

**IMPACT AND EFFECTIVENESS OF MATERIALS
RECOVERY FACILITIES AS A STRATEGY
TO REDUCE SOLID WASTES OF
SANPASADA COMMUNITIES**

**University of the Philippines Mindanao
Philippine Center for Population and Development, Inc
2008**

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COMMUNITIES**

IN COLLABORATION WITH

MUNICIPALITY OF STO. TOMAS, DAVAO DEL NORTE

MAYOR'S OFFICE OF ISLAND GARDEN CITY OF SAMAL

MUNICIPAL MAYOR'S OFFICE OF STA. CRUZ, DAVAO DEL SUR

CITY ENVIRONMENT AND NATURAL RESOURCES OFFICES (CENRO) OF

ISLAND GARDEN CITY OF SAMAL

PANABO CITY

DAVAO CITY

UNIVERSITY OF THE PHILIPPINES MINDANAO

PHILIPPINE CENTER FOR POPULATION AND DEVELOPMENT, INC

2008

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ACKNOWLEDGMENTS

Collaborating Local Government Units and Communities:

Municipality of Sta. Cruz, Davao del Sur
Municipality of Sto. Tomas, Davao del Norte
City of Panabo, Davao del Norte
Island Garden City of Samal (IGaCoS)
City of Davao
Brgy. Zone 1 Poblacion, Sta. Cruz, Davao del Sur
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**POLICY RECOMMENDATIONS ON SOLID WASTE
MANAGEMENT WITHIN COMMUNITIES:
THE CASE OF SANPASADA**

Republic Act 9003 mandates all local government units to implement a sustainable Solid Waste Management (SWM) Program that will reuse, recycle and reduce solid wastes. It provided the general mechanisms by which the program can be implemented. Included in RA 9003 is the empowerment of the barangay as the focal unit in which its provisions must be implemented. Specifically defined in RA 9003 is the establishment of a Material Recovery Facility (MRF) that will serve as drop-off station where the sorting, recycling and composting of the solid wastes are done.

The University of the Philippines Mindanao (UP Mindanao) with funds from the Philippine Center for Population and Development (PCPD) was tasked to assist the different Local Government Units (LGUs) in Sta. Cruz, Davao del Sur; Panabo City; Island Garden of Samal (IGaCoS) and Davao City (SANPASADA) in developing and establishing MRFs. The project was conducted in collaboration with other colleges and universities in Davao City which are members of the Davao Colleges and Universities Network (DACUN). PCPD committed funds in the amount of P1,469,000.00 to finance the whole project. The project commenced in year 2004 covering four (4) pre-identified barangays in four (4) municipalities and cities in the Davao Region.

In March 2008, a team was formed and dispatched to evaluate the progress and status of the PCPD-funded MRFs which in this document are referred to as, “Project MRFs”. The main task was to conduct an assessment of the design and construction and operation of the structures and their impact to the community. Relevant documents that included RA 9003, municipal and local ordinances, municipal and barangay SWM plans were reviewed. Interviews with key informants (KII) were conducted to generate first hand data about the history, operations, impact and other relevant information about the Project MRFs. The team also visited other MRFs not covered by the PCPD-funded Project. Similarly, the team visited the SWM facilities of Sto. Tomas, Davao del Norte.

The results of the study showed that the Project MRFs of the barangays covered did not conform to the design, purpose and function as defined in RA 9003.

All the structures built were either not operated since it was built or not used as prescribed.

It was noted however, that the barangays covered by the project were observed to be clean and relatively free of scattered garbage and wastes within the immediate surrounding of each household despite having non-operational MRFs. This can be attributed to the SWM programs implemented by SANPASADA which do not require the use of structures like those of Project MRFs. All LGUs were relying on the SWM program which involves collection, hauling and disposal of wastes through the dumpsites. Dumpsites were either open dumpsite, as in the case of IGaCoS, or sanitary landfill level 1, as in the case of Panabo City and Sta. Cruz, Davao del Norte. Davao City, which does not have Project MRF, disposes its solid wastes in sanitary landfill and controlled dumpsite. Both dumpsites are located in Carmen, Davao City.

Successful implementation of MRF-based solid waste management program in Sto. Tomas, Davao del Norte is a positive indication that with a strong political will, RA 9003 can be effectively carried out by the local government units. Another key factor that resulted in the success of the program is the effort of the municipality to draw strong support and cooperation from the communities and the barangays. Its facilities and implementation strategy serve as a model not only among other LGUs but also to other institutions, both private and public. Other LGUs are now trying to duplicate the MRF model with assistance from the Mayor of Sto. Tomas and his SWM Team.

