

# Community Empowerment for Controlling Environmental Pollution in Coastal Slum Demaan, Jepara

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**Abstract**—Coastal slums area always identical with an unhealthy environment and polluted, one of the main cause is garbage scattered in the neighborhood. Community behavior who littering directly in the sea, river or vacant land located around their neighborhood cause environmental pollution. The aim of the research is to formulate the form of community empowerment for controlling community in littering the garbage that caused environmental pollution in coastal area of Jepara Regency. The research method used mixed method, a combination of primary data and secondary data. Primary data collected by observations, interview to community and government agency, for secondary data using the previous studies. The analysis used descriptive quantitative and map overlay. The result of the research showed that environmental pollution can be controlled with Community Based Management (CBM), a program management approach based on knowledge and awareness of the local community with utilize resources owned. The society is given responsibility for formulating their needs, goals, and their aspiration in waste management to create a healthy and livable settlement. The lowest level of government, urban village must oversee activities undertaken by the communities.

**Keywords**—community empowerment; waste management; slum area; environmental pollution

## I. INTRODUCTION

Slums have become a problem in almost all developing countries, especially in an urban area with increasing activities. Increased activity in an urban area affects the quality of water supply, drainage, waste collection and management, and transportation as a problem on urban area especially on coastal area [1]. This condition has an impact on environmental pollution to be very complex and risk, especially a problem of waste management in the slum area [2].

Waste problem in Indonesia caused by lack of understanding and awareness of citizen about the impact from midden or garbage pile [4]. Midden as a result of the many community behaviors who dispose of the trash and the community has not yet realized the importance of proper and correct waste management [4]. Waste problem issue being the

global issue and it becomes topic for World Habitat Day of 2018 and concern in Municipal Solid Waste Management. Urban solid waste management is part of the principle of waste sources, storage, collecting, transfer and transportation, and waste management and disposal [5]. This is expected to maintain human and the environmental health, livable, and safe sustainably based on Sustainable Development Goals (SDG's) [7].

The previous study related to slum area mention that slum area characterized with poor sanitation, dense and chaotic residential environments, inadequate water supply, in the dangerous location, air pollution, poor waste management and which would have an impact on the residential environment [1]. As well as a research-related to Municipal Solid Waste Management is carried out with a community-based approach and stakeholder participation in decision making as a response to environment degradation [3]. This approach is carried out by bottom-up where local citizen manage resources and active on participating with local government [3]. However, community-based approach focused on the involvement of lokal stakeholder in making decisions and communities as an activity object who support and participate in policies determined by stakeholder [8].

Unlike stimulation through community empowerment in which initiate of society more control and improving their life through problem identification and asset implementation, designing of a solution, and the process of change [9]. So that, communities as a subject who can make a solution based on their necessity condition and as an important role in their activity [10].

Implementation of community empowerment is seen from power transferring process from an external (exogenous) role to the community (endogenous) [10]. Exogenous can defined as growth or caused from outside so that show the stakeholder who carry out the power and community empowerment which depend on external factor [10]. While endogenous defined as

growth and caused by inside where empowerment process appear from society and free from external influences [10].

However, the research related to the community empowerment to control community behavior about environment pollution caused by midden has not yet examined. One of slum in the north area of Central Java Province is Demaan Urban Village, Jepara Regency with existing environmental pollution condition caused by many of midden in residential and along the beach caused by society's behavior. On the other hand, Demaan society has a potential to do activity with mutual help or gotong royong and community empowerment can be easily to accepted. So based on these issues and problems, the aim of this research is to formulated the form of community empowerment to control environmental pollution in the coastal slum of Jepara Regency. One of the coastal slum in Jepara Subdistrict is Demaan Urban Village as a study case for community empowerment

## II. RESEARCH METHOD

This research used a mix method which is combination of quantitative approach and qualitative approach [11]. Primary data collection is done by observation and interview. While for secondary data is done by reviewing documents, article, and some book references.

The analysis used is overlaying maps of existing midden location and existing land-use map and program from the government. After that, it was followed a qualitative descriptive analysis related to empowerment efforts in controlling environmental pollution caused by midden. In addition, it is also supported by the socio-cultural conditions in Demaan Urban Village. So from the problem result and culture social condition support for community empowerment.

