

PROFILE FOR
COMMUNITY
ACTION
SERIES



Green Cities: a Guide for Sustainable Community Development

a companion
to Harmony
Foundation's
Community
Action
Workshop
Manual



OFFICIAL DOCUMENT
UN WORLD ENVIRONMENT DAY 2005
SAN FRANCISCO URBAN ENVIRONMENTAL ACCORDS

THE GLOBAL 500



United Nations
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for Environmental
Achievement



Communities around the world are increasingly confronted with the challenges and opportunities of achieving sustainable community development. Informed and cooperative action will be vital to improve the quality of life now and for the future.

**MICHAEL BLOOMFIELD FOUNDER AND EXECUTIVE DIRECTOR
HARMONY FOUNDATION**

Since 1985, Harmony Foundation's education programs and materials have helped communities around the world understand the vital issues facing us and to respond with innovative projects which address local needs while contributing to meeting national and international goals.

We are committed to working in partnership with other organizations to achieve positive results and reduce conflict around environment and development issues. Building bridges between community organizations, government and business demonstrates the practical benefits of multi-sectoral cooperation.

We gratefully acknowledge those whose support will enable this publication to assist many more communities.



Thanks to our World Environment Day 2005 Partners



World Environment Day is an official program of the United Nations Environment Programme (UNEP)

Harmony Foundation is a registered charitable organization recognized internationally for its leadership in multi-sectoral cooperation and creating innovative training programs and educational materials for educators, youth, schools, the workplace and communities.



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Thanks to Penny Tennenhouse, Darrell Erb, Diane Weber and Tim Humphreys for their helpful comments and to Professor Robert Carter for his sage advice.

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NATIONAL LIBRARY OF CANADA CATALOGUING IN PUBLICATION DATA

Bloomfield, Michael 1950-
Lithgow, Michael 1965-
Roseland, Mark 1957-
Sustainable, Community Development
Includes bibliographical references.

ISBN 0-929010-23-X

1. Cities, Sustainable Community Development 2. Community Planning 3. Citizen Participation.
I. Lithgow, Michael, 1965-. II. Bloomfield, Michael, 1950-. III. Roseland, Mark 1957.
IV. Harmony Foundation of Canada. V. Title

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Printed on 100% post-consumer paper, Genesis Text Husk, Fraser Papers Inc.





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Once while the sage Choni was walking along a road, he saw a man planting a (carob) tree. Choni asked him, "How many years will it require for this tree to give fruit?" The man answered, "It will require 70 years." Choni asked, "Are you so healthy a man that you expect to live that length of time and eat its fruit?" The man answered, "I found a fruitful world because my ancestors planted for me. So will I do for generations to come."

Building Sustainable Societies Program is made possible by donors, who share Harmony Foundation's commitment to leadership, innovation and excellence in environmental education and sustainable community development. Special thanks to:

Robert and Birgit Bateman

Christine and Michael Bloomfield

Petro-Canada

BMO Financial Group

Bell Canada

The Co-operators

Fraser Papers Inc.

RBC Foundation

We would also like to thank the many other organizations and individuals who support our work to promote informed and cooperative action on environment and development.

Acknowledgements

Harmony Foundation and the authors of this publication gratefully acknowledge the Earth Council Alliance, Earth Council Foundation USA and Tommy E. Short Charitable Foundation for their support and their confidence in our ability to produce a quality publication in such a short period of time. In particular we extend our thanks to Maurice Strong, Tommy E. Short and Darrell Erb.

Thanks to the Foundation's Board of Directors for continuing to encourage innovation in our programs, leadership in promoting a positive approach to environment and development issues and generosity in sharing our materials and expertise.

We would also like to thank Dr. Mark Roseland and the Centre for Sustainable Community Development (CSCD) at Simon Fraser University, which works to support and enable the sustainable development of communities through research, education, and community mobilization in Canada and internationally. The Overview of this publication drew inspiration and in part is adapted from *Toward Sustainable Communities: Resources for Citizens and Their Governments*, by Mark Roseland, with Sean Connelly, David Hendrickson, Chris Lindberg, and Michael Lithgow (New Society Publishers, 2005). (www.sfu.ca/cscd). *Toward Sustainable Communities* can be ordered from bookstores or directly from New Society Publishers (www.newsociety.com).



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In this Guide you'll find facts, resources, inspiring success stories and a wealth of ideas on how to promote sustainable development in your community.





Foreword

The Future is in Our Hands

A foreword by Hon. Maurice F. Strong

Civilization was born in the cities and it is in the cities of the world where our future is being determined. The phenomenal population growth of recent times has been concentrated in urban settlements which have expanded at speeds and on a scale unprecedented in human experience. Cities worldwide have been growing faster than their capacity to provide the homes, livelihoods, infrastructure and services required to meet the most basic needs of their people. The mega-cities that have proliferated are an agglomeration of many communities that have had little time to forge cooperation and understanding adding to the difficulties of governance and giving rise to communal tensions and conflicts. Such rapid growth also pressures the hinterlands which jeopardizes the resources upon which cities depend.

The demise of past civilizations clearly warns us of the dire consequences of pursuing our unsustainable path. In today's highly interdependent world local breakdowns have global impacts. The expanding human population and the intensity of the pressures we exert on the earth's resources and life-support systems threaten the future of life as we know it. The future is in our hands. It can be a very bright and promising future indeed. But collapse will be the tragic consequence of continuing on our present course.

Our global civilization will only be sustainable if the cities in which its populations and resources are concentrated are sustainable. This remarkable guide to green cities is the product of the extensive insights and experience of the Harmony Foundation and their colleagues at the Centre for Sustainable Community Development. It is rich in practical ideas and inspiring examples of what must be done and what can be done in every community to set it on the path to sustainability.

While the concept of sustainable community development is most frequently identified with the environmental movement from which it sprang it embraces the entire system of inter-acting activities and sectors which determine the character, health and directions in which communities develop. The means to make this transition must be found primarily in each community through the efforts of their own people. The benefits locally and globally will almost always exceed the costs, although some of these may only accrue in a future beyond the terms of those now in political office.

What is most needed now is leadership. Those who are participating in this transformation have already manifested the kind of leadership that is required, and I am sure that they agree that leadership cannot be confined to those who hold public office. Leadership is most effective when it inspires and facilitates the participation of people in their communities, instilling an ethos of participatory change involving all people and sectors. This is our best hope of ensuring a secure and stable future for the entire human community.

I am convinced that the future direction of our civilization will be set in the first two or three decades of this new millennium. Surely there could be no more exciting challenge to our generation or a more awesome responsibility. The insights, information and the practical proposals set forth in this guide will brightly illuminate the pathway to that future.





Overview of Sustainable Community Development

Introduction

An exciting transformation is underway in neighborhoods around the world. Citizens and governments are taking action in their cities and towns and across national boundaries to protect the environment, address poverty and other social issues, and improve the quality of life now and for the future. Communities are discovering that when residents, local governments and business work together, destructive patterns of development can be transformed into beneficial outcomes that provide prosperity which is ecologically and socially sustainable.

What many community leaders recognize is that the world's space and resources are shrinking and that we must find innovative new ways to live together. Over the past 50 years the world's population has doubled. Our consumption of natural resources and production of waste, some of it deadly toxic, also has risen dramatically. Our growing demands on the Earth's natural systems are creating serious social, environmental, and health costs. Grave predictions about the future have become common and many believe that we are threatening the survival of life on Earth.

But our purpose, here, is not to make gloomy predictions, but rather the opposite, to recognize and encourage community leaders who have found and who are searching for constructive alternatives, *people like you*. Our shared problems are global in scale, and yet it is at the community level where people live and work and raise their families, where the challenges will be met.

We need fresh ideas and innovative leadership to help transform urban growth into a positive movement toward long term economic prosperity, social justice and ecological stability. Sustainable Community Development (SCD) involves citizens, local governments, community organizations and businesses in a cooperative effort to find sustainable approaches to managing all aspects of urban settlements. Sustainable community development has demonstrated over and over, with meaningful results, that ecological sustainability, economic growth and social well-being are in fact mutually beneficial goals.

Confronted by complex and rapidly evolving issues, we cannot rely on outdated models of growth and development. Clearly, current patterns of urban growth are unsustainable in the long term and increasingly destructive in the short term to the people who live there. We must all take stock – whether as community leaders, public officials, or concerned citizens – and begin to reckon with the consequences of our day-to-day decisions. This re-orientation must begin today to inform how we act and plan for the future.

Our goal in writing this book was not to be exhaustive, but to provide you with a comprehensive overview of the exciting work being done towards sustainable community development and to share inspiring achievements from communities around the world. The power of SCD grows when people and organizations better understand the transformative potential of the decisions

When residents, local governments and business work together, destructive patterns of development can be transformed into beneficial outcomes that provide prosperity which is ecologically and socially sustainable.

We need fresh ideas and innovative leadership to help transform urban growth into a positive movement toward long-term economic prosperity, social justice and ecological stability.





Overview of Sustainable Community Development

that make use of the interconnections between social, economic and ecological processes. We hope that this book will help promote this understanding.

Green Cities is not intended to be read from cover to cover, although this would be a fine way to review the material. Green Cities was designed as a tool box, something to dip into when a problem arises to learn how others have successfully approached similar problems, and to find starting points, strategies to try and stories from which to seek ideas and inspiration. Our hope is that you will return again and again to these pages as the demands of your own community offer ongoing opportunities to introduce sustainable practices.

Sustainable community development offers a new way to plan our cities, to accommodate their growth, and ultimately to live in them. The transition to SCD presents each of us with challenges which at times will seem overwhelming. As with any problem we need to develop strategic plans, set clear priorities and commit ourselves to action. And there is comfort to be had in the fact that we are not alone. People around the world have risen to the challenge. We can take inspiration and encouragement from the innovation, commitment and practical success demonstrated in this book.

We commend you for contributing to that effort and for using your leadership in positive ways. It is our hope that this publication will provide you and your community with a wealth of ideas to incorporate into your own innovative strategies to meet the needs in your community. After all, words are meaningless unless they are backed up with meaningful actions. We have presented a path forward; now it is up to you.

We commend you for using your leadership in positive ways. After all, words are meaningless unless they are backed up with meaningful actions.

Over the second half of the 20th century, while world population more than doubled, food production almost tripled, energy use more than quadrupled, and the overall level of economic activity quintupled (Kates and Parris 2003).

Part 1 – What is Sustainable Community Development?

Today, 49% of the world’s population, or some 3.6 billion people, live in cities. By 2030, the figure is expected to rise to 61% (PDDESA-UN 2003). Large urban settlements face an increasing number of problems: severe environmental degradation, pollution, water, energy and food shortages, solid waste accumulation, housing affordability and availability, disease and poverty.

Sustainable community development (SCD) responds to these problems based on three core principles:

- Environmental considerations must be entrenched in economic policy-making.
- Sustainable development incorporates an inescapable commitment to social equity.
- “Development” means more than simply “growth” – it implies qualitative as well as quantitative improvement. (Jacobs 1993):





Overview of Sustainable Community Development

As many of the examples in this book will demonstrate, ecological sustainability, economic growth and social equity are not only compatible, but inextricably linked and mutually beneficial. It is not growth itself that is the problem, but how we manage growth that determines whether or not our communities flourish or disintegrate into ecological, economic and social crisis. To avoid crisis there must be a different kind of development, a pro-active strategy based upon policies and programs which respect these vital interconnections.

Community Assets & Strategic Planning

It is useful to think of neighbourhoods in terms of assets (or community capital). There are at least six types of assets – *natural, physical, economic, human, social, and cultural* (Hancock 2001; Roseland 2000). Each represents a critical aspect of the community (see **sidebar**). Sustainable community development takes advantage of the natural synergies that exist between community assets as they manifest in day-to-day activities. An example will help to illustrate: A transportation system oriented to walking, bicycling and shared public use rather than private vehicle ownership contributes to *natural capital* by saving energy, reducing emissions and lessening pressure to develop land for roads and parking. It contributes to *human capital* by reducing health-damaging air pollution and motor vehicle accidents, and by increasing the amount of exercise people get. It contributes to *social capital* by increasing the social networking required for car sharing, car pooling and other more social means of getting around, in addition to the social interaction that occurs in the use of public transport. Finally, it contributes to *economic capital* by reducing transportation infrastructure costs, the financial impacts of congestion, and the costs of transportation if people use their cars less, do not need to own a car, or perhaps become part owners in a shared car-pooling system. This in turn increases disposable income, which may be spent on more health-enhancing products and services (Hancock 2001; LRC 2004). It preserves land for more important uses such as food production, parks and housing.

Community assets exist in relationship to each other. It is in the strategic use of these dynamic relationships (e.g., harnessing them together to drive development processes towards sustainable goals), that makes sustainable community development such a powerful and dynamic approach. Strategic planning looks at urban problems and how solutions can be derived from the various kinds of assets which exist in the community.

Part 2 – The Role of Citizen Participation in Local Governance

Public policy makers cannot achieve the goal of sustainable communities without active public encouragement and support. Some writers have labeled the unique importance of local involvement as “urban leverage,” the magnified impact that occurs when large numbers of people located in urban communities

STRENGTHENING COMMUNITY CAPITAL

(Adapted from Roseland 2005)

Enhancing natural capital means conserving and enhancing natural resources, sustainable resource management, cleaner production, and minimizing waste

Improving physical capital focuses on community assets such as public facilities (e.g., hospitals and schools), water and sanitation, efficient transportation, housing, and telecommunications.

Strengthening economic capital means maximizing the use of existing resources, keeping money circulating in the community; meeting local demand with local production; innovation; and developing locally responsive financial institutions.

Increasing human capital focuses on health, education, nutrition, literacy, and family and community cohesion, and the basic determinants of health such as peace and safety, food, shelter, education, and income

Multiplying social capital means making local governance more effective and responsive, encouraging the growth of community organizations, capacity-building, participatory planning, and public access to information

Enhancing cultural capital encourages respect for traditions and values, heritage and place, the arts, diversity, and social history.





Overview of Sustainable Community Development

It is not growth itself that is the problem, but how we manage growth that determines whether or not our communities flourish or disintegrate into ecological, economic and social crisis.

Participation is based on dialogue, and the success of sustainable development practice is directly linked to the degree to which local governments engage in dialogue with citizens and community organizations.

participate in sustainable practices (Rees 1995). A study of 150 municipalities found that sustainable development practice and governance were more successful when local governments worked with their citizens and community organizations (Ludhe-Thompson 2004). Dialogue-based governance is policy-making that actively encourages communication between government and civil society through all stages of the development process.

Sustainable community development rests on an understanding of social, economic and ecological events as intertwined, especially at the individual level where social values influence economic decisions that have ecological outcomes. Citizen participation is essential because many of the problems faced by urban settlements result from the day-to-day choices made by individuals and the places where they live and work. The benefits of wide-spread and meaningful citizen participation are numerous:

- participation reveals the values and priorities of local residents – an understanding of which is essential when framing policies designed to further sustainable community development goals
- participation encourages and creates space for the critical examination of knowledge and information
- participatory processes create opportunities to draw on experience and knowledge in the community
- participation allows citizens to define relevant interests (i.e. to articulate their interests in relation to a sustainable development process) and fosters consensus building and a shared sense of purpose among stakeholders
- participation allows citizens to contribute to shaping their future, helps them adjust to impending change, and promotes adaptive management styles with built in feed-back loops
- participation gives sustainable community development processes access to the rich pool of talent that exists in every community – professionals, academics, community group leaders and concerned citizens.

Essential to meaningful citizen participation is the emerging concept of “environmental justice,” an approach to sustainability that seeks to ensure that all citizens, even the poorest and most marginalized, not only have the right to be protected from pollution and to live in a healthful environment, but to be meaningfully involved in the development, implementation and enforcement of environmental regulations and policies (Agyeman and Evans 2004). Economic and cultural inequalities present significant barriers to sustainable community development because marginalization limits lifestyle choices and the processes of participatory planning for sustainability (Adger 2002). The changes required for the transformation to sustainable communities are so immense that government action alone will not be enough. Sustainable community development will only be achieved by mobilizing the energy, creativity, knowledge and support of local





Overview of Sustainable Community Development

communities, stakeholders, interest organizations and citizens (Ageyman and Evans 2004). Indeed, communities which have higher literacy levels, greater civil liberties and more equal income distribution also generally have higher environmental quality (Torras and Boyce 1998).

The importance of meaningful and widespread citizen participation to the long-term success of sustainable community development cannot be overstated. When citizens are allowed to participate in the decisions which affect their lives, including the most culturally marginalized or poorest citizens in a community, they become stakeholders in the process of change. Collective behaviors are responsible for the problems being faced in urban settlements, and it is only through collective responses that sustainable strategies will transform today's cities into tomorrow's sustainable communities. (See **Honourable Mentions: Puerto Princesa Watch** – Puerto Princesa, Philippines in this publication.)

For more discussion of the role of citizen participation, please refer to the **Establishing Community Priorities** and **The Importance of Citizen Participation**.

The changes required for the transformation to sustainable communities are so immense that government action alone will not be enough.

Part 3 - Market Mechanisms

The shift towards a more market-oriented approach to local government is a relatively recent phenomenon (Osborne and Gaebler, 1993). Budgetary restrictions and economic policies favouring business-like orientation have quickly expanded the role of the private sector in planning and decision-making. In many instances, market-based strategies are replacing traditional regulatory tools (Di Leva, 2002). In addition, government retrenchment has created a need for private investment to help provide public services and infrastructure. Despite the potential risks of over-reliance on market-based models, local governments are increasingly interested in these models as evidenced by the growing number of P3s (public-private partnerships).

Market mechanisms are strategies that seek to positively and proactively capture market forces for the purposes of promoting and building sustainable communities. Market mechanisms can take many forms:

- financial incentives to encourage consumers to do or cease doing some activity
- risk mitigation by public agencies (i.e. government guarantees) for sustainable commercial transactions
- procurement policies that create markets for sustainable services or products
- zoning or bylaw changes that encourage certain kinds of private sector behaviour (i.e. brownfield or infill development)

In 1999 in the U.S., sustainable investment portfolios accounted for 19% of the market for professionally managed assets, some \$2.2 trillion (Jeuken 2001).





Overview of Sustainable Community Development

The dynamic forces and resources that make up market processes can be harnessed to help achieve sustainable community goals.

Investing in green businesses and social ventures is a means by which private investment decisions support sustainable community development. Investments that promise more than profitability – social and environmental benefits, or at least the absence of some harm – are an expanding part of the investment market. In 1999 in the U.S., sustainable investment portfolios accounted for 19% of the market for professionally managed assets, some 2.2 trillion dollars (Jeuken 2001).

Community development venture capital funds specialize in financing smaller, strategic and innovative sustainable development projects like new energy technology and ecologically-sensitive land development. Double or triple bottom-line accounting refers to the business practice of entrenching other considerations alongside profitability such as ecological sustainability and social justice. Multiple bottom-line investing generates positive cash flow while stimulating other benefits such as long-term ecological health, quality jobs in poor neighbourhoods, or affordable housing. In the U.S., community development venture capital funds manage some \$548M in assets with average returns between 10% and 15% (Montoya 2004; Seidman 2005).

Private enterprises and market activity play an essential role in our communities, and an increasingly important role in how we respond to shared needs. The dynamic forces and resources that make up market processes can be harnessed to help achieve sustainable community goals.

In 1950, there was 1 city with a population over 10 million. In 1975, there were 5. In 2000, there were 19. The number is expected grow to 23 by 2015 (UN-DESA 1999)

Part 4 - The Urban Metabolism

An increasingly popular way to conceptualize human settlements is as an ecosystem with metabolic inputs and outputs (Costa et al. 2004). While each part is recognizably distinct from the other (i.e. water and sewage from energy use), they are inextricably linked, and actions in one area affect some or all of the other aspects of the urban environment. This section will examine sustainable community development practice from this perspective, respectful of the urban environment’s biophysical make-up, and how land use and materials exchange form local economies.

