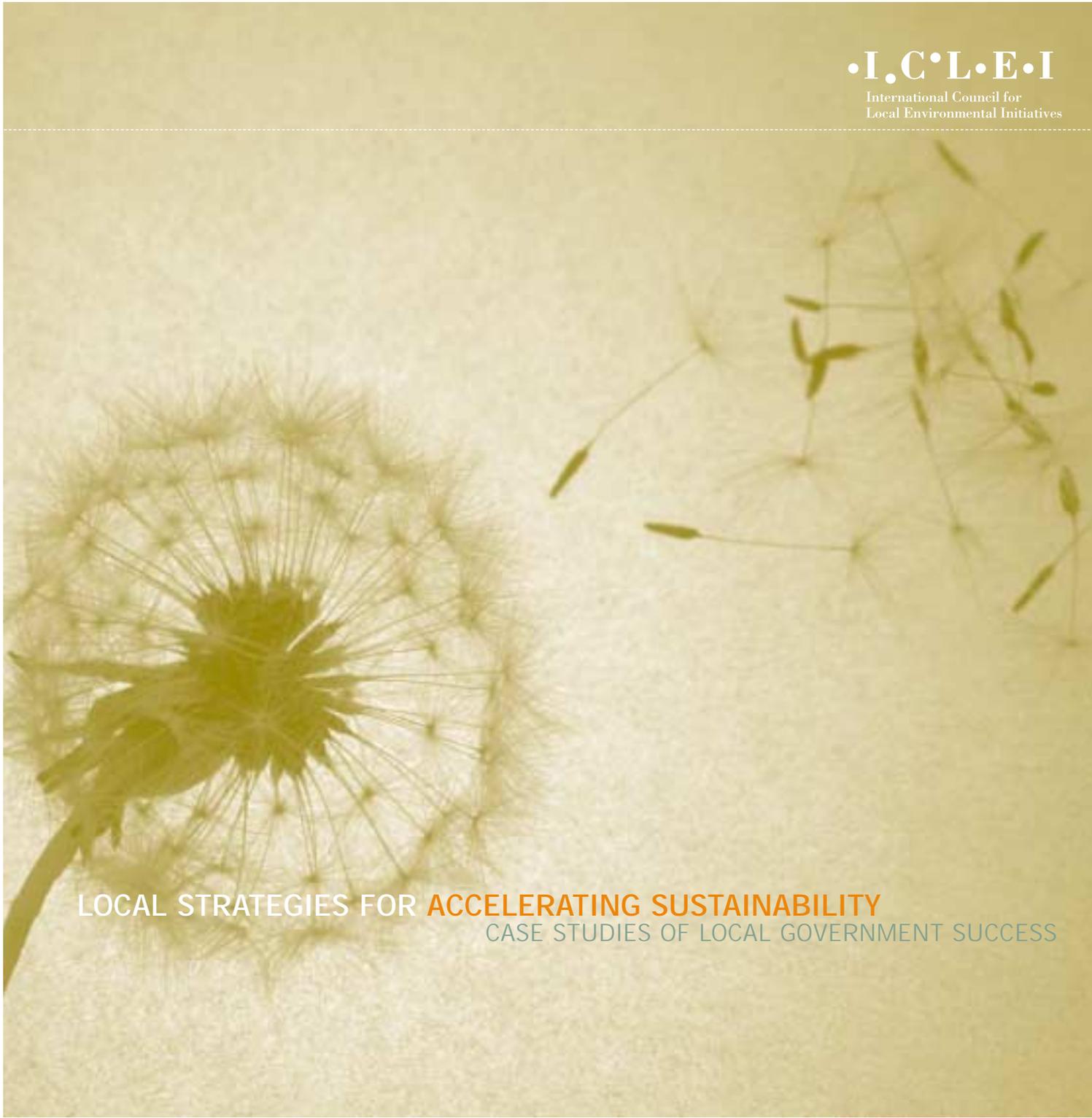


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International Council for  
Local Environmental Initiatives



LOCAL STRATEGIES FOR **ACCELERATING SUSTAINABILITY**  
CASE STUDIES OF LOCAL GOVERNMENT SUCCESS

#### LOCAL STRATEGIES FOR ACCELERATING SUSTAINABILITY

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## INTRODUCTION

At the 2002 UN World Summit on Sustainable Development in Johannesburg, South Africa, the global community will assess and reinvigorate response to *Agenda 21*, the global blueprint for a sustainable future endorsed at the Rio Earth Summit in 1992. The 2002 Summit will focus on action and implementation, on partnerships and on the strategies that will advance sustainable development.

Since the Rio Earth Summit, and in many cases predating it, local governments and their partners have instituted strategies for action that are accelerating the transition to sustainable, equitable and secure communities. Through *local* Agendas 21 they have established strategic planning processes for sustainable development, tackling the fundamental challenges of poverty alleviation, security, climate protection, and conservation of natural resources such as water and soil, among others.

In the preparatory process for the Johannesburg Summit, local governments identified a number of successful strategies for advancing sustainable development, which, if further supported, would accelerate progress worldwide. They called on their

partners—international agencies, donors, local and regional stakeholders and all spheres of government—to work with them to advance sustainable development by implementing the following five key strategies.

- > Strengthen local government.
- > Strengthen inter- and intragovernmental cooperation.
- > Foster international solidarity and cooperation.
- > Build a new culture of sustainability.
- > Accelerate the transition to sustainable communities and societies.

*Local Strategies for Accelerating Sustainability* presents summaries of ten case studies and related examples that demonstrate the diverse ways in which these strategies are being carried out successfully in municipalities large and small, worldwide. These comprehensive strategies and policy frameworks, unlike isolated applications of technologies or projects, address the complexities and underlying causes of problems on a system-wide basis. Through the implementation of these strategies, local governments are:

- > redesigning themselves for sustainable development,
- > ensuring adequate resources to build effective local capacity,
- > creating effective working alliances to address the complexities of ecosystem-based planning,
- > mobilizing to respond to international priorities,
- > adopting sustainable cultural norms within their communities,
- > orienting urban planning and investment toward resource-efficiency, and
- > creating resilient communities and cities.

The examples in this compilation illustrate how long-term, integrative solutions to local social, economic and environmental challenges have met with success. They highlight the importance of strong leadership and vision, community involvement, and the necessity for fiscal responsibility and meeting basic human needs. They illustrate the positive change that national policies and programs can foster, and the value of partnerships and inter-municipal cooperation.

And finally, the cases featured here demonstrate that success typically results from steady

implementation, over time, of a comprehensive strategy that reflects a community's vision. Chapter 28 of *Agenda 21* advises that the best strategies for realizing sustainable development at the local level will be achieved through consultation and consensus building among all stakeholders. The following case summaries bear this out.

Local governments and their partners have built on their inherent strengths to become champions of sustainable development. With the support of their stakeholders, subnational and national governments, and international agencies, this work can be accelerated to benefit the global community.

**Full versions of each of the case studies, as well as references and contact information for the associated examples, are available on the Internet ([www.iclei.org/localstrategies](http://www.iclei.org/localstrategies)) or by contacting the World Secretariat of the International Council for Local Environmental Initiatives (ICLEI).**

## STRATEGY

Strengthen Local Government

## CHALLENGE

To provide basic services for an expanded urban area and growing population, and improve living conditions in slum neighborhoods in the face of cash losses and a deteriorating financial situation

## ACTION

Introduce fiscal and management reforms to enable the AMC to improve and expand basic services and initiate urban development projects

## PROFILE

Ahmedabad Municipal Corporation (AMC), India  
Population: 3,515,361 (2001)  
Land Area: 191 km<sup>2</sup>  
Municipal Budget: US\$118 million (2000)

# INCREASING RESOURCES TO LOCAL GOVERNMENT IN AHMEDABAD, INDIA



WITH FUNDS FROM THE BOND ISSUE, THE AMC CONSTRUCTED A NEW WATER PUMPHOUSE AND PIPELINES TO SERVICE 60% OF THE CITY'S POPULATION.

Ahmedabad, the largest city of the state of Gujarat, is the seventh largest city in India. Known as the textile capital of India, Ahmedabad is the commercial capital of the state and is also a major industrial and financial city.

In the midst of the overall prosperity of the city, a large poor population has suffered from deprivation of basic services and amenities. In 2000, 41% of the population lived in slums and low-income housing, with the bulk of the slum residents sharing the water supply and many living without toilet facilities.

Prior to 1993, the Ahmedabad Municipal Corporation (AMC) had accumulated a cash loss of over US\$9 million and their financial situation was deteriorating. In 1994, the corporation launched a major effort to strengthen its capacity to develop commercially viable projects. As a result, AMC was able to turn around its financial position and achieve a closing cash surplus of US\$50 million in 1999.

The main credit for the financial turnaround and other development initiatives and administrative reforms goes to the dynamic leadership of a municipal commissioner who remained at the helm from 1994 to 1997.

One of the initial reforms addressed Octroi. Octroi (an entry tax on goods) has traditionally been the AMC's major source of revenue, accounting for about 70–75% of total revenue. To increase octroi revenues, the valuation manual for tax assessment was updated based on current market prices. Octroi collection was further improved through a number of means including the deployment of police personnel for controlling touts and catching defaulters and the installation of weighing machines at spot checks. Annual octroi collection increased by 60%.

Similarly, in 1994, AMC introduced a series of measures to improve property tax collection, which accounts for about 30% of tax revenues. A computer database was created to identify defaulters, while attention was focused on recovering major outstanding tax amounts. Annual property tax collection increased by 55%.

In the mid-90s, AMC also introduced a number of management improvements such as computerization of accounts and upgrading of the workforce. In April 1996, the corporation introduced a computerized double-entry accounting system, purchased new computers and recruited chartered accountants to introduce the new system.

In 1997, about 40 chartered accountants and business management graduates were recruited. Placed in key administrative and operational positions, these new officers are improving Ahmedabad's service delivery while introducing a new work ethic.

In 1996, AMC prepared a five-year capital investment plan worth US\$150 million for water

supply, sewerage, roads, bridges and solid waste management projects. It proposed to meet 30% of the total investment requirement from internal accruals, while mobilizing the remaining amount through municipal bonds and loans from financial institutions.

Ahmedabad became the first city in India to request and receive a credit rating for a municipal bond issue. The US Agency for International Development's Financial Institutions Reform and Expansion (FIRE) Project played a multifaceted role in assisting Ahmedabad in developing the bond issue. The city was ultimately assigned an "AA" rating.

In 1998, AMC publicly issued secured redeemable bonds aggregating to a total of 1 billion Rupees. City bonds, as they are popularly known, had a face value \$1,000 Rupees (US\$25) each (for cash at par). AMC sold 25% of the bonds to the Indian public and the remaining 75% of the issue to institutional investors.

