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Perception of Stakeholders, Community Participation and Institutions in Waste Management in Sintang City

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Abstract

Waste in Sintang City is still a problem despite the issuance of Sintang District Regulation No. 4 of 2015 on the Management of Household Waste and Waste Similar to Household Waste and Sintang Regent Regulation No. 54 of 2017 on Procedures for the Management of Household Waste and Waste Similar to Household Waste. Waste problems can be seen in piles of garbage in places that should not be used for waste disposal, resulting in illegal landfills or temporary landfills that exceed their capacity. This study aims to determine the level of community and stakeholder knowledge about waste; analyse community attitudes and awareness towards waste management; assess stakeholder perceptions of government waste management policies; assess community behaviour and participation in waste management; assess the role of institutions in supporting waste management; explore views through FGDs on waste management challenges and solutions. This research used both quantitative and qualitative approaches (mixed methods) to obtain comprehensive data. The quantitative approach was conducted through a survey of the community, while the qualitative approach was conducted through in-depth interviews and focus group discussions (FGDs). Result showed that community knowledge about waste is good but uneven, especially with regard to the 3Rs. Community attitudes and awareness of waste management are positive but need to be supported by concrete actions. Government perception of waste management tends to be negative due to lack of facilities and socialisation. Waste management behaviour is good, but participation in management programmes is still low. Institutions play an important role but need to be strengthened in terms of regulations, resources and cooperation. Interviews and FGDs revealed the need for an integrated approach to address challenges and opportunities in waste management.

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Introduction

Waste in Sintang City is still a problem despite the issuance of Sintang District Regulation No. 4 of 2015 on the Management of Household Waste and Waste Similar to Household Waste and Sintang Regent Regulation No. 54 of 2017 on Procedures for the Management of Household Waste and Waste Similar to Household Waste. Waste problems can be seen in piles of garbage in places that should not be used for waste disposal, resulting in illegal landfills or temporary landfills that exceed their capacity. On the other hand, the capacity of local government to deal with waste through relevant agencies is still very limited. A healthy and clean environment is a right that should be enjoyed by citizens, and maintaining a clean and healthy environment is a duty that must be carried out by all members of the community ^[1]. In this case, local government has a duty to facilitate the proper exercise of these rights and duties.

As we know, if waste is not properly managed, it will cause environmental pollution (water, air and soil pollution), which will not only affect human health and other living things, but also disrupt various social and economic activities of the community,

including tourism ^[2]. Of course, all of this will have an impact on the decline of the quality of life of the people of Sintang in general and will become a separate issue for the local government. Therefore, it is time for the waste problem in Sintang City to receive serious attention from various parties ranging from the executive, legislative, academics, environmental NGOs to the wider community.

The cleanliness and health of an environment is closely related to people's perceptions of waste and their awareness of protecting their environment from waste ^[3]. Community participation is often defined as the participation, involvement and similarity of community members in a particular activity either directly or indirectly, from ideas, policy formulation, program implementation and evaluation. Direct participation means that community members participate by providing labor support in the activities carried out, while indirect participation can be in the form of contributions of ideas, funding and materials needed. Individuals living in an environment have an obligation to protect their environment, one of the ways in which this is demonstrated is through attitudes and behaviors of caring and loving the environment. When people have a positive perception of the need for proper waste management and believe that everyone has a duty to participate in waste management, environmental cleanliness becomes a deeply rooted social movement ^[3]. Conversely, if people have a negative perception, they will not care how waste should be managed and will not care whether or not waste pollutes the environment. According to ^[4], the new paradigm in waste management emphasizes more on reducing waste from the source to reduce the amount of waste generation and reduce the negative impacts caused by waste.

Waste management is not only considered from a technical point of view, but also from a non-technical point of view, such as how to involve waste-producing communities to participate actively, or at least passively, in waste management activities from generation to final disposal Identifikasi Solusi Pengelolaan Sampah ^[5]. Community participation in waste management can increase public awareness of the importance of a clean and healthy environment and strengthen community initiatives to protect, maintain and improve environmental functions ^[6].