Land Use Planning

Conventional land use planning spreads development and growth over wide areas. Sprawl, as it is sometimes called, increases our demands for land and resources and brings with it a host of related problems: increased automobile-dependence which in turn increases energy consumption and green house gas emissions, expensive infrastructure costs, contaminated aquatic ecosystems, destruction of agricultural land, and the social and health consequences of living in environments that encourage auto-dependence and discourage pedestrian traffic (Roseland 2005). The critical issue for most communities is





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how to manage patterns of growth while preserving farmland and ecosystems, reducing car dependency and congestion, preserving and creating green space, and ensuring adequate housing. By creating more compact urban areas, communities can reduce infrastructure costs and pressures on undeveloped areas, revitalize urban areas in decline and create more transportation choice (Tomalty 2003).

Sustainable land use can help reinvigorate communities while increasing environmental, economic, social health and cultural benefits.

Transportation

Transportation is inextricably linked with land-use planning. In many large cities worldwide, land-use has been dominated by transportation demands, particularly the use of automobiles. Instead, land-use planning should guide transportation decisions, and transportation should be designed to support sustainable urban growth (Cervero 1991; Replogle 1990).

Sustainable transportation systems depend on policies that reduce transportation needs and allow us to meet those needs in more energy-efficient, less damaging ways. Cities with low auto-dependence are more centralized, more oriented toward public transit, foot traffic and bicycle use, use higher penalties to discourage speeding, and offer better public transit (Newman and Kenworthy 1999). Land use planning can:

- encourage and/or restrict high-density development to areas within walking distances of public transit routes
- set aside land for bicycle paths and pedestrian routes
- encourage adequate non-auto infrastructure such as cross-walks, bicycle stands, foot paths, adequate lighting, public/employee showers
- encourage inter-modal transportation by linking bicycle and foot paths with transit routes

Housing

Density is often the guiding factor in land use planning and housing, but it is often misunderstood. Density is frequently mistaken for overcrowding which is, in fact, a psychological response to population pressures that has more to do with the number of people per room than the number of people per unit of land (Karakiewicz 2004). It is overcrowding – usually a function of poverty – that is closely linked with social pathology – not density per se. Overcrowding is a problem of distribution rather than numbers, a problem rooted in income inequalities and lack of access to adequate affordable housing. (See **Success Stories: East St. Louis Action Research Project** in this publication.)

High density with little overcrowding has many benefits: economic stimulation; reductions in energy consumption and greenhouse gas emissions because of smaller distances between workplace and home; increases in transit and utility efficiencies, and better street safety (Karakiewicz 2004; Roseland 2005). Higher densities are also associated with many features that make

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Overview of Sustainable Community Development

New urbanism is an approach to developing sustainable housing solutions based on higher density models proven to create and sustain healthy, safe communities.

neighbourhoods desirable – walking distance to amenities, mixed use, high degree of social interaction, and a diversity of local residents.

New urbanism is an approach to developing sustainable housing solutions based on higher density models proven to create and sustain healthy, safe communities. Guiding principles include:

- a mix of public and private housing, and owned and rental properties
- a mix of housing affordability and household income levels
- zoning to accommodate mixed land use – commercial and retail on main spines surrounded by residential, with some light industrial (people living within walking distance of work and shopping areas)
- high densities to encourage transit and utility efficiencies, and to support local economic growth
- open space for children in good view of dwellings
- community facilities such as community centres, libraries, seniors centres, urban farms
- facilitation of easy movement through all parts of the community on foot, by bicycle, and by public transit (Roseland 2005)

Infill development is an approach to increasing density that takes advantage of previously developed and serviced but now abandoned, spoiled or under-used land and redevelops it for renewed habitation. Infrastructure costs are minimized because the land is already serviced, and infill reduces the pressure to expand into undeveloped green areas. (See **Honourable Mentions: Downtown Housing Incentive Program** – Saskatoon, Canada in this publication). The densities and mixed land-use patterns in many cities in developing countries offer strong opportunities for infill housing development (Romaya 2002).

Brownfield development is an infill approach that focuses on the rehabilitation of industrially polluted land. Environmental liability and regulatory complexity are significant market disincentives for dealing with brownfield sites. Public agencies and private organizations have emerged to take advantage of this opportunity by specializing in coordinating the remediation expertise, regulatory knowledge, community mobilizing, risk management and capital requirements needed to steward a brownfield through the development process (CSCD 2005; PolicyLink 2005).

Urban Ecology and Green Space

It has become increasingly clear to planners and residents alike that green spaces and natural environments in the city have many positive impacts, for example:

- increased social interaction and health; air purification and production of oxygen; wind and noise filtering (Chiesura 2004)
- decreased energy costs through shading. Paved surfaces and building materials make urban environments up to 18 degrees warmer than surrounding areas because of heat absorption and fewer plants to metabolize solar energy. Three





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to eight percent of all air conditioning use is compensation for heat-island warming (MacPherson and Rowntree 1994; Streutker 2003)

- improved hydrologic balances. Impervious surfaces create runoff management and pollution problems. Green space absorbs rain, increases evaporation and transpiration, and allows natural purification and infiltration to ground water sources (NRDC 2001)

The amount of green space in an urban area can be expanded through the creation of parks, local stewardship of undeveloped areas and rehabilitation of existing developed sites such as parking lots, vacant land, boulevards, or rooftops. Sustainable green spaces rely on native plant species to minimize water needs (xeriscaping), a strategy that can reduce water demands by up to 80% (Chaplin 1994; Sovocool and Rosales 2001).

Other strategies for increasing green space include (Roseland 2005):

- green space inventories to identify areas in need of protection or reclamation
- land trusts created to protect and manage public and privately owned green space (aspects of privately owned land can be preserved through conservation covenants or private agreements)
- natural planting ordinances that set limits on how much of a lot can be developed and how much must remain in its native state
- roofing ordinances (In Germany, for instance, 43% of cities offer financial incentives for roof greening, and green roofs are often required by conditions attached to construction permits in order to meet the federal requirements for mitigating the ecological impact of building construction. (English Nature 2003; Peck and Kuhn 2001)
- xeriscape bylaws which require landscaping with native or other species that have lesser water needs
- urban reforestation practices which give priority to protecting and increasing tree populations
- urban agriculture (discussed in detail under the heading Food Security)

(See **Honourable Mentions: Urban Greening, Sri Lanka** in this publication)

Another unsustainable hazard for urban green spaces is the use of insecticides, herbicides and fungicides (collectively referred to as pesticides) which introduce toxins into the food chain and hydrologic cycle. In addition to killing animals, birds, plants and beneficial insects, and poisoning aquatic ecosystems, research has shown that exposure to pesticides has serious consequences for human health. Children are especially vulnerable, exhibiting impaired coordination, learning disabilities, asthma and compromised immune systems. Pesticides are also a health risk for adults, causing reproductive difficulties, increased cancer rates and neurological and respiratory problems (Landrigan et al. 1999; Rubin 2003; Weiss 2004).

In addition to killing animals, birds, plants and beneficial insects, and poisoning aquatic ecosystems, research has shown that exposure to pesticides has serious consequences for human health.





Overview of Sustainable Community Development

An increasing number of cities and residents are initiating strategies to restrict and eliminate pesticide use.

The cosmetic use of pesticides by municipal governments and residents has dramatically increased over the past five decades. In response, an increasing number of cities and residents are initiating strategies to restrict and eliminate pesticide use:

- prohibitions against the use of chemical use on municipal property and parks
- increasing consumer awareness of the impacts of herbicides and pesticides, and about green alternatives
- workshops and seminars on organic gardening and landscaping and encouragement to switch

SELECTED RESOURCES

American Forests (United States) is involved in and provides resources related to planting trees for environmental restoration and the science and practice of urban reforestation. www.americanforests.org

Beyond Pesticides (United States) advocates for a pesticide-free society by identifying the risks of conventional pest management and promoting non-chemical alternatives. www.beyondpesticides.org

Centre for Development and Education (Switzerland) focuses on sustainable management resources in Africa, Asia, and S. America. www.cde.unibe.ch

Center for Livable Communities (United States) provides resources for sustainable transportation planning. www.lgc.org/center

Cyberbia (web-based) a web directory of internet resources relevant to sustainable planning for urban planners. www.cyberbia.org

Green Roofs for Healthy Cities North America Inc. (Canada) advocates green roof infrastructure in cities across North America. www.greenroofs.org

Lincoln Institute of Land Policy (United States) studies and teaches land policy, including economics and taxation. www.lincolninst.edu

Livable Region Strategic Plan (Canada) is a comprehensive long-term sustainable transportation and urban growth plan for a densely populated region of British Columbia, Canada. Chosen as “Best Practice to Improve the Living Environment” at the 2002 Dubai International Awards. www.gvrd.bc.ca

Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (International Agreement) is an international protocol for trade of hazardous chemicals in order to protect human health and the environment. www.pic.int

Stockholm Convention on Persistent Organic Pollutants global treaty to protect human health and the environment from persistent organic pollutants. www.pops.int

Additional resources for sustainable land use planning are found at the end of this guidebook under the **General Resources** heading.





Overview of Sustainable Community Development

Transportation Planning

Car-dependency presents one of the biggest challenges for urban settlements. There are over 500 million cars on the planet, a figure expected to double by 2030 (Economist 1996; Renner 2003). Automobiles account for more than 25% of the world's oil consumption and 30-50% of land use in automobile-oriented cities (During 1992; Renner 1988). Nearly 50% of global carbon monoxide, hydrocarbon, and nitrogen oxide emissions from fossil fuels come from gasoline and diesel engines (Saville 1993). In city centres, especially on highly congested streets, traffic can cause as much as 90-95% of the carbon monoxide levels, 80-90% of the nitrogen oxides and hydrocarbons, and a large portion of the particulates, posing a significant threat to human health (WRI 1996). Automobile use results in fatalities, injuries, and noise pollution, and has a negative impact on a community's social fabric (Egan 1995).

There are over 500 million cars on the planet. Automobiles account for 25% of oil consumption, 30-50% of land use, and 50% of carbon emissions.

Sustainable approaches to transportation focus on reducing car-dependence and managing existing levels of traffic in safer and more ecologically and socially sustainable ways.

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Reducing Car Dependence

Car-dependency is a function of a variety of factors: density, the availability of roads and parking, the costs of driving and parking, and provision for transit and non-auto transportation. To reduce auto-dependence, local governments and communities can (Roseland 2005):

- increase the quality and affordability of public transit systems
- re-orient land-use objectives toward facilitating public transit and encouraging the higher density and mixed zoning that allows people to live near where they work
- reduce emphasis on infrastructure for cars (i.e. roads, freeways, and parking lots) and increase infrastructure for public transit (expanded park-and-ride facilities, dedicated lanes, rail construction) and other modes of transportation such as bicycling or walking. (See **Honourable Mentions: Community Bicycle Network**, Toronto, Canada in this publication.)
- cluster high-density development to ensure “walkability” to public transit stops
- raise gasoline taxes and use the money to support non-automobile transportation modes
- impose road-tolls and fees for car use in peak periods or congested areas (Kenworthy and Laube 1996; Downs 2004)





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“Walkable” communities provide one of the most affordable and least destructive transportation systems by returning urban environments to a scale better suited for pedestrian travel.

Recurring congestion, environmental degradation and community impacts have led transportation policy-makers to accept that expanding infrastructure for car-use often imposes greater costs on society than are warranted by the benefits.

“Walkable” communities provide one of the most affordable and least destructive transportation systems by returning urban environments to a scale better suited for pedestrian travel. “Walkable” communities produce many benefits: more sustainable resource use, increased social interaction, improved physical fitness, diminished crime as well as other social problems (Walkable Communities 2004).

Traffic Management

Recurring congestion, environmental degradation and community impacts have led transportation policy-makers to accept that expanding infrastructure for car use often imposes greater costs on society than are warranted by the benefits (Goodwin 1996; Litman 2004; Noland 2000). Road expansion is not only costly (\$60 million per km for highway construction), it is a short-term solution that often increases traffic (CST 1998; Downs 1992; Goodwin 1996; Noland and Cowart 2000). Typically, the only long-term impact of more roads and lanes is more congestion.

Managing traffic for sustainability encourages a more efficient use of existing transportation demands and infrastructure by changing driver behaviour:

- high occupancy vehicle (HOV) and transit-only lanes (At freeway speeds, a full bus or rail car can carry as many people as one lane of car-pool traffic up to a kilometre long (Leman et al. 1994). Bus-only lanes in New York increased bus speeds by 15%-25%, and even allowed car traffic to move 10%-20% more quickly (Zuckerman 1991).
- preferred parking and toll privileges for HOVs (high occupancy vehicles)
- freeway on-ramp traffic lights to regulate flow
- information systems that give drivers realtime traffic and parking information to support more efficient transportation choices
- expanded park-and-ride facilities

Demand management focuses on shifting people to more efficient modes of transportation and to travel during off-peak hours:

- Car-sharing (sometimes called car co-ops or car clubs). Groups of drivers share the purchase, maintenance costs and use of one or more vehicles. In Bremen, Germany, the car-sharing program Cambio has collaborated with the transit authority to use the same pass for the transit system as for Cambio’s cars (Fenton, 2003). In Vancouver, Canada cooperative car ownership has been turned into a thriving green business (CAN 2005).
- Peak-hour road pricing can reduce total vehicle travel which, in turn, can reduce road and parking costs, increase road safety, protect the environment, and encourage more efficient land use. The central London congestion charging scheme has reduced car congestion by 30%, accidents by 28%, traffic volume by 15% and emissions and fossil fuel consumption with only small impact on business activity (Transport for London, 2004).





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- Traffic calming to slow traffic and reduce volumes to make roads more accommodating to non-auto modes. The London Road Safety Unit estimates that a £200m investment in a traffic calming program to cover 60% of local roads would pay for itself in less than a year through road casualty reductions (Grayling 2003).
- Other initiatives include employer-provided tax-exempt transit benefits, fare elimination, u-pass programs that provide students with subsidized transit passes with their enrollment fees, and bike-share clubs where, for a nominal membership fee, members have free access to bicycles at depots throughout the city.

SELECTED RESOURCES

Car Sharing Co-ops (Canada) allow a group of people to share the financial, social and environmental costs of owning a vehicle and to enjoy the mobility benefits that automobiles offer without the burden of private ownership.

- **Cooperative Auto Network** – Vancouver, Canada. www.cooperativeauto.net
- **Car Sharing Cooperative of Edmonton**. www.web.net/~cce/index.html

Carfree Cities (web-based) provides resources dedicated to creating car-free urban spaces. www.carfree.com

Centre for Sustainable Transportation (Canada) advocates for sustainable transportation. www.cstctd.org

Commute Trip – The Center for Neighbourhood Technology (United States) provides tools and methods that create livable urban communities. TravelMatters offers emissions calculators, on-line emissions maps, and educational content to emphasize the close relationship between efficient transit systems and lower greenhouse gas emissions. www.cnt.org

Moving the Economy (Canada) promotes investment and job creation through sustainable transportation. www.movingtheeconomy.ca

Walkable Communities, Inc. (United States) provides tools and resources to help whole communities become more walkable and pedestrian-friendly. www.walkable.org

Additional resources for sustainable transportation are found at the end of this guide under the **General Resources** heading.

Waste Reduction and Recycling

Every human settlement faces waste management issues whose inadequate handling causes health, environmental and other problems. Traditional solid waste management emphasizes end-of-the-pipe solutions, efforts which attempt to clean up the mess rather than prevent it. Municipalities worldwide spend between 20-30% of their budgets on waste disposal and management, with 70% of that cost related to transportation (UN-Habitat 2001). Over the





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The best way to reduce waste is by not creating it in the first place.

course of just one decade the US will transform 500 trillion pounds of its resources into nonproductive CO₂ emissions, hazardous wastes, mine tailings, construction debris, and other elements and materials (Hawken et al. 1999). Increasing land prices and reduced availability of suitable disposal options are making safe waste disposal more difficult and costly.

Disproportionately, low income citizens bear the brunt of environmental pollution caused by the actions of both poor and affluent residents (Agyeman and Evans 2004). Those most affected by an issue are often the most motivated and can bring to the table creativity and knowledge with direct bearing on the problem at hand. Their participation should be encouraged.

The traditional approach to waste, i.e., clean it up after it's made, neglects the four Rs in a hierarchy of preferred options: reduce, reuse, recycle and recover.

Reduce

The best way to reduce waste is by not creating it in the first place. Source reductions are available in all categories of the waste stream: agriculture, construction and demolition, industrial, resource extraction and municipal solid waste. Industries can modify manufacturing processes to reduce waste and use less retail packaging. Consumers can consume more strategically to encourage waste-reducing practices. Small increments can have significant impacts. For example, in the U.S., weight reductions in the manufacture of food containers (tins by 22%, glass bottles by 34%, plastic jugs by 18%) account for savings of over 250 million pounds of solid waste annually (Daniels 2001).

Sustainable community development initiatives for waste reduction include:

- waste reduction awards that recognize companies, schools, hospitals and other workplaces who adopt sustainable waste strategies
- full cost recovery for the collection, treatment and disposal of industrial waste
- pre-cycle programs that ask consumers to think about waste before they buy
- waste disposal taxes for households and industries to reduce solid waste
- prepared food redistribution programs – food destined for the landfill from restaurants and cafeterias on a daily basis distributed to those in need
- incentives for the development of waste reducing technologies and programs
- banning non-recyclable containers
- unit charges (i.e., a fee charged on the sale of a consumer item) collected by a public agency. In theory this discourages consumption, and creates a pool of capital that can be used to fund research and development for alternatives or safer disposal strategies)
- regulations to ensure developers and builders incorporate waste reduction into their plans (Roseland 2005)
- starch-based, biodegradable plastic substitutes (Imhoff 2002) that easily degrade into neutral or beneficial soil additives





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Reuse, Recycle and Recover

Reuse, recycling and recovery are all strategies for reducing waste by turning it into a resource. “Reuse” refers to the reuse of waste material without altering its form. For instance, scrap lumber can be used for other building projects, demolition materials can be recycled as is, or wooden slats from pallets can be used for furniture. Reuse opportunities can be used to address poverty issues by including marginalized communities in the reuse opportunity. For example, a street youth program that makes furniture from wood pallets, or a bottle recycling program that employs “binners” – the men and women who collect recyclable containers from the streets for their deposit value.

Reuse, recycling and recovery are all strategies for reducing waste by turning it into a resource.

Reuse opportunities can be used to address poverty issues.

Another successful reuse strategy is for local governments to establish materials exchanges where producers of industrial waste can contact other businesses that can use the waste. Materials exchanges serve as information hubs, leaving transaction details and transfer of the materials up to the parties involved (See the **Honourable Mentions: Materials Exchange**, Pittsfield Massachusetts in this publication).

Another successful reuse strategy is for local governments to establish materials exchanges.

Eco-industrial parks are a reuse strategy which link businesses that can benefit from each other’s waste streams. They bring together industries that can operate symbiotically thus eliminating waste and reducing waste management costs (Roseland 2005). For the companies involved, an eco-industrial park offers decreased production costs through increased materials and energy efficiency, waste recycling, and elimination of practices that incur regulatory penalties (Indigo 2005).

Sustainable community development reuse initiatives include:

- financial incentives or special zoning to encourage private sector and NGO reuse programs (for instance, a small grant helped to create Waste Wise¹, an NGO that reprocesses materials diverted from the local landfill for repair and resale, and provides classes about waste reduction. The operation became self-sufficient after five years and now has two full time staff (GDA 2005))
- risk mitigation, expertise and planning to establish eco-industrial parks
- municipally sponsored scrap lumber collection programs
- tax credits for including recycled or diverted waste materials in production
- waste materials exchanges (i.e., publicly funded exchange data base)
- providing information on environmentally sound household repairs
- resource directory for businesses that reuse, repair and rent goods in the region
- incentives/penalties to reduce waste materials going to landfills (Roseland 2005)

¹ in Georgetown, Ontario, Canada





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Recycling and recovery transform wastes into raw materials for other industrial outcomes.

