

# **EXTENT AND EFFECTIVENESS OF THE IMPLEMENTATION OF SOLID WASTE MANAGEMENT PROGRAM IN GUIMARAS ISLAND**

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**ABSTRACT** This study was conducted to determine the extent and effectiveness of the implementation of Solid Waste Management Program in Guimaras Island for the year 2014. Descriptive research design was used in gathering the data. The respondents were the 396 household members chosen through random stratified sampling to determine the level of effectiveness and 16 Solid Waste Management personnel for the extent of implementation, activities developed, waste disposal practices and problems met in the implementation of the Solid Waste Management Program. The primary instrument used in gathering data for the level of effectiveness, activities developed, waste disposal practices and problems met in the implementation of the Solid Waste Management Program was the researcher-made questionnaire. The secondary data in the form of the Municipality 10-year Ecological Solid Waste Management Plan were used to determine the extent of implementation and an interview was employed to validate the information and data taken from the Ecological Solid Waste Plan. The statistical tools used in this study were the frequency count, percentage, ranking and mean. Results revealed that the Local Government Units in Guimaras have implemented the Solid Wastes Management Program in the form of development of the 10-year Solid Waste Management Plan and information and education campaign, were the fully implemented and least is the transfer mechanism. The implemented Solid Wastes Management Program of the Local Government Units was highly effective. There are activities developed by the Local Government Units in the implementation of Solid Waste Management Program where the most developed are formulation of Solid Wastes Management Plan and conduct of educational promotion and information campaign, while development of livelihood program for small recyclers, open landfill disposal are the least developed. The Local Government Units have waste disposal practices wherein education and dissemination is the most practiced while enforcement is the least practiced. The problems encountered were garbage is not segregated well at source and sanctions are not properly imposed as the most encountered and lack of information/education among stakeholders as the least encountered.

**Keywords:** Solid Waste Management, Guimaras, Extent, Effectiveness

## **INTRODUCTION**

Article II on State Principles of the 1987 Philippine Constitution states the Right to Health and Right of the people to a Balanced Ecology. Section 15 states that, the State shall protect and promote the right to health of the people and instill health consciousness of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature.

But the Philippine environment continues to experience stresses. Our environmental literature is sated with studies on the rapid loss of biodiversity, declining fishery resources, heavy water and air pollution, depletion of minerals such as petroleum, continued conversion of agricultural lands, loss of a wide coverage of tropical forest and escalating garbage.

Nowadays, wastes are one of the major problems in the society. Anywhere you can see them, scattering along the roads, floating in the bodies of water like in the sea, in the river and in the lake. Wastes can cause pollution in air, water and in land. These problems are all caused by improper solid waste disposal.

Acknowledging the garbage predicament in 2001, President Gloria Macapagal- Arroyo authorized the implementation of RA 9003, otherwise known as the Solid Waste Management Act of 2000. It is an act providing for an ecological solid waste management. The act mandated all local government units (LGUs) to be responsible and accountable for ecological solid waste management within their jurisdictions.

Up to now, the issue of managing solid wastes, however, has not completely faded into the backyard in spite of the implementation of RA 9003. Many LGUs have not implemented the requirements of the program. Waste persisted to be the burden in many cities and municipalities. The old issues of Solid Waste management remain and new.

Guimaras Island is a province composing of five (5) municipalities mandated also by RA 9003. Are these local government units in Guimaras implementing the Solid Waste Management Act of 2000? If they are, what is the extent of their implementation? Is this Solid Waste Management Program effective?

It is for this premise why this study was conducted.

## **Statement of the Problem**

This study aimed to determine the extent and effectiveness of the implementation of Solid Waste Management Program in Guimaras Island for the year 2014. Specifically, it sought answers to the following questions:

1. What is the extent of implementation of Solid Waste Management program among the Local Government Units in Guimaras Island?
2. What is the level of effectiveness of the implementation of solid waste management program among the Local Government Units in Guimaras Island?
3. What are the activities developed by the Local Government Units in the implementation of solid waste management program?
4. What are the waste disposal practices developed by the Local Government Units?
5. What are the problems encountered by the Local Government Units in the implementation of solid waste management program?