Waste management is a critical issue in Sintang City, which is facing an increase in population and economic activity. Waste that is not properly managed has the potential to cause environmental pollution, reduced quality of life and various health risks. Therefore, waste management that includes stakeholder awareness, community participation and institutional strengthening is key to the success of waste management ^[7].

This study aims to determine the level of community and stakeholder knowledge about waste; analyse community attitudes and awareness towards waste management; assess stakeholder perceptions of government waste management policies; assess community behaviour and participation in waste management; assess the role of institutions in supporting waste management; explore views through FGDs on waste management challenges and solutions.

Research Method

Research design

This research used both quantitative and qualitative approaches (mixed methods) to obtain comprehensive data. The quantitative approach was conducted through a survey of the community, while the qualitative approach was conducted through in-depth interviews and focus group discussions (FGDs) ^[8].

Type of research

This research is descriptive-analytical in nature. Descriptive research aims to describe the level of knowledge, attitude, behaviour and participation of the community in relation to waste management. The analytical approach is used to assess stakeholders' perceptions of government policies and institutional roles ^[9].

Population and sample

The research population included the people of Sintang City, stakeholders and representatives of waste management institutions. The sample consisted of 200 randomly selected community respondents and 15 key informants for interviews. The FGDs involved 18 participants from different backgrounds, including government and community leaders.

Research instruments

The questionnaire covered five main aspects ^[10]:

1. Knowledge about waste: 7 Likert-scale statements plus open-ended questions.
2. Attitude and awareness towards waste management: 3 Likert scale statements plus open and closed questions.
3. Perception of waste management by the government: 3 statements with Likert scale, open and closed questions.
4. Behaviour and participation of the community: 3 statements with Likert scale and open questions.
5. Institutional role: 5 open questions.

Data processing technique

Quantitative data were analysed using descriptive and inferential statistics. Correlation and regression tests were used to identify relationships between variables. Qualitative data was analysed using thematic methods.

Research site

This research was conducted in Sintang City with the research site selected purposively.

Result

Survey results

Knowledge about waste

The results show that 80% of respondents have a basic knowledge of the types of waste (organic and inorganic). However, only 45% understand the importance of waste separation at household level. Knowledge of the 3Rs (reduce, reuse, recycle) is still limited to 30% of respondents.

Most respondents have a basic knowledge of waste types and their impacts. However, an understanding of sustainable management such as the 3Rs (Reduce, Reuse, Recycle) is only understood by 45% of respondents. And they are not used to sorting waste due to lack of knowledge and support facilities.

In the FGD, stakeholders expressed the need for more education on the circular economy concept. The circular economy is a resource management approach that aims to reduce waste, maximise the use of materials and recycle products for reuse. In Sintang, this approach is particularly relevant given the importance of sustainable waste management in the area.

Attitudes and awareness of waste management

The majority of respondents (70%) have a positive attitude towards the importance of waste management. Awareness of the need to minimise waste by reducing the use of single-use plastics is high (60%). However, there is still a gap between awareness and action. The majority of the community has a positive attitude towards waste management, with 70% of respondents agreeing that household waste separation is

important. However, awareness is not yet fully reflected in daily behaviour (50%).

Perceptions of government waste management

A total of 65% of respondents felt that government waste management was not optimal. Facilities such as segregated waste bins and waste transportation are considered inadequate. Interviews with stakeholders revealed that coordination between agencies needs to be improved for effective management.

As many as 60% of respondents felt that the government had not provided adequate facilities for waste management. Stakeholders in the FGD highlighted the need to increase synergy between the local government and the community through inclusive programmes such as waste banks and incentives for residents.

Community behaviour and participation

As many as 75% of respondents admitted that they always dispose of waste in the right place. However, only 20% participate in programmes such as waste banks or composting. Factors inhibiting participation include lack of socialisation and lack of support facilities.

Overall, 75% of respondents said that they regularly disposed of waste in the right place. However, participation in schemes such as composting or waste banks is still low at around 25%. Barriers to participation include lack of facilities, information and incentives.

Institutional role in waste management

The results of the interviews show that institutions play an important role in waste management. However, challenges remain in terms of funding, human resources and unintegrated regulations. Stakeholders suggested the need to strengthen local regulations and the capacity of waste management institutions.

The analysis shows that institutions play a strategic role in waste management. However, challenges include budget constraints, lack of coordination between sectors and regulations that have not been fully implemented.