Under pressure of an impending water crisis, AMC was able to rapidly expend bond proceeds to successfully implement an emergency bulk water supply scheme known as the Raska Project in a record five months. Designed to supply 65 million gallons of water a day to the city, the Raska Water Project consisted of constructing a pump house and laying pipelines to bring water to 60% of the city's population.

As well, the healthy state of municipal finances also enabled AMC to partner with the business community, non-governmental organizations (NGO) and other organizations to undertake new initiatives, including:

- > a partnership with a textile company to redevelop an important commercial artery;
- > a Slum Networking Project in which the corporation partnered with a textile company, an NGO and the slum community to improve basic infrastructure and provide water and toilets to households.

## NEWCASTLE, AUSTRALIA

In 1997, Newcastle, Australia, established a revolving energy fund (REF) to increase funds available for energy efficiency programs. Often a perceived lack of capital can prevent local governments from undertaking energy efficiency programs that require significant initial funding.

Newcastle, established an AUS\$300,000 REF to pay a Green Energy Coordinator and fund energy saving projects. REFs rely on identifying energy cost savings and, in future budgets, allocating these savings to a REF so that the money can be reinvested in future energy efficiency projects. Since 1995, Newcastle has reduced its energy bill by 40% and they expect to exceed 50% by 2002.

## SHENYANG, CHINA

The Sustainable Cities Programme (SCP), operated by UN-Habitat/UN Environment Programme, builds capacities in urban environmental planning and management. The SCP is founded on multistakeholder participatory approaches and promotes good urban governance. Shenyang, China, a SCP participant, is home to one of the largest heavy industry centers in China. For years economic development in Shenyang took precedent over the environment.

The city is now taking a different approach. Using a Local Agenda 21 framework, a comprehensive action plan for environmental protection was developed. This approach has led to radical decisions; in 1999 it was decided to close the Shenyang Smelting Plant, one of the city's largest employers but also the largest source of air, water and land pollution.

In March 2002, AMC went ahead with another bond issue of the same amount to complete its original water and sewerage infrastructure scheme. The second bond is tax exempt. Ahmedabad is the first municipal corporation in India to issue tax-free municipal bonds.

## RESULTS

Ahmedabad enjoys a high level of autonomy in revenue use in that it depends on the state government for only 10% of its total revenue in the form of grants for primary education. In addition, management innovations introduced by the municipal commissioner and supported by staff and elected officials helped AMC change its image among the local citizenry.

Because of the fiscal and management reforms, Ahmedabad built an extensive water project, developed mutual partnerships to improve traffic congestion and improved conditions in slums.

## LESSONS LEARNED

Ahmedabad demonstrated that municipal bonds can work in India for raising finances for infrastructure projects. However, before actual issuance of bonds, local governments need to institute efficient project management systems and procedures to reduce time delays and cost overruns. The most critical factor for obtaining market finance is a healthy municipal revenue base.

## KEY REPLICATION FACTORS

One of the main reasons for inadequate levels of urban infrastructure is the inability to tap available capital to finance infrastructure projects. Financial sector reforms offer opportunities for tapping capital markets.

To routinely access capital markets or to form successful partnerships with the private sector, local governments will have to strengthen their capacity to develop commercially viable projects. This will require appropriate pricing of services, efficient cost recovery mechanisms, sound accounting and financial management systems, professionalism of the work force, effective service delivery systems, and development of capital investment plans.

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## STRATEGY

Building a New Culture of Sustainability

## CHALLENGE

To broaden community understanding of the need for long-term and interconnected projects to revitalize the urban center (local economy and environment) in the face of regional suburbanization

## ACTION

Develop a long-term community vision, based on sustainability principles, and a multi-faceted action plan to provide the basis for nurturing a culture of sustainability

## PROFILE

City of Burlington, Vermont, U.S.A.

Population: 39,824

Land Area: 27 km<sup>2</sup>

Municipal Budget: US\$158 million

# DEVELOPING A COHESIVE STRATEGY FOR SUSTAINABILITY IN BURLINGTON, USA



BURLINGTON'S PEDESTRIAN-ORIENTED CHURCH STREET MARKETPLACE

The City of Burlington is the largest urban center in Vermont and its economic hub. Over the past two decades, Burlington has become known for its progressive approach to governance and its strong tradition of activism. The government of Burlington, local organizations and residents have implemented many diverse projects with a focus on sustainable community development and principles of economic self-sufficiency, equity, environmental protection and participation.

Raising awareness of its citizens and providing access to information are central to Burlington's sustainability strategy. Over the years, Burlington has developed several mechanisms for citizen engagement in the governance process, including citizen commissions and boards working with each municipal department.

Burlington has also been active in a number of initiatives to improve the quality of the natural and built environment.

> A major initiative to revitalize the city's waterfront was undertaken in the 1980s which involved cleaning up abandoned industrial sites and creating community and recreational resources.

- > The municipally-owned Burlington Electric Department has implemented many energy conservation and efficiency measures, which have resulted in a decrease in community energy consumption by 18% since 1989.
- > Several projects have focused on creating equitable opportunities for local residents to participate in the economy. For example, the city has begun employment training programs including a job readiness training center to provide resources and support for higher skilled jobs and Step Up For Women, a free program to teach low- and moderate-income women trade skills.
- > Economic initiatives have helped to strengthen markets for and access to locally produced goods and services.
- > In 1988, the city supported the development of the Burlington Housing Trust Fund that assists non-profit groups to establish perpetually affordable housing for low- and moderate-income households. More than 750 affordable housing units have been created.

In spite of Burlington's success in the 1980s and 1990s in improving its community, it became apparent that these initiatives were not well connected to each other and a broader method to promote sustainability was required. More recently, the city has faced a number of interrelated problems, including a shortage of affordable housing, increased poverty, environmental degradation and population decline, as a result of rapid suburban growth and other local development trends.

### *Legacy Project*

In response to these new challenges and as the organizing component of its strategy to promote sustainability, Burlington embarked on a comprehensive process to develop a community vision for the future of the city. As well, the city set out to create a plan that integrates its diverse initiatives into a common framework. Initiated in 1999 by Mayor Peter Clavelle, the Legacy

Project seeks to engage all citizens in a dialogue about the principles and actions that will guide the community over the next 30 years.

The planning process, Burlington's most extensive participation effort to date, was directed by a steering committee comprised of stakeholders from non-governmental and business institutions along with youth and municipal representatives. Their actions will have a major impact on the future of the city.

Over a period of a year-and-a-half, more than a 1,000 residents contributed to the development of the vision through a multi-faceted participation process. In March 2000, a "Summit on the City's Future" was held in which more than 300 participants finalized the Legacy Project Action Plan. The plan presents goal statements that describe Burlington in 2030, priority actions for achieving these goals and indicators for assessing the city's progress. Burlington City Council unanimously approved the plan in June 2000. The principles and objectives of the Legacy Plan have since been integrated into the city's overall municipal development plan.

The common vision that emerged through this process is of Burlington as a regional economic center with an enhanced quality of life and economic security for all residents, a responsive government and extensive civic participation, and a healthy natural environment. The Legacy Project was successful in formalizing a community vision which had been developing over time, resolving a number of fundamental issues facing the city and integrating many diverse policies and programs into a comprehensive strategy for the city. This success was a result of the widespread participation of citizens and community organizations in the process, the forum of open debate that was created, and the commitment of key stakeholders, including political leaders, to the process.

The challenge of the Legacy Project is to balance future growth with the principles of sustainability that underlie the community's vision:

### KOLDING, DENMARK

In 1994 the Town of Kolding, Denmark, signed the Aalborg Charter and committed itself to pursuing sustainable municipal development. This commitment was acted upon in the town's Municipal Plan in 1998. Among other actions, this document obliges the municipality to increase its environmental management through green planning and purchasing. Kolding evaluates all products and services on environmental criteria as well as on price and quality. Kolding is the area's largest employer and this action has considerable potential for widespread impacts.

### JINJA, UGANDA

In 1995, Jinja, the second largest urban center in Uganda, launched its Local Agenda 21 (LA21). Before this an unemployment rate of 70% and widespread poverty prevented the municipality from collecting sufficient taxes to provide basic services. Most residents lacked access to clean water and the waste management system was inadequate. Jinja's LA21 set out to improve services to residents while protecting the natural environment.

### CONTINUED

A wide variety of stakeholders participated and the process was particularly successful at including women. The LA21 initiatives eventually resulted in the identification of numerous self-run community projects. Projects include a profit-generating composting initiative and a biogas digester which uses human waste to generate methane that is then used as an energy source for lighting and cooking. These projects are run by elected management committees independently of the municipality, provide essential services to the community and have nurtured community capacity. Working together for a more sustainable future has become commonplace in Jinja.

This process has changed residents' attitudes, instilling a spirit of volunteerism, demonstrating the value of resources and, perhaps most importantly, building their capacity. Local people are more positive about their ability to influence their situation, take care of their environment and improve their living conditions.

Decentralization promoted by the national government has undoubtedly been a facilitating factor to the LA21 process, and conversely, LA21 has encouraged residents of Jinja to participate in local government.

- > economic security, local self-sufficiency and equity;
- > empowerment and responsibility;
- > social wellbeing;
- > ecological integrity.

The Legacy Plan provides a framework for implementing these principles through a series of diverse actions. Collaboration among all stakeholders is the approach adopted for initiating these actions. Municipal departments and the stakeholder groups have made commitments to implementing components of the plan, including providing information and resources. The project steering committee meets quarterly to assess whether progress is being made on their commitments and to ensure accountability in the implementation process. Once a year, the city produces an annual report, and a town meeting is held to evaluate the community's progress and assess whether any changes need to be made to the priorities established in the plan.

### RESULTS

Through the Legacy Project, a number of changes have been implemented to make the governance system more accountable and democratic, including changes to the City Charter that make municipal departments directly accountable to the Mayor and hence voting citizens. The Legacy Project has helped to further educate citizens about the critical issues facing the city and the necessary actions for sustainability.

One recent action that furthers the aims of the Legacy Project was Burlington's endorsement in June 2001 of the Earth Charter, a declaration of fundamental principles for building a just, sustainable and peaceful global society. In committing to the Charter, the city recognized that the issues facing Burlington are not isolated problems, that other communities around the world have similar concerns and values, and that sustainable development requires a global framework to unite human efforts. "If we could all be working from the same page, success is more likely," states

Mayor Peter Clavelle. For Burlington, like the many other municipal signatories, the Earth Charter is an important educational tool for enhancing citizen awareness about the complexities of sustainability and for guiding the work of individuals and institutions.

### LESSONS LEARNED

The commitment of local political leadership and representatives of the city's major organizations to the concept of sustainability has been critical to the process. Citizens and representatives of business, local organizations and governments have become more aware of the critical issues facing the city and the principles and necessary actions for implementing sustainability.

Although Burlington's collaborative approach has been one of its strong points, it has also been very challenging to implement as there was initially no institutionalized structure in place reflecting this new model of governance. Finally, despite its success in raising the awareness of its citizens, Burlington's experience has demonstrated the challenge of aligning attitudes with behavioral change and that nurturing a culture of sustainability is a long-term endeavor.

