

Solid Waste Management: Some Lessons

Mandate. The scope of services and facilities that a barangay should operate in relation to solid waste management is defined in Section 17.b.1.iii of the Local Government Code:

Section 17b. Such basic services and facilities include, but are not limited to, the following:

For a Barangay

(iii) Services and facilities related to general hygiene and sanitation, beautification, and solid waste collection. (underscoring supplied)

In contrast, the scope, services and facilities that municipalities and cities should provide in relation to solid waste management cover "solid waste disposal system or environmental management system and services or facilities related to general hygiene and sanitation." (Section 17.b.2.vi.) (underscoring supplied)

Get the Incentives Right. In actual practice, these provisions are not observed. Municipalities and cities either do their own garbage collection or contract these out to private hauling companies. A few barangays, usually exclusive villages and subdivisions, hire their own trucks to collect the garbage and convey them to the landfills. The reason frequently given in defense of the practice is economies of scale. It is alleged that collection on a municipal or citywide scale saves the government money. It is also said that it makes garbage collection a more attractive business for the private sector to enter than if the barangays were to do their own collection or separately talk to the contractors. It is easier talking to a few than to many, and bundling barangays and even municipalities allow the contractors to earn more profits. The barangays have better use for their limited funds.

The argument, however, falls flat against current reality. In the cities, where the garbage crisis is most severe, there is enough population and garbage in one barangay to make collection worthwhile. Urban barangays also have the money from their share of the city's Real Property Taxes (RPT) to hire private garbage collectors.

A more important reason is the incompatibility of the private collectors' interest with that required of sound solid waste management practice. Since garbage collectors charge by the truck, it is to their interest to have the trucks make as many trips as possible between the landfill and the villages to cover their costs. Remember that in traveling to the barangay for the first time and in the return trips that follow the truck is empty. Whether empty or full, the cost of

operating the truck remains the same. The only way to make a profit is to spread the cost among as many trips as possible. This is the reason why private collectors gravitate towards barangays that generate a lot of collectible waste or prefer to collect on a large scale. It is to their interest that the volume of garbage continues increasing. This is also the reason why private collectors do not distinguish between different kinds of garbage and throw them all together into one truck. If collection is not segregated, households have no incentive to segregate. With collection being almost assured, there is no compelling reason for households to reduce, re-use and recycle. The garbage in the house will disappear in due time.

But what if for one reason or another collection stopped? This was the situation that confronted all four Metro Manila barangays featured here. Garbage did not disappear. They remained, rotted, and stunk. The closure of the landfills or the inefficiency of the city government's chosen private contractor forced the barangays to turn to solid waste management practices that have been proven to work in other settings but seldom have been applied in this country. They also did the collection, selectively and not indiscriminately as the private contractors had done.

The wisdom of the Local Government Code for assigning collection to the barangays was proven. More than the municipalities or cities, the barangay government is the best collector of garbage because its members suffered from the rot, the stink, and the dirt. They bore the ire of an angry barangay threatened by flies, vermin, and disease. Paradoxically, the barangay's limited budget is actually a compelling reason to start waste reduction and segregation schemes. If it could not afford to have a private collector or if it collected the garbage on its own, it has every incentive that the volume remains the same or decreases. It is also to the barangay's best interest to enforce a "no segregation, no collection" policy.

Distinguish Between Different Kinds of Wastes. This notwithstanding, the barangay cannot handle all kinds of waste. The usual distinction is between "biodegradable and non-biodegradable." But as you would read in the cases that follow, the barangays make even finer distinctions. Sun Valley distinguishes between two kinds of biodegradable wastes; kitchen wastes and garden wastes and treats them differently. Pamplona Dos and Blue Ridge A further divides non-biodegradable waste into those that could be recycled and those that could not. Those that could be recycled were collected, stored, and sold to junk shop dealers or given to poor communities to use in the production of novelty items and art materials. Those that could not were left to the garbage collectors for transport to the dumpsite. Reusable ones found their way into poor communities again to be used in the production of saleable goods. Barangay Holy Spirit makes even finer distinctions among non-biodegradable wastes according to type of material: paper, steel, glass, carton and plastic. How detailed the barangay wishes to go in its

classification is its decision. But it must not be too general as to lose meaning or too specific for residents to have difficulty understanding and implementing.

Wastes can also be differentiated according to *source*: households, restaurants; institutions like offices and schools, stores; different kinds of factories; and specialized institutions like hospitals.

Depending on the characteristics of its inhabitants or establishments, the barangay would generate more wastes from one source over the other. The Pareto Principle is relevant here: What accounts for eighty percent (80%) of the wastes generated by the barangay? Are they households or business establishments? What constitutes eighty percent (80%) of the wastes generated in the barangay? Are they biodegradable wastes? What kind? Are they non-biodegradable wastes? Recyclable and/or marketable or not?

The barangay can tailor the design of its waste management project according to the characteristics of the predominant waste it produces: their so-called shelf life or period before rotting, the ease of segregating, storing, and collecting them, and the prospects of reusing, recycling, or processing them into useful products.

The barangay is most capable in handling biodegradables and recyclable and marketable non-biodegradables. It obviously has the least capability in handling toxic and hazardous waste generated by certain factories and hospitals. This requires special handling and is best left to higher-level Local Government Units or specialized government agencies.

Recyclable wastes can also be classified as those that junk shops buy and those they do not.

Program scope is the barangay's decision. A critical question to answer in designing a program or project is its scope. What types of wastes will the program cover? What stages of the waste management cycle or process should the project concentrate on?

