

# Diversionsary Tactics

Approaches to transferring  
knowledge in waste management



This case study highlights FCM's international program experience building capacity of local governments in various aspects of waste management. It is one in a series of thematic case studies that help inform FCM's cooperation activities and support knowledge sharing among municipal practitioners.

**FCM**

Federation of Canadian Municipalities

Fédération canadienne des municipalités

## OVERVIEW

The Federation of Canadian Municipalities (FCM) is the national voice of municipal government in Canada. With more than 1,500 members, FCM represents the interests of municipalities on policy and program matters that fall within federal jurisdiction. Members include Canada's largest cities, small urban and rural communities, and 18 provincial and territorial municipal associations.

FCM draws on the strength of its municipal network to implement municipal capacity building programs in over 20 countries in Asia, Africa and the Middle East, Latin America and the Caribbean. With support mainly from the Canadian International Development Agency (CIDA), FCM's international programs aim to support decentralization processes, foster governance and strengthen municipal management and service delivery.

More than 200 Canadian municipalities and municipal associations, and 1,500 Canadian municipal experts have participated in FCM's international program since its inception in 1987. Adapting Canadian municipal expertise in developing countries through cooperation activities is a powerful tool for development. Through peer-to-peer exchange, Canadian municipalities share their expertise and practical experience with their overseas counterparts, contributing to staff training and improved municipal service delivery, governance and management.

Over the years, FCM has developed a body of knowledge on innovative management practices and methods of transferring knowledge in a number of thematic areas. This case study highlights some of the good practices emerging from FCM's experience building capacity in solid waste management.

## Section 1: Introduction

### Solid Waste Management – Common Challenges, Different Contexts

Solid waste management has become a priority for many of FCM's international partner municipalities in Africa, Asia, Latin America and the Caribbean. These municipalities have faced quite diverse challenges, including:

- in the Philippines, where a landfill sloped at a precarious level above a stream, posing health, safety and environmental risks;
- in post-tsunami Sri Lanka, where non-biodegradable material has collected on coral reefs and washed up on beaches, undermining the fishing and tourist industries;
- in El Salvador, where the accumulation of solid waste contaminated groundwater and soil;
- in Guyana, where lack of training limited municipalities from delivering essential services; and
- in Nicaragua, where hazardous waste polluted the environment as it seeped from a dump into adjacent creeks, streams and rivers, and garbage in an open dump-site was infested with flies

and began to contaminate the river. This situation gave rise to a high incidence of diseases such as dysentery, cholera and typhoid.

- in rural Ghana, where smouldering fires in the landfill spread toxic emissions and smoke towards the school next door;



Ghana landfill

While the contexts may differ, the problems are the same — the accumulation and improper disposal of solid waste creates environmental and human health hazards, affects quality of life and can have negative consequences for local economic development, including eco-tourism.

Municipalities struggle with the issue of solid waste management for common reasons: poverty, population growth, urbanization and decentralization. Municipalities are typically granted responsibility for providing solid waste management services, including waste collection, transfer, recycling, resource recovery and disposal. It is a complex municipal challenge which, to be done well, means juggling a whole range of technical, institutional, social, legal and financial considerations, not to mention engaging the public and other stakeholders in the process of reducing waste, recycling and composting. Although these functions fall under their jurisdiction, municipalities often lack the capacity and resources required to do them effectively.

The solid waste management projects supported by FCM's international program have all had the same overall goal of improving solid waste management in the municipalities involved, but have focused on different objectives to get there, ranging from making technical improvements to a landfill, to supporting community-based recycling, composting and environmental clean-up campaigns, to building capacity to develop comprehensive solid waste management plans.

FCM-supported projects do not allow for large-scale investments of infrastructure or equipment, so projects have focused on areas in which institutional strengthening through knowledge transfer can make a difference.

The selection of composting and recycling projects has been common among partners, largely because reductions in solid waste can be made cheaply, without requiring expensive equipment. The technology to transform organic waste into compost is simple and accessible to the majority of municipalities and institutions. Well-run recycling programs cost less to operate than waste collection, landfilling, and incineration, and can help promote local economic development. Recycling and composting also offer environmental benefits such as reducing greenhouse gas emissions, reducing the need for new landfills, reducing groundwater pollution, saving energy, reducing air pollution and conserving resources for future generations.

In other projects, what has been needed is a first step to develop a realistic solid waste management plan that can respond to the municipality's specific challenges using available resources.

