



Ecological and Healthy City

When Dr. José Bolívar Castillo was elected mayor of Loja, Ecuador, in 1996, land use policies permitted this impoverished Andean city of 160,000 to sprawl uncontrollably, including in precarious parts of the city. Deforestation resulted in flooded rivers, while lead-fueled buses and cars polluted the air. Garbage filled the city's streets, polluted rivers, overflowed collection bins, and ultimately filled a site across the street from the world-renowned Podocarpus National Park.¹

For Mayor Castillo, "The inspiration for an ecological city came from within Loja. I remember when I was a child, before the city became so polluted." During his eight years as mayor, Loja's municipality turned the city from an "average" Ecuadorian city, into a *ciudad ecológica y saludable*—an ecological and healthy city—by implementing policies that underscore the correlation between a healthy ecosystem, a healthy human population, and a healthy economy.²

Comprehensive land use planning and environmental policies that were carried out at the scale of the county limited degradation of the land, improved public health, and facilitated the municipality's management of necessary infrastructure—all while saving material and construction costs for important municipal projects, such as adding water lines to the poorest neighborhoods. Scientist Dr. Ermel Salinas explained that the water supply was drinkable "because our rivers have been cleaned up, protected and are treated to United States Standard Method requirements," preventing many illnesses caused by drinking dirty water.³

A well-enforced ordinance required real estate developers to leave 20 percent of their land undeveloped for public open space, resulting in many popular parks. Architect Jorge Muños Alvarado, Loja's Director of

City Planning, explained that the greenery "acts as a sponge by retaining stormwater, which prevents the rivers from flooding," while Dr. Humberto Tapia, Director of Public Health, noted that exercising in parks reduces preventable illnesses such as obesity, diabetes, and heart disease, which in turn can lower the death rate from these ailments.⁴

In addition, Wilson Jaramillo, a municipal transportation planner, noted that air quality improved following what he called "a more sustainable transportation policy" by implementing a new rule requiring all cars to run on unleaded gas with catalytic converters and by running cleaner public buses throughout Loja.⁵

To handle the waste problem, the city's recycling program required residents to separate organic from inorganic trash. Residents have been very receptive to this program: 95 percent of them separate their garbage perfectly every day. Meanwhile, the municipality collected all of the city's trash at least once daily and swept streets several times a day, leaving them eerily clean.⁶

The benefits of this program were widespread. Ecologically, the city recycled all organic waste and over 50 percent of the inorganic waste generated in the city, dumping non-recyclables and hazardous waste in a sanitary landfill. Economically, the city earned about \$50,000 a year (7 percent of the program's \$685,000 operating cost) from selling recycled materials, and it created more than 50 related full-time jobs citywide. And in terms of health, the cleanliness of the streets lowered the presence of rodents and vermin.⁷

Understanding why the recycling program works so well can help others bring about environmental change in their own cities. Most obviously, Lojanos joined in because the municipality fined any household or busi-



Trash containers at the San Sebastián market



before (left) and after the improved collection and recycling program was implemented (right)

ness that did not comply with a local regulation that required participation. Furthermore, the municipality shut off a building's water supply if its owner did not pay the fine. The system's organization also assured a high rate of participation: each collection truck met its schedule, plus or minus 10 minutes, seven days a week—and inspectors on the trucks recorded and rigorously enforced infractions. Fernando Montesinos, Director of Sanitation, insisted that the program was “an investment of Lojanos in our own city.”⁸

Moreover, the municipality created incentives for participation, such as providing pipes for water lines and materials for public parks, which were constructed through communal work projects called *mingas*. Lolita Samaniego, president of La Floresta, a women's housing organization, explained that a *minga* is an obligatory event where “everyone works for everyone's benefit...women provide food and men distribute the work amongst themselves, working from sunup to sundown.” These gestures strengthened residents' perception of a direct relationship between waste management, natural resources, and civic improvement. Local leaders asserted that civic awareness and cultural solidarity were values that stemmed from Loja's indigenous past.⁹

Furthermore, hiring a local workforce gave city workers a tremendous sense of ownership and pride. One evening, Marlon Cueva and other Lojano engineers spoke of the significance of having designed Loja's recycling facilities: “Designing

something I had never seen before—that's what it means to live....When I achieved my goal it satisfied me and validated me as a person and professional, raising my confidence and increasing my expectations of myself.”¹⁰

In addition, explained Fernando Montesinos, it helped that no single “recycling tax” existed. Rather, 20 percent of each household's water bill (about 20¢ per month) funded a portion of the recycling program, while smaller percentages of taxes were taken from the highway tax and other public funds. Thus recycling became not a project unto itself, but a small part of a greater network of public works and development projects.¹¹

The city has won three international prizes for its efforts: the International Awards for Livable Communities' Nations in Blooms first prize for community involvement (endorsed by the United Nations Environment Programme), its bronze prize for a global ecological city (behind the Swedish cities Norrköping and Malmö), and Promoter of Natural Environment's City of the Americas first prize for public recreation and physical activity. If a poor city that has many needs beyond the health of its environment can learn to embrace the ecological city, then such a concept—with appropriate cultural adjustments—surely can succeed elsewhere.¹²

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