



**COMMUNITY PARTICIPATION ON THE IMPLEMENTATION OF
ECOLOGICAL SOLID WASTE MANAGEMENT IN THE CITY OF
COTABATO AND KIDAPAWAN: A COMPARATIVE STUDY**

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Abstract

The study aimed to determine the level of community participation on the implementation of ecological solid waste management in the City of Cotabato and Kidapawan in terms of Solid Waste Management; Materials and utilities; Penalties; Seminars and Programs; and Incentives. In this study, the researcher was used the descriptive-survey design to describe the community participation on the implementation of ecological solid waste management in the City of Cotabato and Kidapawan using the adoptive and modified survey questionnaire. In summary, based on the research findings of the study on the community participation in the implementation of ecological solid waste management in the City of Cotabato and Kidapawan both cities were moderately participated as overall results of the mean rating in all components of waste management. This has impacted on the natural environment in the study area. The lack of Public waste bins and proper waste collection processes have affected the waste disposal practices. Moreover, the inactive of the City Environment and Natural Resources Officers have impacted negatively on the imposition of regulation of which penalties is not enforced. The lack of knowledge, awareness and cooperation among the barangay officials and the community as a whole has added to that. Therefore, it can be recommended It is important that the solid waste management should be developed and strengthened. Waste storage and disposal areas are the dominant means of managing waste. Waste separation from the household level, proper storage, more efficient waste collection systems, and sustainable recovery and disposal practices are recommended to be observed strictly the study area. Enhance the reduction of waste generated by households and business places by the waste reuse, recycling and composting processes to manage this challenge. The barangays should integrate this in their sustainable framework. Adequate consideration should be given to monitoring processes. Public education on proper solid waste management needs to be introduced in order to improve the knowledge of the community about the importance of solid waste management for sound environmental development in the area. The community should provide comprehensive plan on waste disposal by involving different stakeholder I the community. The primary purpose on community based in leading waste disposal problem is to apply the sense of ownership where individual could fully participate, there is also needs to involve the traditional leaders because their group perceives to be respected.

Keywords: Community Participation, Ecological Waste Management, Comparative Study, Cotabato & Kidapawan City

INTRODUCTION

In every country, waste is a major environmental issue since the revolution of industrialization. Waste also created by us, it came from home, school and other public places. Some were from hospitals, farms, industries and other sources.

Rapid urbanization has created serious challenges for policy makers and city managers especially in the developing world. In 2003, it was found that 48 percent population was living in urban settlements. The majority of all urban dwellers were living in smaller urban settlements, whereas, less than five percent of the world population is living in mega-cities (United Nations, 2003).

In the Philippines when population growth increase, the standards of living were improved, rapid economic growth, and industrialization in the urban areas but alongside of it was the increase of the generated waste. According to NSWMC they calculated that from 37,427.46 tons per day in 2012, the country's waste generation steadily increased to 40,087.45 tons in 2016 with an estimated average per capita waste generation of 0.40 kilograms per day for both urban and rural. The National Capital Region (NCR), as expected, generated the biggest volume of wastes for the past five years due to its population size, bigger number of establishments and modernized lifestyle. With an estimated population of 12 million people, Metropolitan Manila generated 9,212.92 tons per day of wastes in 2016. It is followed by Region 4A with waste generation of 4,440.15 tons per day (11.08%) and Region 3 with 3,890.12 tons per day (9.70 %) (NSWC).

The local government units (LGUs) have the responsibilities to collect, transport and dispose waste Under RA 9003. At present, most LGUs administer their own collection systems or contract out this service to private contractors. Pursuant to the relevant provisions of R.A. No. 7160, otherwise known as the Local Government Code, the LGUs shall be primarily responsible for the implementation and enforcement of the provisions of this Act within their respective jurisdictions.

Segregation and collection of solid waste shall be conducted at the barangay level specifically for biodegradable, compostable and reusable wastes: Provided, that the collection of non-recyclable materials and special wastes shall be the responsibility of the municipality or city.