### KEY REPLICATION FACTORS

Burlington's strategy of fostering a culture of sustainability has demonstrated the importance of adopting a long-term, integrated approach to sustainable development and grounding a city's sustainability framework in a set of principles that are defined by the community. Nurturing broad citizen participation and collaboration with community organizations in the visioning and implementation processes are key factors of success.

### KEY CONTACT

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## STRATEGY

Accelerate the Transition to Sustainable Communities and Societies

## CHALLENGE

To guarantee a good quality of life for Curitiba's citizens over the long term, ensuring social inclusion, accessibility, public amenities, urban transparency and environmental sustainability for the city and metropolitan area

## ACTION

Undertake a series of long-term, integrated urban planning actions based on valuing the individual that have resulted in a model ecological, people-centered city

## PROFILE

Municipality of Curitiba, Brazil  
Population: 1.6 million  
Land Area: 432 km<sup>2</sup>  
Municipal Budget: US\$600 million

# ORIENTING URBAN PLANNING TO SUSTAINABILITY IN CURITIBA, BRAZIL



CURITIBA'S ECO-EFFICIENT, BUS-ONLY TRANSPORTATION SYSTEM IS A MODEL FOR CITIES AROUND THE WORLD. THE "SPEEDY BUS" RUNS ALONG A DIRECT LINE AND STOPS ONLY AT TUBULAR STATIONS SPECIALLY DESIGNED TO MOVE PASSENGERS QUICKLY.

Curitiba is the capital of the State of Paraná, a mainly agricultural area in southern Brazil. In the 1970s and 1980s, physical, economic and demographic growth was rapid and the city became an important industrial and commercial center. Curitiba's population has doubled to 1.6 million over the past 30 years. Despite the major challenges that came with rapid growth, significant improvements have been made to quality of life in the city.

Curitiba is more than a city with a number of outstanding projects. The key to its success is the underlying, cohesive strategy—with a focus on improving life for residents and on integrated planning—that underpins all of its projects. Specific goals are social inclusion, accessibility, public amenities, urban transparency, efficiency and environmental sustainability for the city and metropolitan area.

The strategic vision that informs all aspects of Curitiba is articulated by its visionary former mayor, Jaime Lerner, who led the city's transformation, "There is no endeavour more noble than the attempt to

achieve a collective dream. When a city accepts as its mandate its quality of life; when it respects the people who live in it; when it respects the environment; when it prepares for future generations, the people share responsibility for that mandate, and this shared cause is the only way to achieve that collective dream."

Strong political leadership and continuity has been essential to long-term implementation of the city's plan. Lerner, now governor of Paraná, was involved in developing the city's 1965 Master Plan. In the same year, Lerner and his colleagues established the Urban Planning Institute of Curitiba (IPPUC) as an independent agency to supervise and implement planning.

A clear strategy and vision of the future in Curitiba and creation of an agency to make sure it was implemented has meant that smaller decisions made over the course of years and in many individual programs have added up to a city that's a model of ecological, people-centered urbanism.

Although Curitiba is known internationally as a sustainable, ecological city, it calls itself "the city of all of us." In almost any area of Curitiba's urban planning over the years, it is possible to see how consideration has been given to people in the big picture—and also to see the associated, system-wide sustainability benefits of integrated planning.

This is what's most unique about the city's strategy: it maximizes the efficiency and productivity of transportation, land-use planning and housing development by integrating them so they support one another to improve residents' quality of life in the city.

## RESULTS

Curitiba has high rates of recycling, large amounts of green space, a model transit system and social programs reaching all members of the community. Per capita income is 66% higher than the Brazilian average. The city's 30-year economic growth rate is 7%, significantly higher than the national average of 4%. Future expectations relate to Curitiba's metropolitan area, where the city's strategy is being applied to improve the lives of people in the surrounding region.

The following individual examples all reflect the city's people-first strategy, and the benefits of integrated urban planning and system-wide sustainability.

### Transportation and Land Use

Integration of traffic management, transportation and land-use planning in the 1970s allowed the city to minimize downtown traffic, provide more leisure areas and pedestrian zones in the city center, and encourage the use of public transport and cycling in order to achieve an environmentally healthy city.

Today there's a model transit service used by more than 2 million people a day. While there are more car owners per capita than anywhere in Brazil, and the population has doubled since 1974, auto traffic has declined by 30%, and atmospheric pollution is the lowest in Brazil. In addition, an inexpensive "social fare" on public transit promotes equality. The city has 200 kilometers of bike paths.

Downtown areas were transformed into pedestrian streets, including a 24-hour mall with shops, restaurants and cafes and a street of flowers with gardens tended by street kids. This vibrant pedestrian zone encourages tourism, which generated US\$280 million in 1994, 4% of the city's net income.

## BARCELONA, SPAIN

In 1994, the City of Barcelona, Spain, signed the Heidelberg Declaration for Climate Protection and set a goal of reducing carbon dioxide emissions by 20% of 1987 levels. A key aspect of the city's plan is the exploitation of solar energy. In 1999, the city passed a municipal solar ordinance calling for the installation of solar panels on new developments. In addition, the largest photovoltaic plant in the world is planned for operation in 2004.

## TORONTO, CANADA

Moving the Economy, a five-year-old partnership between the City of Toronto and Transportation Options, has laid a strong foundation to support the growth of sustainable transportation. It has launched two pilot projects to test the viability of new mobility strategies locally, nationally and internationally. The projects have led to an extensive communications network that links businesses and governments with information about new mobility, experts and on-the-ground examples of where new mobility is making money. Moving the Economy's New Mobility Sectoral Study, completed in 2002, has identified the directions government

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and businesses should take as new mobility develops over the next 20 years. The study has explored how Toronto and other cities can benefit from this trend.

### PORTLAND, USA

By integrating land-use and transportation policies, the City of Portland, USA, is developing a more compact, energy-efficient urban form that reduces automobile dependency. An urban growth boundary guides development, and Portland's regional 2040 Growth Concept protects natural areas and farmland while improving infrastructure. The concept integrates transportation strategies and land-use policies that strongly support strategic growth management while allowing each regional community to develop its business center and neighborhoods with their own characteristics. Public transit, foot traffic, bicycle use, roadways and freight movement are addressed with a strong emphasis on locating jobs and housing near existing multi-modal transportation infrastructure. As a result, during the 1990s bicycle commuting almost tripled, transit ridership increased by 65%, and per capita gasoline consumption fell by 9%.

### Green Space

Curitiba is referred to as the ecological capital of Brazil, with a network of 28 parks and wooded areas representing one-fifth of the city. Builders get tax breaks if their projects include green space. Waters diverted into new lakes in parks solved dangerous flooding problems, while also protecting valley floors and riverbanks, acting as a barrier to illegal occupation, and providing aesthetic and recreational value to the thousands of people who use city parks. The city has 52 square meters of green space per person, up from 1 square meter in 1970.

### Waste Management

The "green exchange" employment program focuses on social inclusion, benefiting both those in need and the environment. Low-income families living in shantytowns unreachable by truck bring their trash bags to neighborhood centers, where they exchange them for bus tickets and food. There's also a program for children where they can exchange recyclable garbage for school supplies, chocolate, toys and tickets for shows.

Seventy percent of the city's trash is recycled, and the money raised from selling materials goes into social programs.

### Education and Capacity Building

Open University, created by the city, lets residents take courses in many subjects such as mechanics, hair styling and environmental protection for a small fee.

The "capacity building job line" includes business incubators designed to help small companies get established and prosper and the Crafts Lycée that trains people for professions such as marketing and finance.

### LESSONS LEARNED

Curitiba's officials found that the application of a city-strategy with strong, coherent governance, design values and a focus on integrated systems can be used successfully to align the actions of planning departments to meet strategic objectives.

The integration of different elements of urban development avoided problems associated with piecemeal development such as pollution, traffic congestion and nonsustainable fuel consumption rates.

Creative, cheap solutions that fit the city provided better solutions to Curitiba's urban problems than more expensive approaches.

### KEY REPLICATION FACTORS

- > Articulation of strong, local core values in a city plan.
- > Creation of an independent municipal authority such as IPPUC to ensure planning continuity and success regardless of political, economic and social challenges.
- > Integrated planning processes structured to assure that planners in all areas know the strategy and are working with a shared vision and developing their plans together.

### KEY CONTACT

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### STRATEGY

Strengthen Local Government

### CHALLENGE

To address unemployment, unaffordable housing, population exodus to the suburbs and shifting demographics that threaten the city's unique economic, social and environmental fabric

### ACTION

Develop a plan to integrate the management of the many and varied programs and policies for sustainable development, using environmental budgeting as the framework to control the use of natural resources

### PROFILE

City of Heidelberg, Germany  
Population: 139,000  
Land Area: 109 km<sup>2</sup>  
Municipal Budget: US\$413.9 million (466 million Euro)

## CREATING A FRAMEWORK FOR INTEGRATED RESOURCE MANAGEMENT IN HEIDELBERG, GERMANY



THE CITY OF HEIDELBERG, A PROTECTED UNESCO WORLD HERITAGE SITE

The City of Heidelberg is located on the Rhine plateau in Baden-Württemberg and is a UNESCO-protected World Heritage site and tourist center. Heidelberg, apart from tourism, has a science and research-based economy. The city has long been a leader in environmental management and sustainable development and in 1994 signed the Aalborg Charter.

When the current mayor, Beate Weber, came into office in 1990, she found the existing city plan no longer fit with realities in the city. The population living in the city had increased only slightly, while the number of commuters coming in from the suburbs had risen sharply. The number of unemployed people and those looking for housing in the city had increased. It was time to engage in a new city development planning process to move the city's activities towards sustainable development.

Developed over two-and-a-half years starting in 1994, and with broad public participation, the planning process was framed by the idea of "Responsibility for

the Future.” Social, economic and environmental factors were to be considered. The City Development Plan was to present a strategy to take Heidelberg to the year 2010.

Expanding on the city’s 1974 development scheme and incorporating the lessons learned through developing climate and transportation plans, the new City Development Plan,

*sets the comprehensive and integrative scope of action for a policy which assumes responsibility for social co-existence within the City and the conservation of an environment worth living in. Its core feature is the commitment towards a sustainable city development which meets the task of the “Local Agenda 21”...* (Source: City Development Plan)

In the end, the plan looked at objectives under seven target areas: urbanism, regional cooperation and development, employment, housing, environment, mobility, social matters, and culture. Existing commitments and plans, such as the climate protection and transportation plans, were incorporated into the broader City Development Plan, although they are still followed separately as well.

The environmental target area addresses overall improvement in the local environment and permanently protecting natural resources such as water, soil and air. This section includes a call to establish an environmental budget as such a “scheme plays a vital role for the initiation of sustainable development.”