## III. RESULT AND DISCUSSION

### A. General Description of Slum in Jepara Sub-Regency

Jepara Regency is one of regency in Central Java Province with the total area is 100.413.189 Ha. Jepara Regency has 183 villages and 11 urban villages which spread in 16 subdistricts and have 16 of villages/urban villages located in coastal areas, especially in Jepara subdistrict. One of the urban villages has decided as a coastal slum is Demaan Urban Village which has 7 RW and 22 RT (*Rukun Warga / RW* is the division of territory in Indonesia under Hamlet; and *Rukun Tetangga/RT* is the division of territory in Indonesia under the *Rukun Warga/RW*) with the total coastal slum area is 17,42 Ha [11,12]. Demaan Urban Village have 1462 of households where

there are 719 house units or 60,26% has served by garbage transportation. So there are 743 house units have not yet served by garbage transportation. From map below, the location of Demaan Urban Village in Jepara Subdistrict.

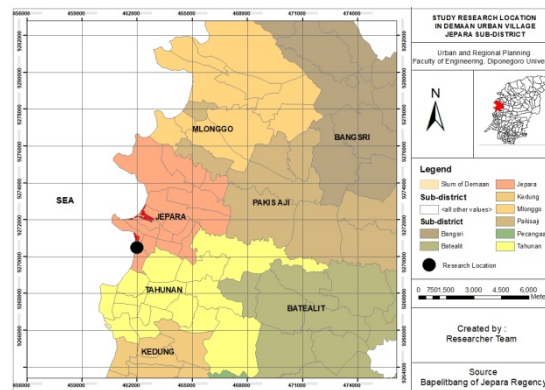


Fig 1. Slum location in Demaan Urban Village

The existence of households which have not been served by the adequate waste network has triggered the community's behavior for littering waste which is the cause of environmental pollutions, such as in littering waste in sea and drainage that become midden.

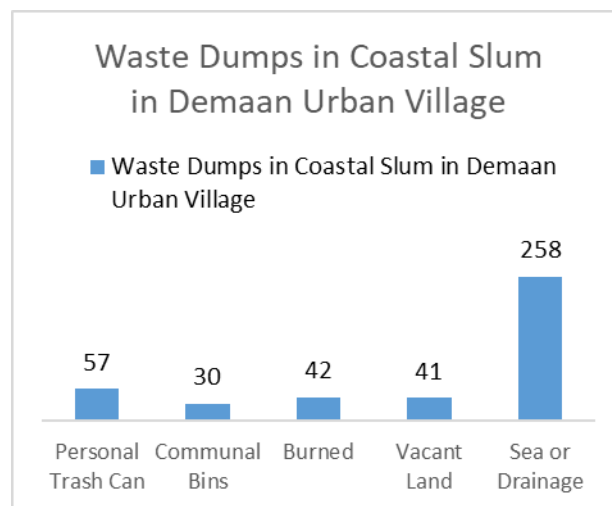
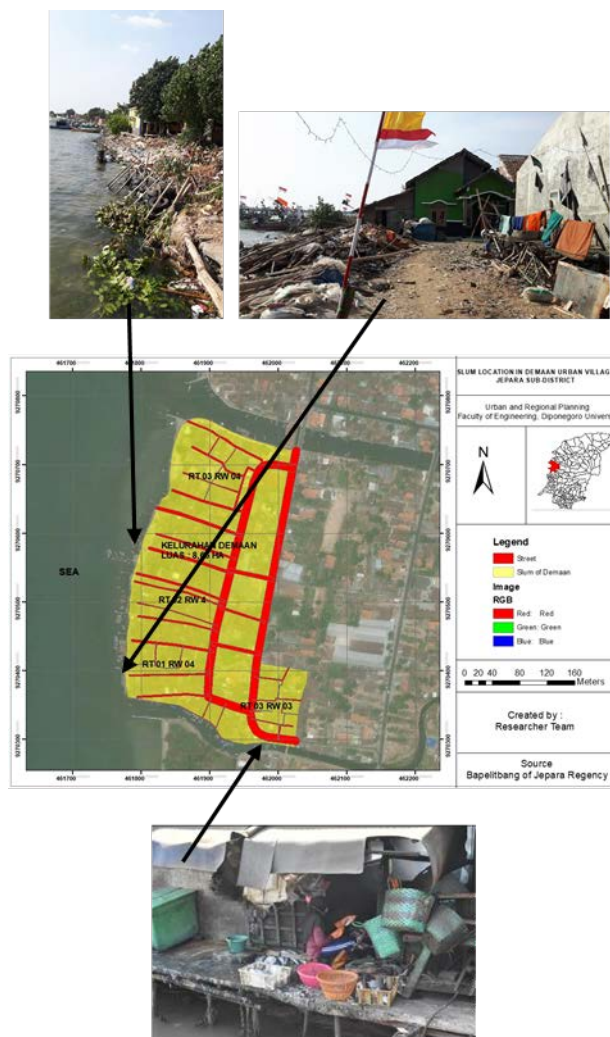


