

Reduce, Reuse, Recycle

An interview with Laurie Batchelder Adams and Jaime Lozano



AP/WWP Photo by Rich Pedroncelli

Bales of used plastic bottles are destined for recycling and conversion into such diverse products as chairs, kayaks, jewelry, and clothing.

The United States is now recycling about 30 percent of its solid waste, a percentage that includes source reduction—using less material in the first place—and composting—using degraded organic material as a fertilizer and soil conditioner. The adoption of recycling programs and public support for them has been steadily increasing for the past couple of decades. The U.S. Environmental Protection Agency encourages and promotes recycling and composting of garbage, but no federal law requires local communities, counties, cities, and towns to take this action. Rather, local and state governments, with support of their citizens, are adopting programs on their own.

Global Issues managing editor Charlene Porter discussed the trends in recycling and waste management with two experts in this field. Laurie Batchelder Adams of Denver, Colorado, is a consultant who advises clients on managing recycling programs. She is also an official with the Solid Waste Association of North America, an industry group. Jaime Lozano is an environmental specialist in the Bureau of Sanitation, city of Los Angeles.

Question: Why are local governments finding that diversion of waste from landfills is a good decision?

Batchelder Adams: It started back in 1987 when the infamous garbage barge, the Mobro, left a town in New York with more than 3,000 tons of garbage on board. The ship wandered the Atlantic coast for months, unable to find a community willing to take this huge amount of waste. This traveling garbage barge received a lot of media attention, and the message that incident sent to the American public was, “We are out of landfills in this country.” A lot of recycling advocates jumped on that bandwagon, but a garbage crisis was only a partial truth as communities were not then, and are not now, out of space for developing and maintaining landfills.

Recycling became very popular after that episode. Everybody was doing it. A wave of publicity swept the country. Recycling was considered one of the sexy new ways to spend public works dollars.

A lot of easy recycling happened at first. A lot of easy materials could be captured and diverted into recycling. The public was very excited to be involved.

Lozano: That barge, the Mobro, represented the moment of reasoning. All of a sudden people started looking at that and saying, “Oh, my gosh, could that be us in the future?” Although there is no federal mandate for recycling or waste diversion programs at the state level, the legislatures started analyzing how their waste programs were designed and whether they made any sense.

The state of California issued a mandate to different jurisdictions at the city and county levels. Assembly Bill (A.B.) 939 mandated all cities and counties to reduce their waste by 25 percent by the year 1995 and 50 percent in the year 2000. This goal was based on studies conducted in 1990 to establish a base year, or a starting point for future waste reduction.

The law said that cities and counties that failed to implement these programs could be fined up to \$10,000 a day retroactively. A lot of people, especially the environmental community, were very supportive of that bill. It seemed like everybody decided that it was important to become part of the solution.

Q: The current rates of recycling for different materials certainly vary considerably. What I'm seeing from the Environmental Protection Agency figures is that paper is at 42 percent, aluminum cans at 55 percent, and 60 percent for steel. What affects the different recycling rates on different materials?

Batchelder Adams: Different subcategories exist within certain types of materials, too. Cardboard is a subcategory in paper. The recycling rate for cardboard and some of the higher-value paper materials is in the 70 percent range. The basic curbside, residential recycling program collects about 70 to 75 percent paper, and the rest of the material is containers. Paper recycling is successful because it is collected in relatively large quantities. There are also paper mills operating in this country and abroad such that we have an abundance of end-users who want the paper that we're generating in recycling programs. The market is strong. You've got plenty of it, you've got plenty of people who want it, and the price is high enough to keep it relatively lucrative within the business. Those factors make it win-win.

Aluminum has always been strong in its marketability, but we're seeing aluminum fall now. Less packaging is made of aluminum these days. Other materials are taking over that share of the packaging market, so recycling programs are just not generating as much. Plus, an awful lot of this material is being used away from our homes so it is not getting into our curbside recycling programs.

Lozano: This is so important. You have to have markets for recycled materials in order to pay for the process of collection, sorting, baling, and storing all the materials you collect. So if you don't have markets, you're in a real difficult situation.