Segregation of waste must be started in our household, company, industries, farms and other public areas. In any policies, program and services that are implemented in the communities, participation of the people is play a vital role in accomplishing it. Without the commitment and active participation of the community, we cannot guaranty the effectiveness and success of any policies, program and services

implementation. On this study, the researcher would like to know the participation of the community on the implementation of the ecological solid waste management.

Theoretical Framework

The study was anchored on the Participation theory. Participation is not a new concept (Buchy, Ross et al. 2000). It represents a move from the global, a spatial, top-down strategies that dominated early development initiatives to more locally sensitive methodologies (Storey 1999). There are differing opinions as to the origins of participation theory. Midgley et al (1986) suggested that the historical antecedents of community participation include: the legacy of western ideology, the influence of community development and the contribution of social work and community radicalism. Buchy, Ross et al (2000) suggested that literature on participation and participatory processes stems broadly from two major areas: political sciences and development theory. Lane (1995) added to this view, suggesting that participation is heavily influenced by theories of development and is therefore highly varied and complex due to different theoretical positions. The dominance of the top-down approaches to development was largely a result of modernization theory which was dominant in the 1960s (Lane 1995). The study also anchored on the Republic Act 9003 or the Ecological Solid Waste Management series of 2000.

Statement of the Problem

The study aimed to determine the level of community participation on the implementation of ecological solid waste management in the Cities of Cotabato and Kidapawan.

Specifically, it aimed to answer the following questions:

1. What is the level of participation of the respondents in the implementation of RA 9003 in terms of:
 - 1.1. Solid Waste Management;
 - 1.2. Materials and utilities;
 - 1.3. Penalties;
 - 1.4. Seminars and Programs; and
 - 1.5. Incentives?
2. Which of the two cities participated on the implementation of Ecological Solid Waste Management?
3. Is there any significant difference between the implementation of Ecological Solid Waste Management in the two Cities?

Scope and Limitations of the Study

The study was limited only to the community participation on the implementation of Ecological Solid Waste Management or RA 9003 in the Cities of Cotabato and Kidapawan. Particularly on the two (2) most populated barangays of the two (2) Cities.

Significance of the Study

The findings of the study offered benefits to the following:

Generally, the result of the study will be significant to the Local Government Units, lawmakers, researcher, future researchers, and of course to the residents of the barangay. It will provide them additional knowledge and information on the implementation of Ecological Solid Waste Management.

For Local Government Units, this study may significant to them in a way that they can monitor and identify the extent of the participation of the community in compliance to the implementation of RA 9003. By this study, they can get substantial information to be their guide in formulating and implementing programs that related to solid waste management to insure the public security and health.

To Lawmakers, this study may beneficial to them because it can serve them a guide in formulating and strengthening policies regarding solid waste management in their areas of jurisdiction.

To the researcher, the study gives her a more knowledge on RA 9003, and this study will be a guide to do more research on solid waste management and implement programs to help improve the solid waste management in barangay level in accordance to RA 9003.

In order to be more guided, this study will significance to the students that have the same study in the future. This study will serve as reference to them.

Lastly, this study will be beneficial to the respondents because it will give them more awareness on the RA 9003. Also, by this study maybe they can more actively doing their part in implementing the law at home.

METHODS

The researcher used the descriptive-survey design to describe the community participation on the implementation of ecological solid waste management in the Cities of Cotabato and Kidapawan using the adoptived and modified survey questionnaire. The study was conducted on the two most populated barangay of Cotabato and Kidapawan City. In Cotabato City, the two barangays were the Barangay Bagua II and Barangay Mother Poblacion. In Kidapawan City, the two selected barangays were the Pobalcion and Barangay Sudapin. The four selected barangays were chosen because they are those barangays that most populated based on the August 1, 2015 Census of Population and

