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Making Recycling Work for Manila's Waste Management

EEPSEA POLICY BRIEF • No. 2002 - PB3

Metro Manila is notorious for its solid waste disposal problems – from the city's infamous garbage dumps to its choked and polluted rivers. To help tackle this challenge, a new study has looked into how solid waste management programs should be designed and implemented. It found that households are generally willing to separate and recycle waste and that many already do so, particularly for newspaper. →

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628.4(914-21)
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A summary of EEPSEA Research Report 2002-RR3, **RESOURCES, ENVIRONMENT & ECONOMICS CENTER FOR STUDIES** by Ma. Eugenia C. Bennagen, Georgina Nepomuceno and Ramil Covar, Resources, Environment & Economics Center for Studies (REECS), Quezon City 1109, Philippines; contact: bennagen@skynet.net; reecs@skynet.net

New legislation *offers*

➔ Given this, it should be possible for local governments to implement effective projects. New national waste management legislation provides a “wake up call” to do so. The study, by Ma. Eugenia C. Bennagen, Georgina Nepomuceno and Ramil Covar from the Resource, Environment & Economics Center for Studies (REECS), examined attitudes and behavior of households toward waste management in two middle-income barangays (subdivisions) in Metro Manila.

A garbage pile of trouble

The study was carried out in the shadow of a looming garbage crisis. Manila generates more than 5,000

tons of solid waste per day – almost 75 percent of which comes from the households. Waste segregation (separating plastic, paper, food scraps and so on), is not widely practiced and recycling of the materials, except through informal door-to-door entrepreneurs, is minimal. Landfill sites are so poorly maintained that they pose health and safety hazards; as a result, two key sites were recently closed. Incineration is prohibited by law. Open dumping is now the most common disposal method – a situation that itself threatens public health.

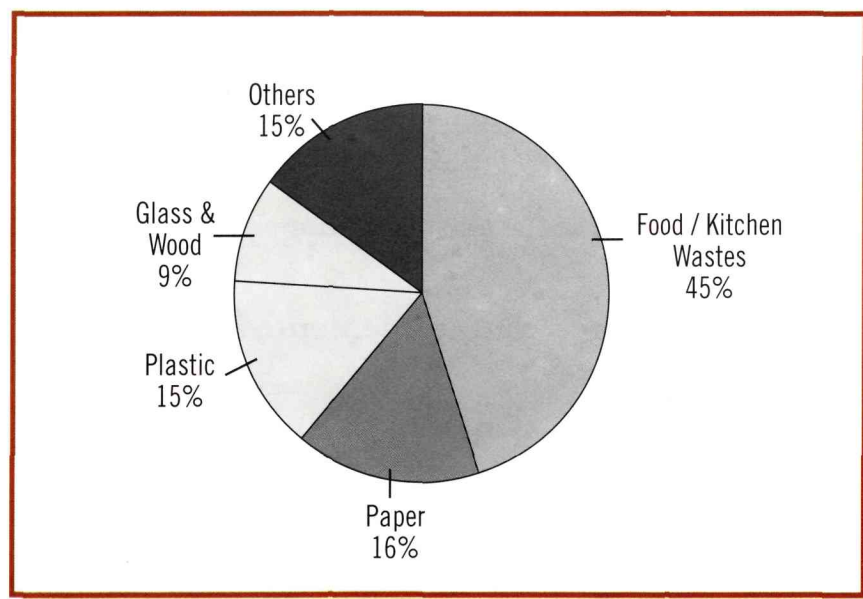
To help tackle these problems, the national government passed the Ecological Solid Waste Management

Act in 2001. The act gives local governments a 25 percent target for the amount of waste that must be diverted away from disposal into resource recovery activities over the next five years. It also gives local governments the authority to collect waste disposal fees to pay the costs of preparing and implementing solid waste management plans. One of the research team’s aims was to collect information that would help local governments conform to the legislation.