It has to be emphasized, however that the MRF of Sto. Tomas is a facility and not just a small structure like the Project MRF. It is a facility which serves as drop-off, sorting, recycling and composting stations, conforming to the MRF as defined in RA 9003. A containment area for toxic and special solid wastes was also constructed in the same facility. It is a good show window for a sustainable SWM program. In fact, the LGU in Sto. Tomas also earns out of the fees collected from visitors coming from different areas in the country. Because of the facility, the municipality has received several awards both from local and international institutions.

In Davao City, two community- and barangay-initiated SWM programs were documented. These programs are implemented by Woodridge Park, Maa, Davao City (a high-end subdivision) and Brgy. Vicente Hizon, a barangay located along the highway, specifically in Lanang, Davao City. The former has been operating its “Zero Waste Program” since 2004 while the latter which is comprised of nine (9)

villages, eight (8) of which are medium- and high-end subdivisions, started middle of this year. Just like the Sto. Tomas model, the two programs can be easily duplicated by other barangays, subdivisions, households and other communities.

The LGUs in SANPASADA and in other areas may have unique factors in its structure and political dynamics within their respective organization that may affect the implementation of an important program such as SWM. Because of this, one strategy may not be applicable in all the LGUs. Some would require a much stronger motivation and a different set-up that is more appropriate to their internal capability and environment. It is therefore necessary that other models be developed and utilized for better management of solid wastes. These models should result in the significant reduction of solid wastes, optimized utilization of biodegradable wastes for organic farming and offer more benefits to the communities and environment.

OBJECTIVES

This study was conducted to assess the impact and effectiveness of the Project MRFs as a strategy in reducing solid wastes in communities within SANPASADA. Specifically, it aimed to accomplish the following objectives:

1. document the implementation of MRFs in selected barangays;
2. determine the factors that influence success or failure of managing MRFs;
3. determine project impact and sustainability;
4. provide lessons on best practices in managing MRFs at the barangay level;
5. recommend strategies and alternative models for effective implementation of MRFs and RA 9003; and
6. conduct a forum to validate the information generated and disseminates the results of the study to SANPASADA officials and other stakeholders.

LESSONS LEARNED

1. LGUs involved in this project have difficulty implementing RA 9003 fully due to lack of resources (financial, equipment, manpower and technical), geographical problems and political will.
2. LGUs have different understanding of the features, scope and functions of MRF based on how they operated or utilized the Project MRFs.

3. The construction and utilization of MRFs in SANPASADA are not uniform and do not conform to the provisions in RA 9003.
4. The problem of succession affects the continuity of a project. It occurs when there is a change in leadership or in key personnel implementing the project.
5. Effective approach should be applied to draw full support from the community. In this study, at least two (2) major approaches were documented that either legally compelled (Brgy. Balet, IGaCoS) or diplomatically convinced (Sto. Tomas and Brgy. Bandera, IGaCoS) the community to participate in the program.
6. MRF-based SWM programs can be effectively implemented inside high-end subdivisions such as in the case of “Woodridge Park Zero Waste Program”, and in the case of Brgy. Hizon which comprised mostly of medium- to high-end subdivisions.
7. Operation of MRFs will require a well-planned and well-coordinated implementation with full community participation, involvement of the private sector and strong political will and support.
8. With the right concept, the use of MRF as a system instead of just as a structure may result in the significant reduction of solid wastes, reuse of solid recyclables and recycling (through composting) of organic wastes into organic fertilizer. The organic fertilizer can be utilized for agricultural crop production both at the household/barangay (organic vegetable production) and commercial (i.e., plantations) levels.
9. The volume of solid wastes is huge and the potential economic value already demonstrated, solid wastes should now be considered as a resource specifically as raw materials for products that will benefit both the community and the environment. Examples of these products are organic fertilizer, organic vegetables, souvenir items, and bags.
10. There is potential money in the commercial production of organic fertilizer that can supply the current demands for fruit plantation, vegetable and ornamental crop production.

An MRF constructed and operated as defined in RA 9003 and treated as a system will have an important role in the proposed organic waste utilization strategies or models. Impact of use of these proposed models will include: cleaner environment, income generation for households, employment opportunities, organically grown food, healthier Filipinos and reduction in poverty and hunger.