Recycling and recovery transform wastes into raw materials for other industrial outcomes. Recycling re-purposes waste into a usable product (i.e., glass products recycled into other glass products). Recovery extracts energy or utility from waste – for instance, burning tires as fuel to power industrial processes. The goal is to “close the loop” and divert waste back into the materials flow. Creating a strong market for recycled products is essential to completing the recycling process and “closing the loop.” Recycling and recovery initiatives include:

- government procurement policies that create reliable markets for post-consumer recycled materials
- programs to encourage private sector use of recycled materials in their products
- eco-labeling that identifies percentage of post-consumer recycled content to help consumers make informed decisions about products and to help create markets for recycled materials
- packaging laws that require manufacturers to take back and recycle all packaging materials (Germany’s packaging regulations have reduced packaging from 30-35% of annual solid waste (Dragicevic 1997; Imhoff 2002))
- newspaper deposit programs (similar to container deposits)
- recycled content laws requiring products to include some amount of post-consumer recycled materials
- materials bans at local landfills (A ban on drywall at the Vancouver and Victoria (Canada) landfills led to drywall recycling businesses)
- gas extraction from landfills (At the Vancouver landfill, enough methane is extracted annually to meet the demands of between 3,000 and 4,000 homes and generate revenues for the city of about \$400,000 (Roseland 2005). (See the **Honourable Mentions: Landfill Gas Extraction**, Vancouver, Canada in this publication.)

Composting diverts organic solid waste from landfills and converts it into a beneficial soil additive.

Composting diverts organic solid waste from landfills and converts it into a beneficial soil additive. It provides a local and low-cost method of soil enhancement, water retention (through improved soil quality) and significant savings in municipal waste management costs. Municipal initiatives that have proved successful:

- composting education and workshops
- community composting (The city of Zurich helped to establish a neighbourhood composting program providing sites, education and information. The program involves more than 1,000 neighbourhood composting sites and more than half of households (GRRN 2001).
- composting micro-enterprises that collect organic waste, convert it to compost, and sell it (See **Success Stories: Waste Concern**, Dhaka, Bangladesh in this publication.)





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SELECTED RESOURCES

Community Recycling Network (U.K.) promotes community-based sustainable waste management. www.crn.org.uk/about/main/main.shtml

Environmentally Sustainable Solid Waste Landfill Management in Asia (web-based) This website contains materials on solid waste management, mainly in developing countries, and is part of the Asian Regional Research Program on Environmental Technology project. www.serd.ait.ac.th/sidaSWM

Grass Roots Recycling Network (United States) works towards eliminating the waste of natural and human resources using activist strategies. www.grrn.org

Global Recycling Network (web-based) is an electronic information exchange that specializes in the trade of recyclables reclaimed in municipal waste streams, as well as the marketing of eco-friendly products. www.grn.com/grn

International Solid Waste Association (web-based) promotes sustainable waste management worldwide. www.iswa.org

Energy

Ninety percent of the world's energy supply comes from fossil fuels. Currently, global carbon emissions are estimated at 37.1 billion metric tons annually (EIA 2004). The United States consumes 30% of the world's oil with only 5% of the world's population (Adam 2002). Consumption is growing in both the developed and developing worlds. By 2025, energy consumption and carbon emissions from developing countries are expected to surpass those in the industrial economies (EIA 2004).

Our addiction to fossil fuels has many impacts felt at the local level: acid rain, smog, global warming (impacts on coastlines, fresh water supplies and agricultural production), environmental degradation, sprawl, congested roads, and costly inefficiencies for heating and cooling structures, weaker local economies, excessive taxes and increased health costs. In developing countries, energy can account for as much as 40% of the debt burden (Pinderhughes 2004). Local governments everywhere have an interest in adopting sustainable patterns of energy consumption.

There are generally three approaches to increasing energy sustainability: strategic energy planning, increasing energy efficiency, and exploiting energy alternatives.

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Strategic Energy Planning

Strategic energy planning integrates energy considerations into all planning decisions and evaluates the environmental and economic benefits of energy supply options. Communities can address multiple goals, maximize cost efficiencies and explore strategic combinations of energy sources – for instance, renewable energy to decrease fossil fuel dependence alongside fossil fuel sources to provide energy stability.

Least cost utility planning treats energy efficiencies as alternative energy sources by giving investments in energy efficiency equal priority to investments in new generating capacity. Utilities also proactively support non-conventional, de-centralized smaller energy generators (such as wind turbines, micro-hydro turbines, and photovoltaic rooftop generators) with programs that combine technical support with financial incentives targeted to residential, commercial and industrial consumers (Roseland 2005)

Increasing energy efficiency allows more people to meet their energy demands with the same amount of energy inputs.

Energy Efficiency

Expanding traditional energy supplies is costly and contributes to the unsustainable patterns and problems described above. Increasing energy efficiency allows more people to meet their energy demands with the same amount of energy inputs thereby avoiding the need to expand supplies. This is often done through technological innovation.

Biomass emissions tend to be untreated and contribute significantly to air emissions, health problems, and the spread of pathogens and bacteria.

In developing countries, biomass fuels such as wood, charcoal, plant debris and animal waste make up close to 50% of household energy use (Pasztor and Kritoferson 1992). Biomass emissions tend to be untreated and contribute significantly to air emissions, health problems, and the spread of pathogens and bacteria. Biogas digesters are affordable technologies that convert biomass into methane, a cleaner burning and more efficient fuel. Small household units and large industrial-scale systems are available. The sludge left over from the process can be used as a fertilizer (Pinderhughes 2004).

Buildings – their construction and operation – account for a large part of the world’s energy demands. According to the U.S. Green Building Council, buildings in the United States account for 36% of total energy demands, 12% of total water use, and 30% of U.S. green house gas emissions. Initiatives for increasing the energy efficiency of buildings include:

- energy audits, upgrades and retrofits subsidized by local governments or offered by NGOs on a fee-for-service basis. The incentive for an audit is future savings on energy costs.
- design features which maximize the use of natural light for interior brightness, i.e., light shelves and light-tubes; and incorporate renewable power sources such as solar hot water or geothermal
- energy-efficient lighting and appliances
- green building design standards (the LEED™ program established by the U.S. Green Building Council offers a framework for assessing building





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sustainability targets and goals: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality).

- high-grade insulation and high-performance windows to reduce energy demands
- programmable thermostats which reduce energy use when space is unoccupied
- green roofs (thin layers of soil on rooftops with living vegetation) can be used in hot or cold climates to decrease heat loss and/or reduce air conditioning needs by as much as 25%² (Peck and Kuhn 2001; Roseland 2005; Scholz-Barth 2001)

Cogeneration is a highly efficient process that generates electricity and heat at the same time from the same energy source. Fossil fuel demands are reduced and the power-generating process reaches efficiencies that triple, or even quadruple conventional power generation (IPPSO 2005). Any large industrial facility that generates excessive heat (e.g. pulp and paper mills) can harness waste heat for cogeneration (Roseland 2005).

District energy, also known as ‘district heating and cooling’, is a way of centralizing the heating or cooling process and then distributing it to a network of buildings. District energy saves money for the users, conserves resources, and reduces pollution by centralizing the generation of heat (or cooling or power) in one central plant thereby eliminating the inefficiencies of many smaller units. District energy also creates opportunities for cogeneration. There are more than 5,800 district energy systems in use in the U.S. and up to 98% of urban areas in Scandinavia and Germany use district energy (Byfield 2001). (See **Success Stories: Deep Lake Water Cooling**, Toronto, Canada in this publication.)

Demand management is an approach to energy efficiency that focuses on the behavior of consumers (individuals or organizations) in order to reduce energy demands:

- subsidies and rebates for switching to more energy-efficient technologies
- energy audits and retrofits
- education programs to raise awareness about household energy efficiencies
- regulations requiring builders to use energy-efficient designs, materials and technologies
- using public buildings as models by incorporating energy-efficient designs, materials and technologies into all new construction
- certification and rating systems to encourage efficient energy use
- grants and loans to help consumers pay capital costs of energy-efficient technologies (public agencies can make zero interest loans to homeowners to help finance residential efficiency improvements (Roseland 2005)

Global energy production from renewable sources such as geothermal wells, wind turbines, and solar generators grew by 80.7% between 1990 and 2002 (Cetron and Davies 2005).

The world used only 57 million barrels of oil per day in 1973. By 1982, it was using more than 82 million barrels daily. Consumption is expected to reach 110 million barrels daily by 2020 (Cetron and Davies 2005).

² Green roofs have the added advantage of decreasing runoff by up to 80% – see Water & Sewerage





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RENEWABLE ENERGIES

Biomass – the use of organic material to produce energy, such as firewood or plant debris, or in the creation of methanol and ethanol.

Deep-lake Cooling – the use of water circulated from deep, cold regions of lakes to cool air re-circulated into a network of buildings.

Geothermal Heat Pumps – the use of ambient ground heat to warm air for interior circulation.

Micro-hydro – using the water flow from small waterways (creeks and streams) to produce electricity through specially designed water turbines.

Solar Photovoltaic – using solar panels to produce electricity from sunlight.

Solar Thermal – using the sun’s heat for hot-water systems and space heating.

Tidal Power – using tidal fluctuations to produce electricity through turbines placed behind dams built across inlets.

Wave Energy – using the motion of waves to produce electricity through floating turbines.

Wind power – using wind to produce electricity through stand alone wind turbines.

Environmentally Responsible Energies

Environmentally responsible energies are renewable energies that are ecologically neutral, clean, and cost-effective and offer the opportunity for local self-reliance in energy production. These include wind, solar photovoltaic, solar thermal, tidal or wave motion, geothermal, micro-hydro, biomass and deep-lake water cooling (see **Sidebar – Renewable Energies**). Initiatives for encouraging the use of environmentally responsible energy include:

- grants and subsidies for research and development
- cooperatively owned energy producing enterprises (such as the Dutch wind cooperatives that allow multiple households to share the capital expenses of establishing a renewable energy production facility and the benefits (See the **Honourable Mentions: Wind Cooperatives**, Denmark in this publication.)
- tax and zoning incentives to encourage small, decentralized power production
- allowances and special treatment for developers who incorporate renewable energies into their designs
- buy excess energy produced by small energy producers (Roseland 2005)

SELECTED RESOURCES

American Solar Energy Society (United States) promotes education related to solar energy and publishes information on related topics. www.ases.org

Clean Energy Resource Teams (United States) promotes comprehensive energy plans reflecting a mix of energy sources. www.cleanenergyresourceteams.org

Database of State Incentives for Renewable Energy (DSIRE) (web-based) a comprehensive (American) source of information on state, local, utility, and federal incentives that promote renewable energy. www.dsireusa.org

Energy Efficiency and Renewable Energy (United States) U.S. Department of Energy. www.eere.energy.gov

Northeast Sustainable Energy Association (United States) promotes the development and adoption of energy conservation and non-polluting, renewable energy technologies. www.nesea.org

Green Pages (web-based) – an online ‘green’ pages of companies providing environmental services around the world. www.eco-web.com

Rocky Mountain Institute (United States) promotes the efficient and restorative use of resources, publishes reports on energy policy and technologies, and provides information to the public and professionals on energy efficiency and other topics. www.rmi.org

Source for Renewable Energy (web-based) a comprehensive online buyer’s guide and business directory of more than 8000 renewable energy businesses and organizations worldwide. www.energy.sourceguides.com

U.S. Environmental Protection Agency (United States). www.epa.gov/cleanenergy



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Water & Sewerage

Human settlements depend on fresh water for drinking, washing, cooking, agriculture, and industrial processes. Water consumption has grown twice as fast as world population in the last 100 years; since 1950, global per capita freshwater supply has dropped 58% (Geographical 2003; Postel and Wolf 2001). Agricultural water use has increased 175% since 1970 and now accounts for 2/3 of global fresh water consumption (Matilda 2002; Postel 1997). Industrial use (including hydro and nuclear power generation) currently accounts for about 22% of global water use, and is expected to double in the next 20 years (Environment 2003, UNEP 2002).

Lack of access to safe drinking water has devastating impacts at the local level. Over 250 million cases of water-related illnesses occur each year resulting in the deaths of between 5 and 10 million people. The lack of access to safe water results in the deaths of between 10 and 20,000 children every day (Gleick 2001a, 2001b).

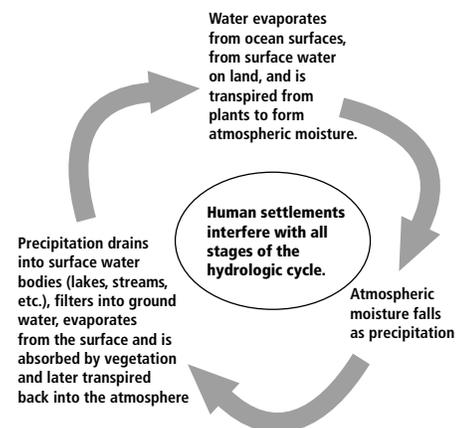
About 1/4 of the planet's total fresh water supply is available in the form of surface or underground sources for human use (the rest is locked in ice caps and glaciers). These water sources are replenished through the annual hydrologic cycle (see **Sidebar: Annual Hydrologic Cycle**). Urban development has a deep impact on the hydrologic cycle at every stage:

- impervious surfaces in cities reduce infiltration and transpiration, and produce large volumes of polluted runoff, which lowers water tables and pollutes local aquatic ecosystems
- urban development changes stream flow and natural drainage and obstructs nutrient transportation between ecosystems
- runoff increases erosion which increases sedimentation in local aquatic systems
- cities use more water from underground sources than can be replaced. In addition to depletion, this also increases the flow of industrial and household pollutants and sedimentation into ground water sources
- traditional water treatment uses hazardous compounds in the treatment process and produces environmentally toxic sludge (Anton 1993; Gleick et al. 2002; Roseland 2005)

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ANNUAL HYDROLOGIC CYCLE

Freshwater makes up less than 3% of the Earth's total water. Only 0.7% of this is available to meet all human needs, the rest being locked in icecaps and glaciers (Moss 1998). The Earth's fresh water supplies are replenished through the hydrologic cycle:





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By 2025, an estimated 2.8 billion people living in 40 countries or 2/3 of the world's population will be living in areas that regularly experience water stress (UNEP 2002).

As much as 50% of the water in piped systems worldwide is lost to leakage (Economist 2003).

There are three general approaches to achieving water sustainability: reducing demand, reducing runoff volumes, and using ecological water treatment strategies.

Reducing Demand

Increasing water efficiency means satisfying more demand without increasing water draws. Worldwide, 50% of the water in piped systems is lost to leakage (Economist 2003). Initiatives for decreasing water leakage include:

- leak detection and flow monitoring technology (In the town of Fukuoka, Japan sophisticated flow monitoring and leak detection systems have reduced water losses to 5% (See **Success Stories: Water Conservation**, Fukuoka, Japan in this publication) (GLC 2004).
- programs where local governments, water utilities, and volunteer organizations offer water audits to residences and businesses (Roseland 2005)

Demand management strategies are also effective at the local level.

Demand management applies to household (indoor and outdoor), industrial and agricultural use (Vickers 2002):

- sustainability measures can reduce **indoor household** water use by 10%-50%:
 - toilets: low-volume, ultra-low volume, dual-flush toilets, waterless, composting, liquid and solid waste separation technology, and toilet leak repair
 - urinals: low-volume, waterless, composting, urinal retrofit devices, and urinal leak repair
 - showerheads: low-volume
 - faucets: low-volume, point-of-use hot water heaters for faucets, faucet leak repair
 - clothes washing machines/dishwashers: high-efficiency
 - grey water recycling
- sustainability measures can reduce **outdoor household** water use by 15%-100%:
 - water-wise xeriscape planning and design
 - native, drought-tolerant, and low-water-use turf and plants
 - limit areas of lawn
 - efficient irrigation systems and devices: no watering option, containers, appropriate spray heads, rainwater harvesting barrels and cisterns, manual hoses, drip irrigation
 - efficient irrigation scheduling: limited watering cycles and days per week, site-specific water budget controller adjustments based on hydrozones
 - soil improvements: soil tests, topsoil preservation, reduced compaction, soil preparation, lawn chemical minimization and elimination, use of mulches





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- maintenance: irrigation system repairs, proper mowing, fertilizing, use of downspouts, weed control, leak repairs
- water decorations and fountains: re-circulating systems, hours of operations, leak repairs
- pools: pool covers, temperature adjustments, splash control
- **industrial use** is often overlooked, but can play a key role in determining the long-term sustainability of an urban settlement's water use patterns. Sustainability measures can reduce industrial water use by 15%-95%:
 - leak repair
 - cooling systems: re-circulated water, leak repair, optimized flow controls and water treatment, electric cooling systems
 - heating systems: re-circulated water, optimized flow controls and water treatment, steam trap repair or replacement
 - process water reuse: optimized process washing and rinsing, ozonation, "Living Systems" technology³
 - flow controls
 - maintenance: minimization of water for cleaning, high-pressure hoses, reuse of greywater for non-potable applications
- Sustainability measures can reduce **agricultural water use** by 10%-40%:
 - soil moisture monitoring
 - irrigation scheduling
 - laser leveling of land (reducing uneven water collection)
 - furrow diking (installing of small mounds of soil to create water holding basins in front of the dike)
 - surge valves to direct water alternately to different sections of a field at timed intervals (achieve more even water distribution and minimize loss)
 - drip irrigation (systems that deliver water directly to the plants and minimize loss from evaporation)
 - grey water reuse
 - conservation tillage (various strategies for reducing the amount of tilling such as crops being sown directly into the untilled stubble of the previous crop and weed control with cover crops rather than cultivation)
 - canal and water conveyance lining and management (systems for transporting water that reduce loss due to seepage and surface percolation)

It takes 110,000 litres of water to produce one car. The U.S. computer industry uses 1.8 billion litres of water annually. Nuclear power stations can consume up to 130 million litres a day (Geographical 2003).

³ Living systems water treatment technology takes advantage of natural waste treatment ecology using microorganisms, small invertebrates (such as snails) and plants and uses them in comparatively small, self-contained water treatment facilities.





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Between 25-50% of a cities water needs could be met by "grey water" (filtered but untreated water) (Pinderhughes 2004).

Mobilizing household, industrial and farm participation in water reducing strategies is essential for the sustainable management of water.

Grey water is waste water that has been used for washing, showering, dishwashing and bathing (i.e. with low levels of organic waste and no fecal matter), and makes up between 25% and 50% of a city's water use (Pinderhughes 2004). Grey water recovery involves filtering (not treating) and then reusing the filtered water for non-drinking purposes such as irrigation or toilet water. By using grey water to meet non-drinking needs, fresh water draws and treatment needs are reduced. The grey water collection and distribution system in Fukuoka, Japan saves 7 million liters of potable water each day (GLC 2004). (See the **Success Stories: Water Conservation**, Fukuoka, Japan in this publication.) There are more than 1,000 water reuse projects in the U.S. alone (Roseland 2005).

Mobilizing household, industrial and farm participation in water reducing strategies is essential for the sustainable management of water. Strategies that have proved effective include:

- incentives and subsidies for the replacement of water fixtures with ecologically efficient models
- rebates, grants, loans and tax credits for water-efficient landscaping and irrigation
- subsidized rain collection equipment
- education and demonstration projects
- rate restructuring, meter programs and user fees (increasing fees with the volume used)
- permits, by-laws and ordinances (Requirements for developers to replace or install low-flush toilets, penalties for water wasting, landscaping requirements)
- eco-labeling (Australia has introduced a Water Efficiency and Labeling Standards scheme for all showerheads, washing machines, dishwashers and toilets that indicates a product's water consumption levels (Ecos 2003)).

Runoff

'Runoff' is water that accumulates from rainfall on impervious surfaces. In most cities with storm water management infrastructure, runoff is collected and discharged directly into local water bodies, or combined with sewage and treated. Both strategies are problematic. Runoff collects high concentrations of salts, metals, sediment, organic materials, nutrients, pathogens and chemicals which cause degradation when released into the environment. If runoff is combined with sewage, it increases the demand on treatment facilities, a costly approach that uses hazardous compounds and produces toxic sludge as a by-product. In both cases rainwater is prevented from infiltrating into the ground where it can be naturally purified, absorbed by vegetation or replenish groundwater sources (Jones 2004; NRDC 2001).