**A summary of the main projects explored in this case study can be found on the last page of the case study.**

Despite their varied objectives, there have been some common approaches used to transfer knowledge and make institutional changes leading to improvements in waste management.

The next section outlines a number of good practices that have emerged from the exchanges between FCM's partners.



Recycling in Nindirí, Nicaragua

## Section 2: Good Practices

### GOOD PRACTICE #1: PLANNING MAKES PERFECT

FCM's experience has shown that whether a project succeeds from beginning to end largely depends on the planning. Of course projects can hit unexpected roadblocks that have little to do with how well they were planned, but this is usually the exception to the rule. The following are some basic considerations for planning.

#### Involve Canadian and overseas partners from the outset

FCM's international programs are grounded in a peer-to-peer approach that enables municipalities to share their expertise and practical experience to contribute to municipal management, governance and service delivery. While FCM provides some technical support and overall program coordination, the participating municipalities manage their own partnerships or exchanges, which usually involve a series of short-term technical missions in Canada and in the overseas municipality, between staff, council members and community representatives.

In keeping with FCM's support for capacity building and local ownership, the waste management projects aimed to involve overseas partners in all aspects of the process. Rather than parachuting Canadian experts into a community to tell municipal governments what to do, the partners worked together and, wherever possible, tried to engage local stakeholders in goal setting. Canadian partners provided examples of local governance policies and procedures that work in the Canadian context as starting points for discussion. Solutions were then developed together, after partners had time to understand their different contexts, cultures and challenges.



Waste implementation team in New Amsterdam, Guyana

In the Guyana Municipal Management and Governance Program, small environmental projects were selected based on local priorities. Each of six municipalities involved in the program had a team that prioritized and selected projects. The teams, which had balanced representation of women and men, were drawn from municipal staff, councillors and a diverse cross-section of community members.

#### Be flexible

Typically, the partners developed goals after exploratory missions helped to determine the scope of projects. Of course, partners continued to fine-tune goals throughout their projects, adjusting for on-the-ground realities. For example, during the implementation phase of their project, the Ghanaian team traveled to Nanaimo to work on its solid-waste management plan, as well as to receive on-the-job training related to two focus areas. During the mission, the partners recognized the need to improve garbage collection and disposal before attempting to mobilize the local community. Consequently, they narrowed the focus of their initial plan.

#### Build on past experience

Good planning doesn't always involve reinventing the wheel. Some Canadian municipalities now bring considerable experience to their capacity building projects. In 1997, for example, the MRC of Matapédia in Quebec completed a successful composting pilot project in San Vicente, El Salvador. Subsequently, it identified four other municipalities in the country for a new composting project, selecting them based on the presence of a local non-governmental organization with expertise in environmental projects. The project drew on the Quebec partner's previous experience in the country to develop an effective participatory strategy.

#### Gather vital information

In the Philippines and Sri Lanka, the Canadian team worked with partners to gather vital information before setting goals. In Galle, for example, a collection efficiency study revealed that trailers fill quickly due to lack of compaction; this meant that waste collectors were idle while they waited for trailers to make trips to the dump. In Olongapo and Galle, waste audits determined the make-up of the waste stream, enabling the team to develop a baseline for measuring future waste diversion and to set priorities. The teams also took an inventory of recycling and composting activities.

#### Waste audit as a planning tool

When a Canadian partner brings in knowledge gained from another project, it can set up expectations that successful strategies will work again. A waste management expert from Windsor, Ontario, for example, knew the City of Olongapo in the Philippines had passed a bylaw that encouraged residents to bring recyclable bottles, as well as steel and aluminum cans, into junk shops. He thought the City of Galle in Sri Lanka could replicate the practice. A waste audit, however, revealed that Galle had a negligible amount of bottles and cans in its waste stream. In Olongapo and Galle, waste audits were vital to understand the nature of the waste stream. The waste audit in Galle enabled the team to focus on reducing the amount of food and yard waste through composting. As a planning tool, the waste audit is often needed to help clarify the local context and determine priorities.



Waste audit in Galle, Sri Lanka

### Coordinate with other actors

Another important consideration in project planning is whether other actors may be involved in the same area of capacity building. For example, FCM was one of many organizations working in Sri Lanka in the context of post-tsunami reconstruction and rehabilitation. The FCM team had to ensure its work complemented, rather than duplicated, other waste management efforts. FCM ultimately coordinated its work with that of the International Cooperation Agency of the Association of Netherlands Municipalities (VNG), which had a similar focus.