Over a full budget cycle, Heidelberg used and adapted the *ecoBUDGET*® system developed by the International Council for Local Environmental Initiatives (ICLEI). The city subsequently introduced environmental budgeting on an ongoing basis.

Environmental budgeting is a management system for the use of natural resources that complements financial budgeting and human resource management. It applies periodic financial budgeting processes, mechanisms and routines to the management of natural resources so that city managers devote the same amount of attention and concern to these resources and to environmental quality.

As a comprehensive system of municipal environmental planning, controlling and reporting, environmental budgeting constitutes the environmental cornerstone for Integrated Resource Management (IRM). IRM relates the management of financial, human and natural resources to one another, thus building a consistent framework for effective municipal service delivery with efficient resource use.

Environmental budgeting does not attempt to express environmental effects in monetary terms. To set limits on, and follow the “spending” of natural resources, budgets are based on five to twenty resource accounts, using environmental indicators measured in physical quantities. In Heidelberg, carbon dioxide (CO<sub>2</sub>) emissions, water consumption and residual waste generation were some of the indicators used. For each account (indicator) a mid-term (five to ten year) target is set. Based on the state of each indicator from the reference year, annual or biennial targets are set to reach agreed mid-term targets.

At the end of the budgetary cycle, an environmental budget balance is established to inform the municipal council of the progress towards meeting the targets. Environmental budgeting as a management system ensures that objectives are not only discussed but actually adopted, that implementation is controlled

### BIELEFELD, GERMANY

Bielefeld, a city of 325,000 in northwest Germany, has been faced with excessive sprawl and increasing motorized transportation over the last few years. Local environmental budgeting was seen as a strategic aid to target setting in planning, especially related to the city’s climate protection, water provision and open space activities. Environmental budgeting has been integrated into most of the departments involved. It plays an increasingly important role as Bielefeld politicians decided in early 2000 to introduce environmental budgeting into the local authority on a permanent basis, and are looking at extending the *ecoBUDGET* to include other accounts (indicators).

and that previous experiences are considered in the next period. The application of a budget cycle similar to the financial management process ensures that the issues of the use of natural resources and environmental quality are returning to the political agenda regularly. In a transparent way, municipal decision makers determine in advance the spending framework (targets), and can be held accountable for meeting the targets or overspending (debt to nature).

In Heidelberg, a project team with representatives from various departments in the administration oversees the implementation of the environmental budget, including presenting it to the mayor and city council for approval. The environmental budget is seen as a “Meta-Environmental Management System” in that it provides a framework to review the success of various actions. The environmental budget serves to build a network of departments and their various projects, each with responsibilities to balance their respective “budget lines.” Heidelberg’s concept links the various single projects and policies to the environmental budget (*ecoBUDGET*) and eventually the city’s Local Agenda 21 (*City Development Plan*).

Heidelberg has expanded on the original environmental budgeting concept, keeping a budget for the city’s overall environmental consumption (municipality, citizens, businesses, etc.). They now also have special budgets for environmental consumption by “big” municipal projects (those requiring an environmental impact assessment) and municipal institutions.

### RESULTS

The city recently completed the first review of the implementation of the City Development Plan. While some activities have been completed, others are long-term commitments that will continue to evolve. The city already has formulated environmental quality targets through the *ecoBUDGET* process, has presented an “undeveloped area structure concept” and an environmental plan, and has reduced CO<sub>2</sub> emissions from municipal buildings through energy saving measures.

In the environmental target area, Heidelberg is now able to prove the success of its activities, moving to quantify statements like, “we have improved the environment.” Heidelberg can now state:

- > reductions in municipal CO<sub>2</sub> emissions by 30% since 1993,
- > reductions in nitrous oxides (NO<sub>x</sub>) emissions by 65% since 1986,
- > reductions in drinking water consumption by 12% since 1990,
- > reductions in specific residual waste by 49% since 1990.

Environmental budgeting has allowed the city to set targets, and then use the resource management process to ensure that the targets are being met. As Mayor Beate Weber puts it, “With environmental budgeting we have a reliable basis for decisions and can check if our aims are being met.”

The cross-departmental nature of the environmental budgeting procedure has served to educate municipal staff not traditionally involved in that field on environmental concerns and limits. Overall, environmental budgeting has proven to be a useful controlling instrument for successfully meeting the environmental targets set out in the City Development Plan. It will continue to support Heidelberg’s overall strategy going forward.

## NORDHAUSEN COUNTY, GERMANY

Nordhausen is a county of about 100,000 citizens located in central Germany. As a small county with limited financial and staff resources, Nordhausen uses the ecoBudget approach to integrate their environmental policies and programs into their Local Agenda 21 in a cost-effective manner. As Sylvia Stüven from Nordhausen has stated, the county has found that, "... environmental budgeting appears as the optimal instrument for a sustainable use of natural resources on the basis of scientific, region-oriented environmental targets." Nordhausen recently approved its second environmental budget balance and environmental master budget for the next year.

## LESSONS LEARNED

Heidelberg found that properly organizing before starting the budget process led to a more successful outcome. For example, developing cross-departmental groups, setting very clear targets linked to other initiatives (such as linking climate protection targets to the existing Heidelberg targets to reduce CO<sub>2</sub> emissions), and setting in place systems to develop and track budgets throughout the cycle were key to getting the process started. Part of this organization is the development of a system for ongoing reporting. As with many initiatives, a transparent system is critical to success. For the environmental budget to work, a willingness to systemize policies, set priorities and debate conflicts is absolutely necessary.

Data availability proved to be a stumbling block. Heidelberg found that the selection of indicators was limited by the available data—current, comparable, and easily and economically collected data are needed. Given the time required to see effects from changes in environmental activities, the city also found the environmental budget cycle worked better over two years.

Finally, support from the municipal leadership was very important for the establishment of the City Development Plan and the implementation of the environmental budgeting component of the plan.

## KEY REPLICATION FACTORS

As the foundation of a sustainable community, natural resources like air, water and land need to be managed to ensure their long-term viability. The ecoBUDGET model serves as a cornerstone for IRM, a system to link the management of financial, human and natural resources.

With environmental budgeting, Heidelberg has introduced a mechanism that sustains the attention of municipal decision makers on natural resources and environmental quality through periodic target-setting, controlling and reporting. Building a network within the administration to collect and analyze the necessary data from various initiatives, and to define the budget accounts and targets together with the responsible departments was important in making the mechanism work.

As part of the city's overall development plan, environmental budgeting shows the success of the cumulative and interactive effects the city's initiatives have on natural resources in both the short and long term, and link these environmental benefits to sustainable development.

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## STRATEGY

Accelerate the Transition to Sustainable Communities and Cities

## CHALLENGE

To address immediate basic needs and promote longer term human security and sustainability values among residents where poverty and accessing basic human needs, such as shelter, food and clothing are of primary importance

## ACTION

Involve the community in selecting the most innovative, technically relevant and ecologically sound solutions to enhance local economic development, and build community capacity to contribute to those solutions

## PROFILE

City of Johannesburg, South Africa  
Population: 2.9 million (1998)  
Land Area: 2,300 km<sup>2</sup>  
Municipal Budget: US\$1.04 billion

# ADDRESSING POVERTY IN JOHANNESBURG, SOUTH AFRICA



THE SHOVA LULA CYCLE COOP, SET UP AS ONE OF THE ECOCITY INITIATIVES, IS INVOLVED IN THE SALES AND MAINTENANCE OF BIKES, ADVOCATES BIKE USE AND BIKE SAFETY, AND PROMOTES BIKE USE FOR ENTREPRENEURIAL ACTIVITIES.

Midrand is a neighboring municipality of Johannesburg, now part of the amalgamated City of Johannesburg. It is an area of rapid economic and population growth with the total population of 240,000 expected to grow to 380,000 by 2010. Midrand is an area of many contrasts—geographically, racially and economically—as a result of the legacy of apartheid and economic development trends. You can find both affluent suburbs, where residents have large plots of land, interspersed with clusters and townhouse developments and in contrast densely populated planned and informal settlements where 80% of the population live.

Sixty-five percent of Midrand's population earns less than US\$70, compared to 21% nationally, and it suffers from high levels of unemployment. Of all of the households in Midrand, over 40% are informal with limited access to basic services (water, electricity, sanitation, waste removal, paved roads).

It is in these informal areas where you find the greatest population densities and the associated social, health and environmental problems, such as a higher level of respiratory tract illnesses due to the use of coal as the primary heat source during winter months.

While much of the land area of Midrand can be characterized as rural, residential or undeveloped, there is a lack of public open spaces, especially in the informal communities. Wetland and riparian habitats have been subjected to serious degradation—water in the Kaalspruit River has been described as more polluted than that which arrives at sewage treatment plants.

Growing out of grassroots environmental activism, the EcoCity initiative sought to promote human security and sustainability values among residents, particularly among the informal residential communities, while addressing their immediate needs.

The EcoCity initiative was established in 1999 as a partnership between the Midrand Town Council and the Midrand EcoCity Trust, a non-governmental organization created to promote change within the community and drive the process. The town council was to mainstream these developments through various departments. Since then, Midrand has been amalgamated into the City of Johannesburg. Johannesburg City Council has now joined the partnership and plans to expand the EcoCity vision throughout the city.

Despite its name, the EcoCity initiative's primary focus is poverty alleviation, based on the belief that sustainable development can be best implemented if it improves the quality of life and the standard of living of local residents. Long-term environmental successes are dependent on the economic, social and environmental security of the person, the home and the community. Self-reliance, capacity building, green transformation,

equity and public participation are also key principles of the initiative, through which EcoCity has been able to orient urban planning and investment towards sustainable development.

The vision of the EcoCity initiative was developed as a solution to the environmental problems that were identified in the 1999 State of the Environment Report. The report identified air, land and water pollution as dominant themes, exacerbated by the lack of services and infrastructure in informal areas. Public open spaces, waste management, transportation and household energy use were also identified as issues in need of attention.

The new initiative was to ensure a self-sustaining city that produces its own wealth and keeps resources circulating within the community. From the beginning, Midrand focused on creating an alternative sustainable development vision where the community defines and develops the objectives and strategies, which are then implemented using local resources.

Through community workshops, the residents agreed to common principles and initiatives. They decided that the best way to drive the process was to use small, local businesses. Business cooperatives were set up that created employment opportunities in the community, contributed to sustainability values and generated community support for the EcoCity initiative. The goal was to have these cooperatives be self-sustaining within two years of their establishment.

The diverse EcoCity projects are coordinated around a common vision, values, goals and strategy. Each element, while important in its own area, is also an integral part of the larger strategy.