Fig 2. Diagram of Dump trash of society in Demaan coastal area on 2016.

The majority of the population in coastal area of Demaan Urban Village littering waste directly in the sea and drainage as many as 258 households or 60% of all households. In addition, garbage is

burned and littering in vacant land. This condition also supports the existence of midden around the neighbourhood and can pollute the environment. Only 87 households or 20% of all households in Demaan Urban Village who aware for not littering waste. They throw waste by personal trash can and communal bins. So that, they helped and support to keep their residential environment. This picture below showed of midden condition in the sea, drainage and households in some location.



**Fig 3. Midden Condition and Dump Waste in Demaan Coastal**

Midden of solid waste in the slum coastal of Demaan Urban Village comes from fish fuming industry and households. The building nearest from the sea will tend to throw garbage directly into the sea or drainage. While households waste in the coastal area will throw garbage in the vacant land

or littering in the sea. This condition triggers an impact on environmental pollution in the neighbourhood.

### *B. Culture Social Condition in the Demaan Coastal Slum*

The Demaan people are mostly native people who have lived there more than 20 years. Their livelihood is mostly as entrepreneurs or private company as many as 36% while an inhabitant as a fisherman as many as 27%. Their education degree dominated high school graduated which reaches 33%.

The relationship between inhabitants are good, even to handle environment physical problem and developing their economic-social, they create a Community self-supporting agencies or BKM (*Badan Keswadayaan Masyarakat*). In the improvement activity and development of the residential environment, community cooperates with government and non-government organization. Mutual help for infrastructure construction by self-helps still persists, but community service activity has begun to wear of. The habit of gathering in front of the house, on the side of the road, and side of the beach for just tell stories and do activities as fisherman community.

### *C. Community Empowerment as Effort for Environmental Pollution Controlling.*

Stimulation through community empowerment where efforting society more controlling and improve their life through the identifying problems and implementing assets, designing solution, and change process [9]. So, the people as subject who are able to make the solution based on their necessity condition and as an important actor in the activity [10].

Implementation of community empowerment is seen from power transferring process from an external factor (exogenous) role to the community (endogenous) [10]. Exogenous is defined as growth or have a cause from outside so that show stakeholder who driving a power and community empowerment which depends on external factor [10]. While endogenous is defined as growth, comes from, or have a cause from inside where community empowerment emerging from the community and free from external influences [10].

Community behavior in Demaan in conducting the activity through mutual-help way become one of social capital in waste management. With the potential from community and support from the stakeholder, the community can be empowered to identify problem and designing solution for the solid waste problem in their neighbourhood. Problem identification supported by Non-government organization with local inhabitant also give aspiration relate on problem, such as based on observation result said many community behavior littering the rubbish with inadequate of trash bins or garbage cars.

*"Community behaviour littering in the river, so the garbage flow to the coastal area of Demaan. An Addition Demaan have an Lambiran Land which is the heap of waste and pieces of construction have compacted in the side of beach for 1 until 5 years - Mr. Suhanto as Head of RW 04 (Rukun Warga / RW is the division of territory in Indonesia under Hamlet) "*

To make the slum environment in Demaan become not polluted from rubbish which caused by community behavior, it requires an approach that can foster community effort to make a better change. One of approach that can change community behavior is community empowerment.

