

FROM WASTE-TO-ENERGY (AN AWARENESS CAMPAIGN IN CONVERTING WASTE INTO ENERGY IN SUPIT URANG LANDFILL, MALANG, INDONESIA)

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Abstract: *This research primarily aims to build peoples' awareness to the benefit of waste from Supit Urang Landfill – Malang. Several issues highlighted in this research are: 1) to describe the public perception on the use of landfill gas from waste processing; 2) to determine the government's role in campaigning the conversion of waste into landfill gas to the public around Supit Urang landfill; 3) to determine the roles of community leaders in campaigning the conversion of waste into landfill gas to the people surround the landfill; 4) to identify campaign obstacles; 5) to create a proper campaign model.*

This study employs qualitative approach. The primary data is collected through observation, in-depth interview, and Focus Group Discussion (hereafter FGD) with the following informants: 1) villagers of Mulyorejo, Sukun District, Malang, 2) community leaders in Mulyorejo village, Sukun District of Malang, 3) Officers in Department of Environment Cleanliness and Gardens (hereafter DKP), 4) and a bioenergy expert from University of Brawijaya. In addition, the secondary data is collected from related references and documents.

The study summarizes five findings. First, Most society has positive perception on the use of landfill gas in terms of money saving as it is free, but few people are still worries about the danger of explosion and the hygiene of the food cooked using landfill gas. Second, DKP only provides stickers and word of mouth communication as the campaign media which the authors consider them insufficient. Third, community leaders play an important role as opinion leaders. Fourth, campaign obstacles are people's worries to the safety of the installation and the hygiene of the food cooked using landfill gas. Fifth, the ideal model for the campaign is a model that has identification, legitimacy, participation, penetration, and distribution stages.

Keywords: *Campaign Management, Organic Waste, Alternative Energy Source*

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1. INTRODUCTION

Environmental aspect has now become the center of public attention. Due to the fact that the numbers of environmental destruction are getting increased, people begin to realize the importance of protecting the environment. It is widely known that the destruction of nature and the environment raises many problems. In addition, the excessive energy consumption raises another problem. Natural resources that are continuously consumed for the necessities of life be dwindling in number. One example of petroleum and natural gas for daily consumption is the use of motor vehicle fuel and household needs.

One example of the use of gas for everyday needs which growing in number is LPG (Liquid Petroleum Gas), as well as a variety of alternative energy as fulfilling the needs of everyday life. In order to overcome the issue, the government has taken several steps which sometimes controversial. One of which is the policy of kerosene conversion into gas. This program encounters some problems due to the lack of field control. It leads to the serial accidents of gas tube explosion because of the gas cylinder leakage.

The case seemed to make the existence of kerosene is maintained, but to save the country's economy and reduce subsidies, the conversion program is inevitable. Slowly, the number of kerosene in the community begins to decrease and being replaced by a 3-kilogram LPG gas in society. The existence of LPG in the community can help the government to maintain the stability of the country's economy. However, government subsidies for gas are still relatively large. It stimulates some experts in creating innovative ways to substitute alternative energy, i.e. biogas. Biogas is a natural energy made from cattle dung. The experts employ a specific method so that the dung produce heat that can be used as an alternative energy to fulfill people's daily need such as cooking.

Waste is divided into organic and non-organic type. The waste processing into biogas as an alternative energy source is one form of innovation could serve as a state financial subsidy savings. By utilizing waste residue, the alternative energy can be formed, the aim of which is to divert subsidies to other more crucial aspects. Having seen the great potential of landfill gas in Malang, the researchers decided to conduct a campaign of LPG conversion into waste-landfill gas as an alternative energy. Campaign management concept is one form of notification or dissemination of information about an event that is deemed important to be known by the public.

In conducting campaign activity, the researchers need to know in advance the condition of public culture as well as the theme of the campaign. The concept of the campaign is an implementation of one of the traditions of communication science, rhetoric, which become the basic concept of the campaign. The concept of

the campaign can be implemented in a government program. In order to ensure the success of the program, the researchers can analyze how the campaign of LPG conversion into landfill gas can be accomplished.

Biogas production requires a high degree of accuracy. By using the bioreactor and refining technique and proper filtration, it will create an ignition that can be used as an alternative energy. The distillation process is one form of biogas production. Biogas is then propagated by one region in Malang i.e. the TPA supit Urang. The campaign aims to empower this innovative community. There are still few people who know about the benefits of waste, therefore it is necessary to have campaign management to inform how waste can be used as an alternative energy to substitute LPG.

