RESEARCH ON BARRIERS TO INSTITUTIONAL COMPOSTING AND COMMERCIAL COMPOSTING SUSTAINABLE DEVELOPMENT

Submitted by: David Turcotte and Julie Villareal
Center for Family, Work & Community (CFWC)

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Introduction

During this research project, we attempted to identify and overcome barriers and resistance to the establishment of organic waste (leaf and yard waste and food waste) collection and diversion programs within public and private institutions in the region that generate large amounts of organic wastes. As only 2.4% of food waste (EPA 1997) is recovered or recycled, there is 97.6% of food waste that could potentially be recovered and recycled. This material could be turned into a valuable compost product thereby not only diverting organics from incinerators and landfills, but also creating viable economic development opportunities as well.

The disposal of organic waste is an important issue to sustainable regional development. We decided to focus on food waste because many large institutions produce waste that is being dumped in the few remaining landfills or is being incinerated unnecessarily. Organic materials can be collected and converted through composting into a natural fertilizer. Our intent was to gather key information that would assist us in developing viable methods to divert food waste generated from major institutions in the region and funnel this waste to a source of material for emerging commercial composting enterprises.

Summary of findings

Among the large institutions in this region, we included five sectors in our in-depth interviews with directors of food services and/or managers of recycling programs. The five sectors are: 1) major supermarkets; 2) higher education institutions; 3) hospitals; 4) nursing homes; and 5) regional high schools. Some of the topics that we discussed during these interviews included the following: did they have a recycling program in existence; did they separate food waste from other waste; if they did not separate food waste from other waste, have they thought about food waste recycling; what did they feel were the potential barriers to prevention of a food waste separation and collection program; amount of waste generated per week; the number of meals served per week; potential space for storing containers for collection of food waste; hauling costs, methods, pick up points and frequency; and terms of waste removal contract (see attached questionnaire for full list of questions).

As anticipated, we found that, generally, most major institutions have implemented some sort of a recycling program and are aware of the importance of recycling to sustainable regional development, as materials are finite resources. Our survey did confirm that there is some recycling going on i.e. cans, bottles, corrugated cardboard, paper, plastics, and one supermarket is recycling meat scraps. However, as we suspected, no one is separating food waste from other waste. As we know, food waste is only one component in the recycling loop, but it is the least understood. One institution (a high school) expressed outright resistance to the strategy of separating food waste from other waste by saying that the school would “never do it.” Other high school interviewees thought that they “could do it,” but thought it best to get the children involved in the process (in one high school, the student council members take care of the paper recycling program). The higher education institutions, however, saw incentives to recycling organic materials because “it was good for the environment and would benefit everyone.” A food

service vendor at one of the higher education institutions was eager to look at the logistics and implementation of such a program and they did not even pay for waste disposal – the higher education institution shouldered those costs. Their key incentive to separating organic material for composting was due to their attitude that "it's the right thing to do – a good neighbor policy." The interviewees at the various supermarkets thought that there could potentially be a "dollar savings for waste disposal." One or two of the nursing homes personnel found the idea interesting and thought that "the dietary departments would look good" if a food waste separation program was put in place and succeeded in cutting or containing costs. The hospital interviewees said that "they are now thinking about" implementing an organics separation and collection program.

Barriers

While we did approach these interviews from the various sectors mentioned above, some barriers were common among all sectors. The many common barriers that we found were: costs (people think that a separation system will cost more); education (it will take time and money to educate staff/students); space (lack of enough storage area for extra containers); attitude (getting people to cooperate); time (extra time will be needed for the separation process itself and also the negotiating and organizing to determine the logistics of a pick-up service); sanitation problems (odors; bees, wasps, flies, rodents; and complying with Board of Health, etc.); and one interviewee commented on "lazy custodians" who did not put the lids on the containers.

However, along with the negative feedback, we also heard some positive comments as some of the people interviewed were intrigued by the idea of composting in general (and even more intrigued by vermicomposting) and the environmental and economic reasons behind food waste separation and collection programs. One or two people interviewed (from the high schools) stated that environmental education has to begin early in a person's life (in elementary school) before "they get to me in high school, attitude has set in, and it may be already too late."

Recommendations

It is most important to demonstrate that organic waste diversion and composting can be achieved within an institutional setting. An example of this is what we have done at UML with the pilot vermicomposting project in Olney Hall on the North Campus that demonstrated how organic waste collection and composting can function on a campus. Through this work, we have expanded composting opportunities and broken down barriers on campus and in the community.

In the larger scheme of things, the pilot vermicomposting site is very insignificant, but without it we could not have developed a larger outdoor operation where facilities personnel are bringing materials (leaf and yard waste and food waste) in and mixing it with the compost at the new Compost Education and Demonstration site in the Riverview parking lot on South Campus. In order for something like this to happen, opportunities and avenues must be explored to identify and develop allies within the institution. We developed relationships with the following people at UML who have proved crucial to expanding composting on campus and overcoming institutional resistance: the superintendent of grounds, the director of the physical plant, the special assistant for economic development, the director of food services on campus, and the director of environmental health and safety. Developing composting programs within any institution is about organizational change and that cannot happen without support from the key players.

