Success Story

Turning Garbage into Gold

"Composting can work in the marketplace and provide ongoing environmental and economic benefits."

John Majercak
Director of Waste Management Programs
Center for Ecological Technology

Organic waste comprises a significant portion of the U.S. municipal solid waste (MSW) stream. EPA estimates that the nation's MSW contained 85.7 million tons of paper and paperboard in 1999, 25.2 million tons of food discards, 27.7 million tons of yard trimmings, and 12.3 million tons of wood—adding up to 66 percent of the total waste stream. Similarly, compostable waste in Massachusetts accounts for as much as 70 percent of the state's total MSW by weight.

Composting Organic Waste in Massachusetts

The Center for Ecological Technology (CET), a nonprofit organization that promotes sustainable technologies in New England, successfully created an innovative market-based infrastructure for diverting commercial and agricultural organic waste from disposal in landfills. CET's on-farm composting program turns the waste into organic material suitable for sale as a market product or for use on the farm.

A Market-Based Approach

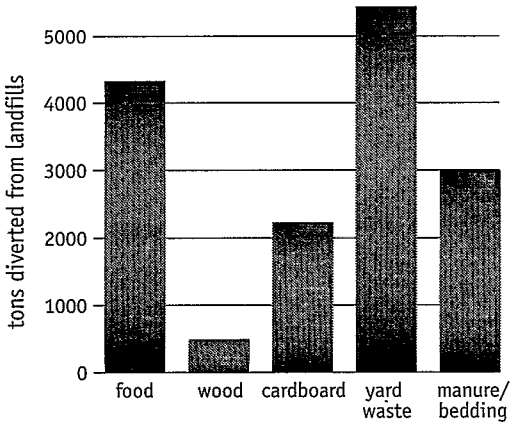
Massachusetts has innovative state policies on composting, an active agricultural sector, and existing composting activities. CET, aware of these advantages, seized the opportunity to turn composting into a regular "way of doing business." With funding from the U.S. Department of Agriculture, the Massachusetts Department of Environmental Protection, and foundations, CET launched an extensive outreach and technical assistance program in 1996.

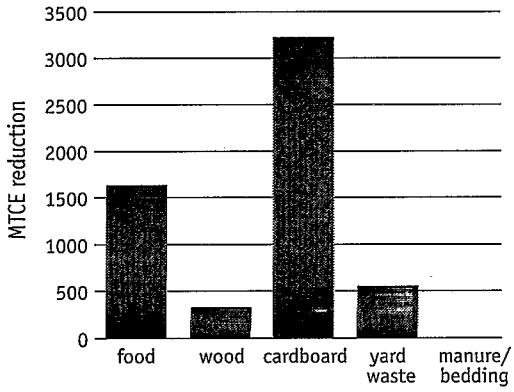
CET's on-farm composting project targeted farmers, waste haulers, and commercial waste generators. Within three years, CET had enlisted 7 farmers, 6 commercial haulers, and 45 commercial waste generators at more than 70 locations such as supermarkets, restaurants, schools, and large wholesale food distributors. The haulers transport the waste to the farms where it is composted, and the finished product is then marketed to customers such as landscapers and home gardeners. The program is continuing and expanding through industry-led efforts.

Benefits

By reusing the organic wastes rather than disposing of them, CET achieved greenhouse gas reductions of approximately 5,700 metric tons of carbon equivalent (MTCE) from the program's inception in 1996 to 2000—an amount comparable to the amount of carbon that would be sequestered annually by 6,333 acres of five-year-old trees.

Results at a Glance: 1996-2000





In addition to reductions in greenhouse gases, diverting organic waste from landfills can help reduce leachate production and free up limited landfill space.

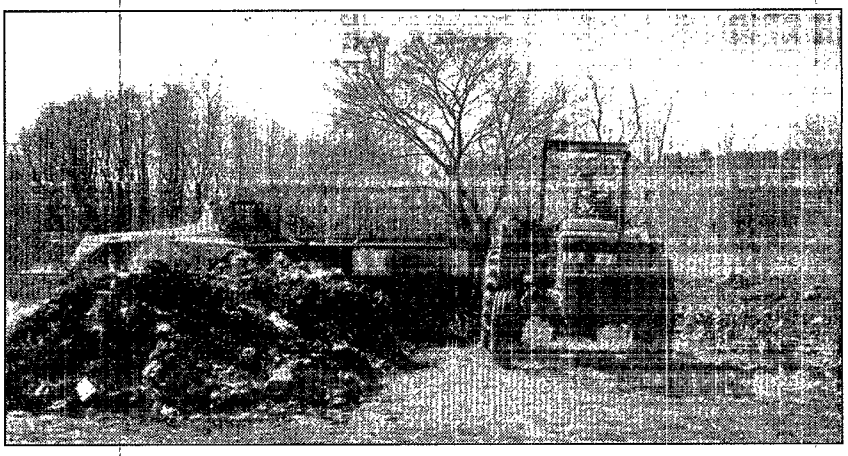
The project has economic benefits as well. Communities and commercial waste generators benefit from the lower tipping costs charged by the farmers versus landfills. Farmers receive income by accepting the commercial waste and marketing the finished compost to the public. Haulers, seeking local disposal options, and communities, seeking to prolong landfill life, benefit from the availability of farm composting facilities.

The program also helps promote sustainable agriculture, as farmers can better manage their own wastes and substitute the compost for petroleum-based fertilizers.

Challenges

CET overcame a number of obstacles. At the outset, farmers needed assurance that enough waste would be available to make the program cost-effective, and waste generators wanted to be sure that farms would accept the waste. CET met these barriers through extensive outreach and technical assistance to ensure a critical mass of participants to reduce the risks and achieve needed economies of scale.

Quality control to ensure an end product suitable for sale presented another obstacle. CET employed technical experts to train participants in techniques to ensure that the waste loads are free from contamination and are composted correctly.



Farmers accept organic waste such as food waste, corrugated cardboard, paper, and yard trimmings and turn it into a marketable finished product.

CET recognized the need to make on-farm composting cost-effective. High tipping fees at New England landfills ($65 to $85/ton) enable farmers to charge tipping fees for food scraps and other compostable materials ($25 to $35/ton) that are sufficient to help make their operations profitable.

They supplement the tipping fees through retail sales of $30 per yard of compost (wholesale is only $8/yard). The lower the tipping fee, the higher the price the composter needs to secure for the finished product. When replicating the program in regions where tipping fees are lower, the retail market is even more critical.

Replicating the Project

Communities interested in replicating the CET model should begin by making a shift from thinking of composting as a disposal option to viewing it as manufacturing a product and the composter as capturing the inherent value left in a material. Line up waste generators, haulers, and composters so that everyone is ready to initiate the program at the same time. Ensure that the project has enough sites to reduce the risk that the effort would fall apart if one site shuts down. Be ready to provide extensive follow-up technical assistance.

In line with CET's goal of modifying practices that have adverse impacts on the natural environment, the organization's On-Farm Composting project proves that innovative waste management practices can reduce emissions of destructive greenhouse gases.

Additional Information

"Building a Market-Based System of Farm Composting and Commercial Food Waste in Western Massachusetts — Final Report," available on the CET Web site at www.cetonline.org.

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EPA's Climate and Waste Program increases awareness of climate change and its link to waste management in order to (1) make greenhouse gas emissions a factor in waste management decisions and (2) employ waste management as a mitigation action for reducing greenhouse gas emissions. For additional information on EPA's Climate and Waste Program, see www.epa.gov/mswclimate.

Solid Waste and Emergency Response (5306W)

EPA 530-F-02-021
July 2002
www.epa.gov

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