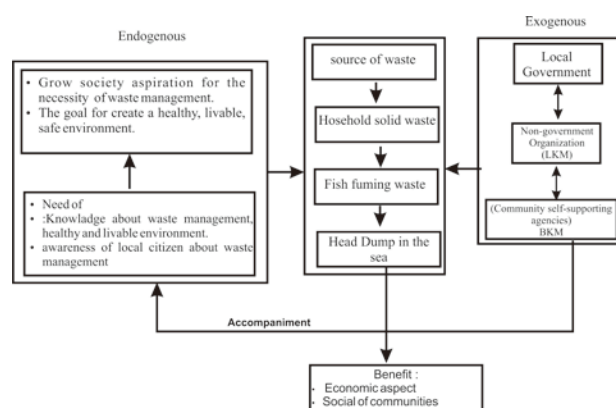
Empowerment process to realized in community level for waste handling activity requires direct involvement and participation from the community. An Engagement-Participation-Empowerment (EPE) approach model can be used, this approach begins from community involvement, followed with participating in waste management, and empowering the resources they have [10].

This method made endogenous and exogenous factor has not direct effect. The exogenous factor can not influences the endogenous factor [10]. The endogenous factor is an internal resources owned by the community. The empowerment process in controlling waste pollution with EPE method is carried out in several stage, starting with exploring community needs towards the impact that will be received when managing waste, next stage is the community makes a goal to be achieved in manage solid waste and community can submit several aspirations in accordance with their knowledge and experience. In the endogenous stage there is a decision making process carried out by the

community and produced governance of waste management based on local resources owned.

While the exogenous factor is stakeholder who has outside authority from the community, such as apparatus of local government and facilitators (Community self-supporting agencies or BKM) or Non-government organization (LKM) [14]. An exogenous factor can be a companion but they can not influence the result of a decision from endogenous factor [14].

Waste management from fish fuming waste, solid waste from daily activity from the household can be processed by 3R method (Reuse, Reduce, Recycle) and preventive method or reduce waste from community activity. Knowledge about waste management can be carried out with exogenous factor towards endogenous factor that are socialized and practised directly [14]. The community empowerment process for controlling environmental pollution from the waste in Demaan can be seen in following diagram:



**Fig. 4 Community Empowerment Diagram in Coastal Slum of Demaan.**

In preventing environmental pollution caused by waste from community behavior, the community empowerment approach expected to reduce littering behavior. Behavioral change can occur if they receive benefit and know the impact that will occur which can cause harm and disaster for themselves and their environment. Littering garbage carried out in the sea and around their residential can cause accretion, marine biota community damage, flood hazards, environmental damage and can be caused several diseases.



Cognitive and affective aspects will affect changes in the community in littering trash at their neighborhood. With cognitive aspects, they are community activity in understanding of healthy residential environment benefit and meet healthy standard through socialization of exogenous factor. Affective aspect is subjective nature of community in accepting and rejecting with knowledge, understanding which received by cognitive aspect. Both of aspects are very influential on community behavior to do better changes in waste littering that can pollute their neighborhood.

#### IV. CONCLUSION

Community empowerment to control environmental pollution of the waste in Demaan by EPE (Engagement-Participation-Empowerment) method, which is community empowerment from endogenous and exogenous factor. An Endogenous factor is an internal factor from the community to identify their needs, deciding goals and exploring their aspirations in waste management based on owned resources. An Exogenous factor is a stakeholder who has an authority to facilitate the community but did not influence them. An Exogenous factor is a local government, Community self-supporting agencies or BKM and Non-government organization (LKM).

Community empowerment is expected to change community behavior in waste littering in their neighborhood. Change can be influenced by cognitive and affective aspects from the socialization result of exogenous factor about healthy residential, livable, and good waste management received by the community. While an affective aspect is the community behavior to receiving or rejecting information and knowledge obtained from exogenous factor

#### V. ACKNOWLEDGEMENT

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