### Access the required technical support

FCM's experience shows that in some cases municipal partners need specific technical support to aid in the project's design and implementation. The earlier those needs can be anticipated, the better. Projects can progress more quickly if technical staff is involved in initial missions.

In some cases, technical experts outside the municipality can become involved if it will yield better results for a project. The Usulután-La Matapédia team in El Salvador engaged a compost specialist from the Canadian Centre for International Studies and Cooperation (CECI) to lead the project. As part of its "Garbage is Treasure" program, the National Association of Municipalities of Nicaragua (AMUNIC) provided a legal advisor to support and help monitor the Tipitapa and Nindirí projects.

FCM itself has provided technical support in some projects. In Sri Lanka, FCM's Technical Project Team provided monitoring and evaluation of the program's various components. For the Sunyani project in Ghana, FCM staff took part in the initial mission to help partners identify realistic goals. As a member of the technical team in Nicaragua, FCM also helped develop the budget for the Nindirí-Chelsea and Tipitapa-Victoria exchanges.

## GOOD PRACTICE #2: INVOLVE THE COMMUNITY

To be successful, any waste management strategy needs to engage the public in the pursuit of solutions. A top-down approach imposed by a local government or well-meaning "partners" may yield short-term benefits, but is unlikely to be sustainable. A more inclusive approach can bring people on board from the start, building their awareness of their social responsibilities as waste-producing consumers and as citizens of their municipality, and motivating them to get involved in waste management.

All of the projects involved some aspect of public engagement. In some projects this element was the focus, while in others it was a necessary part of the process. Below are some of the methods that have been effective in involving the public in waste reduction activities.

### Youth are catalysts for change

Youth are often seen as catalysts for change that reproduce what they learn at school in the home, so schools played a large role in several projects that aimed to put recycling or composting programs in place.



Students participating in the composting project in El Salvador

In Nicaragua, the two cities and their Canadian partners viewed young students as agents of change who could take a "reduce, recycle, compost" message back to their families and the larger community. In Tipitapa, four schools took part in a one-day clean-up; a communication and training program planned to encourage sorting and reducing waste, as well as anti-littering. The Nindirí-Chelsea partnership put a composting program into schools, set up a volunteer committee for environmental issues and supported municipal initiatives such as clean-up days; it also recruited and trained students to conduct "door to door" awareness campaigns.

The four communities involved in the El Salvador project also harnessed the enthusiasm of young people. As part of its goal to make youth take more responsibility for their environment, the project trained 621 students (as well as 30 teachers) how to sort, classify and treat solid waste, as well as how to produce compost. They used compost to support school projects such as horticulture and tree nurseries, promoting benefits to the community through events such as Compost Day and Achievement Day. The project sought to increase awareness among youth about the need to reduce waste, and to motivate youth to compost at home. Ultimately the project reduced solid waste generated by schools, neighbouring businesses and students' homes. Moreover, community members used the high-quality compost to fertilize vegetable gardens and nurseries. The high quality of vegetables harvested from the compost-rich gardens increased students' nutrition.

In Galle, the partners created a Public Education Committee that encouraged schools to integrate waste management into their curricula. The Committee supported a pen-pal program that enabled students in Galle and Calgary, Alberta, to exchange views about environmental issues.

The Guyana Municipal Governance and Management Program also involved youth through a project called Cycle Savers, implemented across six participating municipalities. Using a model adapted from Halifax Regional Municipality, Nova Scotia, Cycle Savers helped children to appreciate their local environment through an engaging outdoor environmental education program led by community volunteers. With new enthusiasm and knowledge, the children returned home to help their households reduce their impact on the environment. They shifted to more appropriate waste disposal methods, and took steps toward water and energy conservation.

### **A Little Motivation Goes a Long Way...**

Motivating the public to become involved in a project can sometimes be facilitated when complemented with the provision of supplies. The Municipality of Galle aimed to provide better waste management services; ensure less waste was disposed of at dumps; and generate more awareness among citizens about the issue. As part of the pilot project, FCM planned to provide about 1,500 households in two wards with a free pail for composting yard waste and kitchen organics, and a garbage pail for residual waste. To obtain the supplies, residents had to attend an Open House for training and to sign an agreement of usage. The Open House process was based on a Canadian community-based social marketing strategy that was adapted to the Sri Lankan context, whereby the Sri Lankan partners were trained to hold Open Houses and to prepare a Request for Proposals (RFP) from consultants who could develop awareness-raising tools.

As part of its early results, the project delivered 1,330 compost bins to residents in two wards. About 87 percent of those households were using the composter properly six months after receiving it.