The formulation of the problems is as follows:

1. How do the community perceive the waste utilization as an alternative energy in substituting LPG?
2. What does the government's role in campaigning the waste utilization to the communities living nearby the Supit Urang Landfill?
3. What does the community leaders' role in helping to have waste utilization campaign to the communities surrounding the Supit Urang Landfill?
4. What are the campaign obstacles in the conversion of waste into energy for the community around the Supit Urang Landfill?
5. What is the campaign model of waste management in producing alternative energy to substitute LPG for communities around the Supit Urang landfill?

2. RESEARCH METHODS

This study employs a qualitative approach with descriptive design. A qualitative approach gives maximum autonomy to researchers in developing mental processes that occur between the researcher and the object of research, while a descriptive design is employed to describe the characteristics of the individual, situation or a particular group. This research developed by using descriptive design because it tries to describe a symptom, and to make a systematic, factual, and accurate description about the facts and the nature of the population of a particular object. Researchers are the most important instrument in the research. It means that the researchers participate actively in defining the type of data.

The source of the data is classified into two: the primary data and the secondary data. The primary data is collected through observation, in dept interview, and FGD with the following informants: (1) The community of Mulyorejo village, Sukun Sub District Malang; (2) Community leaders are people

who are well-recognized by the communities and have wide influence in the Mulyorejo village of the Sukun subdistrict Malang; (3) DKP officers who serve in Supit Urang Landfill; (3) Bioenergy experts from academia. On the other hand, the secondary data is collected from literatures, journals and documents related to this study.

Before the site research, the researchers conduct a preliminary research consists of preobservations and preliminary interviews to the village residents, the community leaders of Mulyorejo Subdistrict, and DKP officers who serve in Supit Urang Landfill Malang. By conducting these preobservations and interviews, the researchers are able to see at first hand the communities' perception toward the use of waste as an alternative energy and the problem rises. After conducting preobservations and interviews, the researchers run an FGD to discuss the data found from preliminary research with the all informants. The results of FGD is used as the basis to formulate the campaign management model.

3. RESULTS AND DISCUSSION

1. Public Perception on Waste Management into an Alternative Energy

Leavitt (in Sobur, 2003, p. 445), states that perception is the direct meaning of vision, how a person sees something; whereas in the broad sense is sight or understanding, that is how someone views and comprehends something. According to Atkinson et al (1997, p. 201) perception is a process where there is organization and interpretation of the environment stimulus patterns.

Humans have a tendency to hold judgment or build an impression on people, situation or event existing around them. Once the judgment is formed, then he/she thinks about something or does things that relate to everything he/she saw and heard or felt. In the communication process, each individual will respond message differently according to the individual situation that leads to different perceptions.

Perception is called the core of communication, because if our perception is inaccurate, we cannot communicate effectively. Perceptions that define us choosing a message and ignoring the other messages. The higher the degree of similarity between individuals, the easier and the more often they communicate, and as a consequence, the more it tends to form a cultural group or group identity (Mulyana, 2000, p. 167).

There are three main components in the process of perception (Sobur, 2003, p. 447), which are:

1. Selection is the process of filtering by the senses to external stimuli, the intensity and type can be a lot or a little.

2. Interpretation is the process of organizing information so that it has meaning for someone.
3. Interpretation and perception then translated in the form of behavior as a reaction.

Observations that the researchers did to the people around the Supit Urang Landfill in Sukun Sub District Malang revealed that they expressed their positive perceptions to the use of landfill gas. Mr. Sariman, Chairman of RT 05. RT 05 (the nearest neighborhood to the area of Supit Urang Landfill) said that people were happy with the use of landfill gas produced from Supit Urang as they are able to save their expenses. Before the installation of Supit Urang landfill gas, people have to buy LPG for cooking but now they don't pay a rupiah. Furthermore, the people consider that the use of landfill gas is safer than LPG.

"Awalnya dibuka itu 8 kompor. Pada waktu itu kami takut meledak. Ternyata lebih enak daripada gas elpiji. Kalau pipa bocor itu nggak meledak, cuma bau saja. Jadi api yang terbakar tidak bisa keluar. Tapi kalau di kompor itu api biru, cuma nggak terlalu keras. Gas Metan itu api, tapi kok nggak pake pipa.. eh ternyata enak, malah yang lainnya ikut. Malah lebih enak. Malah yang nggak kebagian malah ngiri."

("At the first time, the landfill operator only installed 8 stoves for us. Initially we were afraid the gas would explode. Then, it turned out better than LPG. If the pipe leaked, it didn't explode, just bad smell came out. So the burning fire could not burst out. Furthermore, the color of the fire comes out from the stove is blue although it didn't very strong. We thought that landfill gas is fire but why it does not use pipe... hemm great!, It is more comfortable actually. Even better than LPG. The other people who hadn't got the installation finally eager to try to use it, they felt envy. "(FGD, June 27, 2014).