## RESULTS

The cooperatives and other projects have met with some immediate success. For example, a group of 70 organic farmers working on the river edge has contributed to the stabilization of the flood plain and

## VELINGRAD, BULGARIA

In 1997, Velingrad, Bulgaria, had a very high rate of poverty and citizens lacked hope for the future. They were skeptical about the use of sustainable development planning as a strategy for improving the local economy. However, through their work with the UN Development Programme – Capacity 21, the city successfully used poverty alleviation as the primary theme for its community planning. Along with the rejuvenation of local markets, upgrades to schools and green spaces, and other projects, the town created a business center. The center helped to increase the growth of foreign investment in local small- and medium-sized enterprises and has provided a focus for the entire community. This success has allowed the town to invest in other projects as well.

to wetland rehabilitation. A bicycle cooperative has created jobs and provided bikes for commuters and 1,200 bikes for school children, decreasing reliance on transport by car. Fourteen women run a construction cooperative, building homes in an environmentally friendly way. Water pollution and water savings initiatives have been introduced, such as grey water recycling, demand management and water conservation fittings, which are being promoted in new developments. Local builders and contractors are sought for all projects and they use locally available materials.

The most impressive aspect of the EcoCity initiative is that it has resulted in a behavioral change at the community level. The development of the Ecovillage provides a good example. Early in the community participation phase, people did not care what type of housing was provided, how it was made, where it came from or who provided it. They just wanted housing. However, in working through options to address their most urgent need, the community ultimately incorporated multiple environmentally friendly innovations and technologies. The Ecovillage features houses built with reclaimed bricks, grey water recycling, and oriented to maximize exposure to the sun in the winter months, equipped with solar panels and other energy efficiency approaches. This shift is evidence of the fundamental progress being made.

The EcoCity initiative has demonstrated to community members and to politicians that it is possible to create economic benefits while making a contribution to a more sustainable community. Since the focus of the EcoCity initiative has been on poverty alleviation through respect for environmental principles, it was able to generate greater community support.

The challenge now is to mainstream the activities established in Midrand through the City of Johannesburg's key development sectors, while maintaining the momentum that has been generated in Midrand itself.

## LESSONS LEARNED

Once local government became involved in the running and management of the EcoCity initiatives, an element of financial stability was introduced, which decreased reliance on donor funding and donor priorities.

By focusing on local institutional arrangements and capacity building, greater participation and local ownership over the initiatives was ensured. Some of the ways in which this was done was to encourage volunteerism, to promote the use of local cooperatives that were directly in the control of the local community and responsive to community needs and concerns, and to develop local solutions to local ecological problems.

## KEY REPLICATION FACTORS

Success is dependent upon:

- > a core of committed individuals that can drive the process, particularly in the early stages,
- > continual monitoring and evaluation of initiatives to identify what has been successful and what has not,
- > a supportive local government open to changes in the way the planning process operates,
- > local government commitment and willingness to mainstream successful initiatives into daily city operations.

## KEY CONTACT

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### STRATEGY

Accelerate the Transition to Sustainable Communities and Cities

### CHALLENGE

To repair the physical, social and economic degradation resulting from a major earthquake, and lessen the potential for loss of life and other damage in the future

### ACTION

Physically restore the city's infrastructure and revive the city through a plan that addresses physical, social and institutional issues ultimately creating a resilient community better able to withstand natural disasters

### PROFILE

City of Kobe, Japan  
Population: 1,506,112  
Land Area: 550 km<sup>2</sup>  
Municipal Budget: US\$16 billion

## DEVELOPING A RESILIENT CITY IN KOBE, JAPAN



MORE THAN 67,000 BUILDINGS IN THE CITY OF KOBE COLLAPSED AS A RESULT OF THE GREAT HANSHIN-AWAJI EARTHQUAKE.

The City of Kobe, together with Osaka and Kyoto, forms the focal point for the western-Japanese economy. The south side of the city is highly urbanized and industrialized, while other parts have mixed development or remain rural. One million people reside in southern Kobe.

The Great Hanshin-Awaji Earthquake took place on January 17, 1995. In the City of Kobe alone, the earthquake killed over 4,500 and injured almost 15,000 people. The majority of the victims were elderly and people who lived in poorly built structures. More than 67,000 buildings in the city collapsed, and many more burned or suffered other damages. Since water and transportation infrastructure failed, large-scale life-saving activities were not available where they were needed the most.

The City of Kobe found that institutional inefficiency made the resulting secondary disaster more serious. Lack of effective information sharing among national, prefectural and municipal governments slowed life-saving activities immediately after the quake. Evacuees

faced poor access to medical services, food and housing for a considerable period of time after the quake. Financial support from the government to restore personal housing was not immediately available. Thus, emergency survival and restoration of private property were dependent on personal finances.

The earthquake made it clear that Kobe was not disaster-resistant—physically, socially, economically or institutionally. Kobe needed to have a new development strategy and in June 1995, the city established the ten-year Kobe Revival Plan (KRP).

The aim of the KRP is to revive the city by fostering communities, and strengthening the economy and culture using a multistakeholder decision-making process. In the short term, the focus was on the quick restoration of urban infrastructure, while the creation of a disaster-proof society is the long-term goal.

Kobe strategically adopted communities as the driving units of the plan. After a disaster, community groups can respond much more effectively to immediate needs than a central government can. Kobe established disaster-preventive and welfare communities (DWCs) to implement the disaster management plan. Units are divided by elementary school districts, which generally hold about 10,000 people. Presently, 187 districts have established DWCs. Units are expected to collect public comments, check durability of structures and host disaster simulation events.

The immediate goal of the KRP was to help the victims of the quake and to restore the city physically, socially and economically. This was achieved through a series of programs.

### *Civic Life Rehabilitation*

Civic life rehabilitation included providing houses, promoting employment and securing sufficient medical services especially for low-income and elderly citizens. In the five years after the quake approximately 149,000 houses were built. As restoration of private property was primarily dependent on personal financial capability, the government chose to focus not only building houses, but on job promotion and financial support for low-income citizens.

A national act to provide funds to those experiencing a natural disaster was established after the quake. Local authorities lobbied the national government to establish this act. It was effective retroactively for the victims of the Great Hanshin-Awaji Earthquake. Based on the act, Kobe provided personal financial support therefore improving the affordability of private property restoration.

### *Economic Restoration*

Kobe has been supporting the rehabilitation of existing businesses both financially and technically, although the business environment has yet to be completely restored. The physical restoration of major public facilities such as the port, roads and railways was completed two years after the quake.

### *Attractive Kobe*

Since the quake, open spaces have been expanded and networked, and information infrastructure has been further developed. These are not only making Kobe more attractive, but also contributing to future disaster management, as both are of critical importance in times of emergency. As well, the city has been promoting broader urban environmental sensitivity.

### SURAT, INDIA

Rapid population increases coupled with a poor solid waste management system left the City of Surat, India, open for an outbreak of the plague in 1994. Decentralizing the city into regional management centers and increasing the accountability of the municipal bureaucracy resulted in a remarkably clean and responsive city within 18 months. Citizens became directly involved in monitoring waste management, local authorities were held to rigid evaluations and strict waste management policies were enforced.

### **Collaboration**

Community-based organizations (CBOs) were recognized as major contributors to the implementation of the plan including life-saving activities immediately after the quake. CBOs have helped victims who had to settle into new communities. Recognizing the importance of CBOs, Kobe is working to collaborate with these organizations to increase communication at the community level, which will also improve disaster preparedness at this level.

### **Resilient Community**

Kobe is implementing physical and social durability improvements at the community level. Community-based educational programs about disaster prevention are underway including workshops for fostering community leaders and seminars for residents. Meanwhile, the fire department has revised their organization and is using state-of-art information systems and equipment.

Physical restoration of the city has been achieved as planned or at an even faster pace than expected. However, it was difficult for Kobe to identify appropriate solutions (acute and top-down versus long-term and participatory) immediately after the quake because the restoration work was urgent. Some policies applied were inappropriate as a result.

### **Going Forward**

In 2000, the municipal government announced after public input that physical restoration had been completed. Moving forward, the government recognized a number of outstanding issues:

- > although rebuilding was complete, some citizens had lost jobs and did not have access to family doctors partly because of moves. In order to fully rehabilitate the city, Kobe is working to increase access to public services and improve all citizens' lives.
- > the economy, as the basis of a residents income, has to be revived,
- > urban development for disaster-prevention has to be continued and maintained.

The government recognizes that creating a resilient community requires ongoing efforts and many of the actions required are interrelated. Going forward, Kobe will strategically complete the plan while adjusting to newly recognized problems.

### **RESULTS**

Kobe has quickly achieved the physical restoration of urban structures through both top-down and collaborative approaches. Within five years of the quake, Kobe had built 149,000 houses, rebuilt infrastructure and transportation networks, and established community units to ensure the effectiveness of disaster planning. In general, residents are playing a much greater role in the management of the city. Almost 40% of elderly people, and more than 50% of youth are participating in community groups. Kobe aims to increase this significantly over the next five years. Throughout the process, social improvements have also been implemented. It was found that the ties that exist within communities can increase the resilience of a neighborhood. This connection definitely improved the effectiveness of various projects. Fostering these relationships will be an important part of Kobe's ongoing work.

### **SUDBURY, CANADA**

Only 30 years ago, the City of Greater Sudbury, Canada, was a barren "moonscape," the result of 100 years of careless mining and industry. In 1973, Sudbury brought together a multi-disciplinary committee, including scientists and community groups, to rebuild and restore the region's plant and animal life. Since then, more than 11 million trees have been planted with over 6 million of these coming through Sudbury's Land Reclamation Program. The city is now regarded as one of the world's finest examples of environmental resiliency in reclaiming damaged landscapes. Although half of the city's land still requires reclamation work, the city is committed to enhancing and sustaining a healthy environment for residents through the restoration and protection of air, land and water resources.

### **LESSONS LEARNED**

Kobe's experience provides four major lessons. First, an educated and empowered community is the practical unit for disaster management. Considering that governmental functions are not very active immediately after a vast disaster, fostering communities with abilities to help themselves is essential.

Second, physical resilience of structures is a basic requirement of a disaster-proof city. Since structural damage is predictable in a disaster, it is necessary for local authorities to devise countermeasures.

Third, institutional preparedness such as security, flow of information (among governments, between municipal government and residents, and among residents) and medical logistics are highly important. In order to maintain institutional procedures, it is important to operate them regularly, not only for disaster prevention, but as day-to-day events. Neglecting these factors will delay life-saving activities and make a disaster unnecessarily worse.

Fourth, identification of appropriate policies for restoration is needed even under difficult circumstances, as this will reduce conflict during program implementation. The City of Kobe would have preferred to hasten the institutional supply of necessities but implement rezoning and redevelopment projects more slowly to increase community involvement. Necessities can and should be dealt with quickly while longer-term restoration requires community consultation.

### **KEY REPLICATION FACTORS**

Countermeasures that should be prepared for disaster management are roughly divided into three steps by timescale: emergency, short-term care and long-term restoration. The first two steps are handled best in a top-down manner for quick decisions, while long-term plans need to be implemented using a participatory approach for accountable and sustainable outcomes. The steps progress more effectively and efficiently if a cooperative culture exists among residents, experts, business and governments.