### **What is community-based social marketing?**

Community-based social marketing is an approach used to promote behaviour change. In the case of Galle, Sri Lanka, the project aimed to increase household composting and reduce waste. Generally this approach identifies a problem, taking into consideration the local context and the barriers that might affect behaviour change. A strategy is then developed to overcome the barriers. Following a pilot test of the strategy, its effectiveness is evaluated prior to being implemented on a broader scale. Unlike many information-intensive campaigns, community-based social marketing has been shown to have a much greater probability of promoting sustainable behaviour change. In the Galle example, each household in the pilot wards received a compost bin, garbage pail and supporting educational material through a series of Open Houses conducted by municipal council staff. Trained volunteers provided weekly follow up support and also identified community leaders to support continued participation in the project.



Open house in Galle, Sri Lanka

### **On the ground messaging**

Many projects motivated citizens to get engaged in waste management by taking their message directly to the streets. In New Amsterdam, a community clean up project encouraged residents to clean up 16 neighbourhoods. At any one time, usually on weekends, 12 volunteers were on the streets of their neighbourhood to unclog drains or pick up loose garbage from private yards. The project also captured the imagination of local businesses, which donated cleaning supplies. In Ghana, the Sunyani-Nanaimo project also planned monthly community clean-ups to engage the public. These activities, as well as theatre skits in public venues and other initiatives, formed part of a larger communication strategy.

### **Use of written and audio-visual communications**

Both the El Salvador and Sri Lanka projects used written and audio-visual material to inform residents about the benefits of composting. They also organized contests and events to attract the news media and create incentives for residents to get involved.

### **TIP: Focus on Leaders**

Never underestimate the influence of leaders or champions to motivate people to get involved.

The Usulután-La Matapédia project chose dynamic and creative leaders who knew how to retain students' interest in composting. Interactive educational games engaged youth in all stages of the process and on their own level. The project found it was better to train a small group of highly motivated students than a larger group of uninterested ones. The partners observed that schools with a designated teacher in charge had the best composting results. They also recognized the need to integrate programs into the curriculum to encourage sustainability.

The City of Olongapo won regional and national awards for the cleanliness of its city. With its award money, the city bought a landfill compactor and six motorcycles to check every nook and cranny for garbage. To lead by example, the mayor and his staff were jogging around the city twice a week with a broom and a dustpan. The city initiated its own annual contest for the Cleanest and Greenest "Barangway" (a ward or district), which awarded cash and a trophy.

### **GOOD PRACTICE #3: PRACTICAL TRAINING HELPS BUILD LONG-TERM CAPACITY**

Partners involved in waste management projects used information-gathering, training, and awareness building as the primary tools and techniques to transmit knowledge. In the early stages, the Canadian team often strengthened the capacity of its overseas partner in areas such as waste audits and project management. Once the projects began, many partners used technical exchanges to pass on practical skills relating to landfills, recycling and composting. The overseas partners would put these new skills to work in their communities, transferring this knowledge to the community level using public education techniques and other awareness-raising tools.

Among its goals, Olongapo sought to improve solid waste-collection, landfill operation and management practices. Through the project, staff learned how to conduct waste generation and characterization studies, perform waste audits and operate the landfill properly. Specific skills included landfill compaction, soil removal and replacement, and building the proper slopes to stabilize the landfill. Improvements to the New Cabalan Landfill in Olongapo extended its life by up to 50 years. The team stabilized the slope, repaired the material recovery facility and installed a litter control fence. It also began covering the site with soil to reduce odour and fires.

With support from AMUNIC, the Tipitapa-Victoria and Nindirí-Chelsea projects embarked on technical exchanges that provided training in such areas as composting and recycling, as well as decision-making and municipal governance.

The Sunyani-Nanaimo project focused on the development of a solid-waste management plan, creating opportunities for participatory learning, as well as on-the-job training in garbage collection and landfill operation.

#### **GOOD PRACTICE #4:**

#### **SOMETIMES THE BEST PROJECT IS THE PLAN**

Municipalities need to incorporate a whole range of technical, institutional, social, legal and financial considerations in the process of managing waste effectively. Municipal waste management plans may need to meet standards defined in higher level policy or legislative frameworks under environment or public health portfolios, or that have been accorded to them because of newly emerging decentralization processes. They also need to consider the means available to the municipality to deliver waste management services.

In some cases when partners did their initial needs assessment for their projects, they recognized that improved waste management planning was the biggest priority. Rather than delving into projects that aimed to reduce waste or improve waste collection straightaway, these projects focused specifically on building capacity to develop waste management plans, or in one case, a communications plan around waste reduction.