By reducing runoff, more water is available for ground infiltration (helps to purify water before it reaches rivers and reservoirs), evaporation and transpiration are increased, and unnecessary demands on water treatment are avoided.





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Sustainable runoff initiatives include:

- increasing surface absorption rates through green roofs⁴ (a layer of soil a few inches deep with living vegetation on roof top surfaces), an approach that can also be used to increase urban agricultural opportunities
- rain harvesting (collecting rain water that would normally become runoff and diverting it to green spaces, gardens or holding it for later use)
- diverting surface runoff into ditches and swales to allow natural filtration and infiltration to disperse accumulated volumes
- using semi-permeable cements, paving bricks and other surfaces (NRDC 2001)

Ecological water treatment tries to replicate natural water purification.

Water Treatment

Water treatment is the processing of sewage before it can be safely released into the environment. Traditional treatments result in a toxic-sludge byproduct, use hazardous compounds, and are expensive. Ecological water treatment tries to replicate natural water purification. These systems are less expensive to build than traditional treatment facilities and more energy efficient.

Waste water is channeled on or below the surface so that it flows over and through rock, gravel, sand, soil, roots and vegetation, all of which filter out toxins and organic material. Artificial wetlands, gravel beds, and underground water flow are all employed. There are more than 500 constructed wetland water treatment facilities in operation worldwide including Saudi Arabia, India, Italy, the U.S., Canada, Thailand, Brazil and China (Juwarkar et al. 1995; MacDonald 1994; Wynn 2002). (See **Honourable Mentions: Integrated Wetland System**, Calcutta, India in this publication).

Another smaller-scale sustainable water treatment strategy is ‘solar aquatic systems’, a biologically integrated technology that treats sludge, sewage and industrial waste water to high specifications using plants and micro-organisms in greenhouses to filter and consume contaminants. These systems are low cost, can be constructed in small spaces, and produce purified water (Farrell 1996; Roseland 2005).

SELECTED RESOURCES

Cooperative Research Centre Water Forum (Australia) – Resources and forums on catchment hydrology, estuary and waterway management, freshwater ecology, and water treatment. www.freshwater.canberra.edu.au/php-bin/php.exe/Site-WaterForum/index.php

Global Water Partnership (Sweden) promotes sustainable water management. www.gwpforum.org

The Water Page (U.K.) focuses on sustainable water management and use in Africa and other developing countries. www.thewaterpage.com

Continued...

⁴ Green roofs have the added advantage of providing cooling in hot climates and insulation in cold climates – see Energy





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Third World Water Forum (Japan) provides a forum for global collaboration on water issues which threaten the health and safety of the world's citizens. www.world.water-forum3.com

Water Magazine (New Zealand) is an online magazine for water policy advice and ideas. www.watermagazine.com

Water Web Organization (web-based) advances water-related issues, with both a global and regional focus (North America, Central America, South America, and Europe). www.waterweb.org

WCA InfoNET (web-based) is an internet-based information platform sharing resources on water conservation and use in agriculture. www.wca-infonet.org/iptrid/infonet/index.jsp

Food Security

An estimated 5 to 10 million hectares of agricultural land fall out of production each year because of severe environmental degradation caused by industrial farming practices.

Industrial agriculture accounts for 70% of global fresh water draws and contributes to ground water pollution, air contamination and health problems.

In North America, food travels on average 2,000 km from farm to plate.

Food security demands a balance between human nutritional needs and ecological sustainability. Industrial farming produces abundance over the short-term, but at great long-term cost. An estimated 5 to 10 million hectares of agricultural land fall out of production each year because of severe environmental degradation caused by industrial farming practices (Lacy 2003). Industrial agriculture accounts for 70% of global fresh water draws and contributes to ground water pollution, air contamination and health problems through the use of petroleum-based fuels, fertilizers, pesticides and herbicides (Pinderhuges 2004; Postel 1997; UNEP 2003).

How we package and transport food is also problematic. Food wastes, including packaging, account for 1/3 of all solid waste in industrialized countries (Pinderhuges 2004). In North America, food travels on average 2,000 km from farm to plate (Roseland 2005). On a global scale, an estimated 15% of all energy use occurs in the food system, and 8% of all greenhouse gas emissions come from agricultural sources (Pirog 2001). Food transportation also produces inefficiencies: for instance, it takes 36 times more energy to move a head of lettuce from California to New York than it contains (Shrybman 2000).

Food scarcity remains a concern in every region of the world. An estimated 35,000 people die every day from lack of adequate access to food (Kol et. al 2000). Food security is a measure of three key characteristics:

- **Availability** – Is there sufficient food for the short and long term? What is the dependability of the supply in the face of shortages caused by climate change, natural disaster and civil disturbances?
- **Adequacy** – Are food supplies nutritionally sufficient to meet demographically specific needs?
- **Accessibility** – Are the marketing and distribution mechanisms stable and adequate for farmer and consumer (Lal et al. 2003)?





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Food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (UN World Food Summit 1996).

Urban agriculture (UA) offers a comprehensive food security strategy for urban settlements. Urban Agriculture employs small-scale decentralized organic production in unused urban space such as vacant lots, school grounds, parks, yards, boulevards, traffic calming circles, balconies, utility right-of-ways, roadsides and even roof tops (Kol et al. 2000). It is an efficient use of land and water, generally produces higher yields, directly increases dietary nutrition in local populations, and reduces transportation needs because produce is usually sold directly to the consumer within a day or two of harvesting (Kol et al. 2000; UN 1996). Plots are individually maintained and also managed as community gardens where groups of residents combine their efforts and share the harvest.

Urban Agriculture has many benefits:

- increases local access to nutritional needs
- creates jobs and generates income through the sale of excess produce in local markets (See the **Success Stories: Cuba's Urban Agriculture and the Abalimi Market Garden Project** in this publication.)
- creates opportunities for skills learning and capacity building
- healthier environment/expanded green space
- ecological restoration
- stronger community interaction around community gardens and markets
- reduced fossil fuel consumption in the form of petroleum-based fertilizers and pesticides, transportation and packaging, and expensive farm machinery that requires significant resources to manufacture and operate (Kotschi 2004; Shrybman 2000; Stocker and Barnett 1998).

Urban Agriculture can make significant contributions to local food needs as well as the local economy. Farmers in Havana produce 40,000 tons of vegetables, fruits, tubers and medicinal plants every year for local consumption (See the **Success Stories: The Cuban Urban Agricultural Program**, in this publication). Hong Kong produces 2/3 of its poultry, 1/6 of its pigs, and 1/2 of its vegetables (New Scientist 2002). Urban cultivation can be up to twice as productive as nearby rural production (New Scientist 2002).

To encourage more sustainable food production and consumption habits in urban settlements, local governments and community organizations can:

- support urban agriculture as a response to local food poverty
- incorporate urban agricultural needs into local planning (See **Honourable Mentions: City of Seattle's P-patch Program**, United States)
- create space for growers and farmer's markets through zoning, by-laws, tolerance and enabling the use of public land

To meet human nutritional needs over the next 40 years, global agriculture will have to supply as much food as has been produced during all of human history (Cetron and Davies 2003).

Urban agriculture is an efficient use of land and water, generally produces higher yields, directly increases dietary nutrition in local populations, and reduces transportation needs because produce is usually sold directly to the consumer within a day or two of harvesting.





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- facilitate the use of local organic waste in local cultivation
- support/initiate eco-labeling that tells how and how far a food item has travelled
- establish and support local food policy councils that provide information, education and policy recommendations of local food issues
- use available open space and begin gardening in derelict and neglected sites such as vacant lots
- adopt purchasing policies that include locally grown produce

SELECTED RESOURCES

FarmFolk/CityFolk (Canada) promotes eating local, fresh, seasonal foods, grown using farming practices that contribute to the health of the planet. www.ffcf.bc.ca

Food and Agricultural Organization of the United Nations. (Italy)
Mandated to improve nutrition, agricultural productivity, and the lives of rural populations and contribute to the world economy. www.fao.org

FoodShare (Canada) is a community resource group that promotes grassroots strategies for sustainable community food production, and advocates for social assistance reform, job creation and training, nutrition education, farmland preservation and comprehensive food labeling. www.foodshare.net

International Federation of Organic Agricultural Movements (Germany) promotes the organic movement, and advocates for the worldwide adoption of ecologically, socially and economically sound systems based on the principles of organic agriculture. www.ifoam.org

Leopold Centre for Sustainable Agriculture (Unites States) is a research and education centre that develops sustainable agricultural practices with an emphasis on profitability and the conservation of natural resources. www.leopold.iastate.edu

Resource Center on Urban Agriculture and Forestry (The Netherlands) facilitates the integration of urban agriculture in the policies and programs of national and local governments, research centres and NGOs, and promotes multi-sectored urban agriculture projects. www.ruaf.org

Community Economic Development

Community economic development (CED) fosters economic growth through local capacity building and long-term ecological sustainability. It is an asset-based approach, meaning that the starting point for development is the strengths and resources that already exist at the local level (Markey et al. 2005). The ultimate goal is local economic self-reliance in the sense of a more diversified economy that can meet more local needs (Markey et al. 2005; Roseland 2005). Community economic development addresses income disparities while building community capacity through processes that add to the local economy.

Community economic development (CED) fosters economic growth through local capacity building and long-term ecological sustainability.





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At the core of CED are four strategies:

- **Making More with Less:** This incorporates the principles of conservation, prevention and recycling into local economic entrepreneurial strategies. Through conservation and recycling, communities are able to produce more with the same or less amount of energy and resources. An energy savings of \$1,000 per household can amount to hundreds of thousands of additional dollars that residents have to spend in the local economy.
- **Making the Money Go Round:** Each time a dollar changes hands with someone who lives in the community, it becomes a new dollar that will be spent again. In this way dollars in circulation multiply, and the economic impact is called the multiplier effect. In a healthy community, a dollar gets spent six or eight times before it leaves a community. In a poor community, money falls out of local circulation almost immediately. There are two main sources of money leaks: imported goods and services, and savings accounts with institutions who do not reinvest in the local community. Community economic development finds ways to “plug the leaks” of money leaving the local economy, which increases the local circulation of dollars, which expands the local economy by merely capturing more of what is already in existence.
- **Making it Locally:** Many of the goods and services we purchase on a daily basis come from other places and the money we spend on them largely supports someone else’s economy. Each good or service that fits this description presents an opportunity for creating local wealth by replacing the imports with locally manufactured products and locally sourced services. Local demand can be used to stimulate local supply and thus create jobs, businesses and increase local wealth and capacity.
- **Making Something New:** Entrepreneurial inventiveness and creativity are two of the most important human resources we have for creating new wealth for local communities. Market opportunities that can be recognized and acted on are critical ways of increasing local wealth (Nozick 1992).

An essential CED tool is multiple bottom-line accounting, the business practice of making environmental and social considerations as important as profit making. Businesses who practice multiple bottom-line are sometimes called green businesses or social enterprises. Advantages include: lower operating costs (through ecological efficiencies such as waste reductions and energy-efficiencies); lower risk of environmental liability; increased employee commitment; and customer loyalty. Green businesses are also generally less of a burden on utility infrastructure and less destructive to ecosystems (Roseland 2005).

Community economic development requires that citizens and groups have access to adequate resources in order to take entrepreneurial steps on their own behalf. This is often one of the most significant barriers preventing a community from transforming itself from poverty to prosperity and achieving environmental justice. Adequate resources may include funds to expand a small business, but equally important are micro-enterprise projects undertaken by poor households.



CED continued

Community economic development requires that citizens and groups have access to adequate resources in order to take entrepreneurial steps on their own behalf.

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Resources, in this context, include small or larger sums of cash and credit, business expertise, literacy skills, adequate diet and health, technical know-how, equipment, materials, marketing, resolution of addiction problems, etc. – in short, the capacity to work towards becoming economically self-sufficient.

Creative sustainable community development financing strategies have emerged:

- lending circles: small groups of individuals who pool their funds through regular contributions
- community development corporations: they assemble the expertise and resources to finance small businesses and initiatives that have difficulty obtaining loans from traditional lenders
- downtown development authorities: non-profits created by local governments to look after business areas to foster economic growth, usually with the ability to tax local businesses and use these funds for activities and improvements to benefit local business
- credit unions: cooperative, non-profit financial institutions owned by their members who control how the institution manages its assets. Credit unions generally keep savings and loan profits at the local level
- community loan funds: non-profits that secure loans from individuals and institutions, and use this capital to fund community development assisting community-based organizations that cannot get loans from conventional sources
- micro-enterprise loan programs: they provide small loans for micro-entrepreneurial activities; help low-income people gain access to capital. Borrowers likely have no collateral and are considered high-risk, or the amounts are too small for conventional lenders (Roseland 2005)

Initiatives for encouraging CED activity include:

- establishing local buying policies (i.e., local governments, and public agencies and institutions) that emphasize buying from locally-owned businesses. (See **Honourable Mentions: EcoPurchasingVienna**, Vienna, Austria in this publication.)
- local currency used in a small geographic area encourages local spending
- barter clubs or networks of citizens who exchange goods and services without the need for currency
- cooperatives, which are for-profit or non-profit organizations whose members own the business and whose main function is to distribute the benefits of market activity equally among the members (who typically make up the staff and management) (See **Honourable Mentions: EcoCity Trust**, Johannesburg, South Africa in this publication.)





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- green maps and directories are directories that list locally owned green businesses to encourage citizens to spend their money in ways that contribute to local wealth and support ecological sustainability
- community forestry, fisheries and agriculture are co-management strategies for local resources that give stakeholders from the community, including residents and NGOs, a measure of control over how the resources are exploited and conserved
- business incubators that can provide tools, administrative support, skills-training and expertise in the planning, financing and operating of small enterprises for local residents
- planning that takes into account home-based businesses through such means as zoning, utility loads, adequate land and space and tolerance
- workshops, mentorship programs, and publications designed to increase local capacity for business start-ups, operations and expansion (Roseland 2005; Tipple et al. 2002)

Housing

Community-initiated housing is an increasingly popular strategy for reinvigorating whole neighbourhoods by addressing income disparities, lack of adequate affordable housing, and even job training while building social ties and local capacity. Generated where the need resides, community-initiated housing typically involves collaborations between public bodies, private builders and local residents. Many initiatives have demonstrated success:

- shared ownership strategies increase affordability and create stronger social ties between owners – cohousing and cooperatives have been successful worldwide. Cohousing clusters homes together, creating shared public areas such as gardens and yards, meeting rooms, and eating areas (Fromm, 2000). Cooperatives share ownership, but still retain separate homes.
- self-help housing prepares residents for home ownership through a variety of ownership strategies including self-management of publicly-owned housing (Brozan, 2004).
- brownfield redevelopment uses commercially unattractive, industrially polluted land to achieve infill housing projects (PolicyLink 2005).
- community land trusts (CLTs) separate land ownership from home ownership in an effort to reduce the impact of speculative investing on housing affordability. Land is held in trust by a locally-accountable community group who may also be responsible for coordinating financing and construction of the housing itself. A homeowner buys the home, but not the land. When a homeowner wants to sell, the house is sold back to the trust (Institute for Community Land Trusts 2005). (See **Success Stories: Northern California Community Land Trust** and **Honourable Mentions: Small Towns Development Project**, Nairobi, Kenya in this publication.)

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Sustainable community development housing initiatives can be encouraged in many ways:

- local governments can accelerate the application and approval processes for rental housing, special needs housing, and non-market housing
- local and regional governments can generate new funds for affordable housing projects through local initiatives such as tax policies and builder levies (See **Honourable Mentions: Downtown Housing Incentive Program** in this publication.)
- local governments can regulate zones to encourage compact and higher density forms of residential land use and lease or provide municipal land for affordable housing at lower than market rates
- community groups, businesses and local agencies can establish collaborative programs or housing councils that work toward finding housing solutions that benefit all stakeholders and the long-term well-being of the whole community
- local governments can regulate existing housing stock to ensure what remains as affordable housing.
- community groups or local agencies can collect, maintain, and disseminate information regarding affordable housing in the community
- develop creative zoning to promote affordable housing programs, e.g., mixed-land use or density bonuses (BCMCAWS, 2004).

SELECTED RESOURCES

Asset-Based Community Development Institute (United States) provides resources and tools for community builders involved in the process of capacity-based initiatives, helping them identify, nurture, and mobilize neighbourhood assets. www.nwu.edu/IPR/abcd.html

Canadian CED Network (Canada) promotes and supports community economic development for the social, economic and environmental betterment of communities. www.ccednet-rcdec.ca

CED Online (Canada) offers general information about community economic development. www.ced.gov.ns.ca

Centre for Sustainable Community Development (CSCD) (Canada) at Simon Fraser University, which works to support and enable the sustainable development of communities through research, education, and community mobilization in Canada and internationally. www.sfu.ca/cscd

Community Development Foundation (U.K.) is an organization that works in partnership with local people and groups to promote community development. www.cdf.org.uk





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Enterprise Development Website – a website that lists, describes and rates electronic resources related to community economic development.
www.enterweb.org/communty.htm

Ecotrust Canada (Canada) promotes conservation economics primarily in coastal regions of British Columbia. www.ecotrustcan.org

Institute for Community Economics (United States) assists with building the capacity of a national network of community land trusts and other locally controlled organizations for permanently affordable housing and community economic development. www.iceclt.org/contact.html

Mondragón Co-operative (Spain) – Mondragón is a business cooperative of 120 companies organized into three groups: financial, industrial and distribution, together with the research and training areas.
www.mondragon.mcc.es/ingles/mcc.html

Air Quality

The combustion of fossil fuels produces smog, acid rain and 80% of the world's greenhouse gas (GHG) emissions (City of Vancouver 2003). Ozone-depleting chemicals are used as coolants in refrigerators and air conditioners, as blowing agents for foam products, and as cleaning solvents in the computer, aerospace and metal products industries. Methane, another GHG, is released from rotting organic material in landfills. Deforestation affects the ability of the biosphere to re-metabolize carbon out of the atmosphere.

In 1997, the Kyoto Protocol was established to create a future of lower GHG emissions, better energy efficiency, sustainable economic performance, and cleaner air, leading to an overall healthier environment. The Protocol created various targets for industrialized countries to reduce overall GHG emissions by a global average of 5.2% below 1990 levels in the commitment period of 2008 to 2012. While international bodies and national governments struggle to formulate policies to reduce carbon dioxide emissions, it is at the community level where most of these policies will be implemented.

The SCD strategies identified under every category of the urban metabolism all play a role in addressing climate change concerns and solutions:

- Sustainable land use and planning patterns affect transportation needs which influence levels of car dependence and the use of transportation modes such as walking, cycling and public transit, all of which can reduce fossil fuel consumption.
- Sustainable housing strategies can incorporate into the design renewable energy technologies which satisfy some or all household energy needs, and use materials which insulate well and reflect heat to decrease heating and cooling needs – all of which can decrease demands for emission-producing energy supplies.

It has been estimated that ambient air pollution causes 5% of trachea, bronchus, and lung cancer, 2% of cardiorepiratory mortality and 1% of respiratory mortality globally. This translates into 0.8 million deaths and 7.9 million disability-adjusted life years (Pope and Dockery 1999).

The Kyoto Protocol (1997) established targets for industrialized countries to reduce overall GHG emissions by a global average of 5.2 % below 1990 levels in the commitment period of 2008 to 2012.





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Nearly 50% of global carbon monoxide, hydrocarbon, and nitrogen oxide emissions from fossil fuels come from gasoline and diesel engines (Saville 1993)

Region-wide planning offers a comprehensive approach to improving air quality that takes into account the interrelationships between the many ways that human activities pollute and degrade air quality.

- Alternative energy strategies replace fossil fuels with renewable energies that have little if any impact on air quality.
- Composting reduces the amount of methane gas produced as organic material decomposes. Landfill methane extraction also reduces methane emissions by capturing methane and reusing it for fuel, which has the added impact of reducing demand for fossil fuels.
- Sustainable food strategies rely on locally grown organic foods which use fewer petroleum-based inputs. The closer the consumer is to the source of the food, the less transportation is required which also decreases the use of fossil fuels.
- Expanding urban green spaces and urban reforestation increases the removal of carbon from the atmosphere and can decrease energy needs through shading or insulation from green roofs.
- Green businesses reduce emissions through increased energy efficiency.