## **METHODOLOGY**

Descriptive research using survey method was used in this study. It a design that is appropriate for studies which aim to find out what prevail in the present conditions or relationships, held opinions and beliefs, processes and effects, and developing trends (Ardales, 2001)

The respondents of the study were the 396 household members chosen through stratified sampling for the level of effectiveness and 16 Solid Waste Management personnel for the extent of implementation, activities developed, waste disposal practices and problems met in the implementation of the Solid Waste Management Program.

The primary instrument used in gathering data for the level of effectiveness, activities developed, waste disposal practices and problems met in the implementation of the Solid Waste Management Program was the researcher-made questionnaire. A questionnaire is intended to obtain the information about conditions or practice of which the respondents are presumed to have knowledge (Good and Scats, 2002)

The secondary data in the form of the Municipality 10-year Ecological Solid Waste Management Plan were used to determine the extent of implementation and an interview was employed to validate the information and data taken from the Ecological Solid Waste Plan. The statistical tools used in this study were the frequency count, percentage, ranking and mean.

## **RESULTS AND DISCUSSION**

### **Extent of Implementation of Solid Waste Management Program among the Local Government Units in Guimaras Island**

Data revealed that the five municipalities in Guimaras have developed their Ten Year Ecological Solid Waste Management Plan as part of their mandate as to Solid Waste Management Program. As to source reduction in the five municipalities this was through massive Information and Education Campaign however, in the Municipalities of Jordan and Buenavista, aside from massive campaign, they practice recycling and composting as ways of reducing their solid wastes. The Municipality of Buenavista had organized Buenavista Organic Growers Association (BOGA) which produces organic fertilizers, Bana-ag Recyclers to convert recyclable wastes into bags, mat, etc., the Libon makers who produce bayong and sold on consignment basis at MC Nester processing Center.

As to collection, Buenavista and Jordan implemented the No Segregation No Collection Policy in 12 pilot barangays for collection in Buenavista, the public market in Rizal and San Miguel, Rizal Wharf, hospital and commercial buildings along the road, their wastes are handled and transferred to the Jordan dumpsite, in Nueva Valencia, collection is done only in the Poblacion proper however, they have barangay collection where the upland, rural, coastal and island barangays shall be responsible for the segregation and collection of recyclable and biodegradable wastes, in Sibunag in 3 barangays only and in San Lorenzo, there is no clear waste collection activity in the municipality.

For segregation, the five municipalities adopt the No Segregation No Collection Policy. As to transfer practice, the municipality of Buenavista, San Lorenzo, and Sibunag have not developed the Material Recover Facility while the Nueva Valencia has the Central Material Recovery Facility has been assigned in the barangay level.

Data further reveal that for processing, all LGUs practice backyard composting and the recyclable are sold to junkshops roaming in the community. Vermi composting is handled by the Municipality Agriculture Office. In Buenavista, aside from vermin composting and selling of recyclable to junkshops they have the Bokashi production under the MAO also. In final

disposal, Buenavista, Jordan, Nueva Valencia and Sibunag have controlled dumpsite for the residual wastes while the San Lorenzo has no final disposal for residual wastes.

### Level of Effectiveness of the Implementation of Solid Waste Management Programs

Data gathered from the respondents from the five (5) Municipalities in the Province of Guimaras show that for source reduction the overall mean is 3.54 interpreted as "high", for the segregation the overall mean is 4.26 interpreted as "Very high" while for processing the overall mean is 3.28 interpreted as moderate.

These reveal that the grand mean for the level of effectiveness is 3.68 which is at high level of effectiveness which implies that the residents in the province of Guimaras have put into action what the implementing agencies have transferred to them as to Solid Waste Management however improvement is still need to the level of effectiveness particularly for processing.

