Cost-Benefit Analysis of Recycling in the United States: Is Recycling Worth It?

Although recycling programs in the United States have become a key component in waste management, recycling programs are in fact one the most costly methods of waste disposal. According to author Harvey Black of the *Environmental Health Perspectives Journal*, in San Jose, California “it costs $28 per ton to landfill waste compared with $147 a ton to recycle” (Black 1006). In Atlantic County, New Jersey, selling recyclable goods brings in $2.45 million. However, the cost of collecting and sorting these recycled materials plus interest payments on the recycling facility costs the county over $3 million (Black 1006). With the time, money, and energy spent collecting and processing recycled goods, the price of recycling is much higher than discarding waste into landfills or incinerators. Despite the high costs of recycling, proponents of recycling argue that the environmental and health benefits of recycling outweigh the costs. Recycling advocates believe that recycling is more than just an issue of economics and is essential to caring for human health and environmental sustainability. Nevertheless, recycling facilities not only cost a great deal of money, but they also damage the environment by generating large amounts of waste and endanger human health by emitting numerous toxic pollutants. Instead of spending a large sum of money on recycling programs, we should put money towards higher priority programs such as healthcare, education, and cost-effective environmental initiatives. Given that the environmental and health benefits of recycling do not outweigh the high costs, the United States must cut down its number of recycling programs. In order to offset several of the environmental benefits of recycling, waste reduction techniques such as reducing and reusing must become a commonplace component of this country’s waste management.
In the midst of dwindling and fixed recycling rates, a number of these setbacks are due to the high costs of recycling programs. According to the Environmental Protection Agency (EPA), the United States has already begun to witness a decrease in curbside recycling programs. Today, approximately 8,660 curbside recycling programs exist nationwide, down from 8,875 in 2002 (“Municipal Solid Waste”). Also, recycling rates of municipal solid waste appear to have reached an apex with recycling amounts leveling off from 2005 to 2008 (“Municipal Solid Waste”). In general, recycling is a costly method of waste management as it forces recycling centers to add specialized trucks and additional employees to collect, transport, and separate recyclable materials. In New York City, for every ton of recycled goods that a truck delivers to a recycling facility, the city spends $200 more than it would spend to dispose of that waste into a landfill (Tierney 2). Recycling programs also spend a great deal of resources on continual public relation campaigns explaining to the public which products are recyclable and which are not (Tierney 5). An extra cost that has hindered recent recycling efforts is the cost of purchasing and providing a variety of recycling containers to residences. In addition, recycling costs are generally more expensive than the manufacturing costs of producing virgin materials. Materials such as plastics, which represent up to 26% by volume of the municipal solid waste recycled in the United States, are more expensive and time consuming to recycle than to produce initially. Thus, it is cost effective to manufacture virgin plastics rather than recycled plastics, which must undergo collection, transportation, and sorting costs (Breslin et al. 2).

Not only are recycling programs cost inefficient, but they are also a source of numerous negative environmental effects. Given that the most popular method of recycling in the United States is curbside recycling, a large number of recycling trucks are constantly on the road. These additional trucks on the road offset the environmental benefits of recycling by “outweigh[ing]
the pollution saved by recycling” (Cooper 271). A study of environmental emissions associated with curbside collection discovered significant amounts of carbon dioxide, carbon monoxide, sulfur dioxide, and other gasses polluting the atmosphere due to the increased number of trucks on the road. Other environmental and social costs found during the study included increased road congestion, litter, and noise pollution (Powell 100). What is even more surprising is the amount of toxic waste recycling facilities produce. The EPA has reported that “recycling 100 tons of old newsprint generates 40 tons of toxic waste” and 13 of the 50 worst Superfund Sites (hazardous waste sites) are currently or were at one point recycling facilities (Taylor 281). These facilities contain hazardous wastes due to the number of toxic substances and additives utilized to recycle materials. For example, recycling plastics creates a waste stream that includes contaminated wastewater and air emissions. Also, many toxic additives are used in processing and manufacturing plastics such as colorants, flame retardants, lubricants, and ultraviolet stabilizers (Breslin et al. 2). Recycling facilities that do not properly manage these chemicals can not only cause health problems for humans, but chemicals that get mixed with rainwater can also damage nearby biomes and percolate into groundwater. In the article “Reused paper can be polluted,” Janet Raloff, explains that some bathroom tissue made from recycled paper contain toxic substances that can harm fish and other wildlife when flushed down the toilet and disposed into water bodies (Raloff 334).