Region-wide planning offers a comprehensive approach to improving air quality that takes into account the interrelationships between the many ways that human activities pollute and degrade air quality. The International Council for Local Environmental Initiatives (ICLEI) Cities for Climate Protection campaign is working with over 500 municipalities around the world to develop comprehensive local strategies to reduce energy consumption and CO² emissions (ICLEI 2004). In the early 1990s, ICLEI established the Urban CO² Reduction Project to help municipal governments world-wide develop effective strategies to reduce emissions of greenhouse gases (ICLEI 1990, 1991, 1997). Twelve international urban jurisdictions agreed to reduce emissions to 1988 levels by 2010. Air shed quality management programs have been established in many jurisdictions, that focus on auto-use restrictions and conversion to cleaner fuels (Roseland 2005). (See **Honourable Mentions: Liveable Region Strategic Plan for the Greater Vancouver Regional District (GVRD)**, Canada in this publication.)

SELECTED RESOURCES

Climate Change Solutions (Canada) offers interactive tools, resources and success stories on actions to reduce greenhouse gas emissions.
www.climatechangesolutions.com

Intergovernmental Panel on Climate Change is an organization created by the World Meteorological Organization and United Nations Environment Program to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the risk of human-induced climate change, its potential impacts and options for adaptation and mitigation. www.ipcc.ch

International Council for Local Environmental Initiatives (Canada) was established to build and serve a worldwide movement of local governments to achieve tangible improvements in global sustainability with special focus on environmental conditions through cumulative local actions.
www.iclei.org





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Part 5 – Conclusion

As we meet the challenge of creating communities which are healthy, prosperous and just, there will be problems to be faced and opportunities to be realized. As with any problem we need to develop innovative and strategic plans, set clear priorities and commit ourselves to positive action.

The transition to sustainability also requires visionary leadership. We have long since learned that we share one planet, and that all of our actions have the potential to affect everyone and everything. Our demands for space, resources, consumer products, and waste disposal sites are raising serious concerns and even grave predictions. Bluntly put, if everyone adopts the wasteful and polluting ways of industrialized societies, we risk the survival of life on Earth.

The choices made by this generation are critical to the future. Our growing environmental deficit and current patterns of urban settlement are unsustainable.

Many environmental problems are global in scale and yet it is at the community level, where people live and work and raise their families, that the challenges must be met. Our smallest and largest decisions have an impact, whether reducing waste, choosing public transit, conserving water and energy or building green. All of our decisions are linked to all other aspects of the urban metabolism. It is both the puzzle and power of sustainable development to understand these connections, and to tap into them so that decisions by hosts of people and myriads of organizations are moving together towards achieving sustainable goals.

Real leadership means not only expressing a commitment to a healthy environment and social justice, but delivering on these promises. It means accepting our responsibilities to each other, to other species and to future generations. There should be no doubt that our response is a very clear expression of our most fundamental values and will determine how we are judged by future generations.

These are immense issues whose solution demands a generation of elected officials and concerned citizens who, as our greatest leaders have, are prepared to work for future generations. You can take inspiration and support from the wealth of innovation, commitment and practical success demonstrated in this book and, from each other. There are many people around the world who have risen to the challenge and are ready to help!

We greatly commend you for your willingness to act, to apply your leadership in positive ways. It is our hope that this publication will help guide you in this complex and enormously important arena.

As community leaders, public officials, and concerned citizens, it is our responsibility to begin today to work for a better future. Human development which respects our dependence on each other and the natural systems of which we are a part provides the best opportunity to achieve peace, prosperity, social justice and healthy environments.

The rewards will be great, for your community and for the future. We have presented a way forward; now it is up to you.

“It is not our duty to carry the whole load, nor do we have the right not to carry our fair share.”

Tarfon

Real leadership means not only expressing a commitment to a healthy environment and social justice, but delivering on these promises.





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Community Success Stories

Introduction

The inspiring Community Success Stories that follow represent some of the most successful and creative examples of sustainable community development initiatives from around the world that we found in our research. Each story examines the challenges involved and the results achieved thanks to the efforts of dedicated people like you.

These stories offer concrete and practical examples of strategies that have been effective. Each profile includes contact and other information to help you learn more about these innovative projects and how you might use them as models for projects in your own community.

They cover a wide variety of topics and range from small-scale pilot projects to larger and well-established programs. Most touch on several facets of urban life, a point important to keep in mind as you read them. They demonstrate the synergies that exist between various community assets and different aspects of community life and the transformative power of a dedicated group of people working together.

The stories are drawn from a wide variety of settings, from large urban centres and smaller ones; from developing countries and from the wealthier economies; from countries with long histories of peace and from regions experiencing political turmoil. Sustainable community development is being advanced everywhere in every type of community, and we hope that these stories will inform and inspire you. What all of these profiles have in common is that they have benefited their own communities and residents while contributing to the larger global effort to achieve sustainability.

The **Community Success Stories** directory on the following page lists all of the stories in this book. Beside each category in the directory you will find symbols, for example  for Transportation. These same symbols next to each story identify the categories of activity represented.





Community Success Stories Directory

CATEGORY		SUCCESS STORIES (DOMINANT THEME)	HONOURABLE MENTIONS
Citizen Participation		Quanzhou, China – Neighborhood revitalization Capetown, SA – Market gardens East St. Louis, USA – Community revitalization Dhaka, Bangladesh – Commercial composting Middle East – Water conservation/peace	Denmark – Wind turbine cooperatives Seattle, USA – Community gardens Stockholm, Sweden – Water contaminate reduction Puerto Princesa, Philippines – Monitoring and enforcement Halifax, Canada – Environmental monitoring
Market Mechanisms		Dhaka, Bangladesh – commercial composting	Vienna, Austria – Green procurement policy Denmark – Wind turbine cooperatives Saskatoon, Canada – Downtown housing incentive
Land Use		East St. Louis, USA – Community revitalization Curitiba, Brazil – Transportation planning Capetown, SA – Market gardens Havana, Cuba – Urban agriculture Quanzhou, China – neighborhood revitalization California, USA – Land use trust	Saskatoon, Canada – Downtown housing incentive Seattle, USA – Community gardens Sri Lanka – Urban greening project
Transportation		Curitiba, Brazil – Transportation planning	Toronto, Canada – Community bicycle network
Waste Reduction		Dhaka, Bangladesh – Commercial composting Toronto, Canada – District energy San Francisco – Climate action plan	Pittsfield, USA – Materials exchange Halifax, Canada – Environmental monitoring Vancouver, Canada – Landfill gas extraction
Energy		Toronto, Canada – District energy San Francisco – Climate action plan	Vancouver, Canada – Landfill gas extraction Denmark – Wind turbine cooperatives
Water		Fukuoka, Japan – Water conservation Middle East – Water conservation/peace Seattle, USA – Runoff management Capetown, SA – Market gardens	Calcutta, India – Wetlands water treatment Stockholm, Sweden – Water contaminate reduction
Food Security		Havana, Cuba – Urban agriculture Capetown, SA – Market gardens	Seattle USA – Community gardens
Community Economic Development		East St. Louis, USA – Community revitalization Capetown, SA – Market gardens Havana, Cuba – Urban agriculture Dhaka, Bangladesh – Commercial composting	Johannesburg, SA – Community revitalization California, USA – Community Land Trust Nairobi, Kenya – Community Land Trust Saskatoon, Canada – Downtown housing incentive Calcutta, India – Wetlands water treatment
Air Quality and Climate Change		San Francisco, USA – Climate Action Plan Toronto, Canada – District energy Curitiba, Brazil – Transportation planning	Vancouver, Canada – Livable Region Strategic Plan Denmark – Wind turbine cooperatives

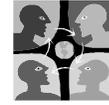




Community Success Stories

Market Garden Project (Capetown S.A.)

Group Name	Abalimi Bezekhaya
Goal of the Project	To support individuals and community groups in developing community organic vegetable gardens to supplement their diets, improve household food and nutritional security and provide additional income.
Development Type:	Food Security, Community Economic Development, Water, Land Use, Citizen Participation
Staff	12
Length of the Project	Started in 1999...on-going.
Budget	R 2 million (about \$330,000 USD)
Partnerships	University of Western Cape (early soil conditioning and preliminary feasibility studies)
Major Funders	45% of funding through German-based Misereor; the balance from some 2,000 individual local donors, small companies and trusts, corporations, service associations, and interest groups.



According to long-time director Ron Small, lack of money, land or resources is entirely secondary to people's ability to conceive a vision and commit to it. "The first 2-3 years in any one of our grassroots projects involves us in the step by step mentoring of community groups whereby they are able to gain expertise, confidence and organizational capacity to formulate and commit to a vision and make it happen."

Narrative

Abalimi Bezekhaya, was established in the Cape Flats near Cape Town, SA in 1982 by the Catholic Welfare and Development agency (today Abalimi is an independent non-denominational NGO). The Cape Flats were a forced-settlement area created under apartheid in the 1980s. The organization's early mission was to help individuals and families create and maintain subsistence gardens for survival in conditions of environmental harshness, poverty and starvation, and political violence. Their first project established two community garden centres that provided low-cost bulk compost, seed, seedlings, information, and training for micro-farmers in the area (micro-farmers cultivate plots typically from 10m² to 500m²).

The *Market Garden Project* started in 1999. At the time, and for a few years prior, the Flats experienced influxes of settlers from surrounding rural areas, sometimes averaging more than 5,000 per month. Unemployment ranged from 50% to 90%. Problems included housing shortages, inadequate public transportation; low literacy, high levels of conflict and crime, and low food security. The goals were to increase local food production and to create income through the production and sale of organic vegetables.

Abalimi helped local residents (mostly women) establish three pilot garden cooperatives in the program's first year. Abalimi provided subsidized seeds, seedlings, tools, manure, irrigation equipment, training, and follow-up.





Community Success Stories

Abalimi’s strategic approach to development is founded on the concept of the ‘four- minute mile’. There was a time when it was believed that it was ‘impossible’ for any human to run one mile in four minutes, however, when one person proved that it was possible the whole of humanity benefited, the model was provided and suddenly ‘anyone’ could achieve the ‘impossible’.

Gardening methods were and remain 100% organic: soil fertility is increased using compost; farmers cultivate biologically diverse microclimates to stimulate bird and insect life as pest control; indigenous windbreaks are used to preserve soil and provide homes to birds (who eat insect pests); farmers do not use artificial fertilizers, genetically modified seed, or chemical pest control. A unique drum-drip irrigation technology is used to maximize water retention: 200-litre drums are connected to hoses buried in irrigation rows. In mid-summer during peak-heat, drum-drip irrigation reduces daily water needs to one drum filled three times for each 100m².

Two of the biggest obstacles faced by Abalimi were access to land and the ability of farmers in the cooperatives to work and stay together as an agricultural enterprise. The land question was solved by keeping plots small, and a willingness to work with poor soil. The gardens occupy “waste-land” on school grounds, in utility right-of-ways, on road reserves and floodplains. The ability of locals to work within agricultural cooperative enterprises is more complex. Garden enterprise success can only happen over time and as a result of group effort. Most of the farmers come from great hardship, abusive relationships (a recurring problem is that farmers are forbidden to participate by other family members), and with limited literacy skills – all of which hinder group success. Many participants (indeed, many local residents) have a subsistence mentality which makes self (rather than collective) preservation a dominant orientation (something which commonly results from chronic poverty and oppression). Abalimi has responded to literacy limitations with training that conveys skills without the need for literacy. And subsistence mentality can be overcome through organization building, a process that helps citizens learn to identify and implement win-win (rather than win-lose) solutions to problems.

By the end of the first year, three pilot gardens were in operation – the SCAGA, Masibambane and Hazeldean Community Gardens. In the second year, the number of community gardens expanded to 9, and one of the pilot gardens had become economically self-sufficient.

As one example, the SCAGA Community Allotment Garden is on 5,000 square metres on soil under power-lines near Macassar, Khayelithsa. Soil reconditioning began in 1997 as a joint research project with the University of Western Cape, Earth Sciences Department. Based on the University’s findings, SCAGA’s goal was 30 subsistence jobs at R200 per month for based on 30 x 100 square metre lots. By 2002, members were earning R100 per month per 100m².

Today, Abalimi works with over 3000 families in over 100 community gardens and over 2500 home vegetable gardens throughout the Cape Flats townships. About 10% of the community gardens are on the early stages of becoming market gardens earning R20,000 (net) annually from the sale of surplus produce.





Community Success Stories

Contact

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Website: www.abalimi.org.za

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Deep Lake Water Cooling System

(Toronto, Ontario, Canada)



Group Name	City of Toronto
Goal of Project	Reduce energy consumption and greenhouse gas emissions
Development Type	Energy, Air Quality, Waste Reduction
Staff	6 shift operators (2 operators/shift); 2 maintenance operators; 1 Chief engineer
Length of Project	Started 1997...on-going
Budget	\$100 million + \$170 million (CDN) - construction
Partnerships	Enwave Energy Corporation
Major Funders	City of Toronto Enwave Energy Corporation Green Municipal Fund, Federation of Canadian Municipalities





Community Success Stories

Narrative

In 1997, the City of Toronto partnered with a private company to build Canada's first deep lake cooling system to service a small area of Toronto's downtown core. The city wanted to reduce demand for electricity and ozone-depleting coolants, reduce emissions, and provide an attractive business climate (i.e. reduced energy bills). The water intake was also intended to provide the City with an improved raw water source (taken from deeper and further away from shore). In 2003, the system was expanded to become one of the largest district energy sources in North America.

The technology is innovative. A stable layer of cold water (4 degrees Celsius) exists 83 metres below the surface of Lake Ontario. Water is drawn through three intake pipes and pumped to a City-operated treatment plant to provide drinking water. After treatment, this 'very cold' water travels to an energy transfer station operated by the private company where it is used to cool water circulating to and from buildings in the downtown. After the energy transfer process is complete, the treated lake water continues into the City's potable water system, and the building cooling water is re-circulated for air-conditioning downtown.

The chilling capacity of the cold water system is equivalent to 59,000 tonnes of refrigeration. This is enough capacity to air condition 32 million square feet of office space, or 8000 single family homes. Currently, the system provides heating and cooling for over 130 office buildings in Toronto's downtown core.

The benefits are significant. Compared to conventional air-coolers, the deep lake water cooling strategy reduces energy usage by 75%. This frees more than 59 megawatts from Ontario's electrical grid. Harmful ozone-depleting refrigerants, CFCs and HCFCs are eliminated. An estimated 40,000 tonnes of carbon dioxide are removed from the air – equivalent to taking 8000 cars off the road. Deep lake water cooling reduces noise, pollution and humidity generated by chillers, fans and cooling towers.

The system has been designed so that new buildings can take advantage of the deep water cooling energy benefits, and older buildings can be retrofitted.

Contact

Toronto Water Services, City of Toronto
Email: askwater@toronto.ca Website: www.city.toronto.on.ca/water/

Enwave Energy Corporation
181 University Ave, Toronto, Ontario M5H 3M7
Tel: (416) 392-6838 Fax: (416) 363-6052
Email: Info@enwave.com Website: www.enwave.com





Community Success Stories

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Curitiba Transportation Plan (Curitiba, Brazil)



Group Name	Curitiba Municipal Government
Goal of Project	To integrate transportation and land-use planning; decrease congestion; increase ridership on public transit
Development Type	Transportation, Land Use Planning, Air Quality & Climate Change
Staff	5,000 total staff members
Length of Project	Started 1965...on-going
Budget	Operating Revenues: ~\$200 million (Brz) Operating Costs: ~\$183 million (Brz)
Partnerships	City staff, government agencies, research institutions, community organizations, residents, non-government organizations and international agencies and the various private transportation companies who operate the buses
Major Funders	City of Curitiba

Narrative

Curitiba, Brazil's 9th largest city, has 2.7 million inhabitants. Curitiba first outlined its Master Plan in 1965 which called for the integration of traffic management, transportation, and land-use planning. The Master Plan established the guiding principle that mobility and land use can not be disassociated. The Curitiba public transit system is upheld around the world as a model for sustainable urban transportation management and has been or is in the process of being copied in 83 other cities including Seoul, Korea and Bogota, Colombia.

The Curitiba transit system has over 2,000 buses making 12,500 trips serving 2.14 million passengers per day. The system is organized around six





Community Success Stories

“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.” Former mayor of Curitiba, Jaime Lerner, who led the city’s transformation.

transport arteries each of which contains three lanes: a two-way lane exclusively for express buses, a one-way high-occupancy vehicle lane, and an access lane for other traffic. These arteries allow bus service to be rapid and efficient as delays in mixed traffic are minimized.

The arteries were constructed first and strongly influenced subsequent growth patterns. Between 1970 and 1978, Curitiba’s overall population increased by 73 percent, but along the five axes, it increased by 120 percent. By 1992, almost 40 percent of Curitiba’s population resided within 3 blocks of the major transit arteries.

Five different types of buses operate in Curitiba: (i) Express buses which operate exclusively on the transit dedicated arteries; (ii) “Rapid” buses which operate on arteries and on other main corridors throughout the city. These busses have flexible routes that can be changed to respond to demand, and they stop at specially designed stations that collect fares before boarding to minimize passenger loading time; (iii) “Bi-articulated” busses – the largest in the world at 25m in length and holding 270 passengers – which operate in the high-occupancy vehicle lanes. (iv) “Inter-district” buses which move passengers among the city’s sectors lying between the arteries; and (v) “Feeder” buses which mix with traffic on all other city streets and bring passengers to the transit arteries. In 2000, Curitiba introduced 30 biodiesel-fueled which emit 43% fewer particulates than traditional busses.

The transit system is managed by Urbanização de Curitiba (UC), a privately owned but publicly managed entity that administers public transport infrastructure while contracting with the 10 private companies that operate the buses. UC establishes the schedules and service standards, sets fares, collects revenues and redistributes payments to the private companies based on distances traveled and usage. The private companies are also paid 1% of the value of each bus monthly by the City who, when the bus is paid for, takes and reconditions it for other purposes. With this public-private collaboration, public sector concerns (e.g. safety, accessibility, and efficiency) are combined with private sector goals (e.g. low maintenance and operating costs). The bus companies receive no subsidies.

Transit infrastructure makes bus travel fast and convenient, effectively creating demand for bus use in the same way that traditional city planning creates demand for private automobiles. There are more car owners per capita than anywhere in Brazil, but auto traffic has declined by 30 percent over 30 years. Curitiba has the highest public ridership of any Brazilian city and registers the country’s lowest levels of ambient pollution and per capita gas consumption 30% lower than other Brazilian cities of comparable size.

In conjunction with the transit system, Curitiba made other strategic decisions that enhanced their overall sustainability and prosperity. High-density zoning was restricted to the blocks around the transit corridors to ensure that these





Community Success Stories

areas had walking access to transit. The city also created a pedestrian network covering an area equivalent to nearly fifty blocks in the downtown area. Because pedestrian zones attracted pedestrians and made it easy and attractive to walk, they became thriving economic zones as retail businesses and restaurants set up to take advantage of the customer base. Over 200 km in dedicated bike trails have been built connecting all parts of the city.

Some of the lessons that can be taken from the Curitiba example are:

- Planning continuity, vision and commitment were essential for long-term success
- Commitment to local values such as accessibility, transparency, social justice and poverty reduction and efficient resource management all played key roles in the overall sustainable development of Curitiba

Creative, cheap solutions that fit the city provided better solutions to Curitiba's urban problems than more expensive approaches (e.g., the bus system's low infrastructure investment versus a more expensive subway or light rail system; using old buses as offices in areas with no infrastructure instead of building).

Commitment to local values such as accessibility, transparency, social justice and poverty reduction and efficient resource management all played key roles in the overall sustainable development of Curitiba.