After the failure of its pilot, Barangay Sun Valley decided to concentrate on collection and on biodegradable wastes. It discovered that there was no incentive for residents to bring the garbage themselves to the barangay's composting and redemption center. The barangay's need for the biodegradable waste is greater than the willingness or rewards that the residents have or would receive from walking the extra kilometer. There was also the stigma attached to garbage and the problem of transport. Even if he could tolerate the smell, no resident would like to be seen by his neighbors carrying a pail of smelly kitchen waste and spoiled leftovers. Neither would they risk introducing the smell inside their vehicles.

It left non-biodegradable wastes to the junk shops, presumably because

these junk shops know better what recyclables are in demand in the market. Sun Valley saved its limited space for its composting machines, compost pits, and vegetable garden. The barangay officials spared themselves the bother of sorting through the different kinds of non-biodegradable wastes and negotiating with junk shops or finding a market for them. Sun Valley poured its limited time, energy, and money to introduce vermi-composting, to improve the competitiveness of its product, and to market them better.

Pamplona Dos chose to be more comprehensive, collecting even non-biodegradable waste and sorting and selling saleable recyclable items.

Combine Soft and Hard Elements. All the five cases, especially Blue Ridge A, Pamplona Dos, and Sun Valley, credit their success to the combination of soft and hard elements in the design. The "soft" element consists of the social preparation done by the barangay officials usually in the form of seminars, leaflets, flyers, signboards and other communication media. The "hard elements" are the ordinances and guidelines passed by the barangay and their strict enforcement. An example is the "no segregation, no collection" policy promulgated by Sun Valley. The two complement each other. On the one hand, the information campaign informs the residents of what to expect and primes them to accept the changes in behavior that the project entails. Better information results in mindful and willing compliance. On the other hand, the formulation and enforcement of policies reinforce and cement the practice of new behaviors such that they become almost routine and automatic.

Blue Ridge A's seminars are more successful than those of Sun Valley, not only because the population of the first is smaller than the second but also because the residents themselves conduct them. There is power in preaching what you practice, and people are more easily convinced by their peers than by those with authority over them.

Sun Valley is particularly strong in enforcing its policies. Consistency and firmness are persuasive, especially in bigger barangays whose residents come from different economic classes and where bonds of kinship, friendship, and work are weaker compared to smaller communities living in exclusive villages.

Clean and Green and Environmental Protection: Some Lessons

Involve Stakeholders as Early as Possible: The lesson of Barangay Cataban, in Talibon, Bohol and Barangay Maria Paz in Tanauan, Batangas is the importance of involving stakeholders as early as possible. Stakeholders are defined by the World Bank as those that are most likely to be affected by the project and/or those who can affect the attainment of project objectives. The common argument against participation is that it takes too much time or it exposes the project, which has not even conceptualized or designed as yet, to objections and opposition by project stakeholders. In response to this, the general principle is that participation should always be undertaken unless doing so is proven

irrefutably to do more harm than good. The better question is what kind of participation is appropriate for a particular project and situation and at what stage of the project cycle and what parts in the particular stage. Again, the general principle is that participation should be done as early as possible. Participation also varies in inclusiveness and intensity. It is best understood as a spectrum or continuum with lower and higher levels. The least inclusive are information dissemination and education methods; the most inclusive are delegation by the project proponent of key project activities to the affected groups. What is appropriate in a given situation? The rule of thumb is that the more radical, comprehensive, or disconcerting the change required in the affected people's behavior and values, the more inclusive the participation necessary. It is the role of the barangay leader to engage his constituents to buy-in or oppose these changes because that process requires unlearning of customary ways of doing things.

Start with a Few. Any change in the status quo would naturally be met by doubt. Majority are fence sitters. Few are supporters, and often their voices are drowned by the vehemence of the opposition. In this situation, it is necessary to begin with a few good and daring men and women who have the courage to serve as guinea pigs and are willing to risk failure, as what happened in Maria Paz. Starting with a few, failure need not be that traumatic for the community; success is its own spokesperson.

Model the behavior. We do not know cleanliness. We do not know leadership but we understand and relate to a clean person or a bona fide leader. We need exemplars. The barangay leaders of San Jose, Puerto Princesa City understood this so they themselves participated in the clean-up to show their constituents in living color and flesh and blood what the desired behavior is.

Small things can make a difference. The almost overlapping awards given by different bodies is a noble attempt at creating success and a "feel good" atmosphere meant to entice barangays and other LGUs to follow in the footsteps of the winners. However, often what gets copied are not major components of the program but seemingly little things: a jingle here, a slogan there. Olongapo City coined the slogan, "*Bawal ang tamad sa Olongapo*," (Lazy people are not welcome in Olongapo.) that has since been copied and reproduced by other LGUs. It was also Olongapo who played a catchy jingle to warn the residents that the garbage truck was nearby to collect the garbage. That too has been copied by other LGUs that perhaps did not implement its waste management program with the same intensity, as the city in Zambales did. In advertising language, those things have "stickiness." The list can go on with the Mambo song of Magsaysay and more recently the Erap sa Mahirap slogan. The point here is understanding the levers to pull and what sticks in the public imagination. Order was difficult to attain in the streets of Marikina until the red sidewalks came along. Red, which according to psychologists is among the most attention-catching colors in the spectrum, immediately alerted the resident that he is occupying public space and is therefore

bound to act in ways different from his typical behavior inside his own house.

Negative reinforcement can be useful and instructive. For some, rewards rather than sanctions inspire them more. For the more thick-skinned ones, it is the fear of punishment or desire not to be embarrassed that spurs them to act. Different strokes for different folks. Barangay Greenwater understood this very well by also announcing during the recognition ceremony for Clean and Green winners the puroks that are persistently untidy and unclean.

Deeper problems can lessen project impact. Success of projects can be undermined by festering problems. The success of the soil conservation project in Maria Paz is threatened by the lack of security of tenure of the farmers. Ancestral domain claims might plague further progress of Dancalan's mangrove reforestation efforts.