### **KEY CONTACTS**

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## STRATEGY

Strengthen Local Government

## CHALLENGE

To address the effects of globalization, history and local environmental factors that have led to deforestation, soil erosion, water pollution, rapid population growth and poverty

## ACTION

Partner with local stakeholders and other levels of government, and embrace national-level changes that strengthen local government and its ability to respond to diverse challenges

## PROFILE

Municipality of Manizales, Colombia  
Population: 387,000  
Land Area: 442km<sup>2</sup>  
Municipal Budget: US\$75,500 (171,795,599 Colombian Pesos)

# REDESIGNING LOCAL GOVERNMENT IN MANIZALES, COLOMBIA



PUBLIC TRANSPORTATION AND DEVELOPMENT ON LANDSLIDE-PRONE HILLSIDES ARE TWO OF THE ISSUES BEING ADDRESSED IN MANIZALES.

Manizales lies west of the Andes mountain range in the heart of Colombia's coffee-growing region. In the 1970s, an international coffee boom resulted in a rapid expansion of coffee growing areas that led to a loss of forest cover and subsequently caused erosion. However in 1994, Manizales's economy was left in shambles when international coffee prices fell drastically. The city responded by enacting a number of successful measures that stimulated industrial development but had the unintended side effect of polluting the city's waterways.

Manizales was also trying to address the issue of a rapidly growing population. Illegal settlements were growing in numbers, perched precariously on steep, landslide-prone hillsides. The challenge of managing increased traffic flow also arose as the volume of traffic grew. Deforestation for agriculture has resulted in soil erosion and increased susceptibility to landslides in an area with pre-existing seismic and geological risks.

In 1991, a series of federal legislative steps created a culture of environmental consciousness that raised national awareness of the importance of sustainable

development. An environment more conducive to local government management emerged, with the decentralization of power that facilitated sustainable development planning and programming at the local level. For example, Manizales was able to implement a tax surcharge on petrol that raised revenue to the amount of 21% of the municipal budget between 1993 and 1995. The proceeds went to support transportation projects. The funds created also allowed local government to implement environmental education and community programs, provide tax incentives for those protecting important ecological areas in the city, and construct housing for residents that were displaced by landslides.

Since 1994, the municipal government of Manizales has capitalized on these new authorities to include sustainable development principles into its planning processes. Manizales began addressing the issues more comprehensively with the goal of implementing Local Agenda 21 measures into the city's planning processes and engaging citizens in planning and implementing sustainable development measures. The municipality has successfully created a BioPlan—a local environmental action plan that facilitates sustainable development planning and implementation.

The BioPlan evolved with strong partnerships between the municipal government and other agencies, a local university, the private sector, international agencies, and citizens. Multistakeholder involvement in the development of the BioPlan has been crucial in gaining credibility and legitimacy and the partnerships have provided the city with technical and financial support.

**Public-Private Environmental Initiatives—**Decentralization within Colombia obliged municipalities to transform public enterprises. Public-private enterprises in Manizales—solid waste management, administration of parks and green areas, water supply management, and sanitation services—are successfully addressing these environmental issues in a fiscally responsible way.

**University Involvement and Partnership Building—**The involvement of the National University of Colombia, as the technical arm of the BioPlan, is crucial. The municipality supported the university to develop the urban environment profile of Manizales, a pilot case for the country. The research was used to implement the first environmental program in the area of transportation including improving transportation corridors and developing related environmental education materials. **International Support—**After gaining the respect and trust of the international community by creating an accountable, responsive and transparent government, several organizations supported the city technically and financially. International support added the equivalent of 4% to the municipal environmental budget in 1996. The support permitted Manizales to build infrastructure for the protection of the city's hillsides, reforest, purchase land at risk of landslides for conversion into parks and initiate environmental education programs. Cooperation agreements with Latin American and European cities have helped maintain local support for the BioPlan.

**Local Citizens—**Local Administrative Boards, composed of members elected by residents of each of the 11 communes and legally representing the communities, were involved in developing the BioPlan. The capacity of these citizens and others was increased through involvement in open forums and roundtables and they now hold the local government more accountable for its decisions. For example, in 1999, when the second version of the BioPlan had no modifications or improvements to the municipal government environment policy, there was swift reaction from the universities, neighborhood associations and environmental non-governmental organizations, which resulted in substantial positive changes to the plan.

In late 2001, Manizales developed its *Plan de Ordenamiento*, or official community plan, as required for all municipalities by the national constitutional reforms of the early 1990s. The BioPlan, and moreover, its principles of sustainable development, are now a

## BACOLOD, PHILIPPINES

The City of Bacolod, Philippines, is using gender-conscious budgeting as a strategy to address gender and social inequities. The program was started with support from a prominent women's organization, DAWN (Development for Active Women Networking), after the national government passed an act requiring all governmental agencies to dedicate 5% of their financial budgets to gender and development activities. To ensure that gender concerns are addressed in all aspects of the city budget, each department is required to set aside 5% for gender activities. Similarly, the budgets of the smallest units of local government, the barangays, are not passed by council if they are missing this component. Gender-conscious budgeting has led to gender education throughout the municipal system, as well as increased funding for reproductive health education, community welfare, environmental protections and other key issues.

## PORTO ALEGRE, BRAZIL

In 1989, Porto Alegre, Brazil, adopted a participatory budgeting system. In this system, the city is broken into regions and all citizens are asked to assist in designing the municipal financial budget. Budget decisions are made by examining the infrastructure, population and priorities of each area. Over 30,000 people participate in the process annually which has led to improvements in the ability of the government to satisfy demands, improve local government transparency and the active engagement of the population in municipal issues. Over 50 cities in Brazil have started participatory budgeting processes.

legislated priority within the city's strategic planning processes. The BioPlan is embedded in the municipal governance framework of Manizales.

### RESULTS

Since 1994, the BioPlan has provided a "blue-print" to guide the long-term development strategy of the city with environmental, economic and social considerations taken into account.

Under the BioPlan, action plans were designed and implemented for the 11 *comunas* of Manizales. Projects related to ecotourism, sustainable urban transportation, environmental education and recreation (360 hectares have been preserved as Ecoparks with the city core) were developed. When coupled with the financial revenue raised through local taxes on gasoline, the city has been able to provide environmental education programs, community programming, tax incentives for those protecting areas of ecological importance, and to construct housing for residents displaced by landslides. As well, three mixed economy enterprises—a solid waste dump, a recycling plant and a center for supplies—were created, generating local employment opportunities.

### LESSONS LEARNED

Although changing levels of commitment from local politicians and municipal administrators has been an ongoing issue, the municipal government's championing of the BioPlan has been crucial for its success. The strong support from Manizales's previous mayor was critical in getting the BioPlan started. The continuity of the staff at the state-level environmental authority and at the Institute of Environmental Studies at the university has played a crucial role in maintaining institutional memory and building upon momentum.

Financing the implementation of programs from the BioPlan has been addressed by local taxation, extra funds from donor organizations and from national and local government programs. The state government—of which Manizales is the capital—has committed to

providing technical and financial resources to the implementation of Local Environmental Action Plans in the 24 municipalities under its jurisdiction, which will include Manizales's BioPlan.

It is a continuing challenge to keep people informed, interested and involved. There is a need for training around participatory planning and urban environmental management to increase the capacity of the various stakeholders, particularly the city's citizens. Improved access to information for the citizens through an "environmental traffic light system" (which visually communicates the quality of the city's environment), a series of Urban Observation Centres and workshops in the *comunas* will address some of these shortcomings.

### KEY REPLICATION FACTORS

Partnerships with the university, the private sector and other levels of government, together with national-level legislative changes that empower local governments, have worked to strengthen the local government of Manizales. Taxation powers and access to international support for specific projects have increased the resources available. With these legislative and financial powers, and by working in a participatory and consensus-oriented manner, the city has been able to develop and implement a concrete strategy for a sustainable community.

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### STRATEGY

Strengthen Inter- and Intragovernmental Cooperation

### CHALLENGE

To coordinate overlapping governmental jurisdictions in the Fraser River estuary to ensure economic development in harmony with increased recreational opportunities and environmental improvements

### ACTION

Establish a mechanism for co-operation among federal, provincial and local governments, First Nations, and port authorities to coordinate planning and decision making on human activities in the estuary

### PROFILE

Fraser River Estuary Management Program (FREMP), Vancouver, Canada  
Land Area: FREMP applies to a 155 km<sup>2</sup> area of the lower Fraser River. This area is surrounded by the Greater Vancouver Regional District (GRVD).  
GVRD Population: 2 million  
FREMP Budget: US\$560,000

## CREATING WORKING ALLIANCES IN VANCOUVER, CANADA



THE FRASER RIVER ESTUARY, VANCOUVER

The Fraser River is one of the great rivers of the world, draining nearly 250,000 square kilometers into the Strait of Georgia (Pacific Ocean). The estuary, a coastal body of tidal water where fresh water is mixed with sea water, is a significant natural area with some of the most productive biological systems in the world.

Nowhere in the Canadian Province of British Columbia are the environmental pressures and competing demands for space and resources greater than in the fertile and heavily populated area around the estuary. Over the next 20 years, the growing population in the Vancouver area will reach three million people. These people will be looking to the Fraser River estuary to satisfy demands for housing, commercial and industrial developments, expansion of ports, and recreation. At the same time, the region's residents want to protect fish and wildlife habitat and improve the environmental quality of the estuary.

Many agencies' jurisdictions overlap in the estuary. Twelve local governments and three First Nations (indigenous peoples) have responsibility for community and land-use planning. The regional government is

responsible for sewage and drainage facilities and growth management. Two port authorities are in charge of water and land use, transportation, and port planning. The provincial and federal governments regulate water-based activities, environmental protection, and the protection of fish and fish habitat. The resulting legislative, regulatory and policy regime produces overlapping jurisdictions and competing responsibilities.

In the late 1970s, in recognition of the need to coordinate this governance system and in response to local government and community concerns about environmental degradation and habitat loss in the lower Fraser River, the federal and provincial governments initiated the Fraser River Estuary Study. As a result, in 1985 the Fraser River Estuary Management Program (FREMP) was established.

FREMP illustrates a working alliance among six governmental partners, including three federal and provincial agencies, two port authorities and the Greater Vancouver Regional District (GVRD), a federation of 22 municipalities. As part of the FREMP Management Committee, the GVRD gives the municipalities an equal but indirect voice in the management of the partnership. Each of the six partners contributes equally to the operating budget. Partners retain their authority as agencies and coordinate policy through a linked-management structure. Organizations and agencies pursue their individual interests and meet the needs of the broader region at the same time.

A Water and Land Use Committee provides advice on the implementation of the Estuary Management Plan. It comprises those agencies, port authorities, municipalities, First Nations and the regional district with a prominent role in estuary decision making.

