

# Role of the Broadcast Media on Solid Waste Management in the City of Kigali Rwanda

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**Abstract:** *This research emphasized on the role of broadcast media outlets to educate the public on solid waste management in the city of Kigali. Techniques were applied randomly with a sample of 385 people as our target population: 240 people live in the peripheries of the city of Kigali and 145 from broadcast media houses. The researcher enumerated specific objectives in a bid to get more information about solid waste management and how broadcast media houses play a crucial role to educate population about it. Qualitative and quantitative analysis was used to find the role of the broadcast media on solid waste management in the city of Kigali. The appropriate sample size of 385 of the respondents was found by using Cochran's formula to shorten the whole population. The study shows that media play a vital role to aware public about solid waste management on 51.7 percent of respondents agreed the importance of the media to educate the public, 36.7 percent strongly agreed while 11.7 percent disagreed with the broadcast media role to make the public aware about solid waste management issues. Considering the majority of the respondents agreed and strongly agreed the importance and contribution of the broadcast media outlets, it means that media should play a vital role in policy implementation of Solid Waste Management in the peripheries city of Kigali. Considering the results of research and the answers to the research questions, researcher recommended radios and televisions stations to increase the number of programs (media coverage) on environment protection especially on solid waste management to increase a level of participation of the people living in the city of Kigali and suburbs. The following stakeholders like government, leaders of the regulatory authority, the leaders of the city of Kigali, Non-government organizations, owners of the companies, households and community in general are encouraged to put in place policies and sensitize the public on the importance of clean and healthy environment in our city.*

**Keywords:** Broadcast media, role, Waste and Waste management

## 1. Introduction

For many decades, waste production and its management is both a rural as well as urban issue. Human activities are the main generator of waste, and at the same time is responsible for its management problem (Saxena et al., 2010). The issue of solid waste management is concerning because there are many sources producing the solid waste across the globe, the amount of solid waste generated globally per year is estimated to have increased by 8 percent. Therefore, much effort is needed to manage and control the solid waste and its related issues (UNEP, 2009). Rwanda, is facing significant challenges in relation to solid waste management. Waste generation is increasing, while a sizeable portion of it is disposed on improperly located and operated dumpsites, resulting in adverse impacts on environment and health. The country has a backlog in waste legislation enforcement as well as in coordination and promotion of existing efforts to recycle and dispose waste properly (MoE, 2014). To increase the participation of the CoK dwellers, broadcast media is an essential tool to raise an awareness and public participation. Public awareness and attitude towards waste can affect the public willingness to participate and cooperate in waste management practices. Generally, public awareness regarding environmental and health risk issue due to poor waste management are important factors need to be communicated in all sectors (Zurbrugg C, 2002) in Koser, R. (2017). Radio and television stations have a great influence

in the public awareness and behavior change communication with regard to solid waste management. The role of the broadcast media outlets on solid waste management for people living in the peripheries of the city of Kigali was analyzed and studied.

### 1.1 Statement of the Problem

This research had studied about awareness of the people on the solid waste management and the role of the broadcast media outlets to change the practices of the people living in the peripheries of the city of Kigali. This was due to low level of registration of the people living in the rural areas of the city and this is explained by the lack of public awareness according to the study conducted by OAG on the status of solid waste management in city of Kigali. This means that community is supposed to be educated in matters of waste management such as segregation of waste according to their categories (organic and inorganic), efficient use of skips, waste recycling, waste minimization and compliance to waste management guidelines (OAG, 2016). Low level of understanding of the public on solid waste management has a negative impact on environmental health of the people. Therefore, education programs produced and disseminated by the broadcast media houses would increase a certain level of awareness.

## 1.2 Objectives

### 1.2.1 Main Objective

The main objective is to study a role of the broadcast media on solid waste management in the city of Kigali in Rwanda.

### 1.2.2 Specific objectives

- 1) To determine how solid waste management is organized in city of Kigali;
- 2) To identify a perception of the people living in the peripheries of the city of Kigali on the broadcast media programs with regard to solid waste management;
- 3) To evaluate a level of broadcast media policy implementation on solid waste management;
- 4) To explore the resources mobilization as an opportunity to broadcast media coverage on solid waste management.