Looking in the backyard dustbin

The researchers selected two cities in Manila that have well-established waste management programs – Paranaque and Mandaluyong City. Within each city, two representative barangays were selected, one which practiced waste segregation and one which did not. Over 140 households were surveyed.

Through a questionnaire, the researchers collected information on household waste management activities along with information on various socio-economic issues. Households were also asked to estimate the weight of wastes they generate in a day and the proportion of the wastes that they recover, burn or otherwise dispose of.



Composition of household wastes, Manila

a window of opportunity

Reasons for not practicing waste segregation, Barangay Barangka	%
No time/ inconvenient	53
No segregated collection	36
Not interested/not important	20
No space at home	19
It is expensive	9
Do not know how to segregate	5

A middle class concern

The researchers found it necessary to limit the sampling to the middle-income communities because the practice of waste segregation is still generally limited to such households. The team recognized that this meant that their results may not be applicable to the whole of Metro Manila. However, they were confident that their studies could provide insights into waste management in other middle-income communities in the metropolis.

Focusing on specifics

The study found that each household generated an average of 3-4 kg/day. Of this, about half is disposed of (legally or otherwise), between 3-12 percent is burned, and the rest is recovered. Less than half of kitchen wastes are reused as composting material. Since these comprise more

than a third of total household wastes, the researchers recommended that composting should be a key focus for any new waste management scheme.

The results on burning of household wastes suggest that waste management programs should particularly discourage this polluting practice and highlight its health implications.

A regression analysis of the data showed that factors such as age, household size, time, the presence of a yard, the total amount of waste produced and the payment of a garbage fee, and the existence of a local ordinance affected waste management behavior.

The researchers also highlighted the importance of recycling aluminum cans and plastics. They found that less than 50 percent of these wastes are recovered by middle-income communities. They also found that

paper-based wastes (except for old newspapers, most of which is already being recovered) are another area where there was a lot of potential for increased waste recovery.

To segregate or not to segregate?

When it came to investigating the factors that prompted households to practice waste segregation, the researchers found that almost 70 percent did it because they believed it kept their houses clean and free of pests, while almost 60 percent thought it was good for the environment.

Among households that do not practice waste segregation, more than half said they did not have time to do so. Thirty-six percent said that there was no point in doing so, since garbage collectors just mix the waste when they pick it up.

When households were asked to identify factors that would ensure a successful waste management program, many mentioned a disciplined and active community. When everyone else in the community participates, households do not feel that their individual efforts are futile. Over 20 percent of households also cited the need for an information and education campaign.



A question of time and money

Households that were not currently paying any garbage fee were asked if they would be willing to do so in exchange for a dependable garbage collection system. Over 60 percent of waste-segregating households would be willing to pay a fee, as would an even higher proportion of non-segregating households (83 percent). In the communities that pay garbage fees, there is some evidence that the current flat rate fees provide a disincentive to segregate. Because they are paying fees, households may feel they are already "doing their bit" and should not be expected to spend their time as well.

The survey confirmed observations from earlier studies

that time is an important factor in waste segregation and that, in particular, unavailability of the mother in a household can pose a significant constraint.

The presence of a backyard and the implementation of a local waste segregation ordinance were also big positive factors in determining whether a household composts and segregates its waste. A major obstacle to the proper implementation of waste segregation was the unreliable and inappropriate garbage collection services many households received.

Putting together a waste management plan

In light of these findings, the researchers recommended that local governments investigate the possibility of charging variable waste collection fees (linked to the amount of rubbish

produced). They also recommended that waste management programs stress the positive benefits of waste segregation and that all such programs should be as convenient to the user as possible.

From a financial point of view, the researchers advise that local governments should see the Ecological Solid Waste Management Act as an opportunity to finance their solid waste management projects and achieve their waste diversion targets.

All in all, the researchers found that there was sufficient civic mindedness to make a solid waste management program work. But the authorities need to provide suitable collection services if they expect households to do their part.

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