FREMP has coordinated activities to improve resource management, including a habitat colour-coding system that classifies habitat value along the foreshore

to indicate an area's sensitivity to development and a process to coordinate the environmental review of all development proposals in the FREMP boundaries (about 100 per year).

The key achievement of FREMP was the 1994 approval of a comprehensive Estuary Management Plan, also known as *A Living, Working River*. Formally endorsed by all of the municipalities in the FREMP area of interest, the plan established a vision to "improve environmental quality in the Fraser River estuary while providing economic development opportunities and sustaining the quality of life in and around the estuary."

The action component of the plan comprises two broad themes: environmental protection and human activities. The supporting action framework for environmental protection addresses water quality management and fish and wildlife habitat. The four elements in the action framework under human activities are navigation and dredging, log management, industrial and urban development, and recreation.

## RESULTS

FREMP has proven to be an effective and efficient working alliance among various government jurisdictions to manage a precious resource that lies within various jurisdictions in a growing urban area. Through greater coordination of activities within the estuary, partners have reduced time and resources required by individual jurisdictions to plan and manage the foreshore and adjacent upland areas. Amid changes in partner institutions and their legislative frameworks, FREMP continues to provide a stable and continuing focus for delivering a program of action for the Fraser River estuary and contribute to a sustainable world.

In 2001, FREMP delivered its first monitoring report. The indicators used in the report show progress in fulfilling the Estuary Management Plan:

## KATOWICE, POLAND

The Katowice region of Poland has long been a center of heavy industry and mining. Combined with insufficient waste management practices, this caused widespread environmental degradation and health concerns. In 1994, 13 neighboring municipalities formed a legal union to develop a cohesive approach to improving the urban environment. Working in partnership, the group found international support and initiated a variety of key pilot projects including the recultivation of old landfills sites, cleaning up a closed coal mine and coke plant, and developing appropriate waste management facilities.

## MARRAKECH, CASABLANCA AND TANGIER, MOROCCO

The three Moroccan cities of Marrakech, Casablanca and Tangier started an urban poverty alleviation pilot project in 1998. Supported by UN-Habitat, a partnership between the beneficiaries, associations and elected municipal and national officials was created. The goal of the partnership was to develop local capacity, create and implement action plans, and make decision-making institutions more participatory. Three main themes provided

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focus for the project; increasing income for low income families, improving access to housing and basic services, and protecting vulnerable groups. This project has been so successful that it encouraged the government to create a Social Development Agency designed to finance local initiatives.

## AIR QUALITY DISTRICT MANAGEMENT (LOS ANGELES, USA)

The City of Los Angeles and its four surrounding counties comprise the second most urbanized part of the United States. High population density, industrialization and natural geography have caused severe air quality problems. The South Coast Air Quality Management District, initiated in 1976, has developed a comprehensive planning approach that sets and enforces regulations, provides a wide range of programs, and promotes clean energy. This approach involves all sectors and has resulted in a reduction of ozone to half of 1950 levels and a decrease in the number of days on which air quality is considered unhealthy.

**Conservation of the Estuary**—contaminants in Great Blue Heron eggs have decreased, fecal coliform counts in the main arm of the estuary have been reduced, and there has been a net gain in productive fish and wildlife habitat.

**Social and Economic Development**—FREMP ports' share of regional marine cargo increased, the number of visits to regional parks along the estuary doubled, the length of recreational corridors along the estuary increased, and the number of protected cultural sites has increased.

**Protect and Enhance Environmental Quality**—most log booms in the estuary are now stored to protect sensitive fish habitat and river dredging now conforms to removal limits set to balance navigational needs with environmental sustainability.

In the Fraser River estuary, economic development is progressing in a way that allows increased recreational opportunities and enhances environmental quality.

## LESSONS LEARNED

The most important value that the FREMP partnership offers to all who participate is the opportunity to act upon common goals and objectives regarding a shared resource.

This collaborative process has taken time and patience and has yielded excellent results. The success of the program has depended on the quality of engagement of participants and effective balancing of the varying levels of power of partnering agencies. FREMP has learned the importance of using dispute resolution and consensus building to transcend the hierarchy between agencies.

While the individual municipalities are indirectly represented on the program's executive via the GVRD, they are encouraged to participate directly in the development and implementation of the Estuary Management Plan. For this type of partnership to work, local governments need to commit to the

process—from a regional perspective, success is compromised if municipalities choose not to participate, or participate on an infrequent basis.

The final challenge that has faced FREMP over the years is in the area of public participation and transparency. FREMP recently shifted its resources away from an earlier focus on an education, such as a schools program and volunteer clean-up events, so as not to duplicate work done by other organizations. Though it has been criticized by public interest groups for not being included in decision making, the FREMP partnership is committed to fostering dialogue with these groups and the general public.

## KEY REPLICATION FACTORS

FREMP's linked-management model is particularly appropriate for management of coastal areas or other significant waterways where there is shared jurisdiction.

To replicate the FREMP model, champions for partnership are essential. The willingness to participate in such a working alliance should be reflected in partners' commitment to contributing financial and human resources. (In this case the six funding partners each get a CDN\$0.5 million program for less than \$100,000 each.) A written agreement, such as a memorandum of understanding is important to codify common principles and operating protocols. A commitment to consensus building is a requirement.

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## STRATEGY

Strengthen Local Government

## CHALLENGE

To encourage and assist local governments in Norway to implement sustainable development in the form of Local Agendas 21

## ACTION

Create a supportive national framework to provide local governments with the regulatory, jurisdictional and financial resources they need to implement Local Agendas 21

## PROFILE

Norwegian Association of Local and Regional Authorities (NALRA)  
Population: 4.5 million located in 434 municipalities and 19 counties  
Land Area: 324,000 km<sup>2</sup>  
Budget: US\$21 million

# NATIONAL STRATEGY FOR LOCAL IMPACT IN NORWAY



PARTICIPANTS IN A TRAINING COURSE, *PLANNING FOR REAL*, OFFERED TO LOCAL AUTHORITIES BY NALRA

*Agenda 21* calls on all local authorities to engage with their populations, non-governmental organizations (NGOs) and business sectors in order to develop Local Agenda 21 (LA21) action plans for sustainable development. Norway is one of the many countries that adopted *Agenda 21* at the national level and is now supporting LA21.

Much of the foundation for the LA21 effort in Norway originally was laid in environmental protection reforms. In 1993, the Norwegian Association of Local and Regional Authorities (NALRA) and the Ministry of Environment (MoE) began a local environmental management program that eventually included almost all of Norway's 434 municipalities.

The objective of the program was to enable local governments to integrate environmental protection and natural resource management into their overall planning processes. The participating municipalities were required to have their environmental management plans in place by the end of 1996.

Local governments received state grants so that they could appoint coordinators for environmental affairs. In addition, the MoE allocated considerable funds for training, networking and exchange of information. The resulting network of environmental coordinators in each municipality provided a good base from which to begin the LA21 initiatives.

In 1996 and 1997, the national government developed a White Paper that emphasized that sustainable development must be based on three perspectives:

- > an ecological perspective that deals with maintaining nature's production capacity,
- > a generational perspective that deals with a more equitable distribution of goods between generations,
- > a welfare perspective that deals with equitable distribution of goods around the globe today.

The paper stated that the national government would encourage every municipality to begin their own LA21 initiatives, and integrate LA21 concepts and activities into their municipal master plans and planning and budgeting processes.

The MoE and NALRA organized a conference in Fredrikstad in February 1998, bringing together more than 700 representatives from the central and local government and NGOs. The event gave participants more details on their roles and opportunities in the LA21 effort. Local governments were asked to endorse the *Fredrikstad Declaration*, which committed them to mobilize their residents, NGOs and other social partners to play an active part in LA21 processes, and to establish suitable meeting places and networks. This conference and the declaration provided the impetus needed to get LA21 going in Norway.

While responsibility for coordinating the LA21 effort at the national level rested with the MoE, NALRA worked in close cooperation to coordinate with local governments. Most of the work was to be done locally, with each municipality deciding what issues to tackle first depending on their local conditions and challenges.

To support this work, the MoE, NALRA and the counties worked together to develop a regional network of LA21 nodes. This network was established in 1998 and 1999. The MoE and NALRA also jointly publish a periodical called *Local Agenda 21* four times each year. Information sharing between the local authorities was further facilitated by the launch of a national internet site for LA21 ([www.agenda21.no](http://www.agenda21.no)).

When the MoE and NALRA first initiated the LA21 program, they committed to a five-year program, to end in 2002. During the program's last year, NALRA is focusing its efforts on ensuring that LA21 concepts have become a regular part of municipal planning and budgeting processes. They have just issued a position paper on the role of municipalities and counties in continuing sustainable development work in the coming years. The position paper also provides input into the development of a national strategy for sustainable development, which is expected to be completed in May 2002, and will move Norway from LA21s to a national *Agenda 21*.

## RESULTS

By the fall of 2000, more than half of Norway's municipalities and all 19 counties had endorsed the *Fredrikstad Declaration*. In a 2000 survey, 70% of municipalities claimed to be carrying on some kind of LA21 activity. However, the level of effort within each municipality varies considerably, with 40% having started some kind of project.

A more recent (March 2002) survey showed that 80% of the municipalities plan to continue their LA21 work, either at the same level (60%) or at an intensified level (20%).

## NATIONAL LA21 PROGRAM IN TURKEY

In 1997, the International Union of Local Authorities-Eastern Mediterranean and Middle East (IULA-EMME) initiated the "Promotion and Development of Local Agendas 21 in Turkey" project with the support of the UN Development Programme-Capacity 21. The project sought to build the capacity of local authorities to develop local action plans based upon participation, involvement of local actors, establishment of local "partnerships" and decentralization of local decision-making processes. The project was successfully completed in December 1999, and was selected to be the most successful and far-reaching project amongst the Capacity 21-supported programs conducted in 50 countries.

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Building on these achievements a continuation project was launched in January 2000. This project seeks to strengthen decentralized governance by ensuring that civil society is able to participate in decision making and influence local investment. The continuation project encompasses five main objectives, including creating a mechanism through which LA21 processes can influence local decision making and ensuring that LA21 receives long-term sustained support. Project partners from Turkey currently include 48 cities and 5 regional associations of local authorities.

Local projects that have been implemented under the LA21 banner include attempts to come up with more sustainable and holistic solutions for housing, transport, energy use and changing public attitudes. Many of the LA21 projects are focusing on informing and mobilizing the public, whereas only a few focus on more physical tasks, such as changes to energy infrastructure or transport.

### LESSONS LEARNED

When the municipalities were first asked to develop environmental management plans by 1996, it turned out that the most successful municipalities were those that incorporated their environmental management plans into their normal planning and budget systems. Municipalities that developed stand-alone environmental management plans ended up with plans to which nobody paid very much attention. NALRA learned from this experience. Instead of asking for stand-alone LA21 plans, NALRA encouraged the municipalities to include LA21 and sustainable development aspects directly into existing budget and planning documents and processes. More than 80% of the municipalities that undertook LA21 initiatives found this approach to be useful.

