

## **Curitiba: A green miracle in a developing country**

By Daniela Ochoa Gonzalez

Developed and developing nations are being challenged more than ever to provide a good quality of life for their inhabitants while coping with population growth. Curitiba, the most environmentally friendly city in Brazil, is flourishing by meeting these needs. Through embracing sustainable development, it has become an important reference among these communities in terms of planning, public policies, and successful strategy implementation towards environmental sustainability. With 1.7 million residents, Curitiba has grown through calm, harmonic urban solutions that respect individuals and cultures and preserve the environment while sustaining its cosmopolitan cultural identity. This setting makes Curitiba an example for the rest of the world.

### **How Curitiba got there**

Most of the policies that transformed Curitiba into a model of environmental sustainability were initiated by Jaime Lerner, Mayor of Curitiba during Brazil's military regime in the late 1980s.<sup>1</sup> He and a working team designed and implemented the urban master plan, which included integrated initiatives of green areas, waste recycling, and transportation projects. Today, the public transport system accommodates 2 million passengers daily and is the main source of transportation for 54 percent of the city.

Most Curitiba citizens embrace the city's commitment to environmental responsibility as part of their collective subconscious. The exhaustive marketing and educational campaigns that were carried out during the military regime have been maintained and reinforced during the democratic mandates that have followed. Citizens have incorporated environmental awareness as part of their lifestyle.

Curitiba started its green transformation with the development of an integrated plan for basic sanitation and environmental preservation. When in the early 1970s the United Nations declared that every urban inhabitant should have a minimum of twelve square meters of green area, Curitiba had only a half-square meter per inhabitant. The city implemented various strategic changes, and today the green area per inhabitant is fifty-one square meters. Through land expropriation, the city government offered new sport and leisure spaces while preventing illegal land occupation by those without explicit right to the property. They also created ponds and lakes by containing rainwater at a cost fifty times less than a typical channel network.

These green areas are spread among thirty forests and parks that have become highly valued meeting points for the population. Several of them are allusive to important local history, honoring the arrival of immigrants and the native habitants, the Tingui Indians. Because immigration contributes to the multicultural accent and development of the region, Curitiba's green spaces represent its culture with free public libraries of various languages and open spaces that host annual cultural and gastronomic celebrations.

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<sup>1</sup> The authoritarian government, which reigned from 1964 to 1985, sustained Lerner's foresight, but the successes of his administration ultimately led to his democratic reelection.

Additional projects improved the strategic use of the extensive green areas in an inclusive way. UNILIVRE, the free university for the environment, is the first of its kind in the Americas. UNILIVRE holds workshops for environmental awareness and education for people of all ages, backgrounds and socioeconomic conditions.

### **Keeping it clean through sustainable waste management**

A few of Curitiba's most notable successes are its solid waste management and recycling programs. The city established an industrial landfill through a public-private partnership near the assigned industrial development area. At the landfill site, they neutralize toxic waste (such as batteries) and reuse other materials for cement production. Additionally, they collect and process cooking oil to be reused for soaps and fuel. Finally, they introduced a particular process for clinical and hospital waste to be sterilized before being sent to the organic landfills.

Curitiba was the first city in the country to practice selective garbage collection by separating organic from inorganic waste. The municipal service collects an average of 1200 tons of organic waste and thirty tons of recyclable materials daily, and independent collectors gather an additional forty-five tons of recyclables daily. Through "Cambio Verde" (green exchange program) another thirteen-and-a-half tons are exchanged. This program exchanges four kilograms of recyclable material for one kilogram of food at over eighty-eight points in the city twice a week.

Recyclables are a profitable source of income not just for the lowest quintile of the local society, but also for the other stakeholders in the recycling system. The majority of the collected materials are donated to the Pro-Citizenship Institute (Instituto Pro Cidadania de Curitiba, or IPCC), a local NGO. IPCC separates, compacts, and sells the material to surrounding recycling factories, giving a source of income to over sixty employees.

Another group that benefits from municipal assistance with recyclable material are the "ecociudadanas" cooperatives. The city provides groups of twenty to twenty-five citizens, mostly women, with a physical space to keep, select, compress and sell the recyclable materials they collect. This system allows them able to double and sometimes triple their regular income while also obtaining healthcare, childcare, and education access for them and their children. As of July 2008 nine ecociudadano cooperative groups existed, and given their successes, the local government is continuously opening more.

### **Application to other cities**

The most likely obstacles that other local governments will face while trying to integrate these policies in their municipalities are budget restrictions. Surprisingly, the expenses for such a progressive system are relatively limited. In 2006, expenditures for the Environmental Department represented just 1.4 percent of Curitiba's annual budget. However, the annual expenditures for urban development and education were 39.8 percent and 18 percent of the annual budget for Curitiba, respectively. Sustainable planning requires a willingness to invest and cooperate with the private sector, and Curitiba demonstrates how this commitment efficiently promotes environmental preservation.

Curitiba is far from being an ecologic sanctuary, but the "green" attitude of Curitibaans has taken them in a positive direction and has transformed the city into an

| important reference worldwide, inviting others to be creative and value citizens' input as a priority for environmental conservation. Curitiba, along with other cities such as Portland, OR (USA), Geneva (Switzerland) and many others as in Germany and Sweden, is a living model for other cities that want to implement sustainable living policies. As a blossoming city in a developing country, Curitiba is an inspiration for other cities in this context to overcome economic resource constraints and address the same sustainable challenges.

**Suggested Further Readings (English):**

<http://www.curitiba.pr.gov.br/Paginas/ENG/Default.aspx>

**Suggested Further Readings (Portuguese):**

<http://www.curitiba.pr.gov.br/>

<http://taminato25123.can.br/curriculo/cambio-verde>

[http://www.unilivre.org.br/area\\_publica/controles/ScriptPublico.php](http://www.unilivre.org.br/area_publica/controles/ScriptPublico.php)

<http://www.curitiba-parana.net/parques/jardim-botanico.htm>

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