Housing of the National Statistics office. The City of Kidapawan has a total population of 140, 195. Among its barangay, the most populated barangays are the Poblacion which has a total population density of 31, 586 and Barangay Sudapin has a total population density of 10, 385. On the other hand, the Cotabato City has a total population of 299, 438. Among its barangay, the most populated barangays are Poblacion Mother which has a total population density of 20, 734 and the Bagua II has a total population density of 19, 720. The respondents of the study were the residents of the two most populated barangays in the Cities of Cotabato and Kidapawan. There were 50 respondent each barangay, so in this study the total sample were 200 residents. Purposive sampling technique was used in the study to get the respondents of the study. Purposive sampling techniques is a non-probability sampling procedure in which the elements are selected from the target population on the basis of their fit with the purposes of the study and specific inclusion and exclusion criteria (Kumar 2011).

RESULTS AND DISCUSSIONS

Level of Community Participation in the Implementation of Ecological Solid Waste Management or RA 9003 in the Cities of Cotabato and Kidapawan in terms of Solid Waste Management, Materials and Utilities, Penalties, Programs and seminars, and Incentives

Table 1 presents the level of community participation in the implementation of Ecological Solid Waste Management in Cotabato City and Kidapawan City.

In Cotabato City the respondents' answers revealed the lowest mean rating in terms of solid waste management on the statement no. 5 which stated that the City Environment and Natural Resources Officer (CENRO) monitors the participation of the Barangay in the implementation of Solid Waste Management with the mean rating of 2.04 which was interpreted as less participated. This result denotes that in Cotabato City the City Environment and Natural Resources Officers they seldom monitored the barangay level implementation of solid waste management. It means that in managing solid waste they gave the responsibility to the barangay levels.

In Kidapawan City, the respondents' answers revealed the lowest mean rating in terms of solid waste management in item 1 which stated that the budget is enough for the implementation of solid waste management program with the mean rating of 2.92 which was interpreted as "moderately participated". According to the respondents, they did not feel the activity of the barangay but although there were no regular invitations of the barangay officials for them to participate in terms of solid waste management, they did their responsibilities as citizens to maintain and segregate their waste at home.

On the other hand, the highest mean rating in Cotabato City in terms of solid waste management was on item no. 2, which stated that the Barangay creates committee who will be responsible for the

implementation of the Solid Waste Management Program got a mean of 2.90 which was interpreted as “Moderately Participated”. This result denotes that in Cotabato City, they organized a committee which was in charged to manage and oversee the proper management of solid waste from house to house to the garbage collection.

Further, in Kidapawan City the answers of the respondents revealed that the highest mean rating was on the item no. 4 which stated that the barangay strictly imposed the “NO segregation, No collection Policy” with the mean rating of 3. 55 and interpreted as highly participated. The result described that in Kidapawan City they did not collect garbage that was not segregated. According to the respondents, the assigned personnel who collected their garbage did not include garbage that were unsegregated and sometimes the personnel scattered the unsegregated garbage to give them a lesson so that next time, they need to segregate their garbage into bio and non-degradable.

The overall mean rating of Solid Waste Management was 2.64 and 3.15 for Cotabato City and Kidapawan City which was interpreted as moderately participated. The results denote that the communities of both cities were moderately participated in the implementation of the Solid Waste Management.

The result was similar to the study of Subash (2019), which states that the residents organize themselves and become involved at the level of a living area or a neighborhood, to improve the conditions of daily life (water, sanitation, health, education, etc.). It comprises various degrees of individual or collective involvement (financial and/or physical contributions, social and/or political commitment) at different stages of a project.