While the LA21 work can be coordinated centrally, the majority of the work must be done locally. It is essential to have regional coordinators that are mobile, and that can visit municipalities and other organizations to provide advice and assistance.

LA21 work is complex and results will not be seen overnight. It is like building a cathedral, stone by stone. With patience and perseverance, the task can and will be accomplished over time.

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### STRATEGY

Foster International Solidarity and Cooperation

### CHALLENGE

To assist local governments to reduce the emissions causing global climate change by influencing local energy, transportation, waste and land use practices

### ACTION

Engage local governments in an international campaign that enables them to integrate measurable climate change emission reductions into local practice, policies and actions that address immediate municipal concerns

### PROFILE

The International Council for Local Environmental Initiatives (ICLEI) is the international sustainable development agency for local governments. Its mission is to build and support a worldwide movement of local governments to achieve tangible improvements in global environmental and sustainable development conditions through cumulative local actions.

## AN INTERNATIONAL FRAMEWORK FOR LOCAL ACTION: CITIES FOR CLIMATE PROTECTION CAMPAIGN



CITY OFFICIALS FROM BUENOS AIRES, BERLIN, RIO DE JANEIRO AND KYOTO JOIN TOGETHER AT THE 4TH MEETING OF THE UN CONFERENCE OF PARTIES IN BUENOS AIRES TO URGE NATIONAL GOVERNMENT ACTION. EACH OF THESE CCP CITIES HAS HOSTED MEETINGS OF THE CONFERENCE OF PARTIES TO THE FRAMEWORK CONVENTION ON CLIMATE CHANGE.

Global climate change is inextricably linked to the increasing demand for energy and automated transport, much of which flows from the growth in urban populations. Recognizing the strong influence local government decisions exert on urban policies and practices, ICLEI established the Cities for Climate Protection™ (CCP) Campaign. The CCP is performance oriented. A milestone framework guides participating local governments toward achieving their emissions reduction goal. The framework begins with a local greenhouse gas emission inventory and forecast, proceeds to setting targets and developing an action plan, and culminates in the implementation and verification of measures.

The operation of the CCP is decentralized through a number of national or regional offices that provide local governments with technical assistance, training, materials and resource brokering to help them implement various measures. The regional efforts allow the CCP Campaign to be tailored to the needs of each region, while still providing a standardized international framework. Over 530 local governments participate in the campaign, collectively representing approximately 10% of the world's anthropogenic greenhouse gas emissions.

## RESULTS

Through the CCP, climate protection has begun to be successfully integrated into the decision-making processes of local governments throughout the world. Within the framework of the CCP, local governments have

- > become aware of the climate change problem,
- > acquired an understanding of their role in contributing to climate change,
- > seen possibilities for local solutions,
- > recognized the local co-benefits of climate protection,
- > been provided the tools, training, and capacity to act.

Launched in 1993, regional or national campaigns now exist in Australia, Canada, Europe (both region-wide and specific national campaigns in Italy and the United Kingdom), India, Indonesia, Latin America (Argentina, Brazil and Chile), Mexico, Philippines, South Africa and the USA.

Most CCP municipalities are successfully working through the milestones and implementing measures. A few examples include:

**Landfill Methane Utilization**—Adelaide, Australia, is capturing landfill methane and using it to generate 15 gigawatt hours of electricity, enough to power 5,000 homes and offsetting the fossil fuel previously used.

**Street Light Retrofit**—Querétaro, Mexico, replaced 10,000 high wattage street lights with more efficient lamps, cutting carbon dioxide emissions by nearly 4,000 tonnes/year.

**Green Homes Project**—In Puerto Princessa, Philippines, energy efficiency measures integrated into the design of a 1,000-unit social housing project have saved 170 tonnes of carbon dioxide/year.

**Water and Sewerage Pumping Upgrade**—Vadodara, India, replaced aging pumps at lift stations and treatment facilities to save 3.37 million kilowatt-hours of electricity, 15 million Rupees in energy bills, and 4,000 tonnes of carbon dioxide emissions/year—all based on investments with simple paybacks of four to six months. The new pumps also improved overall system performance and brought the biological oxygen demand (BOD) levels in the treated effluent into regulatory compliance.

**Renewable Power Purchase**—Austin, Texas, USA, requires that 5% of the city's electricity be generated from renewable sources. The city's municipal utility created the Green Choice program, a green pricing program which will help the utility meet over 50% of its projected load growth between 2000–2003 through megawatt savings from renewable energy sources. The program provides 340 million kilowatt-hour/year of renewable electricity from wind power, biogas and solar power generation, reducing approximately 230,000 tonnes (255,000 US tons) of carbon dioxide/year.

## LESSONS LEARNED

The CCP Campaign is intended to inspire local government action, therefore it was critical that the campaign be grounded in local government practice and methodologies. The local governments are the critical resource—without the support of elected officials, and action by the municipal management staff and operators, no progress can be made.

Many local governments recognized global climate change as a problem with links to urban development but were unclear about how municipal decisions contributed to it or could help mitigate it. It was essential for climate protection to be presented in a context that could integrate pressing municipal concerns such as reducing air and water pollution, improving sanitation and basic infrastructure, fostering economic development, and providing equitable access to resources and energy.

## CLIMATE ALLIANCE

Since 1990, more than 1,000 local governments in Europe have committed to climate protection by joining the Climate Alliance. The Climate Alliance is an association of municipalities that have partnered with Amazonian indigenous rainforest people. Both groups have a role to play in reducing greenhouse gas emissions: European cities by reducing energy and fossil fuel use and indigenous people by protecting the rainforest that serves as a carbon dioxide sink. The Climate Alliance acts as a link between these local-level initiatives and the international policy processes on climate change, biodiversity and forestry. Their efforts are strengthening sustainable development and North-South equity.

## EUROPEAN SUSTAINABLE CITIES & TOWNS CAMPAIGN

The European Sustainable Cities & Towns Campaign started in 1994 in Aalborg, Denmark. The result of the meeting was the Aalborg Charter, which outlines a commitment to pursue sustainable development at the local level through Local Agenda 21 (LA21) and similar programs. The campaign is supported by an alliance of five organizations; the Council of European Municipalities and Regions, Eurocities, the International Council for Local Environmental Initiatives, the World Federation of United Cities and the World Health Organization's Healthy Cities Project. These partners work to provide training, information and resources and promote sustainable development. The campaign is promoted through a series of conferences, and supported by the Directorate-General Environment of the European Commission.

Presently more than 1,400 European municipalities have committed to sustainable development by signing the Aalborg Charter and joining the campaign. It is currently the largest regional campaign for local sustainable development and LA21 in the world.

The provision of training, technical assistance and other support and the existence of a global network of local government peers engaged in a common pursuit were necessary for the program to be successful. The software tool, the training workshops around inventory methodology, measures selection and measures quantification, and the case studies and local government guides did not exist when the campaign was first launched. They were developed as ICLEI worked with the local governments and learned their needs. City-to-city exchange opportunities and assistance in securing project financing for measures were incorporated to help ensure that participating local authorities achieve campaign goals.

With ICLEI's help, local governments have been able to realize that tackling climate change is good business. For example, if a municipality decides to reduce greenhouse gas emissions by implementing energy efficiency measures, the action can reduce energy costs (fiscal responsibility), improve local air quality (quality of life) and create jobs during retrofit projects (economic development). The development and implementation of new technologies can stimulate local economic activity. Producing power locally contributes to self-sufficiency and limits the municipality's exposure from future increases in the cost of energy.

## KEY REPLICATION FACTORS

The CCP illustrates that global issues are likely to be adopted at the local level if co-benefits, such as improving fiscal responsibility, urban livability, quality of life and economic development can be stressed. A performance-oriented program requires a structure with key indicators and measurable goals. The milestones that CCP local governments are expected to undertake provide a strategic framework within which the local government can act, along with a protocol that facilitates monitoring and reporting both within the local government and to ICLEI. Such a program is also dependent on action by the local governments. To help ensure that ICLEI's mission for the CCP is achieved, prior to being accepted the local governments that participate must sign or adopt an expression of commitment to undertake the milestones and accomplish program tasks.

While local governments can engage in climate protection activity on their own, the training, technical assistance, tools, publications and global municipal partners all represent opportunities typical municipalities would not have if operating without the support of the CCP or other network.

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The International Council for Local Environmental Initiatives (ICLEI) is a membership association of local governments and their associations around the world. The organization's mission is to build and serve a worldwide movement of local governments to achieve and monitor tangible improvements in global environmental and sustainable development conditions through cumulative local action.

### LOCAL GOVERNMENT AND THE 2002 WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT

ICLEI is facilitating the Local Government Preparatory Process for the 2002 Johannesburg World Summit on Sustainable Development. This work is supported by the Secretariat for the UN World Summit on Sustainable Development and major international associations of local governments, including the International Union of Local Authorities, Fédération mondiale des cités unies–World Federation of United Cities and the Organization of Islamic Capitals and Cities. Over an 18-month period leading up to the Summit, regional consultations were conducted with local government officials and staff, as well as urban experts, concluding with an international meeting in Vancouver, Canada, in February 2002.

The local government review process assessed opportunities and recommended the five key strategies for accelerated action for sustainable development at the local level presented herein. The series of publications *Local Action Moves the World*, was prepared based on this process.

- > *Second Local Agenda 21 Survey Report.*
- > *Accelerating Sustainable Development: Local Action Moves the World* (Local Government Dialogue Paper), submitted to the Third UN Preparatory Session for the World Summit on Sustainable Development
- > *Local Strategies for Accelerating Sustainability: Case Studies of Local Government Success*
- > *Local Governments' Response to Agenda 21: Summary Report of Local Agenda 21 Survey with Regional Focus*

A four-day Local Government Session during the Johannesburg Summit is designed to allow participants from all world regions to share local government perspectives, priorities and strategies for local sustainability with the international community.

For more information on the Local Government Preparatory Process, or to review these publications online, visit [www.iclei.org/johannesburg2002](http://www.iclei.org/johannesburg2002).



**ABOUT THIS BOOK**

In 1992, world leaders adopted *Agenda 21*, the global plan of action for sustainable development. *Agenda 21* called on local governments to develop their own *local* Agendas 21.

Over the last ten years, local governments and their partners have built on their inherent strengths to become champions of sustainable development. Their strategies for action are accelerating the transition to sustainable, equitable and secure communities.

The case summaries in this ICLEI report show how these strategies have been successful in cities worldwide.

Reports in the *Local Action Moves the World* series, prepared for the 2002 World Summit on Sustainable Development, are available online at [www.iclei.org/johannesburg2002](http://www.iclei.org/johannesburg2002) or by contacting ICLEI.

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