Results of interviews and FGDs

Several key findings emerged from the interviews and FGDs:

1. Main challenge

- Lack of waste management facilities
- Low public awareness
- Lack of government budgetary support.

2. Opportunities

- Potential for community empowerment through community-based programmes, improved waste management technology and collaboration between government and the private sector.
- Organic waste such as food waste and agricultural waste can be processed into compost. As an agricultural region, Sintang has great potential to use compost as organic fertiliser.
- Plastic, paper and metal waste can be collected, sorted and sold to waste banks or recycled into new products such as plastic paving stones.
- Communities in Sintang can be empowered to set up waste banks, recycling workshops or waste-based handicrafts.
- The Sintang government could work with the private sector to build recycling facilities or provide incentives to businesses that support circular economy principles.
- The people of Sintang need to be educated about the

importance of sorting waste and supporting circular economy practices through socialisation programmes in schools, communities and public places.

3. Recommendation:

- Education on the importance of good waste management needs to be improved so that people are more concerned and actively involved.
- Economic incentives for waste management and stronger regulations at local level.
- Funding is needed to build circular economy infrastructure, such as recycling centres and skills training.
- Collaboration between government, the private sector and the community needs to be more effective to create a sustainable system.

Discussion

This research reveals six important things about waste management in Sintang. First, the community's knowledge about waste is good but uneven, especially regarding the 3Rs. Previous research has shown the importance of exposure to information and environmental knowledge on community participation. Therefore, efforts to regularly disseminate information, valid and compelling messages, provision of facilities, and the role of key actors at the community level can help increase public participation in waste segregation ^[11].

Second, community attitudes and awareness of waste management are positive but need to be supported by concrete actions. Research in China found that both social norms and social networks have a significant positive influence on pure altruistic waste sorting, while only social norms are positively associated with bringing one's own shopping bags for storage and reusing bags in other aspects of impure altruism. For people with higher levels of education, the effects of social norms and social networks on waste sorting and bring-your-own-bag behavior were not significant, while high-income groups were also slightly influenced by social networks, partly due to time constraints and opportunity costs. ^[12] Third, government perception of waste management tends to be negative due to lack of facilities and socialization. The existence of this negative perception causes waste management not to be effective and efficient because the government is less proactive in dealing with waste and lacks socialization activities in waste management. A study in Dili Timor Leste also revealed the weak role of the government in providing waste management facilities ^[13].

Fourth, waste management behavior is good, but participation in management programs is still low. The effectiveness of public engagement is significantly affected by power dynamics, participants' values, and their epistemology, i.e., the way they construct knowledge and the type of knowledge they consider valid; and engagement processes work differently and can produce different outcomes when operating at different spatial and temporal scales ^[14]. Finally, institutions play an important role but need to be strengthened in terms of regulations, resources and collaboration. Interviews and FGDs revealed the need for an integrated approach to addressing waste management challenges and opportunities.

Other research results show that the roles of multi-stakeholders involved in this waste management activity include: private sector as initiator, enabler, mentor and controller; Formas PL group as implementer and controller; village government as regulator and controller; community

groups as implementers; community leaders as enablers and controllers; and; Cirebon district government as regulator and implementer. However, this activity also has its own challenges, namely the search for the consistency of the stakeholders involved and the need for development innovations, such as the use of plastic waste in different kinds of handicrafts or organic waste in compost^[15]. Other studies have reported that the formation of community self-help groups (KSMs) and waste bank initiatives have increased community participation, but there is still a need for increased commitment and coordination to achieve more optimal results. Therefore, there is a need to improve commitment and transparency in the collaborative process for sustainable waste management^[16].

Conclusion

1. Community knowledge about waste is good but uneven, especially with regard to the 3Rs.
2. Community attitudes and awareness of waste management are positive but need to be supported by concrete actions.
3. Government perception of waste management tends to be negative due to lack of facilities and socialisation.
4. Waste management behaviour is good, but participation in management programmes is still low.
5. Institutions play an important role but need to be strengthened in terms of regulations, resources and cooperation.
6. Interviews and FGDs revealed the need for an integrated approach to address challenges and opportunities in waste management

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