Sunyani Municipal Assembly (SMA) had a long-term goal to create a clean and safe urban environment for all residents of Sunyani. It aimed to put in place and implement a sustainable program of action to manage solid waste within 15 years. SMA therefore hoped its work with the Regional District of Nanaimo (RDN) would help move the process forward. SMA and RDN staff finalized a project proposal to establish an integrated, sustainable solid waste management planning process that would not only sensitize and mobilize the local community to address the issue of solid waste in Sunyani, but also ensure their participation in identifying, developing and owning locally based solutions. The long-term goal of the project was to create a clean and safe urban environment for all residents of Sunyani.

Tipitapa-Victoria sought to develop a solid-waste strategic plan, as well as a public awareness and education program. Ultimately, they developed a business and financial plan for solid-waste management, as well as a conceptual plan for a proposed landfill and waste management facility.

The Nindirí-Chelsea team sought to increase understanding among residents about the need to pay taxes for waste collection, and to engage youth and women in decision-making. Together, the partners prepared a communication plan to build awareness among the public about the need to separate waste.

#### **TIP: The best laid plans need resources**

Municipalities that have worked hard to gain technical capacity can still be thwarted by a lack of funding. Sustainable waste management requires long-term investment. Even if a municipal government has the political will to proceed, it may need to seek funds from other sources to implement its plans. Tipitapa had produced a plan to operate a self-sustaining integrated solid-waste management system, including a landfill, but did not have sufficient resources on its own to support the landfill. Victoria and Tipitapa therefore explored other options.

In Canada, it is common for several municipalities to reduce waste management costs by pooling resources. In some cases, neighbouring municipalities pay a fee-for-service to a host municipality that provides waste management services. In other cases, municipalities contribute to services provided by a county or regional level of government. Either way, strong intergovernmental collaboration is required for this approach to work.

The project team assessed the capacity of Tipitapa's proposed landfill site and determined that it would have capacity to handle much of Managua's unmet waste disposal needs, making the project financially sustainable. However, in their meetings with the national government and municipality of Managua, as well as other key stakeholders and donors, the team learned that there were a number of government agencies proposing various solutions, with weak coordination. Ultimately Tipitapa developed a waste transfer station responsible for sorting, recycling and composting waste, as part of a phased approach to support buying land and building a landfill site that would meet its needs.



Waste transfer station in Tipitapa, Nicaragua

## GOOD PRACTICE #5:

### PARTNERSHIPS CAN MULTIPLY THE BENEFITS

There is no better example of a municipal issue than waste management that encompasses all segments of the community. Individuals, businesses, and governments alike generate waste, and ideally, everyone should be part of the solution in managing it. The best approaches to managing waste build bridges between municipal council, the private sector, community groups and individual citizens, and sometimes higher levels of government. Most of the FCM-supported projects developed partnerships, formally or informally, in their activities.

Schools were an obvious partner in many of the projects that aimed to build awareness among youth, as mentioned in the section on community involvement.



Clean up on Main Street, New Amsterdam

community clean-up, and about 85 percent got involved. Local businesses were integral to the success of project. By donating cleaning supplies and tools, the private sector enabled volunteers to carry out their work and allowed the project to spend its budget elsewhere. The community-based project cleaned 47,254 feet of drains, parapets and road shoulders, and revitalized the entire main road. The unclogged drains have reduced flooding, and the general cleanliness has heightened quality of life.

There were multiple benefits to the business community from participating in the project. Local businesses recognized that since they depend on the patronage of residents to prosper, they had a natural role to play in contributing to the well being of their municipality. The small projects enabled them to make tangible donations for which they gained recognition for their generosity and corporate citizenship.

Although New Amsterdam had identified “greater ownership of environmental issues among residents” as a goal for its waste management project, it did not foresee exactly how the results would manifest. Ultimately, the project increased the engagement of both citizens and business in community activities; community members became more willing to participate when they saw neighbours taking part. In some cases, residents donated meals to express their appreciation to the hard-working volunteers.

In New Amsterdam, Guyana, the corporate sector became a valuable partner. The community envisioned clean roadways and streets and residents with a greater sense of ownership of their environment. The partners approached local businesses to support the community clean-up, and about 85 percent got involved. Local businesses were integral to the success of project. By donating cleaning supplies and tools, the private sector enabled volunteers to carry out their work and allowed the project to spend its budget elsewhere. The community-based project cleaned 47,254 feet of drains, parapets and road shoulders, and revitalized the entire main road. The unclogged drains have reduced flooding, and the general cleanliness has heightened quality of life.