Based on the results of our pilot project, we recommend that a pilot project be set up within each of the five sectors: 1) major supermarkets, 2) higher education institutions, 3) hospitals, 4) nursing homes, and 5) regional high schools. For example, in conjunction with the city of Lowell, we have recently submitted a proposal to the Massachusetts Department of

Environmental Protection (DEP) that would set up a pilot composting program within one supermarket of the Market Basket chain (total of 58 stores). We recommend also that if there are recognized consultants who have experience in introducing composting into particular institutions, that those consultants are included in the project. For this pilot supermarket project, we are planning to hire Ted Brown who has assisted Hannaford Bros. Supermarkets in developing a composting program.

We also recommend that the Massachusetts DEP expand their funding and grants programs in order to provide more incentives and help facilitate the diversion of organic waste within the five sectors that we researched. If the DEP is serious about making the Solid Waste Master plan a reality, [specifically through the source reduction strategy where waste is managed 'at the source' (i.e. by backyard composting) and never enters the waste disposal stream and the Food Waste Recycling Initiative which focuses on the increased diversion of food waste through composting,] then the DEP needs to set up funding mechanisms to support and finance pilot programs within these sectors in different regions of the state.

In addition to developing key middle management allies, there needs to be strategies in each of our suggested five sectors to develop institutional support among individuals who will have some role or interaction with organic diversion and composting i.e. maintenance workers and food service workers. For the educational institutions, it is extremely important to involve the students in this process. For example, we had students who volunteered to participate in our pilot vermicomposting project. A successful organics and waste diversion composting program must be designed from the 'bottom up' and not from the 'top down.' Therefore, what gets implemented from the 'top down' is already what the people at various levels within the institution have considered and developed. Consequently, instead of resisting this change, they will support it wholeheartedly because they have ownership of the program.

As certain institutions within our five target sectors start to implement a food waste separation and diversion program, and have proof that it works, they will tell their professional affiliates (i.e. food service vendors, maintenance workers, dietary service personnel) of their successes when they gather at professional conferences and events. This will, in turn, help break down further barriers and resistance to implementing such a program. As the institutions share this information with their fellow professionals, it will have a domino effect and others will start to implement a food waste diversion program within their organizations.

Lastly, sustainability is an important part of the mission of UML. We have accomplished a great deal on campus in the area of organic waste diversion and composting. However, we still have much work to do in this area if we are to truly be a sustainable campus when it comes to organic waste and other recycling issues. Consequently, we recommend the following to be considered: 1) creation of a campus-wide task force that will include food service personnel, faculty, students, maintenance and ground staff, administration, and other important sectors; 2) the dedication of resources and funding that can allow us to facilitate and lead the work of the task force and this process of change that we have begun; and 3) the creation of a strategic plan with the goal of recycling and reuse of all organic materials generated on campus.

Questions for directors of food service and/or managers of recycling programs at institutions:

Do you have any other recycling programs in effect?

Do you separate food waste from other waste as part of your recycling program?

If not, have you thought about food waste recycling?

What factors prevent the collection of food waste and other organic waste?

Who is responsible for handling the garbage?

Who's budget would be affected by containing costs. (who would look good if this succeeds?)

How much total waste is generated per week? (Tons, cubic yards or containers)

What type of containers do you presently use to collect and store food and other trash. awaiting disposal. Are the disposal containers always full when they are hauled away?

Do you have an estimate of food waste volume or tonnage weekly/daily?

For food service generators: How many meals are served weekly?

What kind of hauling costs does your organization have?

Who is your hauler?

What equipment do they use? (containers, collection vehicles, other)

Do you pay for disposal weight plus the container rental and frequency of pickup?

What are the terms of the waste removal contract?

What kind of space do you have for storage containers for the collection of food waste?

What do you presently do with your cardboard? This may include food soiled cardboard, waxed boxes)

Would you be interested in having clean but non-recyclable cardboard collected with food waste? Wooden pallets?

Supermarkets & institutions:
Do you recycle food boxes? Wood/wire produce boxes

(Institutions)… Do you have other organics (ie leaves, brush, and grass) generated on the grounds)?

Description, location, accessibility of collection point to point(s) of generation

Is there a loading dock where food waste could be collected?
Is there any refrigerated storage capacity for clean separated food wastes to be stored in wheeled, clean barrels with gasketed lids for several days at a time?

What is the square footage? (for supermarket, restaurant, cafeteria,)

Where are your pick-up points and how many times per week is collection?

Does collection frequency vary seasonally?

Do you presently or in the summer have problems with sanitary storage of trash containing food waste on site (odors, liquid leachate, flies etc.)?

What is the key factor(s) that would discourage you from changing from the present system to a separated collection of food organics?

What would be the key incentive/s for your institution to separate organic material that could be used for composting?

Do you know anyone who would be interested in talking with us (at this facility or elsewhere?)

Do you know anyone else who is or may be composting or feeding pigs with food waste in the area?