Table 1
Mean Rating of Community Participation in Cotabato City and Kidapawan City in term of Solid Waste Management
N=200

Statements	Cotabato City		Kidapawan City	
	Mean	Description	Mean	Description
Solid Waste Management				
The budget is enough for the implementation of Solid Waste Management Program.	2.64	Moderately Participated	2.92	Moderately Participated
The Barangay creates committee which will be responsible for the implementation of the Solid Waste Management Program.	2.90	Moderately Participated	2.80	Moderately Participated
	3.28		3.20	

The Barangay designates Solid Waste Enforcers at the collection area to monitor the proper disposal wastes.		Moderately Participated		Moderately Participated
The Barangay strictly impose the “No segregation, No collection” policy.	2.35	Less Participated	3.55	Highly Participated
The City Environment and Natural Resources Officer (CENRO) monitors the participation of the Barangay in the implementation of Solid Waste Management.	2.04	Less Participated	3.28	Moderately Participated
Over All Mean	2.64	Moderately Participated	3.15	Moderately Participated

Legend: 3.5-4.0 Highly Participated
 1.5-2.49 Less Participated
 2.5-3.49 Moderately Participated
 1.0-1.49 Least Participated

Table 2 presents the mean ratings of materials and utilities. The respondents’ answers revealed that the lowest mean rating was on item no. 1 which stated that the solid waste enforcers inspected the garbage bins during duty time with a mean rating of 2.78 which was interpreted as moderately participated. The result implies that the solid waste enforcers monitored and inspected the garbage bins if the garbage were properly segregate and put it properly in the garbage bins.

On the other hand, in Kidapawan City the lowest mean rating is on the item no. 2 which stated that the solid waste enforcers segregated the unsegregated wastes in the garbage bins with the mean rating of 1.43 which was interpreted as least participated. This denotes that in relation to the No segregation, No collection policy, the solid waste enforcers in Kidapawan City did not segregate the unsegregated garbage in the garbage bins but rather they threw it.

Further, the highest mean rating of the respondents’ answers in Cotabtao City revealed that on item no. 2, which stated that the solid waste enforcers segregated the unsegregated wastes in the garbage bins with the mean rating 3.25. The result described that in Cotabato City, the enforcers do usually separate the garbage despite of the implementation of No segregation, NO collection Policy. It means, that some people of Cotabato City were most of the time did not separate their garbage at home but still the government collected their garbage.

Furthermore, the highest mean rating of respondents’ answers in Kidapawan City was on the item no. 3 which stated that the garbage bins are enough for the garbage disposal with a mean rating 3.31 with

a description of moderately participated. This implies that in Kidapawan City numbers of garbage bins were enough in the community but some residents used sacks as the alternatives for bins.

The overall mean rating of Materials and utilities was 2.96 and 2.75 for Cotabato City and Kidapawan City which were interpreted as moderately participated. The result implies that the residents of both cities moderately participated in the implementation of RA 9003 in terms of Materials and utilities.

This result conformed with the study of Asian Development Bank (2015, which states that both the quantity and nature of wastes have significantly changed due to new production and consumption patterns and that “rapidly expanding cities are being overwhelmed by the growing volume and toxicity of wastes disposed on land and into the air and waterways.” Further, the proper recovery, treatment, or disposal of waste “is increasingly beyond the financial resources or political will of many national and municipal governments.”

Table 2
Mean Rating of Community participation in Cotabato City and Kidapawan City in term of Materials and Utilities
N=200

Statements	Cotabato City		Kidapawan City	
	Mean	Description	Mean	Description
The Solid Waste enforcers inspected the garbage bins during duty time.	2.78	Moderately Participated	3.21	Moderately Participated
The Solid Waste enforcers segregate the unsegregated wastes in the garbage bins.	3.25	Moderately Participated	1.43	Least Participated
The garbage bins are enough for the garbage disposal.	2.86	Moderately Participated	3.31	Moderately Participated
The Barangay has a Material Recovery Facility (MRF) to dispose the waste products.	2.96	Moderately Participated	2.92	Moderately Participated
The Material Recovery Facility stores waste	2.95	Moderately Participated	2.88	Moderately Participated

in an ecological manner.				
Over All Mean	2.96	Moderately Participated	2.75	Moderately Participated
Legend: 3.5-4.0 Highly Participated 1.5-2.49 Less Participated		2.5-3.49 Moderately Participated 1.0-1.49 Least Participated		

Table 3 presents the mean rating of the respondents' level of participation in the implementation of penalties in RA 9003 in Penalty. The respondent's answers revealed that the lowest mean rating in Cotabato City in term of penalties was in the item no. 2 which stated that the barangay orients the community about the nature of the penalties and got a mean of 3.09 which was interpreted as moderately participated. The result described that in Cotabato City the barangay officials did not regularly remind and orient the people about the sanction if they violated the Law.