### 1.2.3 Research Questions

- 1) How is solid waste management organized in the city of Kigali?
- 2) What is the perception of the public on SWM programs disseminated by the broadcast media?
- 3) What is the level of broadcast media policy implementation on solid waste management?
- 4) Does broadcast media coverage on solid waste management require resource mobilization? What are major challenges?

## 2. Literature Review

### 2.1 Role of the media to waste management

Researches indicated that communication and public awareness has played a special role to promote environmental behavior change. Rim-Rukeh and Ogbemi (2007:493) stated that “communication and awareness can support individuals to enhance their understanding and the collaboration between resources (natural) and the environment”. Barr (2003:43) emphasized that a greater knowledge of the principles of environment, behavior, attitudes and theories of the waste minimization through communication is to boost the ability of the individuals to participate in their daily practices in solid waste management. Therefore, communication focused on environment and waste management issues are playing main role to keep the public aware of the problems related to the risks and dangers of the presence of wastes. Awareness of the community and its attitudes to waste management is normally affect the population's will to cooperate and participate in a suitable waste management daily practices. Communication messages with regard to environment and health dangers due to lack of solid waste management are key factors required to be regularly communicated to all sectors of the population (Zurbrugg C, 2002). RURA as a regulator organizes a public awareness periodically through various radio and TV programs (paid live or prerecorded programs and advertisements) on solid waste management to sensitize the public the negative impact of the wastes and how harmful they are for environment.

### 2.2 Theoretical Review

The following are theories that strengthen this study:

### 2.2.1 Agenda Setting

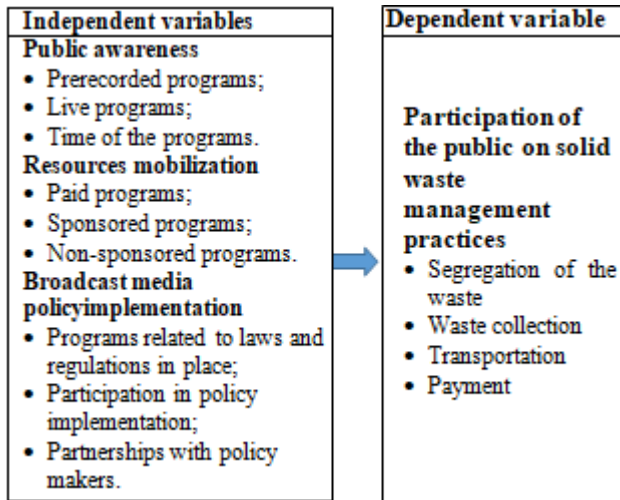
The agenda-setting according to McCombs (2004), influence of the news media is not limited to this initial step of focusing public attention on a particular topic. The media also have an influence on our understanding, our way of communicating and perception according to the topics in the news we received. Media directly influence the attention of the public on the importance of issues aired or published through framing and priming (Lee, 2010). All broadcast media houses set their own agenda according to the specific editorial line and mostly based on the salient issues every day. The intention of selecting this theory, is to analyze how radio and TV stations in Rwanda set their agenda on environmental issues, solid waste management particularly and effect of that agenda to awareness, behavior and attitude change to the people living in the peripheries of the city of Kigali.

### 2.2.2 Knowledge Gap

The knowledge gap theory states that the mass media information influences the population according to their knowledge into a social system. Population with higher socioeconomic status receives the information at faster rate rather than then the population of lower status (Weng, 2000). People with more education have greater ability of perceiving and learning, while people with low level of education may also have less access to sources of information (Liu et al., 2005). Knowledge gap theory is also very beneficial for this research as it helps to analyze two main areas of different socioeconomic status of the people with different educational and financial capacities. With the support of this theory, it was simple to find out the extent of the broadcast media messages influence and change attitude, behavior and practices of the people living in the peripheries of the city of Kigali.

### 2.3. Conceptual Framework

Every conceptual framework is a structure which the researcher considers as a best approach that can explain the natural evolution of the phenomenon to be studied (Camp, 2001). This study analyses broadcast media awareness, resources mobilization to cover the related content, broadcast media policy implementation and the participation of the people on solid waste management. Awareness from broadcast media can transform practices into positive or negative.



Source: Research compilation, 2019.