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## TIP: When engaging partners, watch the clock

Timing is everything! In El Salvador, it was crucial to engage schools at the beginning of the year to get them on board. In Guyana, the team recognized it needed to give potential corporate sponsors lots of time to respond to requests; moreover, they also had to answer questions from potential sponsors quickly to keep them interested.

## GOOD PRACTICE #6: CONSIDER INFORMAL ECONOMIES THAT DEPEND ON WASTE

In some cases the poorest residents of a city live and work as waste pickers or scavengers at open dumps. In the worst scenarios, families of scavengers may live on or around an open dump, breathing the fumes of toxic gaseous emissions and smoke from open burning, as they sort through waste for subsistence existence. Efforts to organize, legitimize, upgrade and support these people should be considered in projects that aim to improve solid waste disposal.

The Olongapo project in the Philippines made improvements to an existing landfill, which was scavenged regularly by a community of residents living beside it. Among the changes made were more frequent covering of waste, which reduced fires and odour, and the erection of a new litter fence designed to contain the waste. In addition, the city began sorting waste prior to transferring it to the landfill.

As improvements were being made, project partners took into consideration the health and economic needs of the scavengers. The more frequent covering of waste with dirt meant that residents reported less odour and fumes in their community. The litter fence kept plastics from blowing into their homes during the dry and windy season. And while the new fence displaced a family, they were compensated by receiving title to a small piece of land nearby.



Newly erected litter fence at Olongapo landfill

When landfill operations changed, scavengers were organized into teams with specific schedules, which stabilized their incomes. The bustle of small stores outside landfills indicated that residents and scavengers had money to spend. In fact, some shop owners were former scavengers who had invested their earnings in a small enterprise. There was one drawback that arose — some scavengers noted fewer recoverable items after the municipality began sorting garbage before transferring it to the landfill.

## GOOD PRACTICE #7:

### POLICY AND LEGAL FRAMEWORKS GUIDE PRACTICE

The involvement of both local and national governments creates another layer of complexity in waste management. Sometimes, a local government struggles to respond to national regulations—whether it is creating adequate landfills or enforcing laws. It is important to be aware of the frameworks imposed by higher orders of government (usually national) at the outset of the project; they may affect project design or be a catalyst for municipalities to influence policy and even expand the reach of the projects.

In the Olongapo project, the partners worked successfully with the League of Municipalities of the Philippines to influence government policy. As one of its primary goals, Olongapo sought to comply with national waste-management regulations. By the end of the project, Olongapo complied with six of eight points of Section 39 of Republic Act 9003, Ecological Solid Waste Management Act of 2000 (RA 9003). It also had the technical knowledge to complete the remaining two points, which related to surface water control and full use of daily cover. A policy paper developed by the Windsor, Ontario partners convinced the National Solid Waste Management Commission to extend the compliance deadline for all municipalities by one year. As part of Olongapo's compliance with national legislation, it passed two bylaws: one introduced fees for waste management services, while the other licensed junk shop owners.

In El Salvador, the Usulután project inspired the national association of municipalities (COMURES) to support a waste reduction and environmental remediation program. The project responded to the *Environmental Act of El Salvador*, which requires municipalities to create a formal environmental commission and to establish landfills that conform to health standards.

## GOOD PRACTICE #8:

### INDICATORS HELP MEASURE SUCCESS

Developing a set of indicators that can be used to assess the results of a project is a good way to ensure that objectives are written in clear and measurable terms. They also help determine the type of baseline data required prior to implementing a project.

The Olongapo-Windsor project had readymade indicators through Section 39 of Republic Act 9003, *Ecological Solid Waste Management Act of 2000* (RA 9003). To evaluate results, the team took “before and after” photographs of the landfill site, conducted a physical inspection and interviewed municipal staff, city market operators, junk shops and elected officials. Based on these indicators, the project achieved most of the goals.

## INDICATORS USED FOR THE OLONGAPO-WINDSOR PARTNERSHIP

### QUALITATIVE INDICATORS

- 1) “Improve existing [landfill] sites”;
- 2) Reduce adverse impact[s] on health and the environment”;
- 3) “Extend [landfill] life span and capacity.”