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Community Success Stories



Good Water Makes Good Neighbors Project

(Israelis, Palestinians & Jordanians)

Group Name	Friends of the Earth
Goal of Project	Establish dialogue and cooperation in regional sustainable water management
Development Type	Water Conservation, Citizen Participation
Staff	3 full-time project coordinators and 11 part-time field researchers
Length of Project	Started December 2001 ... 44 months
Budget	1 million Euros
Partnerships	Friends of the Earth Middle East Tel-Aviv Friends of the Earth Middle East Amman Friends of the Earth Middle East Bethlehem The European Environment Bureau (EEB) – Brussels, Belgium
Major Funders	European Commission SMAP Program; U.S. Wye River Program

Narrative

In Israel, Jordan and the Palestinian territories, water is a scarce and fragile resource that suffers from unsustainable use and pollution. Many Palestinian and Israeli communities share water sources. The political situation has made region-wide water conservation strategies nearly impossible through formal political structures. The Good Water Makes Good Neighbors project was established to foster cross-boundary cooperation for sustainable water management between Israel, Jordan and the Palestinian Authority.

Eleven communities were selected for the pilot program based on interest in the project, willingness to have their schools participate in the program, and proximity to another community near the “Green Line”. Five Israeli communities, five Palestinian communities, and one Jordanian community joined the program. National coordinators were appointed for each of Jordan, Israel and the Palestinian territories to focus on cross-border jurisdictional policies and issues. Within each pilot community, additional field researchers were hired, who, in turn, facilitated the creation of one or more groups of “water trustees” – youth volunteers who met once or twice a week after or during school hours to undertake water awareness and environmental preservation activities guided by their respective Field Researchers.





Community Success Stories

After a period of training, Water Trustees served as water conservation ambassadors in their respective communities. Among their activities, Water Trustees gathered names on anti-pollution petitions (i.e., dumping of solid waste into shared water sources); they surveyed and planned local water conservation strategies; and made presentations on how to convert their schools into model water saving buildings.

Delegates were also selected from the cross-border communities and sent in pairs on America and European learning tours. These tours helped to bring prestige to their respective communities and to inform and gain the support of decision makers as to the objectives of the project. One tour prompted a meeting between the Mayors of Tulkarem (Palestinian) and Emek Hefer (Israeli) which resulted in joint work being conducted for the rehabilitation of the Tulkarem sewage treatment facility.

In each of the pilot communities, public facilities were transformed into model water-wise buildings using low-cost water-saving technologies such as water-efficient taps and grey-water recycling systems. The goal is to collect rain water and drinking fountain water for recycling into the toilet system.

A Regional Community Water Forum has been established in each participating community to carry on water conservation and sustainability education in their respective communities. In Emek Hefer, for example, the Forum gives tours of a rehabilitated river site to visiting picnickers and tourists. One of the project goals is for the Regional Community Water Forums to become economically self-sustaining.

The final phase of the project now underway will involve school children monitoring the amounts of water being saved through the conservation programs and the preparation of reports for public education.

Future joint water projects have been identified and are being pursued. For example, a second phase of research has commenced examining an underground water source shared and polluted by both Palestinian and Israeli communities. The shared necessity of preserving this vital resource is being used to build cooperation between the trans-border communities affected.

The biggest obstacles were the national political restrictions that impeded the free movement of project teams and community members across borders. These were overcome to some extent by choosing field researchers from each of the pilot communities to facilitate project development while minimizing trans-border movement.

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Community Success Stories



East St. Louis Action Research Project (ESLARP) (St. Louis, Illinois)

Group Name	Emerson Park Development Corporation
Goal of the Project	To revitalize the severely distressed community in East St. Louis into a mixed-use, mixed-income residential neighbourhood.
Development Type	Citizen Participation, Community Economic Development, Land Use Planning
Staff	Instructors and students from the University of Illinois; Residents from East St. Louis on various volunteer projects
Length of the Project	Started in 1990...on-going
Budget	\$100,000 in campus funds to support student and faculty outreach, research, training, and technical assistance projects in East St. Louis (at the outset)
Partners	University of Illinois Department of Planning McCormick-Baron and Associates
Major Funders	State of Illinois Treasury US Department of Housing and Urban Development USDA, Urban Resources Partnerships Illinois Industrial Development Authority

Narrative

ESLARP is the successful combination of community leadership with institutional expertise in a community revitalization project that continues to transform what was once described as the most distressed small city (population 43,000) in the United States into a thriving mixed-use and mixed-income residential community.

When the project started, unemployment rates in East St. Louis hovered around 30%. In some neighbourhoods 75% of the residents were welfare recipients, 30% of the buildings, and 40% of the land was vacant. The number of businesses had shrunk from 1,527 in 1967 to 383 in 1992.

The project began in Emerson Park with a local organization formed by concerned residents called the Emerson Park Development Corporation (EPDC). On the heels of the successful building of a new playground, EPDC undertook the creation of a 5-year stabilization plan for the neighbourhood.





Community Success Stories

When Kenneth Reardon was hired at the Department of Planning at the University of Illinois, one of the first things he did was approach EPDC with an offer to help complete the assessment plan. EPDC rejected the offer unless the University would sign what became known as the ‘Ceola Accord’, in recognition of one of the community’s leaders, Ceola Davis. The accord gave the community control over the development process by guaranteeing that the community would determine what issues to focus on, become a full planning and implementation partner, and also by also requiring a 5-year commitment from the University after a one-year probationary period. The university was required to create an organization to continue with the revitalization in the event that the University withdrew from the project. The University signed the Accord.

The first significant barrier had been overcome: a legacy of distrust left by previous university studies in the area that produced no appreciable changes at the community level.

The creation of the stabilization plan was staggered over time through a series of public meetings and research phases involving community leaders, residents and students. Public meetings were held to identify the boundaries of the neighbourhood, landmarks, resources and problems. Then university students carried out base-line research on population, employment, income, poverty and housing. Students shared research at public meetings and took criticism and direction from the community. A comprehensive land and building inventory survey was designed by the students and carried out by students and residents working in teams. A detailed interview/survey form was designed by students and residents, and team volunteers set out to interview local residents, institutional leaders and businesses. Finally, a draft rehabilitation plan was drawn up by students and presented at a public meeting for input and criticism. The residents and students together had articulated a vision to transform Emerson Park into a mixed-income, mixed-use residential neighbourhood.

At first, they could not find funding. EPDC decided to proceed by working with the assets and resources that were available, the residents of Emerson Park and interested students. EPDC organized a volunteer clean-up of illegal dumping in the neighbourhood. The garbage was collected with the help of \$15,000 from a local community foundation for land-fill tipping-fees. Residents cleaned over 1,400 local lots in a matter of months.

EPDC organized a home improvement program for seniors – still without funding – involving residents, home-owners and students. After 20 homes, the project came to the attention of a state senator who was able to allocate \$5 million for a linked deposit program through which local lenders contributed funds to a low/no-interest revolving loan fund to finance more substantial home repairs. Based on this success, the project found enough funding from a number of small agencies to build 4 new single-family homes using a Habitat for Humanity model where locals volunteered in the home construction. Shortly after, the group received funding from the US Department of Agriculture for the development and rehabilitation of open space.

I told the eleven women and two men [at our first meeting with EPDC] that their organization and our [Neighborhood Planning] class would function as partners in the way that a winning NASCAR race team does! As Emerson Park leaders, they would be in the driver’s seat determining our partnership’s final destination and rate of speed. As community planners, we would function as their pit crew collecting data regarding track conditions, charting a safe route through traffic, and designing an organizational vehicle to help them arrive safely at the finish line.

Kenneth Reardon





Community Success Stories

The project has built over 200 homes, a community gardens, new playgrounds and an open-air farmers' market.

Today, many parts of East St. Louis have been radically transformed. Revitalization plans have been put into motion in several neighbourhoods. Unemployment rates have fallen to 16.5%. The project has built over 200 homes (single-detached, duplex and triplex), a community gardens, new playgrounds and an open-air farmers' market (a student-resident collaboration in response to the lack of available fresh fruit and vegetables in the area). Construction and renovation undertaken by EPDC has been turned into an opportunity for unemployed adults to complete high school while acquiring trade-skills on the job.

Since the project started, more than 3,500 University of Illinois students have engaged in field-based learning in East St. Louis through community service-learning courses offered by architecture, history, landscape architecture, law, nuclear engineering, sociology, and urban and regional planning faculty.

In 2005, Kenneth Reardon and Celona Davis were awarded the William R. and June Dale Prize for Excellence in Urban and Regional Planning for their involvement in East St. Louis.

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Community Success Stories

Waste Concern (Dhaka, Bangladesh)

Group Name	Waste Concern
Goal of Project	Improve the environment by promoting waste recycling activities in the country; conduct research, experiments on solid waste management, recycling, clinical and hazardous waste management, waste water treatment and organic farming; develop community-private sector-municipal partnership for improvement of urban environment; create job opportunity by promoting recycling of waste
Development Type	Waste Reduction, Community Economic Development, Citizen Participation, Market Mechanisms
Staff	Industrial engineers, government employees, loan managers, micro-entrepreneurs
Length of Project	Started 1995...on-going
Budget	Operating Costs: 209,000 Taka/\$4,100 (US) Operating Revenues: 526,000 Taka/\$10,500 (US)
Partnerships	The government, the private sector, NGOs, research bodies, communities and farmers
Major Funders	UNDP; UNICEF; OXFAM, UK; RUDO-South Asia/ USAID; The World Bank; Swiss Development Agency for Cooperation; Canadian International Development Agency (CIDA)



Narrative

Dhaka, has a population of about 10 million in an area of only 360 km. It is estimated that the population of Dhaka will be 19.5 million by 2015. Each day about 3500 tonnes of solid waste material is generated in the city. In the slums where over 30% of the population live, there was no collection service which meant that tonnes of material daily was winding up in the storm drains, streets, marketplaces, slums, open dumps, vacant lots, and along riverbanks.

In 1995, Waste Concern started a pilot community-based composting plant in Mirpur, Dhaka on land donated by a local club. The project involved setting up a number of small-scale composting enterprises in different neighbourhoods whose activities included house-to-house waste collection, composting of the collected waste and marketing of compost and recyclable materials.





Community Success Stories

After three years, the Ministry of Environment and Forest with the support from UNDP, wanted to replicate the model in 5 additional neighbourhoods. The Sustainable Environmental Management Program (SEMP) was established. Waste Concern asked government agencies to provide land, water and electrical connections for community-based composting facilities.

Waste materials are gathered house-to-house throughout neighborhoods in converted rickshaw vans. Each van has a part-time driver and one or two waste collectors, and serves 300-400 households. Households pay on average 20-35 cents per month to have their waste collected. This covers the salary of the van drivers and waste collectors as well as operating and maintenance costs.

The composting plants are the hearts of the operation. After the rickshaws deliver the waste, it is sorted into organic waste, recyclable materials and rejects. Recyclables are resold into the solid waste recycling stream. Rejects are collected by the local government and taken to the landfill. The remaining organic waste is converted into compost using a low-tech method that does not produce bad smells (this is important because the composting plants are located near homes rather than in industrial areas).

The organic waste is piled around a bamboo rack to allow a good circulation of air which speeds up the breakdown of the waste. Sawdust is mixed with the waste to increase the air content. The pile is turned frequently in order to maintain the temperature and to ensure equal decomposition throughout the pile. Water is used to speed up decomposition. Adding manure increases the nitrogen in the compost. The pile is then left to mature. The whole process takes 60 days. The compost is then separated into fine and coarse grades and packed into 50kg. bags for sale. Waste Concern has partnered with private companies for the marketing of the compost and recyclable materials.

Each plant produces 500-600kg. of compost daily by processing 2-3 tonnes of household waste. This involves six workers, mostly women.

Another central component of the project is the establishment of waste management committees in each neighborhood where a composting facility operates. Members of the committees are mostly women. They are trained in collection, waste separation, composting and marketing. Waste Concern provides technical assistance and training to help them manage, operate and maintain the composting enterprises. After one year of community mobilizing and training, Waste Concern transfers the project to the community while continuing to monitor it for three more years.

Waste Concern also helps communities sell their compost locally to fertilizer companies and plant nurseries. Each 50kg. bag of compost sells for US \$2.50-\$4.50. One of the factors fuelling the expansion of Waste Concern is growing demand for enriched compost.





Community Success Stories

One of the biggest obstacles faced was availability of land. Land prices in Dhaka were in a period of significant increase and local officials were reluctant to release civic land for private sector use. It was only through demonstrating the pilot project's effectiveness, establishing a network of support within the local bureaucracy, and providing an inventory of vacant and available land that enabled them to get the support of the Dhaka City Corporation and Public Works Department who agreed to provide land to expand the composting facilities.

Another obstacle was marketing the compost. Partnerships with experienced private fertilizer marketing companies who had an extensive network all over Bangladesh solved this problem. The long-term viability of the program depended on finding a market for the compost, and therefore a lot of time and effort was invested in developing partnerships with private companies.

Currently, the project employs 40 waste collectors/composting staff, providing services to 37,500 people in low-to-middle income areas of Dhaka. There are five Community Processing Plants and five slums with Barrel Composting Systems.

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Community Success Stories



Northern California Land Trust

Group Name	Northern California Land Trust
Goal of Project	Provide affordable housing for low-income residents
Development Type:	Land Use Planning, Community Economic Development
Staff	4 paid staff + volunteers
Length of Project	Started in 1973...on-going
Annual Budget	\$300,000 annually
Partnerships	San Francisco Foundation
Major Funders	San Francisco Foundation

Narrative

The Northern California Land Trust (NCLT) is a non-profit corporation that develops housing using a community land trust model. A community land trust (CLT) acquires ownership of land, and by doing so allows residents to acquire ownership in housing through cooperatives or long-term leases. The land itself remains within the trust. When a resident wants to sell, the home is sold back to the trust. Separating home and land ownership eliminates land value increases due to speculative investment. CLTs are a strategy for putting home-ownership within reach of low-income residents.

NCLT buys the properties it wants to develop, or in some cases land has been donated. Funding for land acquisition and development comes from development fees; consulting fees from assisting governments, communities and other agencies implementing the land trust model; block grant funding from the city of Berkeley; and management/ground lease fees from the properties in their permanent portfolio.

Prospective homeowners are selected based on criteria that reflect the type of property under conversion (e.g., a shared property requires more flexibility with other residents, while a co-op has specific financial requirements, etc.). To qualify, a household's income should be 60% or less of median income of the area. The financing arrangements are structured so that housing costs will not exceed 1/3 of total monthly income.

After a homeowner has been selected, NCLT provides training for the responsibilities of home ownership including teaching about credit issues, responsibilities regarding repairs, etc. and other specific concerns related to the type of property where they will live in.





Community Success Stories

NCLT has developed 16 properties containing 84 living units worth over \$4 million.

NCLT also works with other communities and organizations to help them set up land trusts. They provide technical assistance to private and public clients, and consulting and assistance with hands-on implementation of all phases of property development. Their services include guidance with community organizing, federal/state/local housing law compliance, financial sustainability models, and resident ownership training programs - all of which contribute to their revenue stream.

NCLT activities are conducted through paid staff, an unpaid board of directors and dedicated volunteers.

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Sources

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Community Success Stories



Department of Urban Agriculture (Havana, Cuba)

Group Name	Cuban Ministry of Agriculture
Goal	To expand Havana's per capita local food production
Development Type	Food Security, Community Economic Development, Land Use
Staff	68 extension workers for 15 neighborhoods
Length of Project	Started 1992...on-going
Budget	N/A
Partnerships	None
Major Funders	Cuban Ministry of Agriculture

Narrative

When the Soviet block fell in 1989, Cuba lost its primary source of food imports. In addition, Cuba lost its source of commercial agricultural imports – fertilizers, pesticides, tractors, spare parts, and petroleum. By the end of 1992, food shortages had reached crisis in the capital city of Havana. With a population of 2.2 million, the City had no local food production sector or infrastructure.

In response, local residents began growing their own food in any available space they could find – front and back yards, patios, balconies, rooftops, vacant lots. The Ministry of Agriculture responded by creating the Department of Urban Agriculture (DUA) with the goal of putting all of Havana's available land into agricultural production so that by the year 2000, Havana's food production would reach 300g. of fresh fruit and vegetables per person per day.

The DUA offered workshops for citizens who wanted to grow food. Agricultural Support Stores were established to provide access to seed stock, veterinary medicines, garden inputs, tools, medicinal plants, plant cuttings, books, biological insect control methods and compost. The government also created food distribution infrastructure to help to establish food markets and encouraging farms to sell directly to locals. A network of extension agents was established by the DUA from local neighborhoods who worked directly with community residents providing how-to help for sustainable small-scale organic production.

City by-laws were changed to allow residents the legal right to cultivate any unused land, basically creating a free and indefinite right to use public and vacant land for food cultivation.





Community Success Stories

By 1997, 26,000 urban farms in Havana were producing annually 30,000 tons of vegetables, tubers and fruit; 3650 tons of meat; 7.5 million eggs; and 3.6 tons of medicinal plants. By 2003, over 30% of Havana's available land was in cultivation with more than 25,000 residents involved in production.

Today, there are 41 self financing Agricultural Support Stores (including extensions) and 11 seedling greenhouses in operation, and 68 extension workers in Havana's 15 urban districts. The number of jobs generated by urban agricultural activities in Cuba is estimated to be around 100,000.

If the total population of the Ciudad de La Habana province (2,185,076 inhabitants) and the total estimated production for urban agriculture are taken into account, current food production is 115.67 kg./inhabitant/year.

Several factors have been identified as key to the program's success:

- unused land was made available to citizens who wanted to farm
- new planning laws made food production the highest planning priority
- establishment of marketing and sales programs to help farmers sell directly
- development that would displace a garden was required to fully refinance the relocation of the garden

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Community Success Stories



“Water Conservation Conscious City” Program (Fukuoka, Japan)

Group Name	City of Fukuoka, Japan
Goal	Increase the city's water security by reducing the volume of water lost through distribution channel leakage and by raising water conservation awareness among the public
Development Type	Water, Waste Reduction
Staff	N/A
Length of Project	Leak prevention program was initiated in 1956; Leakage detection and pipe replacement programs started in 1965; concentrated leak surveying in high incidence areas began in 1972; Water distribution control technology introduced in 1981
Budget	N/A
Partnership	None
Major Funders	City of Fukuoka

The reported production cost for reclaimed water in Fukuoka City is \$2.0/m³ compared to the drinking water cost of \$1.9/m³. The price to consumers for reclaimed water averaged \$3.0/m³ compared to the drinking water price of \$3.7/m³.

Narrative

The city of Fukuoka, Japan suffers from a lack of fresh water with which to meet the demands of its 1.3 million citizens. The coastal city has experienced two major water shortages in the last 40 years; a drought in 1978 necessitated water restrictions for 287 days, seriously disrupting the local economy and the lives of residents.

In 1979 Fukuoka established a comprehensive plan for water conservation and usage. Fukuoka implemented an on-going leak detection program that discovers on average 800 leaks annually. The city also created an innovative water regulation system to control pressure and flow in distribution pipes. City engineers conduct night time surveys of 2900 km. (1802 miles) of water distribution pipe one city block at a time using electromagnetic flow metres on a four-year cycle. Areas at high risk of leaking and those areas where leaks could create accidents are monitored on a more regular basis. Faulty pipes and older pipes – typically made from unlined iron – are replaced with ductile iron pipes lined with cement mortar or fusion bonded epoxy which reduces the risk of leakage. A system of pressure gauges, flow meters, and motor valves have been installed throughout the city that monitor and regulate water pressure and flow on a 24-hour basis, again reducing the potential for leakage.





Community Success Stories

The results have been significant. A study carried out in 2000 found that Fukuoka consumes 20% less water than other Japanese cities of a comparable size. Reductions in water leakage have increased effective supply to 96.5% of the distributed amount, the highest figure of a major Japanese city. Distribution regulation systems save approximately 5 million litres (1.32 million gallons) per day and have reduced the incidences of naturally occurring leakages by 30%.

The water conservation program included a public education campaign which resulted in 94% of users having water flow reducing devices installed in their homes which produced savings of approximately 1,000 litres (264 gallons) per month per home (for a family of four).