One of the things we've been talking about is trying to inject funding into the business community to get startup organizations that will actually take recycled material and make new products out of it. As Laurie said, there are plenty of paper mills that will buy recycled material. That means communities are almost guaranteed that they'll find a market for recycled paper. If you collect it, as long as it's not contaminated, you can take it to market.

But what about the different plastics? Can a community find a buyer for all the different types of plastics being used in the packaging industry? If you were to collect all of them, can you sell them or are you going to be stuck with them?

So this is one of the things that a community needs to start looking at. You need to have an end-use, and that's why it's so important. If you're not buying recycled, you're

not recycling. You have to close the loop.

Q: Are manufacturers and businesses seeing this availability of material and coming up with new ideas about what to do with it?



AP/WWP Photo by Jeff Chiu

A classifier sorts various paper materials at the San Francisco, California, Recycling and Disposal Center. The city recycles two-thirds of its trash.

Lozano: Absolutely. You're seeing different industries springing up that want to take different material and try to make a new product. What's fantastic is you're generating employment in these enterprises. You employ the private waste-haulers or collectors in the city. You employ people who sort, wash, and dry the materials. Then more people are employed at the company that's actually going to take that material and make new products. They make new bottles or plastic lumber. They make yarn for use in pants or jackets, things like that.

Q: Ms. Adams, what are some of the most innovative, exciting uses that you've seen developed in recent years for recycled materials?

Batchelder Adams: The ones Jaime mentioned are great. Products for glass are ones that we are seeing evolve slowly but they are desperately needed. Community recycling programs are really struggling with glass in this country. It becomes a real problem in local programs because it's so heavy and costs a lot to manage, relative to other materials. Some communities are starting to eliminate it from their programs.

For the rural communities where I do a lot of work, and for countries with emerging programs, market development is the greatest emphasis. Areas with lower population densities struggle with two major things. One is low tonnage in collections, so that their per-unit costs of collection are high. The second thing is, these commu-

nities are somewhat geographically isolated. They are a distance from any market and the transportation costs to get that material to a buyer will eat into profits that they might have. Because of these problems, it's critical for these communities to be able to develop local markets, which will utilize at least low-value recycled materials, things such as low-grade papers or glass, as I mentioned. Higher-value materials—cardboard, newspaper, office paper, steel—are likely to bring you a price strong enough that you'll be able to balance high transportation costs and still make a profit. A thriving international market exists in recycled materials. Several developing nations are buying U.S. recyclables, but especially China. The Chinese are buying up secondary material out of this country, and U.S. end markets are being hurt by the competition that trend has created in prices. We are losing end users, such as paper mills, in this country. They are closing because they can't compete with the exports to China.

If processors of secondary materials in the United States close down, we could come to the day when we have insufficient domestic capacity to make use of recycled material.

Q: Local governments have never been involved very much with management of raw materials, collection of raw materials, and these activities. Has that created a huge learning curve for local governments, figuring out how to set these programs up, how to manage something as industrially oriented as recycling is?

Lozano: I think it has. I came from the private sector myself and learned in business how cost avoidance was a major part of a business's success story. In 1995, I was recruited by the city of Carson, California, to develop their recycling program just when A.B. 939 was taking effect. I learned from that experience that people working in these waste reduction programs need to get a grip on how a business works and start understanding how you can get businesses in your community to be part of the solution.

Batchelder Adams: At the local government level, staffs don't often have the luxury of being market savvy. They don't have the time to understand market dynamics. They often privatize or contract for the processing and marketing of the recyclable material they collect. They don't really worry about the whole enterprise, except for how much revenue comes in from the sale of the material. Local governments would benefit from having a broader perspective on waste generation and the entire cycle.

Local governments also really struggle with this concept of "think globally, act locally." Think what that means. It means that the local government pays the money, the

resources, the time, and the heartache for the program to benefit the rest of us. That's one of the hard sells for any recycling manager to make to their city council or county commission: They're paying for the good of the world. While it's the right thing to do, resources are limited. That's a real dichotomy.



AP/WWP Photo by Douglas Engle
A worker stacks pressed cans at an aluminum recycling center in Rio de Janeiro, Brazil.