Having seen and felt that landfill gas is not dangerous, then they would interpret that landfill gas is good energy for cooking. These selection results and interpretation shaped the behavior or the behavior of people around the landfill. Behavior change that is visible from the community around the landfill is the use of landfill gas for cooking.

2. Role of Government and Community Leaders in Campaign Waste Management

Act 23 of 1997 on Environmental Management Article 7 contains two important things about the community participation in environmental management. Paragraph 1 explained that people have equal and wide opportunity to play a role in environmental management. While in the second paragraph, it is explained that the implementation of the provisions on environmental management by increasing self-reliance, community empowerment and partnership; develop

community capacity and initiative; foster community responsiveness to social control; advising opinion; convey information or to submit a report.

However, the above Act has not been fully implemented by the government and society. One obvious example is the lack of community participation in waste management on the environment. Public awareness is still low on the importance of preserving the environment to be one of the causes of the landfill and global warming.

Campaign in principle, is a process of communication activities of individuals or groups who performed institutionalized and aims to create a particular effect or impact. Rogers and Storey (1987) defines the campaign as a series of communication actions planned with the aim to create a certain effect on a large number of audiences were conducted in a sustainable manner at a certain time.

Campaign of waste management is a process of communicating the waste management activities undertaken by individuals / groups within a certain time. Waste management campaign is a social campaign that is based on the principle of persuasion, which invites and encourages the public to participate in waste management. Perloff (1993) says that the campaigns exemplify general persuasion in action.

The role and involvement of community leaders and government at the landfill can be seen from the public's enthusiasm to use landfill gas as an alternative energy to substitute LPG. In addition, full support is given by the DKP officers who serve at the Supit Urang Landfill and the local neighborhood representatives (RT / RW) in stimulating optimal use of the methane gas. Even to develop the potential of this methane gas, the neighborhood representatives around the landfill proclaimed their region as the the City of Methan. This is proven by the stickers that are tapped in the residents' houses which have used landfill gas. It shows the high participation of community leaders, community, and government in managing the waste.

Picture 1: Stickers tapped into houses using methane gas for cooking.









Source: Researchers' Documentation

3. The concept of Messages Campaign

The findings of the research indicate that previous campaigns hadn't been planned integratively. They were developed and delivered independently and sporadically by several parties, such as: DKP, Supit Urang Landfill community, or word of mouth communication, the result, therefore, were not maximum. In this study, the researchers create a design of an integrated campaign where the messages are developed based on the purpose of the campaign by considering the target audience's background and need. Using verbal and non verbal campaign media, the campaign messages are all developed for the purpose of persuading target audience to use landfill gas. To get the maximum result, the campaign messages explore the benefits of using landfill gas, the easy procedures, the safety, and the effect to the environment. In addition, the researchers also use terms and language commonly used by Malang society to raise their sense of belonging. The concepts of message campaign are as follows:

Table 1
Campaign Media

No.	Campaign Media	Type	Target	Analysis	Table Description
1.	 Ayo Semua Daur Ulang Sampahmu	Stiker, Mug	General Society	Public awareness, Behavior modification	
2.	 Dukung Penggunaan GAS METAN	Poster, Stiker, Mug	General Society	Public awareness	
3.	 PAKAI GAS METAN SELAMATKAN BUMI KITA	Poster	General Society	Public awareness, Behavior modification	
4.	 AREMANIA PEDULI LINGKUNGAN AYO KER PODO NJOGO KEBERSIHAN!	Poster, T-Shirt	Public of Malang city, AREMAMIA	Public awareness	

5.		Poster	General Society	Public awareness	
6.		Poster, T-Shirt	Public of Malang city	Public awareness	
7.		Poster, T-Shirt	The society that still not using landfill gas	Offer information, Public education	Keep impression of the dangers of the use of landfill gas
8.		Poster	General Society	Public awareness	
9.		Poster, Sticker, T-Shirt, Mug	General Society	Offer information, Public Education	Emphasizing the many functions of alternative energy
10.		Poster, Sticker	Public user, and General public	Behavior modification	
11.	KOTA METAN "Energi Terbarukan untuk Kehidupan"	Tagline	Public user	Public awareness	

12		Poster, Sticker	scavengers	Public education	
13		Poster, Sticker, T-Shirt, Pin	KSM member	Reinforce & attitude behavior	Foster a sense of pride in being envi- ronmentally cades.
		Watch and Calender	General Society	Public awareness	