**Table 1. Level of Effectiveness of the Implementation of Solid Waste Management Programs in Waste Reduction**

Waste Reduction	Buenavista		Jordan		San Lorenzo		Sibunag		Nueva Valencia		Total	
	Mean	Int.	Mean	Int.	Mean	Int.	Mean	Int.	Mean	Int.	Mean	Int.
Waste Reduction	3.78	High	4.02	High	3.30	Moderate	2.87	Moderate	3.28	Moderate	3.54	High
Segregation	4.26	Very High	4.70	Very High	4.19	High	4.03	High	4.01	High	4.26	Very High
Processing	3.44	High	3.14	High	3.29	Moderate	3.18	Moderate	3.23	Moderate	3.28	Moderate

Scale: 1.00-1.79 (Very Low), 1.80-2.59 (Low), 2.60-3.39 (Moderate), & 3.40-4.19 (High)

### Activities developed by the Local Government Units in the Implementation of Solid Waste Management Program

Data in table 2 reveal that the Local Government Units in Guimaras have developed the following activities in the implementation of Solid Waste Management Program: Formulation of Solid Waste Management Plan and Conduct education promotion and information campaign as the most developed having all the Local Government Units in the development; Conduct Technical and Capability building assistance; Formulation of local ordinance on Solid Waste Management; establish recycling Plant on Facility (Material Recovery Facility); Production and Marketing organic fertilizer; linkages with private sectors and non-government organizations; Conduct seminars and trainings on Solid Waste Management, and develop livelihood program for small recyclers and develop open landfill disposal system as the least developed activities.

**Table 2. Activities developed by the Local Government Units in the Implementation of Solid Waste Management Program**

Activities Developed by the LGUs in the Implementation of SWMP	Buenavista	Jordan	San Lorenzo	Nueva Valencia	Sibunag	TOTAL
1. Formulation of Solid Waste Management Plan	✓	✓	✓	✓	✓	5
2. Conduct Technical and Capability building assistance	✓	✓		✓		3
3. Formulation of local ordinance on solid waste management	✓	✓	✓		✓	4
4. Conduct education promotion and information campaign	✓	✓	✓	✓	✓	5
5. Develop livelihood program for small recyclers	✓			✓		2
6. Establish Recycling Plant or Facility (Materials Recovery Facility)	✓	✓	✓			3
7. Develop open land fill disposal system	✓				✓	2
8. Production and Marketing organic fertilizer	✓	✓	✓		✓	4
9. Linkages with private sectors and non-government organizations	✓	✓	✓	✓		4
10. Conduct seminars and training on Solid Waste Management	✓	✓		✓		3

## Waste Disposal Practices Developed by the LGUs

Data revealed that the LGUs have developed the following waste disposal practices; education and dissemination as the most developed as all LGUs implemented this; segregated collection; volume reduction at the source; dumping waste in open dumpsite, establishment of materials recovery facility; composting, recycling, reusing and enforcement which is the least developed and none adopted incineration.

Table 3. Waste Disposal Practices Developed by the LGUs

Waste Disposal Practices Developed by the LGUs	Buenavista	Jordan	San Lorenzo	Nueva Valencia	Sibunag	TOTAL
Segregated collection	✓	✓	✓	✓		4
Volume reduction at the source	✓	✓		✓		3
Dumping waste in open dumpsite	✓			✓	✓	3
Establishment of materials recovery facility	✓	✓	✓	✓		4
Composting	✓	✓	✓		✓	4
Adopt incineration						0
Recycling	✓	✓	✓	✓		4
Reusing	✓	✓	✓	✓		4
Education and dissemination	✓	✓	✓	✓	✓	5
Enforcement	✓			✓		2

## Problems Encountered by the LGUs in the Implementation of Solid Waste Management Program

Results revealed that in the implementation of Solid Waste Management Program the LGUs encountered problems like Garbage is not segregated well at source as to biodegradable and non-biodegradable and sanctions are not properly imposed as the most encountered; in sufficient fund; People in the community are not religiously supporting the program; LGU leaders do not take SWM as one of their priority program; lack of garbage collectors; equipment needed are insufficient; lack of monitoring/evaluating of SWMP mechanism; recycling materials are not freely utilized as an income generating and lack of information/education among stake holders as the least encountered.