### 3. Methodology

#### 3.1 Study population

The target population for this research is the people living in the peripheries of CoK where in one rural sector in each district (Gasabo, Kicukiro & Nyarugenge) was selected for this study. In each selected sector, one cell was selected and within that cell, one village was selected. The population was selected based on age, education and sex. The other category is the broadcast media managers, editors and journalists to find out their role on SWM.

#### 3.2 Sample and sampling technique

According to Mugenda & Mugenda (2003), a sampling frame is a comprehensive list of all sampling units, from which a sample can be selected. The respondents were come from every village in each cell of the sectors and were 240 as a total of the 3 districts in CoK. The other 145 respondents were from broadcast media stations selected according to their positions like managers, editors, program managers and journalists. During a collection of data, researcher used a convenience samplings method to gather the information from the public in those 3 districts. A sample of the population was determined by using Cochran formula as the exact number of the residents in the peripheries of the city of Kigali for 3 districts is not known.

$$n_0 = \frac{Z^2pq}{e^2}$$

Where:

- e is the desired level of precision (i.e. The margin error)
- p is the (estimated) proportion of the population which has the attribute in question,
- q is 1 – p.

The Z-value is found in a Z table.

So, p = 0.5. Now let's say that 95% confidence is needed, and at least 5 percent plus or minus precision. A 95 % confidence level gives Z values of 1.96, per the normal tables, so this is the result.  
 $((1.96)^2 (0.5) (0.5)) / (0.05)^2 = 385.$

As a result, this is a random sample of 385 people as target population and is enough to provide the confidence levels needed to the study.

### 4. Data Analysis, Presentation and Interpretation of the Results

#### 4.1 Reasons of wastes in City of Kigali

Figure describe that 83.4 percent of respondents agreed that the core environmental issues cause wastes in city of Kigali and 16.55 percent disagreed, it means that these environmental issues (greenhouse gas emissions, changes in temperature, changes in rainfall, soil erosion and flooding events) are the source of the wastes in the city of Kigali.

**Table 1:** Reasons of wastes in the City of Kigali  
 These issues of environment can bring wastes in the city of Kigali?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	121	83.4	83.4	83.4
No	24	16.6	16.6	100.0
Total	145	100.0	100.0	

#### 4.2 Main mode of disposal solid of waste in Kigali City

For comparing the mode of disposal of solid wastes, the figure 5 and table 11 below indicate that the main mode of disposal of solid waste in the city of Kigali is the collection of wastes as 43.3 percent of total respondents said. Other modes of disposal of solid wastes which come to the second place are both dumping and ploughing in the fields as 20 percent of the respondents said and then hog feeding come as the last mode as 16.67 percent of the respondents confirmed. No respondent mentioned the use of burning wastes as another mode of disposal of solid wastes in the city of Kigali.

**Table 2:** Main mode of disposal of solid waste in Kigali city  
 What is the main mode of disposal solid waste in your area?

	Frequency	Percent	Valid Percent	Cumulative Percent
Collect wastes	104	43.3	43.3	43.3
Dumping	48	20.0	20.0	63.3
Ploughing in fields.	40	16.7	16.7	80.0
Hog feeding	48	20.0	20.0	100.0
Total	240	100.0	100.0	

#### 4.3 Who is responsible for waste collection in peripheries of Kigali city?

This study revealed that the main responsible for waste collection in the peripheries of the city of Kigali are private companies where they perform this work upon payments of the services rendered to collect and transport the wastes to Nduba landfill. Therefore, local leaders are also playing a role in mobilizing people to subscribe to companies and avail their household wastes for collection and pay for the services.

**Table 3:** Responsible for waste collection in peripheries of the City of Kigali

Who is responsible for waste collection in peripheries of the city of Kigali?

	Frequency	Percent	Valid Percent	Cumulative Percent
Local Authorities	64	26.7	26.7	26.7
Private companies	104	43.3	43.3	70.0
Landlords	32	13.3	13.3	83.3
Tenants	16	6.7	6.7	90.0
Estate management	24	10.0	10.0	100.0
Total	240	100.0	100.0	

**4.4 Role of media in policy implementation of SWM**

The main source of broadcast media that disseminate more information on solid waste management. The main sources are both TV & Radio as 40 percent of the respondents stated, 33.3 percent of the respondent said that TV station is a good source of information while 26.7 percent of people living in peripheries of the city of Kigali said that more information is given by radio stations.

