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Community-Based Waste Management Model in DKI Jakarta

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Abstract--The waste management that has been running in Jakarta today, where the majority still use the collect-transport-dump system, has been changed to a waste management approach that integrates the roles of the community, government and the private sector. This study aims to find a suitable waste management model for the DKI Jakarta Province. The research method used was descriptive analysis and a research and development approach. The informants are respondents consist of government officials related to waste management (Environmental Service), community leaders and local waste management activists. The results of the study show that 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 Local Organizations 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 local good environment condition standards. Although the government programs 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.

Keywords--community, community leaders, environmental service, government, waste management.

Introduction

The challenge of waste management has been a growing concern for the national government, local authorities, environmentalists, researchers and the communities at large (Dijkema et al., 2000). The waste management that has been running in Jakarta today, where the majority still use the collect-transport-

dump system, has been changed to a waste management approach that integrates the roles of the community, government and the private sector (Jakarta Recycle Centre, 2019). There are various waste management strategies and those that are based on local communities, and therefore adopt ideas for integrated waste management it is important to think about the management system to solve the waste problem, especially in urban residential areas (Calabrò & Grosso, 2018).

The term "community-based" involves that the role that communities can realistically play in management of their own waste depends on the local context (Colon & Fawcett, 2006). Community based in this context is like playing a "game" to educate others. And what is no less important is the involvement of many components here. One of the key success factors is the effective working partnerships formed between communities, local authorities and private sector (Mubaiwa & Africa, 2006). Waste management is an activity that is systematic, comprehensive and sustainability which includes waste reduction and handling. Model currently known waste management, among others; waste generation, handling at place, collection, transportation, processing and final processing (Faizah, 2008). Waste management is categorized as public services, and every citizen has the right and obligation to manage waste (Arnawa et al., 2019). Every household is obliged to reduce waste and handle it in a way environmentally friendly. Through this community-based waste management modeling study, it is hoped that it can find out the relevance of waste management with several internal concepts help reduce waste generation and support a more adaptive sustainable development program (Hsu et al., 2007; Valentin & Spangenberg, 2000). In the context of this study, the process and results of the field data recaps and secondary data were analyzed along with the expected conditions and had a significant effect on the desired waste management model.

Method

The research method used was descriptive analysis and a research and development approach. The informants are respondents consist of government officials related to waste management (Environmental Service), community leaders and local waste management activists (Krantz et al., 2005; Prummer & Siedlarek, 2017).

The method of research and development is the research method used to produce a particular product and test its effectiveness. According to Borg and Gall, that is with a research and development model is "a process used develop and validate educational products" (Borg & Gall, 1983). According to Borg and Gall (Bin-Tahir et al., 2019; Silalahi, 2017), educational research and development is a process used to develop and validate the educational product. It means a series of research measurement and development carried out cyclically, and every step that is always referring to the results of previous steps until eventually gained a new educational product.

Thus this research is intended to produce a product in the form of a model, through a procedure that begins with a needs analysis, continued with the development process and ended with evaluation. The model produced by this

study in the second year will be disseminated to community groups, so that the results can help accelerate the action plan for reducing waste at the source for DKI Jakarta (Pharcharuen et al., 2021; Houndjo, 2018).

Results and Discussion

Based on the results of secondary data literacy and direct information from respondents through online processes; it is known that to construct a community-based solid waste management model, several strategic interventions are needed, namely: funder (provider of funds), direct practice, collaborator, local organization, and local government (Reddick, 2004; Jaeger & Bertot, 2010).

Provider of funds

Provider of funds; specifically to provide a number of budgets to support training activities or real waste management practices in the community.

Direct practice

Direct practice; with financial support, program development efforts, policy reviews that support solid waste management at the local level, as well as carrying out training activities or real waste management practices in the community as part of the core program of waste management activists at the community level, at least at the village level and district (Thoyib et al., 2021). All of these activities, of course, must receive assistance from the local government and related agencies.

Collabrator

Collabrator; provide moral assistance and personnel as well as institutions for the implementation of real waste management training or practice in the community

Local organizations

Local organizations; is a core part of the implementation and practice of real waste management in the community. This institution is certainly supported by many elements, namely individuals, groups and institutions (community leaders, government officials, universities).

Local government

Local government; play a role as a companion in reviewing policy changes related to solid waste management and the like, environmentally friendly management, capacity building for actors and local organizational institutions, as well as efforts to improve programs through improved monitoring (Wünscher et al., 2008; Vatn, 2010).

These consultation were key because: (a) They have the mandate to handle waste hence offloading that responsibility to communities would mean a shift in their traditional practices, (b) Could easily mobilize the communities through their

socials services department when the need arises, (c) Could create an enabling environment for local organizations to operate without being exposed to the usual bureaucracy associated, (d) Could provide the requisite technical and logistical support in waste transportation and disposal, and (e) Could provide ideal and legal operating spaces for the local organizations, collaborator, and direct practice (Nasution et al., 2021).

The Model: Strategy for intensifying the community-based solid waste management model



Figure 1. The invention strategy of community-based solid waste management model

To inform of the situation on the ground with regards to the current practices:

- Establish the quantities and the types of waste being generated,
- Analyze and review the policy and legislative environment in solid waste management, identifying existing gaps,
- Assess the technologies in use in solid waste management,
- Conduct a solid waste market chain analysis, and
- Identify key players in solid 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.

Lesson learned

The implementation of the invention strategy of community-based solid waste management model has so far given valuable lessons among them are the following:

- The environmental education (EE) 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 solid waste management activities like recycling because many recycling companies only accept bulk supplies which are normally difficult 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 solid waste management,
- Giving up or sub-contracting of services in the traditional sector occupied by solid waste management has been a challenge taking a cue from past experiences from the district,
- Policy issues need to be addressed around handling of solid waste so that the sector can be opened up to more players to ensure a healthy and hygienic environment for the communities.

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 Local Organizations offering the service are from 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 local good environment condition standards. Although the government programs 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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