On the other hand, in Kidapawan City, the lowest mean rating of respondents' answer was in item no. 5 which stated that the barangay implements the Law or the RA 9003 with the mean rating of 2.01 which was interpreted as moderately participated. The result implies that although the barangay officials oriented their people about the penalties if they violate the law; however, no one was apprehended or penalized for some violators, they were only required to have community service or the enforcers just asked them not do it again.

In Cotabato City, the highest mean rating of the respondents' answers was in item no. 5 which stated that the barangay implements the Law with the mean rating of 3.46. The results denote that in Cotabato City, they implemented the law which the offender must have to face the consequences of their action which some of the violators were already apprehended and penalized. According to the respondents there were already individuals who got apprehended and pay penalties for violating the policy.

In Kidapawan City, the highest mean rating from the respondents' answers was in the item no. 4 which stated that the penalties charge is reasonable got a mean of 3.05. This describes that in Kidapawan City in terms of giving penalty to the violators, they assessed first the level of violation before they have given the penalties. But according to the respondents, they did not hear any violators who paid penalties because of solid waste violation. It means that, they followed the Law; however, they were not giving a proper fines or sanction to the violators. They

gave chance to the violators not do it again and they must to follow the Law.

The overall mean rating of Penalties Implementation was 3.26 and 2.68 for Cotabato City and Kidapawan City which was interpreted as moderately participated. The result denotes that the residents or respondents of both cities moderately participated in the implementation of RA 9003 in terms of implementation of implantation of the penalties.

Table 3
Mean Rating of Community Participation in Cotabato City and Kidapawan City in term of Penalties
N=200

Statements	Cotabato City		Kidapawan City	
	Mean	Description	Mean	Description
Penalties Implementation				
The Barangay sets penalties to the violators of Solid Waste Management.	3.19	Moderately Participated	2.68	Moderately Participated
The Barangay orients the community about the nature of the penalties.	3.09	Moderately Participated	2.70	Moderately Participated
The penalties for the violators were done in a procedural manner.	3.14	Moderately Participated	2.96	Moderately Participated
The penalties charged is reasonable.	3.43	Moderately Participated	3.05	Moderately Participated
Barangay Implement the Law.	3.46	Moderately Participated	2.01	Moderately Participated
Over All Mean	3.26	Moderately Participated	2.68	Moderately Participated

Legend: 3.5-4.0 Highly Participated 2.5-3.49 Moderately Participated
 1.5-2.49 Less Participated 1.0-1.49 Least Participated

Table 4 presents the mean ratings of community participation in Seminars and Programs. In Cotabato City and Kidapawan City the lowest mean rating from the respondents' answers was in item no. 5 which stated that the TESDA/DTI oriented the community for skills development for handicraft making using recyclable materials got a mean 2.04 and 1.70 and interpreted as less participated. According to

the respondents, they had not attended any training facilitated by the TEASDA or DTI regarding handicraft making using recyclable material but they added that may be other member of the community attended. This means that in term of trainings that were facilitated by TESDA and DTI about handicraft using recyclable materials, the respondents did not attend any of them but they said that if there will be any kind of training like that, they are more willing to participate and join.

The highest mean rating of the respondents' answer in Cotabato City and Kidapawan City was in item no. 2 which stated that the BLGUs conduct orientation about penalties for the violators of Solid Waste Management with the mean rating of 2.81 and interpreted as moderately participated. The result denotes that the BLGU conducted regular orientation about the penalties of offenders or violators of solid waste management.