Table 4. Problems Encountered by the LGUs in the Implementation of Solid Waste Management Program

Problems Encountered by the LGUs in the Implementation of SWMP	Buenavista	Jordan	San Lorenzo	Nueva Valencia	Sibunag	TOTAL
1. There is an insufficient fund for solid waste management program	✓		✓	✓	✓	4
2. The people in the community are not religiously supporting the program	✓	✓		✓		3
3. The LGU leaders do not take Solid Waste Management as one of their priority programs	✓		✓			2
4. Garbage is not segregated well at source as to biodegradable and non-biodegradable	✓	✓	✓	✓	✓	5
5. Lack of information/education among stakeholders			✓			1
6. Sanctions are not properly imposed	✓	✓	✓	✓	✓	5
7. Lack of garbage collectors	✓		✓			2
8. Equipment needed are insufficient	✓		✓	✓		3
9. Lack of monitoring/evaluation of Solid Waste Management Program mechanism	✓		✓	✓	✓	4
10. Recycled materials are not fully utilized as an income generating	✓		✓	✓		3

## **CONCLUSIONS**

1. The Local Government Units in Guimaras have implemented the Solid Wastes Management Program in the form of development of the 10-year Solid Waste Management Plan and information and education campaign, were the fully implemented and least is the transfer mechanism.
2. The implemented Solid Wastes Management Program of the Local Government Units in Guimaras was highly effective.
3. There are activities developed by the Local Government Units in the implementation of Solid Waste Management Program where the most developed are formulation of Solid Wastes Management Plan and conduct of educational promotion and information campaign, while development of livelihood program for small recyclers, open landfill disposal are the least developed.
4. The Local Government Units have waste disposal practices where education and dissemination is the most practiced enforcement is the least practiced.
5. In the implementation of Solid Waste Management Program the Local Government Units encountered problems where garbage is not segregated well at source and sanctions are not properly imposed as the most encountered and lack of information/education among stakeholders as the least encountered.

The findings of the study imply, that the Local Government Units in Guimaras have complied requirement in R.A. 9003 as to the Ecological Solid Waste Management Program but the extent of implementation and level of effectiveness need to be improved for its full implementation in the aspects of source reduction, segregation, collection, transfer, processing and final disposal province wide and to the highest level of effectiveness.

There are activities and waste disposal practices developed however, these lack sustainability. The Local Government Units in the implementation of Solid Waste Management Program have encountered problems that need to be addressed.

### **Contributions of the Study**

1. This study has provided the province of Guimaras an evaluation result of the status of its Solid Waste Management Program which is the basis of developing mechanisms to strengthen the implementation and level of effectiveness in the whole province.
2. To the Guimaras State College through its extension program in identifying where it can be involved in support to the Solid Waste Management Program like information and education, and livelihood trainings.
3. The Local Government leaders be provided with findings as to what and how their residents are getting participated in the environmental programs of the province as basis for the program improvement.
4. Development of the researchers of this study as instruments in the preservation of the mother earth through research.
5. Provide literature as reference for other Local Government Units to assess the extent of implementation and level of effectiveness of their Solid Waste Management Program.

## RECOMMENDATIONS

Based on the findings of the study, the following recommendations are given:

1. LGUs in Guimaras to strengthen the extent and effectiveness of their Solid Waste Management Program.
2. Residents of the different municipalities to improve their Solid Waste Management practices for source reduction, segregation and processing practices especially the development of the Materials Recovery Facility.
3. LGUs of Guimaras to sustain the activities undertaken in the implementation of Solid Waste Management Program. Review the functions of the Solid Waste Management Board and Technical Working Group for them to be activated in order to develop more SWM related activities.
4. Development of a healthier waste disposal practices especially in the collection and dumping of waste by providing collectors and waste pickers with necessary protective suits.
5. Local Government leaders to address all problems encountered particularly fund allocation in the implementation of Solid Waste Management Program for its development.
6. Strengthen linkages with different local, national and international sectors/ organizations for the adoption of recent Solid Waste Management Technology and source of fund for the program.
7. Guimaras State College through its extension program to strengthen its support to the SWM program of the municipality especially in education and dissemination like inclusion of SWM topics in the curricula and conduct of seminars, symposia on SWM best practices and livelihood training using recycled materials as income generating project.
8. Further study on the extent and effectiveness of the implementation Solid Waste Management Program in Guimaras using other kinds of researches like experimental linking it to extension program of the college.

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