**Table 4:** Broadcast media houses with related SWM programs

	Count	Percent
Media play a vital role to aware the public about solid waste management.	Strongly disagree	0 0.0%
	Disagree	28 11.7%
	Neutral	0 0.0%
	Agree	124 51.7%
Do you think that media reporting is enough for the awareness of solid waste management?	Strongly agree	88 36.7%
	Yes	184 76.7%
How much information you get from media about solid waste management?	No	56 23.3%
	Most sufficient	92 38.3%
Which source of the broadcast media disseminate more information about solid waste management?	Sufficient	100 41.7%
	Insufficient	48 20.0%
	TV	80 33.3%
	Radio	64 26.7%
	TV&Radio	96 40.0%

**4.5 Resource mobilization to SWM**

In a bid to mobilize the resources, the broadcast media respondents agreed that on their weekly programs they have paid, sponsored and non-sponsored programs related to solid waste management on their radio and TV stations.

Table 13 indicates that 99 over 145 respondents said that their radio and television stations have less than 2 programs in week, 29 over 145 have between 2 and 5 programs per week and after 17 over 145 have more than programs per week. This study indicates that every radio and television has at least one program per week which is paid, sponsored or non-sponsored program.

**Table 5:** Paid, sponsored and non-sponsored programs and times of airing them per week

		How many per week do you have paid, sponsored and non-sponsored programs related to SWM for the resource mobilization?					
		Less than 2 per week		Between 2 and 5 per week		More than 5 per week	
		Count	Column N %	Count	Column N %	Count	Column N %
For the resource mobilization, do you have paid, sponsored and non-sponsored programs related to SWM?	Yes	99	100.0%	29	100.0%	17	100.0%
	No	0	0.0%	0	0.0%	0	0.0%

**4.6 Participation of people in solid waste management**

Participation of the people is quite good as the following table demonstrates that 168 over 240 of the respondents stated that they are participating in solid waste management in their villages. Majority of the respondents confirmed their participation in solid waste management by contributing to the services through payments 96 over 168, 48 over 168 participated in transportation and then only 24 participated in waste collection.

**Table 6:** Participation of people in solid waste management

		choose the right answer			
		Waste collection	Transportation	Payments	
		Count	Count	Count	Count
Do you participate in solid waste management practices in your village?	Yes	0	24	48	96
	No	72	0	0	0

**5. Conclusion and recommendations**

**5.1 Conclusion**

Broadcast media outlets have played a crucial role and can increase an awareness which boost the will of the people to participate. Participation of the people is based on the different regulatory measures imposed or mobilization carried out or an awareness. This study found out that 168 over 240 respondents from the peripheries of the city of Kigali confirmed their participation on solid waste management in their villages, 96 over 168 participate in solid wastes payments (Here all is included collection, segregation and transportation from a residence to a truck), 48 over 168 participate in transportation ( here every household is in charge of transporting the solid wastes to the main road where a truck will come and load and transport them to a landfill and bill is not the same).

Then only 24 participate in waste collection and transport themselves in the common dump sites in their villages. As



noticed above, only 168 of respondents accepted their participation and 72 did not show how they manage their solid wastes. Researcher noticed that some of the people who don't participate, they use their own way to manage the wastes which is very harmful to their health and environment in general.

## 5.2 Recommendations

Government of Rwanda should create a fund that can support the implementation of the solid waste management programs and policies. The broadcast media houses should increase their efforts in public awareness by covering news and programs related to solid waste management.

Waste bins are available in the city of Kigali especially in the public and commercial places, the leaders of the city of Kigali, should avail the waste bins and containers in the peripheries of this city because they are not present. There is a need of availing also public toilets to minimize the wastes in the villages of the rural sectors of the city of Kigali.

During this study, a researcher found that in the peripheries of the city, there are dump sites in some of the homes where they throw their wastes without segregating them which is very harmful to their health and environment. Broadcast media outlets and local community leaders (through the measures from the leaders of the city of Kigali) should at least teach them how to segregate and throw them in their dumps and avoid to dispose the hazardous wastes in their environment.

Participation of the people is subjected to the public awareness to boost their willingness to change their behavior and attitude from negative thoughts into positive mind on solid wastes and environmental issues.

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