RECOMMENDATIONS

1. With the success of the implementation and operation and significant impact of MRF in the community, it is recommended to consider the Sto. Tomas, Davao del Norte Material Recovery Facility as a model for 3rd class municipalities like Sta. Cruz, Davao del Sur and small cities like Island Garden City of Samal. The set-up is applicable because the LGUs locate their dumpsites in higher elevation areas. (If it continues to operate as it is, it threatens the lowland and marine ecosystems). The construction of an MRF is very doable and feasible. It does not require so much investment. It also allows households and barangays to generate income. The empowerment of the barangays, political will to impose RA 9003 and incentive or reward system that will encourage everybody to participate and support the program are key factors to successful implementation of the MRF-based SWM Program.
2. In cities like Davao City and Panabo City where population is fast growing, and the number of households, industrial and commercial zones is increasing, the amount of wastes generated is huge. In this case, the Sto. Tomas MRF model may only be applicable if MRFs are operated at the barangay level. An alternative could be a high investment MRF operated by the private sector that can handle huge amount of wastes and can process every component into useful products. In this case, a different model which is more sophisticated and has a higher investment requirement may be needed.
3. To fully establish, operate and sustain an MRF as defined in RA 9003, LGUs must first be equipped with a SWM Plan. They also have to tap trained technical persons; provide legitimate offices which will oversee and coordinate all the activities including strong campaign in all sectors; provide material and financial resources; formulate and implement a strong IEC program and formulate ordinances that will ensure the effective implementation of the program.

4. Stakeholders must be organized and the approach to this project must be institutionalized. A legitimate office equipped and provided with qualified individuals and resources must be created as defined and required by law. The problem on SWM is huge and threatens environment and health of Filipinos. Urgent attention and cooperation among government and private agencies and among all stakeholders in the community are needed to address the problem.
5. There should be a change of strategy in the implementation and operation of MRF by making it more holistic and compelling to everybody. Strong policies that will require everybody to cooperate and participate and aspire for a clean community should be developed and implemented by the local and national government. These policies will not only strengthen the implementation but should be able to create more income-generating opportunities and provide incentives for key participants of the program.
6. There is a need to develop alternative MRF models that will enhance the implementation of RA 9003. These models should advocate a holistic approach, generate income, create employment opportunities, improve nutrition and human health through organic foods and favorable and healthy environment.
7. A change in paradigm in treating solid wastes is important. Because of its proven potential to provide benefits instead of problems to the community, it should now be considered as a resource.
8. Project MRFs particularly in Sto. Nino, Panabo City and Zone I Poblacion Sta. Cruz should no longer be used (or called) as MRF or as an income-generating project of the Barangay. It can be converted into a SWM Information and Awareness Center where information and educational materials are displayed and made available to the community. In addition, it can also be used as office for personnel who are attending to the SWM program of the barangay. Project MRF in Brgy. Balet can either be rehabilitated to improve its present appearance and utilization or just be demolished.
9. There is a need to set-up and operate a barangay or community MRF-based solid waste management model that will serve as a showcase for a small scale and benefit-generating MRF operations. Good models are the community- and barangay-initiated MRF-based SWM programs established in Davao City particularly that in Woodridge Park in Maa and Brgy. Vicente Hizon, in Lanang.

10. Encourage waste reduction activities at all levels or sectors such as the use of paper bags instead of plastic bags; use of *bayong*, baskets and cloth bags during marketing; and use of reusable materials (second-hand materials).
11. A law that will require manufacturers and distributors of non-biodegradable and toxic products, to provide a mechanism that will aim to recover all containers and other toxic wastes as a result of the use of their products including detoxification and/or neutralization of the toxic materials must be formulated and implemented.
12. A national policy that will require all plantations to utilize at least 50 to 60% organic fertilizer. This will reduce dependence on inorganic fertilizers which are imported. It will also increase demands for organic fertilizers, creating opportunities for those who are involved in compost production. Incentives should also be given to investors who are into commercial organic fertilizer production using solid wastes.
13. All government agencies and institutions need to be made aware of the mandate and role to implement their respective SWM programs in accordance to RA 9003. Each agency or institution should closely coordinate with the LGU with regards to a holistic SWM program for the whole community. Likewise, all schools under DepEd, TESDA, and CHED should be required to incorporate in their curriculum the value and opportunities of good solid waste management practices. These institutions should allocate at least 5% of their funds to the implementation of SWM program in accordance to RA 9003.
14. It is essential that the compliance and monitoring of the implementation of RA 9003 be greatly improved. Penalties should be meted to any LGU, government institution, private sector, academic institution and other sectors for failure to comply with RA 9003.
15. Establish strong research and development programs that will support the implementation of RA 9003. Funds should be allocated for this by the national government. Funding from other institutions both local and international should also be tapped.