On the other hand, studies of landfills, currently the most popular method of waste disposal in the United States, have proven to be environmentally safe. According to the EPA, municipal solid waste landfills cause only one additional cancer risk every 13 years (Taylor 281). Today, modern landfills must also be lined with clay and plastic, equipped with drainage and gas-collection systems, covered daily with soil and monitored every day for underground leaks.
With heightened safety standards for landfills, they have become a more reliable method of waste management in the United States (Tierney 2). In addition, although landfills are a major source for methane emissions, the United States EPA Landfill Methane Outreach Program has helped to reduce individual landfill methane emissions by 60 to 90% through encouraging the recovery and use of landfill gas as an energy resource. Today, a large percentage of landfills throughout the country obtain methane gas through a vacuum system and utilize the gas to generate electricity, to replace fossil fuels, or to fuel alternative vehicles (EPA).

While recycling and disposing of waste into landfills continue to be the most utilized methods of waste management in the United States, source reduction and reusing materials have proven to be more sustainable and economical. Over the past five decades the amount of waste each person has created has almost doubled from 2.7 to 4.5 pounds per day. The EPA’s Office of Solid Waste estimates that Americans produce 4.5 pounds of waste per day, which adds up to more than 1,600 pounds a year (EPA). These amounts are twice the waste per capita generated in western European nations or Japan (Kraft 40). As a consumer society, the most cost-effective way for the United States to stop this trend is through source reduction. Source reduction involves reducing the amount of material needed to complete a specific task, reusing a product in its original form, or using repairable, refillable, and durable products which last for long periods of time (EPA). Source reduction is an exceptionally beneficial component of waste management because it can help reduce waste disposal and decrease expenses, as it avoids the costs of maintaining recycling facilities or landfills. Another major benefit of source reduction involves cutting back on natural resources. Ultimately, reusing items or using fewer materials in production both preserves resources and reduces waste significantly. Finally, reducing waste
also results in economic savings for schools, communities, businesses, and individual consumers (EPA).

One of the simplest and cheapest methods for sustainable waste management can come from source reduction. In the United States, more than 30 billion plastic water bottles are thrown in the trash each year (Baskind). Instead of contributing to the vast number of plastic water bottles that end up in landfills, people can purchase reusable water bottles. This will not only save them money, but it will also contribute to source reduction. Another source reduction option is backyard composting and grasscycling. Since yard trimmings account for a large part of the waste stream in the United States, leaving grass clippings on the lawn rather than collecting them can reduce a home’s waste yield. Decomposition of yard trimmings and throwing food wastes in a bin or open pile can also be a major method of reduction. Finally, the United States’ waste stream contains a great deal of office paper. The average office worker uses 10,000 sheets of copy paper each year. That is 4 million tons of copy paper used annually (EPA). However, office paper use can be reduced through a wide variety of methods, such as printing and copying double-sided, printing drafts on the blank sides of used paper, using exclusively electronic files, circulating documents rather than distributing individual copies, and communicating through email (EPA).

Reducing first, reusing second, and recycling third should be the key focus of every business, school, home, and waste management program throughout the United States. Source reduction is a tremendously beneficial method of waste management because it prevents the production of waste. Environmentally, source reduction drastically lowers the amount of materials and energy used for manufacturing and distributing products. Economically, source reduction cuts back on the amount of waste that is thrown away, thus lowering waste disposal
costs. Reusing is another important waste management technique because it both prevents items from entering the waste system and creates less of a demand for manufacturing products. Countless items can be reused, including water bottles, bags, paper, clothes, and gift wrap. Finally, recycling is an essential waste management technique but should be utilized only after reducing and reusing. While the benefits of recycling are superior to landfills and incinerators, the benefits do not outweigh the economic, human health, and environmental costs that originate from recycling facilities. Furthermore, money spent on recycling programs takes away from money spent on more efficient environmental initiatives or higher priority programs such as education or healthcare. Joanne Dittersdorf, director for the Environmental Action Coalition, a nonprofit group based in New York, criticized the city of New York for spending a great deal of money on recycling programs while many of the city schools failed to have a sufficient number of computers and art classes (Tierney 9).

In order for source reduction to become a commonplace component of people’s everyday lives in the United States, people must first recognize the economic and environmental downsides of recycling facilities, incinerators, and landfills. Next, people must partake in source reduction and reuse. Businesses must also continue to develop innovative ways to conserve resources. For example, bottled water companies have redesigned their bottles to reduce the amount of plastic used. Ultimately, to increase source reduction throughout the country people must not only partake in source reduction, but they also must advocate and support an expansion and improvement of source reduction as a part of this country’s waste management program in order to protect our most important resource…the state of the earth.
Bibliography