The city also built a three-part collection and distribution system for the reuse of grey water for non-drinking purposes. One part of the system redistributes reclaimed water to 7.7 square kilometres (3 square miles) in the central part of the city (which includes the City Hall and subway stations). Another part provides reclaimed water to several apartment complexes which have their own treatment facilities that recirculate reclaimed water within the complexes. The third part provides reclaimed water to any large new buildings within the city. Total savings are approximately 7 million litres (1.85 million gallons) of potable water each day.

Wastewater reclamation has the greatest potential in urbanized areas as the costs associated with building a separate distribution system are high. Even though it is sold to consumers for less than potable water, and in spite of the high capital costs associated with building a residential grey water re-distribution system in a high density area, Fukuoka recoups a small margin on the sale of reclaimed water- approximately US\$1/M3. The Fukuoka example indicates that the reuse of water for residential toilet flushing and urban irrigation (parks, golf courses) can be economically and environmentally justified, especially in water scarce areas.

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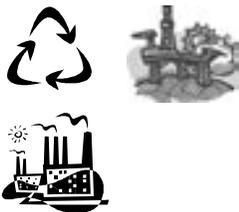
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Community Success Stories



Climate Action Plan (San Francisco, California)

Group Name	San Francisco Department of Environment (SF Environment)
Goal of Project	Reducing citywide greenhouse gas emissions 20 percent below 1990 levels by the year 2012
Development Type	Air Quality & Climate Change, Energy, Waste Reduction
Staff	See details below
Length of Project	Started 2004...ongoing
Budget	Moscone Solar Facility: \$8 million Southwest Water Pollution Control Solar Facility: \$1.7 million Generation Solar: \$400,000
Partnerships	Public Utilities Commission (PUC), the city department that oversees water, wastewater and municipal power services to San Francisco
Major Funders	City of San Francisco

Narrative

The Climate Action Plan's mandate is to reduce citywide greenhouse gas emissions 20% below 1990 levels by the year 2012. To achieve this goal, San Francisco must reduce its annual greenhouse gas emissions by about 2.5 million tons CO₂. As citywide emissions are about 9.7 million tons CO₂ each year, to meet the target, emissions must be brought down to 7.2 million tons CO₂.

The Plan focuses on several categories of emissions reductions including renewable energy, energy efficiency and transportation. Programs and policies include investing in energy efficiency and renewable energy, transit improvements including increased ridership, and "greener" alternative fuel and hybrid fleets. The plan also recommends the establishment of a City interdepartmental working group to monitor Plan implementation, track progress and quantify CO₂ emissions and reductions. It is one of the most ambitious big-city greenhouse gas reduction commitments and programs in the United States.

Renewable Energy

In 2004, the PUC built the largest city-owned solar power system in the U.S. atop the city-owned Moscone Convention Centre. The system has 5,400 solar panels (some 60,000 square feet of photovoltaic roofing tiles), produces 826,000 kWh annually. It cost \$8 million to build. The plan also includes





Community Success Stories

strategic energy efficiency measures such as upgraded lighting systems. Altogether, the Convention Center's solar electric system and energy efficiency measures will save the City about \$305,000 annually in reduced energy costs.

In mid 2005, San Francisco will begin installation of its second large-scale solar electric system at the Southeast Water Pollution Control Plant, the City's largest wastewater treatment facility. Covering 20,000 square feet, this solar system will cost \$1.7 million, generate more than 300,000 kW per year and employ one full-time staff. The efficiency measures are projected to save an additional 1.5 million kWh per year. Ten additional solar power systems will be installed at City schools, libraries and health clinics by the end of 2006.

Generation Solar, a \$400,000 program with one full-time staff administered jointly by the PUC and the Dept. of Environment has streamlined permitting, reduced permit fees, created a qualified contractor pool, and established pre-negotiated prices for solar installation in homes and businesses. As part of Generation Solar, the PUC developed a network of eleven solar monitoring sites around the city to measure the amount of sunlight that hits a square meter area. City residents use this information to estimate energy and cost savings from installation of rooftop PV solar panel systems.

Energy Efficiency

In 2002, San Francisco adopted an Electricity Resource Plan to guide the city's energy efficiency, renewable energy and demand management programs with a goal of reducing electricity demand in San Francisco by 16.4 megawatts. The Electricity Resource Plan employs 3 full-time staff.

In 2002-3, the City introduced the Power Savers program to encourage lighting retrofits for 4,000 small businesses using state rebate funds. This program successfully converted small businesses to T-8 lamps and solid-state ballasts, reducing demand by 6 megawatts and saving each business from \$600-\$1,000 per year, for a total annual savings of \$3.5 million per year.

A recently passed Green Building Ordinance requires LEED "silver" certification in all City construction projects over 5,000 square feet. Silver certification results in energy savings of between 20% and 30%.

Other energy efficiency initiatives include the installation of LED traffic signals across the City, expected to reduce electricity use by 7.7 million kWh and save \$1.2 million per year.

Transportation Innovation

The City has acquired more than 700 cleaner air vehicles (compressed natural gas, hybrid, electric, biofuel and propane) for its fleet. More than half of the city's Municipal Railway (Muni) fleet is zero-emission vehicles, and the City sponsors programs to promote low-emission taxicabs and liquid natural gas, long-haul garbage trucks. The Zero Emissions 2020 Plan calls for Muni to establish an all-electric drive fleet that includes hybrid, battery, and fuel-cell buses by 2020.





Community Success Stories

"Muni [The municipal transit system] aims to be emissions-free by 2020," according to San Francisco Municipal Transportation Agency Executive Director Michael Burns.

In early 2004, San Francisco added two Honda FCX hydrogen-powered fuel cell vehicles to its city fleet through a lease arrangement. The buses and hydrogen fuel cells are the latest in clean air vehicle technology, producing no emissions other than drinkable water. The lease arrangement, including the fueling station, costs \$200,000 annually.

Outcomes

- In the period 2001-2004, San Francisco eliminated 4mW, 74,503 tons of CO₂, and achieved a 24,369 mWhr per-year reduction in electricity use from completed energy efficiency improvements.
- City-facility energy efficiency projects save \$10.7 million in energy costs per year.
- More than 100 new jobs have been created.
- Assistance has been provided to 3,000 low-income residents and 4,000 small businesses.
- Improved air quality

Contact

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Sources

The Climate Group, www.theclimategroup.org





Community Success Stories

Community-Based Urban Management (Quanzhou, China)



Group Name	City of Quanzhou, Fujian Province, China
Goal(s)	To explore how more active citizen involvement in urban planning and management can make regulatory structures more rational and easier to enforce; To increase participation of residents in local planning through dialogue with municipal government on issues of neighborhood infrastructure upgrading, self-built housing regulation and historic preservation.
Development Type	Citizen Participation, Land Use
Staff	Varied over length of project. Anywhere from 2 to 20 representatives from the municipal, district and sub-district governments
Length of Project	1999-2005
Budget	US\$134,000
Partnership	University of British Columbia Centre for Human Settlements; Tsinghua University School of Architecture; Chinese Academy of Urban Planning and Design
Major Funders	Ford Foundation, Beijing. The project was also supported through academic research grants

Narrative

The Community-Based Urban Management project was initiated in the coastal city of Quanzhou, in China's Fujian Province to facilitate dialogue between lay people and urban planners and to test the limits and possibilities of new forms of communication between lay people and municipal planners and officials.

Quanzhou is an old city with a unique history. Unlike most other regions in China, Quanzhou protected the private ownership of homes (due mostly to an official interest in not alienating expatriate owners who continued to invest locally). Building in the city, at least since 1949, has been mostly private and informal. Both of these aspects – private ownership and informal construction – presented serious difficulties in the late 1990s when the local government wanted to revitalize an aging infrastructure and address housing problems.

When the project began in 1999, 17% of Quanzhou had been subject to large-scale demolition, street widening, and construction of mass housing and





Community Success Stories

commercial space by government-sponsored developers in an attempt to improve and expand infrastructure and environment. Angry reaction by local residents to the prospect of demolition, concern for the historic character of the city, and the expense of relocating private homeowners forced local officials to look for alternative approaches to development.

The project was designed to address urban revitalization in the inner-city neighborhood of Cheng Nan:

- assess the historic value of the buildings and spaces
- assess the condition of buildings occupied by local businesses and residents
- propose housing and public space solutions that maintained architectural identity, met local residents' desire for "modern" lifestyles, and improved business conditions
- explore strategies for using local cultural resources (in particular, two important temples) for economic revitalization

To begin to build relationships between local planners and residents, the project coordinators planned a series of activities designed to break down barriers and facilitate dialogue. Workshops/meetings were held to identify the different interests in the community and to formulate policy options that proposed various trade-offs for each interest. Residents and planners were placed in separate groups and asked to answer questions: Who benefits? What are the benefits? Whose interests are not met? Residents were pleased to be listened to by local officials; local officials were surprised at how articulate and civil residents were. Participants were introduced to face-to-face problem-solving techniques such as the "Planning for Real" technique developed by the Neighbourhood Initiatives Foundation in the UK. At these meetings, a "core group" of residents was identified who were willing to take a leadership role and keep the community informed and involved.

Another important aspect of the project was a coordinated publicity campaign. Contacts with local television and newspapers were established, project activities were well publicized, and publicity was coordinated with local festivals.

The project hosted design clinics for residents and planners with two goals: to introduce stakeholders to a range of approaches to participatory design and planning education, and to give residents an opportunity to participate in household upgrade design. As part of the process, participants were given the opportunity to see their neighbourhood visions come to life in photo-edited images. Design skills were used as a medium of engagement to resolve conflicts between resident aspirations and municipal regulations.

There also have been conferences in China and North America where municipal leaders and other stakeholders examined a range of community engagement strategies, multi-stakeholder planning processes, and participatory research techniques.





Community Success Stories

The project faced numerous obstacles. Local residents had poor organizing skills – likely due to long-standing cultural and political prohibitions against autonomous organizing into official groups – and there was very limited legal space for residents to organize into officially recognized groups. Previously, neighbourhood committees acted in their own economic interests, frustrating residents and planners alike. There were conflicting agendas among various levels of government, who often gave insufficient support to resident-planner compromises.

Despite these obstacles, there were significant beneficial outcomes. The workshops demonstrated that residents and planning officials can come together, discuss planning and development, and build trust, goodwill, and enthusiasm for experimentation (it was generally other levels of government not participating in the process that resisted or rejected the compromises and agreements reached by residents and planning officials). The workshops also provided a precedent for a more transparent way of gathering information from residents than standard surveys.

Residents and planners engaged in a design process that bridged significant gaps and conflicts between municipal regulations and residents' desires.

The project also demonstrated that initiatives intended to expand citizen participation in municipal planning processes should look for cooperation between agencies with overlapping interests. One approach was to form a temporary task force with representatives from each stakeholder to develop pilot projects and deal with contentious situations.

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Leaf, M. and Abramson, D. (2002). "Global networks, civil society and the transformation of the urban core in Quanzhou, China" in Eric Heikkila and Rafael Pizarro (eds.) *Southern California and the World* (Westport, CT: Praeger)
Project Summary www.chs.ubc.ca/china/PDF%20Files/CHSrept-China%20Project.pdf





Community Success Stories



Street Edge Alternatives Project (Seattle, Washington)

Group Name	Seattle Public Utilities
Goal of Project	Reduce runoff pollution in local water ecology
Development Type	Water & Sewage, Land-Use
Staff	1 full-time
Length of Project	Started 2001...on-going
Budget	\$850,000 (USD) to build
Partnerships	none
Major Funders	Seattle Public Utilities
Topic Area	Water and Sewage Aquatic Ecosystems

Narrative

Seattle covers approximately 84 square miles and has a population of 516,259. Like most urban centres, much of the city is made up of impervious surfaces. As a result, a large component of municipal water management is managing the rain water that accumulates on these surfaces and which would normally return to ground water tables through the process of infiltration. Diverting, collecting and discharging runoff requires costly infrastructure which is also costly to inspect and maintain, especially as it ages. Poor maintenance of runoff infrastructure can compromise the hydrologic performance of a municipality's entire water system.

Ground infiltration is an essential part of the hydrologic process. It replenishes ground water tables (which provide water to waterways in dry periods), and it provides natural water purification (water percolation through soil, streambeds, wetlands and vegetation, eliminates most pollutants including metals). Runoff is particularly polluted as it contains high concentrations of the salts, metals, sediments, organic materials, nutrients, pathogens and chemicals which accumulate on city surfaces. Cars are one of the worst sources of pollutants depositing automotive fluids, tire debris and other contaminants directly onto road and parking surfaces where they are collected by runoff and then transported to local waters during storms.

SEA Streets was and is a comprehensive approach to managing runoff through low impact development (LID), a technique designed to preserve or re-introduce natural (i.e. predevelopment) hydrology and water quality through small-scale, decentralized controls.





Community Success Stories

The pilot project was introduced into the northwest part of Seattle after a neighbourhood survey revealed a 94% approval rating for the project. The project was carried out on a designated 2.3 acre right-of-way.

A number of alterations were made. The street was narrowed so that the total area of impervious surface was reduced by 11%. Water drainage techniques were introduced that combined traditional drainage features (culverts, catch basins, flow structures, and slotted pipes) with LID methods – interconnected swales and vegetation, landscaping, biofiltration and tree preservation. The goal was to recreate, as much as possible, the hydrology of a natural ecosystem.

Where feasible, swales were created which contained native wetland plants to treat runoff and beautify the area. In places where swales were inappropriate (i.e. where they increased the potential for home flooding), vegetated surfaces were used. Vegetated surfaces slow water flow and provide biofiltration.

The city also planted more than 100 deciduous and coniferous trees and 1,100 shrubs in the area as part of the runoff strategy. Prior to this project, there were no trees in the right-of-way area. Designers worked with homeowners to create functional transitions between private and public areas.

The SEA Street pilot project reduced the total volume of stormwater leaving the area by a remarkable 98%. Total suspended solids in runoff were reduced by 70%.

The project has been so successful that the City of Seattle has converted an additional 10 areas using LID runoff management structures. Seattle Public Utilities' long term goal is to retrofit the entire ditch and culvert drainage system in the northern part of the city using SEA Streets and other natural approaches to manage runoff.

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Sources

City of Seattle (2003) Retrieved from www.ci.seattle.wa.us/util/About_SPU/Drainage_&_Sewer_System/Natural_Drainage_Systems/Street_Edge_Alternatives/index.asp

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Honourable Mentions

Introduction

Our research revealed many more success stories than we intended to include in this publication. However, these examples of the innovative and positive results achieved by a dedicated group of people were too compelling to ignore. They offer more inspiring examples we are pleased to share with you.



Small Towns Development Project (Nairobi, Kenya)

The Small Towns Development Project was established in 1994 to provide long-term sustainable solutions to informal settlements. The informal settlement of Tanzania-Bondeni in the southern part of Voi town had about 5,000 citizens (half earned less than \$40 US/day and 30% were unemployed) living in temporary structures with no infrastructure. None had any legal right to own or occupy the land they lived on.

The Ministry of Local Authorities initiated a series of consultations with the community which resulted in the Tanzania-Bondeni Community Lands Trust. The land was placed into a community land trust (CLT) managed by a citizen elected committee.

Under the CLT's stewardship, roads and water supply have been brought into the area, the land has been surveyed and titles issued to residents, half of whom are women. The CLT's goal is to make land tenure sustainable and to minimize the negative effects of local land market on poor residents. One of the key principles was that beneficiaries would pay for the infrastructure improvements and security of tenure in order to make the project sustainable and replicable.

Over 600 houses had been rehabilitated or newly constructed. This construction activity has improved the employment situation in the settlement and supplemented other income generating activities. The improved living environment has reduced the incidence of water-borne disease. The model is being expanded into at least two other informal settlements in Kenya.

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Source

www.blpnet.org/learning/casebooks/hic2/kenya.pdf





Honourable Mentions

Landfill Gas Extraction (Vancouver, Canada)

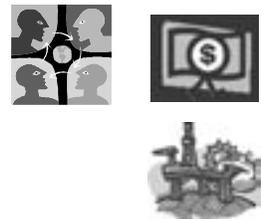


In 1990, Vancouver built a landfill gas (LFG) extraction system at the regional landfill which collects approximately 400,000 tonnes per year of municipal solid waste from approximately 950,000 people. Today, with over 200 vertical extraction wells, the system collects approximately 2000 standard cubic feet per minute (scfm) of LFG with a methane content of approximately 50%.

The project recovers approximately 500,000 GJ/year of energy, the total energy requirements of 3,000 to 4,000 homes, and results in a reduction of more than 230,000 tonnes per year CO₂ equivalents or the emissions of approximately 45,000 automobiles. The City of Vancouver will receive revenues of approximately \$400,000 per year for the duration of the 20-year contract period from the sales of extracted methane.

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Wind Cooperatives (Denmark)



Beginning in the 1980s, the Danish government wanted to encourage individual action toward meeting Danish energy and environmental policy. Revenues from wind cooperatives were made tax exempt. With a tax rate of about 50%, this is an extremely attractive incentive and is the driving force for cooperative investments. Nearly any Danish household can effectively generate their own electricity with wind energy and sell excess electricity into the domestic market. Half of all wind turbines in the country are owned cooperatively.

The wind industry has created 20,000 jobs in Denmark. 150,000 families participate in more than 2,100 wind cooperatives countrywide. Wind energy provides 20% of Denmark's energy needs. The government's goal is 50% by 2030.

Contact

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Honourable Mentions



Integrated Wetland System (Calcutta, India)

Calcutta has no wastewater treatment plant. The integrated wetland system developed by the Calcutta Metropolitan Authority is a complex and cost-effective strategy for handling Calcutta's solid waste and sewage. The wetlands are a patchwork of canals, vegetable plots, rice paddies and fish ponds covering some 12,000 hectares. When solid waste arrives, thousands of people comb through the debris removing what can be recycled. The remaining organic mass is used to support vegetable gardens irrigated with sewage water.

Raw sewage is decomposed in a 2,500 ha system of ponds and canals filled with algae. The algae is transformed into edible protein by fish that thrive on the thick algal soup such as Indian and Chinese carp and tilapias. The multiple stocking of fingerlings and multiple harvesting provides relatively high yields of 3-8 tonnes of fish per hectare annually.

Through this process, the garbage fields produce 150 tonnes of vegetables per day, the fish ponds produce 3-8 tonnes per hectare annually, and the paddy fields produce 16,000 tonnes of rice. The project is managed by community groups and utilizes appropriate technology, with entrepreneurs taking away all sales proceeds in return for rental of land and water. Some 17,000 fishermen produce 20 tonnes of fish daily.

Under the Ganga Action Plan, similar wetlands treatment facilities are being implemented in other municipalities to address pollution in the Ganges River.

Contact

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Honourable Mentions

Puerto Princesa Watch (Puerto Princesa, Philippines)



Puerto Princesa (population 120,000) was suffering ecological devastation from slash-and-burn farming, and illegal logging, fishing, and hunting. Fish poaching destroyed local ecosystems with cyanide, blasting and destructive trawling technology. And forest cover had been severely reduced. In addition, the streets were filled with garbage as the municipal solid waste system was dysfunctional.

The municipal administration adopted an Agenda 21 approach guided by the principle that the citizens must be made partners in the planning and execution of sustainable solutions. The city initiated Puerto Princesa Watch, a campaign of environmental monitoring by mostly civilian volunteers, some city employees and with the support of local police. Teams of locals were organized into sub-groups responsible for monitoring different aspects of the local environment. Forest Watch is responsible for the protection, conservation and rehabilitation of the city's forest areas. Baywatch focuses on the protection and conservation of city marine ecology through preventing illegal fishing. Other programs focus on city-wide littering, car pollution, and slash-and-burn agriculture.

With the support of local police, the program has drastically reduced illegal resource extraction and environmental degradation. The program has been responsible for confiscating hundreds of thousands of board foot of prime lumber, hundreds of talking birds, chainsaws, truckloads of logs, thousands of pump-boats and fishing boats for violation of various fishing laws and city ordinances. The program also embarked on a massive reforestation scheme that has resulted in an increase in forest cover of more than 2000 hectares.

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Citizens must be made partners in the planning and execution of sustainable solutions.