Source: Researchers' Documentation

4. Model Campaign Waste Management into Alternatives Fuel to LPG for Communities around the Supit Urang Landfill

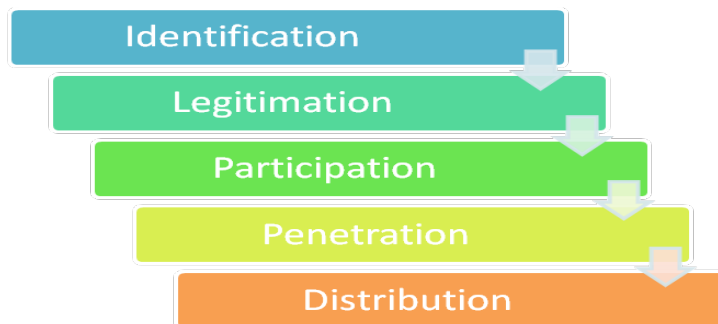
The campaign model developed in this study is a Five Phase of Development Functional model proposed by Venus (2009: 18). It focuses more on the campaign execution stages rather than to the process of the message exchange between campaigner with campaignee. In this model, each phase of the campaign must be passed before the end of these activities determined succeeded or failed to reach the goal. Stages of the campaign include the identification stage, legitimacy, participation, penetration, and distribution. Model selection is based on the idea that this campaign model is more flexible to be applied to social change campaign (social change campaign) or also known as ideologically oriented campaign or cause.

In preparing the campaign messages, the researchers used participatory techniques which involve the drafting team campaign, campaign targeted community to be actively involved in the planning and formulation of campaign messages. Community involvement in the preparation of this campaign program aimed at encouraging people to contribute their ideas in the process of creating

a message in the hope they have sense of belonging and be part of a campaigner who was responsible for disseminating the waste management campaign.

The stages passing in the campaign management of organic waste into alternative fuels in this study can be described as below:

Picture 3: Campaign Stages



Source: Venus (2009, p. 18)

1. Identification Phase

Based on the analysis of initial data collected from interviews with primary informants (government officers, community leaders and residents around the landfill Supit Urang, and based on the results of focus group discussion) and documents obtained from the Department of Environment Cleanliness and Gardens (DKP) Malang City, as well as studies related to the research references, the researchers obtained information that socialization and educational utilization of waste into alternative energy have been carried out by government officers in 2012 or in the first period of installation of biogas from landfill pipe supit Urang into people's homes. Moreover, tapping stickers of 'Malang, City of Methane' in the residents' houses who already taken advantage of the pipe installed from the landfill gas installation is also one form of campaign method that have been carried out by the relevant agencies. Based on these findings, the researchers intend to create a more integrated campaign program and reach out broader community by using a variety of media, as described in point 4.

2. Legitimation Phase

To convince the target audience, given legitimacy through the testimony of excellence and utilization of waste management into alternative energy. Some residents who get a benefit from the landfill gas of the landfill provide their

testimony to support the success of the campaign. In addition, community leaders, experts and government officials are also involved in providing testimony and opinion to strengthen public confidence.

3. Participation Phase

At this stage, the public is made up of community leaders, members of KSM and citizens involved in the planning and formulation of campaign messages. Furthermore, they are involved as campaigner who spread the campaign messages that have been formulated.

4. Penetration Phase

At this stage, the whole design of the campaign is launched to target public through the media that have been planned at point 4. In order to support the dissemination of the campaign program, each community activities related to the processing and use of waste as an alternative energy will be covered by the media (radio, TV, and newspapers).

5. Distribution Phase:

This stage is proving whether the campaign programs that have been implemented are successful or otherwise. To determine whether the messages conveyed in the campaign has been quite effective, researchers conducted an evaluation to obtain feedback from the public. Based on the feedback obtained, the researchers update their campaign programs which already communicated to society.

4. CONCLUSION

1. The society has positive perception to the use of landfill as they don't pay a rupiah for using it. Otherwise, several people have negative perceptions First, Most society has positive perception on the use of landfill gas in terms of money saving as it is free, but few people are still worries about the danger of explosion and the hygiene of the food cooked using landfill gas.
2. The government and community leaders strongly support the program of alternative energy made from waste utilization. However, the government does not provide a large of fund to build landfill gas installation. Likewise, in educating the society about the benefit and the safe way of using landfill gas, the government only provides stickers and word of mouth communication as the campaign media which the author consider insufficient.
3. Community leaders play an important role as opinion leaders to influence people in following the government's program.

4. The authors identify two basic problems that obstruct the campaign success.
5. The author finds that the ideal model for the campaign is a model that has identification, legitimacy, participation, penetration, and distribution stages.

5. SUGGESTION

1. There is an urgent need to add campaign materials. The materials available today are only the sticker of "Malang Kota Metan" (Malang is a Methane City), and "Rumah ini Menggunakan Gas Metan" (This House Utilizes Methane Gas).
2. The government and society create an integrated campaign management so that the use of gas made from waste is increasingly recognized by the wider community.
3. Future researcher continue this study by examining the effectiveness of media campaigns before it is applied.

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