The overall mean rating of Seminars and Programs was 2.66 and 2.47 for Cotabato City and Kidapawan City which were interpreted as moderately participated and less participated. The result denotes that the respondents in Cotabato City moderately participated in the implementation of penalties while Kidapawan City was Less Participated.

Table 4
Mean Rating of Community participation in Cotabato City and Kidapawan City in term of Seminars and Programs
N=200

Statements	Cotabato City		Kidapawan City	
	Mean	Description	Mean	Description
BLGU conducts Seminars on Solid Waste Management for all stakeholders.	3.04	Moderately Participated	2.41	Moderately Participated
BLGU conduct orientation about penalties for the violators of Solid Waste Management.	3.15	Moderately Participated	2.81	Moderately Participated
Barangay organized a multi-purpose Cooperative for the uses/products for the recyclable materials.	3.05	Moderately Participated	2.68	Moderately Participated
The Barangay organized youth to	2.37	Less Participated	2.41	Less Participated

collect recyclable materials.				
TESDA/DTI oriented the community for skills development for handicraft making using recyclable materials.	1.70	Less Participated	2.04	Less Participated
Over All Mean	2.66	Moderately Participated	2.47	Moderately Participated
Legend: 3.5-4.0 Highly Participated 1.5-2.49 Less Participated			2.5-3.49 Moderately Participated 1.0-1.49 Least Participated	

Table 5 presents the mean rating of community participation in term of incentives. The lowest mean rating of the respondents' answers in Cotabato City and Kidapawan City was in item no. 1 which stated that the awarding of incentives was based on the plans and programs of the barangay got the mean rating of 2.81 and 3.14 which was interpreted as moderately participated. The result describes that in Cotabato and Kidapawan Cities awarding of incentives of the LGUs was based from the Barangay plan and program. It means that the amount provided by the LGUs was dependent on how much budget which the BLGUs allotted on their program on solid waste management.

Further, in Cotabato City and Kidapwan City the highest mean rating of respondents' answers was in item no. 5 which stated that the LGUs provide incentives to barangay to motivate them to perform better with a mean of 3.47 and 3.36 which interpreted as moderately participated. The results denote that both cities were giving incentives to their barangays to manage the solid waste.

Furthermore, the overall mean rating of Cotabato City in terms of community participation in the implementation of RA 9003 was 2.94 while in Kidapawan City was 2.83 which were interpreted as moderately participated. It means that both cities were doing their best to manage their solid waste although some items were differed from each City.

The overall mean rating of Penalties Implementation was 2.26 and 2.68 for Cotabato City and Kidapawan City which were interpreted as moderately participated. The result denotes that both cities were moderately participated in the implementation of penalties.

The overall mean rating of Program and Seminars were 2.26 and 2.68 for Cotabato City and Kidapawan City which were interpreted as moderately participated. The result denotes that the respondents of both cities moderately participated in Program and Seminars

The overall mean rating of Incentives was 3.14 and 3.11 for Cotabato City and Kidapawan City which interpreted as moderately participated. The result denotes that the respondents of both cities moderately participated in the implementation of incentive.

Table 5
Mean Rating of Community Participation in Cotabato City and
Kidapawan City in term of Incentives
N=200

Statements Incentives	Cotabato City		Kidapawan City	
	Mean	Description	Mean	Description
The awarding of incentives was based on the plans and programs of the Barangay.	2.81	Moderately Participated	2.53	Moderately Participated
Appropriate incentives were given to garbage collectors.	2.87	Moderately Participated	3.14	Moderately Participated
LGUs allocates budget for incentives for the barangay.	3.30	Moderately Participated	3.25	Moderately Participated
Budget for incentives were used to improved implementation of solid waste management at barangay level.	3.27	Moderately Participated	3.27	Moderately Participated
LGUs provide incentives to barangay to motivate them to perform better.	3.47	Moderately Participated	3.36	Moderately Participated
Over All Mean	3.14	Moderately Participated	3.11	Moderately Participated

Legend: 3.5-4.0 Highly Participated 2.5-3.49 Moderately Participated
 1.5-2.49 Less Participated 1.0-1.49 Least Participated

Significant Difference

A paired-samples t-test was conducted to compare the community participation of Kidapawan City and Cotabato City. There was no significant difference in the score mean for Cotabato City (M=2.93, SD=.43) and Kidapawan City (M=2.83, SD=.49); $t(24) = .785$, $p = .440$. These results suggest that community participation of both Cotabato and Kidapawan City has no significant difference.