### QUANTITATIVE INDICATORS

- 4) Prepare a 10 year Solid Waste Management Plan;
- 5) Adopt specific revenue generating measures to promote the viability of its Solid Waste Management Plan;
- 6) Divert at least 25% of solid waste from waste disposal activities through re-use, recycling and composting;
- 7) Take into account persons engaged in the business of recycling or persons otherwise providing recycling services before the Act came into effect;
- 8) Convert open dumps into controlled dumps in accordance with the guidelines set out in the Act, including:
  - a) Regular application of inert cover;
  - b) Installation of surface water and peripheral site drainage controls;
  - c) Restriction of waste deposition to small working area;
  - d) Construction of fencing for litter control
  - e) Basic record keeping
  - f) Provision of maintained access road
  - g) Controlled waste picking
  - h) Post-closure site cover and vegetation

## Section 3: Implementation Challenges

Not surprisingly, projects did not always go according to plan. The teams had to contend with constraints such as fires and floods, changes in government, unrealistic expectations and ongoing financial limitations in the overseas partner. In each case, the partners tried to rise above the challenges.

### Technical capacity

Lack of technical capacity often means that municipalities don't have the means to carry out waste management plans. For example, the tsunami had left Galle with insufficient expertise and financial resources to improve garbage collection and disposal. The lack of capacity continued to be a factor during the project's implementation. Municipal officials were forced to dump garbage into the Indian Ocean for lack of landfills. The Canadian team worked with the Engineering Department to identify two temporary disposal sites while a new landfill site was being planned and developed.

## Political Roadblocks

A municipal council may be all fired up about waste management, but municipal councils—and national governments—change regularly. It's important to find champions within administrative staff that can help overcome political roadblocks that may emerge after elections.

As the Tipitapa-Victoria team shopped around its proposal for a new landfill, it discovered the national government had been working for more than three years on a plan to deal with solid waste in 30 municipalities. The government had identified three municipalities to house new landfills, but Tipitapa was not among them. The team changed tactics, inviting government representatives to tour its proposed landfill site. It also assessed one of the government's potential landfill sites, and argued it did not meet international standards. Tipitapa ultimately adopted a phased approach to support buying land and building a landfill site.

Initially, the Nindirí-Chelsea partnership got off to a slow start until a newly elected council in Nindirí invited Chelsea to develop a new work plan. A working group made up of representatives from the two cities, as well as FCM and AMUNIC, was put in place to give the project added momentum.

### TIP: Local Champions can help overcome political roadblocks

In El Salvador, specialized staff from local government contributed to the composting project's success. They monitored activities, liaised with other stakeholders, and took steps to "institutionalize" the project in the municipality to ensure sustainability. Three of the four municipalities also provided support and material to build composting bins, as well as to organize competitions and awareness-raising campaigns.

## Gender and Social Equity

FCM has a long history of promoting gender equality in its programs. In El Salvador, many teachers believed that composting was a job for boys, a belief that hindered the full participation of girls and women. Still, girls sorted and deposited waste in the appropriate containers, which was in itself a new activity for them. Outside schools, women's participation in production was higher, especially in communities where women were in charge.

## Unexpected weather

Severe weather disrupted several projects. A week before the Windsor team arrived in Olongapo, a typhoon unleashed nearly a metre of rain that further damaged the landfill. On its second mission, the team brought a bulldozer operator to help pull waste out of the river and back up the slope. A few days before the team arrived, lightning struck the methane gas in both primary and secondary landfills. The Windsor team stayed an extra two weeks to cover the exposed waste that fuelled the fire, as well as to stabilize the slope.

## Section 4: Sustainability

The projects included in the case study achieved most of their desired results. Yet the true mark of success is sustainability. Will their many achievements stand the test of time? To promote the chance of greater sustainability, the projects focused on institutional strengthening through skills transfer and public awareness and engagement. The main factors that will contribute to the sustainability of the projects are outlined below.

**Skills transfer:** the projects transferred a variety of skills—from conducting waste audits and holding Open Houses to strengthening landfill sites and making compost. To make these improvements sustainable, overseas partners strived to embed skills and lessons learned in the institutions themselves rather than in individuals. Moreover, they shared many newly acquired skills and ideas with peers in other cities.

**Goodwill:** the projects also generated intangible benefits such as greater self-confidence, goodwill between the partnering cities and greater interest among the community to get engaged in waste management, recycling or composting. While difficult to measure, these types of changes bode well for the future.

**Public-private sector partnerships:** in Guyana, the New Amsterdam project and others funded under the Guyana Municipal Governance and Management Program used a common approach. At its core, MGMP developed partnerships among the municipality, the private sector and the community. The success of this approach provided a foundation to develop more formal public-private sector partnerships.