I have a list of three things that I recommend for any community starting a recycling program. First, you need public support. Get your citizens onboard as best you can. But realize the support is going to peak and valley and you need to be prepared for that. Second, your program will always be changing, whether it's your level of public support, markets for materials, or the technology you use. You must be prepared for constant change.

Third, whatever program you have and however much you rely on the private sector, governments need to take control of the services provided by implementing basic policies and pricing strategies that will maintain public participation in the ways you need. I'm talking about policies such as frequency of collection, covered loads, mandates for refuse collectors to also offer recycling services, and directives for setting refuse collection charges that encourage recycling if that is a goal of your program.

Q: Mr. Lozano, you've traveled in Central and South America, talking with local officials about the importance of recycling, how to set up recycling programs. Will Ms. Batchelder Adams' advice serve as good starting points for communities you've seen abroad?

Lozano: That is very excellent advice—most importantly, control and ownership. Officials setting up these programs need to work with the community to educate them that it is not just government's responsibility to minimize waste and operate the landfills. Businesses and residents need to recognize their own contributions to the waste problems in

order for them to become part of the solution.

In the several countries I visited, I saw a hunger from the population to become part of the solution. They really want to participate but they want to learn more. There has to be a lot of education. The state of California has a great, program called Closing the Loop. It's a program for the integrated waste program from kindergarten to 12th grade, and it's available in Spanish. I believe El Salvador has formally accepted it and implemented it as part of their national environmental education, at least three states in Argentina are adopting it, and Chile is looking to do that. You need to get educators involved, you need to get the local and national governments involved, and you need to get the businesses involved. Finally, you need to find ways to generate money to make things happen.

Q: Another element in this whole equation is source reduction—reducing the amount of solid waste that is generated in your community in the first place. How successful are local governments in addressing that component of this whole cycle?

Batchelder Adams: I'd have to say low to moderate. It's a hard thing to track and measure. It is also extremely hard to sell to your public because it requires people to change lifestyles, which is about the hardest thing to change.

We're seeing more improvement with green purchasing policies. Local governments are buying recyclable products to fulfill their own supply needs and are helping to stimulate the market.

Lozano: Source reduction is a very difficult goal to achieve but it's very important. In our work now, the slogan is reduce, then reuse, then recycle. It's so important that we start doing more of those reduction activities. Reuse paper, for instance. Why is it most organizations only print on one side of the paper? That's 50 percent being thrown away.

Companies can do simple things to achieve these goals. We did an audit with the Nissan Corporation of North America in Carson at a time when they were getting ready to purchase new copying machines. We made a suggestion that they set up the copiers so that the automatic default would be for double-sided copies versus single-sided. That

means if you want a single-sided copy, you have to be proactive, change the default, make an effort, and press the button. All of a sudden, Nissan saw that monthly expenses of \$50,000 dollars for paper went down to \$25,000. What they were disposing of—whether as a recyclable or as trash—went down by half also.

Q: What are the difficulties that communities have had weighing the costs and benefits of these programs?

Batchelder Adams: Local governments really need to truly and comprehensively track all the costs involved in the recycling program, including equipment life cycle and avoided transportation and disposal costs. In time, we are all going to have the ability to identify and track costs beyond the direct recycle/landfill system. For example, researchers and some leading local governments in the United States are evaluating recycling versus disposal in terms of the impacts on the broader environment. This gets to factors such as pollution prevention and public health problems that might be associated with air pollution and greenhouse gases.

Lozano: And the cost to health can be enormous. In my travels, I've seen people living on landfills. That is a very, very terrible health hazard. I think there's the potential for diseases that we haven't yet come to know that could be transmitted from the landfill to those people and then be transmitted back into the general community. It's a part of a circle that we need to break.

Batchelder Adams: If we look at the full and true costs of disposing of this nation's waste, it is by orders of magnitude more expensive to this country than recycling. Being able to evaluate the complete economic and environmental sustainability of recycling in this manner is a new capability that we will have in the next few months and years. ■

The opinions expressed in this interview do not necessarily reflect the views or policies of the U.S. government.