The Table 6 presents that there was no significant difference between the participation of the community in ecological solid waste management in Cotabato City and the City of Kidapawan. The results denote that both Cities were doing their best to help the National Government in the implementation of the Republic Act 9003 in their own capability ad capacities. As we all know, changes cannot be done in a split of a second but it can be done through policy formulation, policy improvement, policy implementation. Empowering community by means of informing and educating them on the policy on the positive and negative outcome if they did not follow the regulation. In this way, we can see the changes gradually with sustainability.

Table 6
Paired Samples Test for the Community Participation in Cotabato City and Kidapawan City

Area	Mean	N	Standard Deviation	t	Df	Sig. (2 tailed)
Cotabato City	2.934	25	.43772			
Kidapawan City	2.832	25	.49270			
Cotabato City – Kidapawan City				.785	24	.440

Summary of Findings

This study was designed to describe and determine the community participation in the implementation of the Ecological Solid Waste Management in Cotabato City and Kidapawan City.

To achieve the objective of the study, the descriptive-survey design was used to describe the community participation in the implementation of ecological solid waste management in the City of Cotabato and Kidapawan using the adoptive and modified survey questionnaire as primary instrument in acquiring data. There were 100 residents as respondents in two Cities. A total of 200 residents as sample respondents of this study.

In summary, based on the research findings of the study on the community participation in the implementation of ecological solid waste management in the City of Cotabato and Kidapawan both cities were moderately participated as overall results of the mean rating in all components of waste management.

Also, the research findings showed that there are significant issues on the waste disposal practices due to the lack of proper waste management process in the community. This has impacted on the natural environment in the study area.

The lack of Public waste bins and proper waste collection processes have affected the waste disposal practices. Moreover, the inactive of the City Environment and Natural Resources Officers have impacted negatively on the imposition of regulation of which penalties is not enforced. The lack of knowledge, awareness and cooperation among the barangay officials and the community as a whole has added to that.

Conclusion

On the basis of findings of the study, the following conclusion were drawn:

It was concluded that since the task of monitoring the solid waste management in the barangays were not implemented properly by the City Environment and Natural Resources Officers, it is therefore denoted that the impact of the imposition of the RA 9003 on the solid waste management in the barangays have no bearing. Add to that is the imposition of penalties that are being informed but are not being imposed.

It is evident that improper waste management practices have impacted on the natural environment and sustainable development in the study area. Thus, it is concluded that awareness about solid waste management in the study area is seemingly low.

Recommendation

In the light of the findings and conclusions of the study, the following are strongly recommended to the following.

It is important that the solid waste management should be developed and strengthened. Waste storage and disposal areas are the dominant means of managing waste. Waste separation from the household level, proper storage, more efficient waste collection systems, and sustainable recovery and disposal practices are recommended to be observed strictly the study area.

Enhance the reduction of waste generated by households and business places by the waste reuse, recycling and composting processes to manage this challenge. The barangays should integrate this in their sustainable framework. Adequate consideration should be given to monitoring processes.

Public education on proper solid waste management needs to be introduced in order to improve the knowledge of the community about the importance of solid waste management for sound environmental development in the area.

The community should provide comprehensive plan on waste disposal by involving different stakeholder I the community.

The primary purpose on community based in leading waste disposal problem is to apply the sense of ownership where individual could fully participate, there is also needs to involve the traditional leaders because their group perceives to be respected.

There should be a sustainable mechanism in combating waste problem through passing the resolution to the Barangay Council up to Sanguniang Panglungsod.

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