**Policy impact:** in El Salvador, almost half of the 23 participating schools were still composting after the project ended. Elected officials and municipal staff wanted to work with schools and communities to promote a permanent municipal compost promotion and production program. Given the need for municipalities to comply with national environmental legislation, the national association of municipalities (COMURES) was looking at ways to roll out the model developed in the Usulután-La Matapédia project to other jurisdictions. Indeed, about 20 other schools in the region, impressed by the project's results, wanted to take part in a composting program.

**Media attention:** media coverage about Olongapo's achievements led to requests for study tours and participation at workshops. According to the League of Municipalities of the Philippines, the city has become a model for surrounding areas.

**Public awareness:** the Galle project has devoted much of its energy to building local capacity to engage the community. A video explains both the craft of composting and holds up current participants as role models. The Sunyani-Nanaimo team planned to use its draft solid-waste management plan to simulate public discussion. Public education activities carried out by Malaspina University College and its college partners in Sunyani will also help build community involvement and ownership to take the next step: a sustainable solid waste management system.

# HIGHLIGHTS OF PROJECTS

## PARTNERS

## GOALS

## HIGHLIGHTED RESULTS

Concepción, Jiquilisco, Puerto El Triunfo and Santa Elena, El Salvador – Regional County Municipality (MRC of La Matapédia, Quebec)

- Increased awareness among youth about their responsibility to reduce waste
- Increased composting at home due to influence of youth

- Widespread composting reduced solid waste generated by schools, commercial enterprises and families.

Municipality of Galle, Sri Lanka – Various Canadian municipalities

- Better waste management services
- Less waste disposed at dump sites
- Citizens more aware of waste management concerns

- 1,330 compost bins were delivered to residents in two wards; 87 percent were being used properly six months later.
- the city of Galle reduced solid waste by 50% in two wards through improved collection and the composting project. Public health officials attributed improved waste collection as a factor in the reduction of fatalities from mosquito-borne Dengue fever in Galle.

Municipality of New Amsterdam, Guyana (Guyana Municipal Governance and Management Program)

- Waste removed from main roadways and streets
- Reduced health risks by preventing indiscriminate dumping and burning
- Citizens more aware of need to organize solid waste for collection
- Greater ownership among residents of various wards for their environment

- Volunteers cleaned more than 47,000 feet of drains to reduce flooding.
- A successful partnership between residents, small businesses and local government was developed.

Association of Municipalities of Nicaragua (AMUNIC)

- To provide technical assistance to sixteen member municipalities on the recycling of inorganic waste and composting of organic waste.

- Tipitapa and Nindiri (see below) were among 16 municipalities to receive technical assistance on the recycling of inorganic waste and composting of organic waste through AMUNIC's Waste is Treasure program.

Municipality of Nindiri, Nicaragua–Municipality of Chelsea, Quebec, AMUNIC

- Less solid waste sent to landfill
- Increased understanding among residents of the need for taxes to collect waste
- Youth and women involved in decision-making

- A recycling program was put in place.

City of Tipitapa, Nicaragua – City of Victoria, British Columbia, AMUNIC

- A solid-waste strategic plan, and a public awareness and education program
- Composting and recycling programs in place
- Sanitary landfill operational
- Funding options to implement programs

- A strategic plan and business model to deal with solid waste were completed.
- A waste transfer station was in place and operational
- Waste management fees increased for residents and businesses
- A joint proposal was developed for collaboration between the city of Tipitapa and the neighbouring capital city of Managua

City of Olongapo, The Philippines – City of Windsor, Ontario

- Improved solid-waste collection, landfill operation and management practices
- Strengthened capacity for budget development and capital financing
- A waste collection system that includes recycling
- Compliance with the National Ecological *Solid Waste Management Act* of 2000

- Lifespan of a major landfill was increased up to 50 years
- The City was in compliance with nearly all aspects of national environmental regulations.
- A recycling program was put in place

Sunyani Municipal District Assembly (Ghana) – Regional District of Nanaimo, British Columbia

- A solid-waste management plan and greater capacity to implement it
- Increased involvement of public in managing solid waste

- A plan to improve garbage collection and disposal was drafted.

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### ***Contact Information***

For more information, contact [international@fcm.ca](mailto:international@fcm.ca).

**Federation of Canadian Municipalities  
International Centre for Municipal Development**

24 Clarence Street

Ottawa, Ontario, CANADA K1N 5P3

Tel.: (613) 241 5221

Fax: (613) 241 7117

Email: [international@fcm.ca](mailto:international@fcm.ca)

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