Honourable Mentions



Downtown Housing Incentive Program

(Saskatoon, Saskatchewan, Canada)

High land values in downtown Saskatoon had been discouraging development compared to cheaper sites just outside the downtown and in the suburban areas. This resulted in underused or vacant lots with development potential being ignored by developers and an increasing lack of affordable rental housing. In partnership with Canada Mortgage and Housing Corporation, the City of Saskatoon established a program to actively increase the population of the downtown area by increasing the number of available rental housing units built through developer incentives.

After extensive consultation with the development community, downtown residents and businesses, the original program provided two incentives: 1) a tax abatement phased in over five years (100 per cent exemption the first year, 80 per cent in year 2 and so on) for new rental housing in the downtown, and 2) a 50 per cent rebate of the building permit fees on the residential portion of any new development in the downtown. This was changed later to a 100 per cent tax exemption for five years for all housing not targeted to specific types of residents (such as seniors). The tax abatement program was complemented by the elimination or relaxation of parking requirements for multiple unit dwellings in downtown residential areas.

The program (which started in 2001 and is still ongoing) has so far resulted in two projects and an additional 104 rental units built in the downtown area. The amount of taxes the City would have collected in this period for these sites without their redevelopment would have been approximately \$61,524. The total amount of residential taxes that will have been paid over this same time frame is approximately \$364,022.

The City was able to influence the behavior of private developers to achieve long-term planning goals and increase tax revenues by \$302,498.

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Honourable Mentions

EcoPurchasingVienna (Vienna, Austria)



EcoPurchasingVienna was launched in 1998 with the objective of turning Vienna's municipal spending into a force for sustainable change. Every year, the City of Vienna spends about \$3.6 billion Euro on the purchase of goods and services. The goal was to have as much of that spending as possible meet the criteria of ecological sustainability.

The scheme is based on a catalogue of criteria, a tool that specifies ecological recommendations for planning and tendering products and services by all departments. The criteria include: minimum packaging, no phosphate or formaldehyde in the products, no chlorine bleaching, no aggressive cleaning agents, and no tropical timber. The project covers all municipal departments and enterprises operated by the City of Vienna.

The project undertook a vast awareness campaign which included informational materials and catalogues of ecological criteria on almost everything purchased by the City. The catalogues proved instrumental in simplifying and standardizing planning procedures and tendering of services.

To date, this initiative has considerably increased the procurement proportion of organic and other ecological products in city-run institutions. For example, the share of organic products at the Vienna's public hospitals has reached 30 percent; all baked and dairy products, with the exception of cheese, are 100% organic; and organic farmers deliver most of the beef.

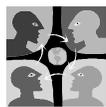
Contact

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Honourable Mentions



City of Seattle's P-patch Program (Seattle, Washington)

In conjunction with the non-profit P-patch Advisory Council, this program provides community garden space for residents of 35 Seattle neighbourhoods. Over 1,900 plots serve over 4,600 urban gardeners on 12 acres of land. Special programs serve refugees, low-income, disabled and youth gardeners, and the Lettuce Link project delivers 8-10 tons of fresh produce to food banks every year. All gardening is organic; no insecticides or herbicides are permitted. Since its inception, 53 community gardens have been started throughout Seattle, and a Community Shared Agriculture program has also been initiated.

Contact

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Urban Greening Partnership Program (Sri Lanka)

In 2003, the University of Peradeniya, Sri Lanka (along with other partner organizations including the Canadian International Development Agency) began a three-year Urban Greening Partnership Program (UGPP) using urban agriculture to reduce poverty and enhance the environment in urban areas in Sri Lanka (Matale, Moratuwa and Badulla). The first phase of the project took place in the fall of 2003, and involved the formation of multi-stakeholder committees for each project community. A series of Community Action Plan workshops were conducted, in which the participants mapped out "Green Plans" for their respective communities. The following spring, approximately 180 home gardens and four community gardens were created in the project communities.

In August 2004, a national seminar, Next Steps for Urban Greening Partnerships, was held in Matale. Approximately 80 local authorities, community residents and project staff attended, and spent a day discussing the lessons that had been learned and the direction of the second year of the program.

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Honourable Mentions

Massachusetts Materials Exchange

(Pittsfield, Massachusetts)



The Massachusetts Materials Exchange connects businesses with reusable materials with others that can use them. The Exchange links businesses through its on-line database, and by actively researching and pursuing reuse and recycling options. Participants arrange for shipping and take possession of the materials themselves.

Materials commonly listed in the database include: manufacturer's byproducts, surplus stock, scrap and overrun material, used equipment, used office furnishings, packaging and transport materials. Success stories include:

- a food manufacturer who sold 1,000 used plastic buckets monthly to a business that converted them into biohazard waste containers.
- a commercial greenhouse who bought five used, 20,000-gallon fuel storage tanks from a business that needed to get rid of them
- a glass processor who sourced misprinted boxes which cost 40% less than new boxes, reducing cost and waste.

In the past four years, the Massachusetts Materials Exchange has moved over 2,000 tons of materials, saving participants more than \$100,000 in avoided disposal and purchasing costs.

Contact

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Honourable Mentions



The project began with a series of community meetings to find out from residents what areas they wanted to address to improve their communities.

EcoCity Initiative (Johannesburg, South Africa)

The EcoCity Initiative and EcoCity Trust were established in response to Local Agenda 21 to address community and environmental problems in some of the poorest neighborhoods in Johannesburg. The goal was to involve locals in the planning and implementation of development initiatives that would also rehabilitate and sustainably manage core natural resources. Community problems included chronic poverty and unemployment, water shortage, low literacy rates, food shortages, and widespread pollution and accompanying health risks.

The project began with a series of community meetings to find out from residents what areas they wanted to address to improve their communities. It was decided by all participants that the development of small, locally owned businesses was the best way to drive the transformation into a more self-sustaining and ecologically responsible region. The participatory workshops proved to be a crucial step in fostering individual commitment and personal responsibility.

EcoCity began capacity-building with locals to increase education levels about cooperatives and to begin establishing market cooperatives owned and run by residents. The first co-operative was set up as an organic food co-operative run by 25 women. A secondary agricultural coop was established to provide regulation, marketing and sales services for the producer coops.

The agricultural coops were just the beginning. EcoCity has helped to establish:

- a bicycle cooperative that builds, repairs and sells bikes and employs 8 people
- a recycled materials buy-back centre providing 40 jobs and decreasing the flow of solid waste into the local landfills.
- a youth group who give environmental education workshops on topics such as organic farming and eco-building and act as EcoCity guides for tourists.
- an all-women's eco-building cooperative
- a 30-home solar water heating trial

There are now over 70 farmers working in 6 primary agricultural coops producing and selling organic produce.

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Honourable Mentions

Community Bicycle Network (CBN) (Toronto, Canada)



CBN works to stimulate, support and link together a wide range of community-based bicycle initiatives in the City of Toronto. CBN houses an array of activities from repair and skills workshops, bike promotion programs and bicycle recycling efforts, to urban revitalization. CBN serves as a community resource and offers an accessible, affordable place for community groups concerned with sustainable transportation and urban affairs to convene. CBN operates with the support of scores of regular volunteers and generous contributions from individuals and organizations. CBN's core mission is to make sustainable, community-friendly transportation accessible to all in the city of Toronto.

Programs include: BikeShare, a fleet of 200 bicycles housed in 14 hubs throughout Toronto that members can use at no cost after paying the annual membership of \$25 CDN; Toolworks, a cycle repair facility that allows members of the public access to use tools and workshops; Wenches with Wrenches, a series of on-going workshops run by women for women; and West Toronto RailPath, a community initiative formed to try to have an abandoned rail line converted into a bike path.

Contact:

Community Bicycle Network
101-761 Queen Street West, Toronto • ON • M6J 1G1
Tel: (416) 504 2918 Fax: (416) 504 0068
Email: info@communitybicyclenetwork.org
Website: www.communitybicyclenetwork.org

Measures at the Source (Stockholm, Sweden)



Measures at the Source was initiated to reduce the amount of hazardous materials entering the water system in the city of Stockholm. Although waste water was captured and treated before being discharged into the Stockholm archipelago and the Baltic Sea, the treatment process did not remove many of the polluting materials from households and small-scale businesses. Like many cities, small and medium sized businesses were exempt from having to install pollution control and treatment systems.

The city pursued voluntary source reduction through public education and regulation to reduce levels of contaminants. The city hoped that a reduction in the level of hazardous materials coming into the system would: reduce the burden on the municipal waste water system and the local aquatic environment, and reduce concentrations of contaminants in the biological sludge by-product from waste water treatment process, making it suitable for re-use as agricultural fertilizer.





Honourable Mentions

New discharge standards and operating requirements were linked with research and education programs and product development to encourage voluntary compliance and improvements in waste handling. The municipal water service carried out analysis of pollution levels, prescribed limits, conducted information campaigns, evaluated products for environmental friendliness, and developed treatment technologies in cooperation with small and medium-sized industries.

Local businesses and small industries cooperated with the water service to create less polluting products and to develop treatment technologies. For example, the Swedish Dental Federation established programs to reduce mercury discharges from dental practices.

The program achieved substantial reductions of contaminants in sewage sludge – from 50% to 84% – over an 18-month period in 1990-91:

- a 50% reduction in the mercury content of digested sludge
- a reduction in cadmium of between 62-89%
- a 50% reduction in nonylphenol (non-biodegradable chemical found in auto-care products)
- reduced use of household laundry detergents containing chlorine

Contact

Stockholm Vatten AB
SE-106 36 Stockholm, Sweden
Telephone: +46 8 522 120 00 Fax: +46 8 522 120 02
e-mail: info@stockholmvatten.se



Community-Based Environmental Monitoring Network, St. Mary's University (CBEMN) (Halifax, Canada)

The CBEMN is a resource group established to build community capacity for monitoring environmental conditions and for generating strategies for reducing environmental impacts. They provide monitoring services, and more importantly training and equipment to citizens to conduct their own monitoring. Community members and groups can borrow equipment for monitoring purposes from an equipment bank. CBEMN also brings people together to discuss environmental issues, give presentations and offer information about being environmentally friendly around the house.

Contact:

Saint Mary's University, Department of Geography
Burke Building, Room 204A
923 Robie Street, Halifax, Nova Scotia B3H 3C3
Telephone: 902-491-6243 Fax: 902-496-8213
E-mail: environmental.network@smu.ca Website: www.envnetwork.smu.ca





Honourable Mentions

Livable Region Strategic Plan (LRSP)

(Greater Vancouver Regional District (GVRD), Canada)



The 21 member municipalities of the GVRD brought various stakeholders together in a series of workshops to develop the Livable Region Strategic Plan (LRSP). The LRSP was developed and adopted as Greater Vancouver's official regional growth strategy. It has four main goals:

- protect the green zone;
- build complete communities;
- achieve a compact metropolitan area and
- increase transportation choice.

The LRSP provides the framework for making regional land use and transportation decisions in partnership with the GVRD's 21 member municipalities, the provincial government and other agencies. Urban centres were identified and have been successful in containing development within a concentrated urban area while establishing diverse and more complete communities. The plan led to the establishment of a regionally controlled and operated transit authority (Greater Vancouver Regional Transit Authority).

As a result of this initiative, the protected green zone has increased by approximately 60,000 hectares since 1991. Air quality improvements have been significant as a result of reductions in emissions from industry and vehicles.

These initiatives have enhanced the region's social, economic and environmental health. Implementation of the plan is integrated into the budgets of the member municipalities through their official community plans.

Contact

Greater Vancouver Regional District
4330 Kingsway, Burnaby, B.C. V5H 4G8
Telephone: 604-432-6200
e-mail: gvrld.communications@gvrld.bc.ca Website: www.gvrld.bc.ca





Establishing Community Priorities

Community-wide strategic planning is the process of bringing stakeholders together, taking inventory, identifying strengths and weaknesses, prioritizing problems, formulating solutions, charting future goals and determining the characteristics of success.

For those who organize community meetings, whether on behalf of local governments or as community leaders, it is important that the process is inclusive and representative.

In sustainable community development, planning must be accompanied by a broad-base of participation, collective prioritizing of issues and goals, and the tools to measure progress and success over time. Community-wide strategic planning is the process of bringing stakeholders together, taking inventory (see the **Community Profile** and **Checklist of Sustainable Practices**), identifying strengths and weaknesses, prioritizing problems, formulating solutions, charting future goals and determining the characteristics of success. The end result will be a realistic plan for action based on relevant and accurate information about the community and the challenges being faced (Ransom 1998).

Strategic planning for sustainable community development must begin with stakeholder participation. Non-profit organizations, businesses, culturally marginalized groups, cultural and educational institutions, public agencies, more and less affluent citizens, and local government all have knowledge to contribute and a role to play in realizing the long-term goal of transformation to a sustainable community. Ensuring representation from all of a community's many groups is often the most difficult barrier for a community to overcome when trying to formulate a strategic plan for SCD. Some of the reasons include:

- Organizers of meetings tend to invite individuals and groups they know or know about, limiting who gets invited based on language or cultural or economic barriers.
- In many instances, participants are people who are skilled and comfortable participating in public meetings, often meaning those with more formal education, professional experience and access to power.
- Discomfort with public speaking and intimidation; parenting needs (e.g., single parents who may need childcare); language barriers for those whose native language is not the language of the meeting; alienation for those belonging to groups other than the dominant or organizing group – all can play a role in limiting participation.

For those who organize community meetings, whether on behalf of local governments or as community leaders, it is important that the process is inclusive and representative. For example, in a particularly poverty-stricken neighbourhood in Vancouver, Canada community leaders offered residents stipends to attend meetings that eventually lead to a community-wide strategic plan.⁵

Setting Priorities

Obviously, it isn't possible to do everything at once. At the core of the strategic planning process is a balancing of limitations and desires that will define both short-term and long-term strategies. What is most or least important for each stakeholder will be influenced by geographic location, income, age, gender, importance of the issue, feasibility, economic viability, safety, time-frame,

⁵ The result was a neighbourhood revitalization plan called the Vancouver Agreement, created by local residents, businesses, non-profit organizations and three levels of government.





Establishing Community Priorities

resources, effectiveness, media appeal, etc. It is inherently a political task (Malbert 1998). What is essential is that groups detach themselves, at least temporarily, from their own interests. This is an important opportunity for local governments to take a leadership role by keeping the broader picture and the common good clearly in sight while helping stakeholder groups overcome interest-based bickering and work together on a common course of action.

Measuring Success

Communities must also measure and report their own successes and failures. Many people take identifying success for granted, but agreeing on what success looks like is a value-laden endeavor. For example, an initiative to decrease water consumption may appear successful in terms of reduced volumes of water being used, but from residents' perspective appear disastrous if, for instance, households have been cut off or can no longer afford water services, resulting in illness or death. Agreeing on indicators from the outset can help to overcome these kinds of value-based conflicts.

Many writers have noted that the most influential and reliable indicators tend to be those that are developed with input from a broad range of participants in the planning process. This not only brings together many different groups within the community, but it can build new alliances and help stakeholders better understand community problems and strengths (Mitra 2003; Murray et al. 1998). Even the understanding that there are different kinds of success depending on frames of reference is a valuable step forward.

Communities should consider why they are measuring the effectiveness of their actions, and who will use this information. Such considerations will help communities choose indicators that are suitable for their needs. Stakeholders will have different reasons for monitoring the success of a project: for personal or family well-being and safety, to establish financial support, to justify policy creation or elimination, for publishing or academic purposes, to save or protect a particular species, etc. Some important considerations when thinking about indicators include (Mitra 2003):

- **Holistic measurements** – Select indicators that emphasize linkages between different aspects of the community rather than single attributes. For example, the traditional approach of using unemployment as an indicator is to accept any decrease as a sign of success. A more holistic approach is to link the unemployment rates with other community characteristics such as pollution levels, pregnancy rates, nutritional needs, levels of physical health, birth defects, etc.
- **Trends** – Select indicators that measure trends. Indicators should show where you are, where you are going, and how far you are from your goal.
- **Contextual relevance** – Select indicators that are relevant given the context within which your community exists. For example, measuring public transit use patterns in a small, rural community may not be as good indicators of climate change policies as the degree to which residents limit their use of

Communities should consider why they are measuring the effectiveness of their actions, and who will use this information. Such considerations will help communities choose indicators that are suitable for their needs.





Establishing Community Priorities

petroleum-based agricultural inputs. Make sure that what is being measured makes sense in the specific circumstances.

- **Technical validity** – Select indicators whose gathering processes and values, be they qualitative or quantitative, will be credible and reliable.
- **Easy to understand** – Select indicators that will be easily understood by all of the stakeholders, or find ways of translating complex information into understandable terms.
- **Currency** – Select indicators that will provide you with the data you need in a timely way. If your measurement for success is the survival rate for a certain species of fish, but continued funding depends on showing results before the eggs hatch, the data gathered will be too late (Mitra 2003).

Collective planning processes challenge the community identities of stakeholders. Future planning is a process that usually begins when something has gone wrong and needs to be fixed.

Community Identities

Collective planning processes challenge the community identities of stakeholders (Baum 1998). Tensions emerge as past experience is confronted with future expectation. Future planning is a process that usually begins when something has gone wrong and needs to be fixed. In this sense, future planning questions the past and asks people to embrace uncertainty. As a consequence, the tendency is for communities to avoid thinking realistically about present problems and alternatives to current practices.

Sustainable community development introduces transformative change into an urban setting. There is an aspect of this process that asks stakeholders to change familiar roles and identities for the common good (Baum 1998). For example, a poor community used to unregulated sewage and solid waste disposal may have to let go of an identity of entitled victim. Similarly, a company whose exclusive water access denies local farmers irrigation may have to let go of an identity of entitled owner. These examples illustrate the importance of the tensions that can arise between past experience and future expectations in sustainable community development processes.

Strong leadership and confidence in the process are essential for helping stakeholders overcome positional biases and uncertainties.

Some effective strategies for overcoming these kinds of barriers include:

- Creating opportunities to acknowledge and show respect for past identities. In divided communities, this can be the bridge over long-standing differences and mistrust which can give rise to anger and fear about future uncertainty.
- Establishing clear goals and building confidence in the process. Strong leadership and confidence in the process are essential for helping stakeholders overcome positional biases and uncertainties.
- Creating an atmosphere that allows people to look at the community critically without feeling guilty or disloyal, and without fear of reprisal or isolation.

In the end, successful collective planning provides the foundation for sustainable transformation because all members of a community have had the opportunity to participate in the decision-making process, have had their





Establishing Community Priorities

concerns heard and have had their most basic and essential needs treated respectfully. Sustainable community development is not about doing something to a community, but rather offering the tools required for people to transform their own communities for themselves.

In order to assist you in your information gathering and community planning we offer the following tools;

- **Community Profile and Checklist of Sustainable Practices** – A guide for information gathering about your community and its levels of sustainability (see section **Establishing Community Priorities**)
- **Citizen Participation Assessment Tool** – A tool to help you identify and assess opportunities for participation in local governance (see section **The Importance of Citizen Participation**)
- The vision and practical actions presented in the section entitled **Green Cities Declaration** and **San Francisco Urban Environmental Accords**

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Establishing Community Priorities

Selected Resources and Related Readings

Asset-based Community Development Institute (United States) provides resources and tools for community builders. www.northwestern.edu/ipr

Community Action Workshop Manual (2001) Harmony Foundation, Victoria, BC V8S 1G1. www.harmonyfdn.ca. A process for cooperative community planning, including workshop instructions and activities. 125 pages

Communities by Choice exists to share knowledge and resources that advance the practice of sustainable development. www.communitiesbychoice.org

Developing a Strategic Communications Plan is a publication of the Institute for Media, Policy and Civil Society (1999) assists nonprofit organizations to create strategic communications plans. www.impacs.org/index.cfm?group_ID=2723

Discovering Your Community (1994) Harmony Foundation, Victoria, BC V8S 1G1. www.harmonyfdn.ca. A workbook for collecting information to plan sustainable community development projects. 58 pages

International Sustainability Indicators Network connects people who work on or are interested in using sustainability indicators to measure progress toward sustainability in their communities, companies, countries, and the world. www.sustainabilityindicators.org

Sustainable Measures develops indicators that measure progress toward a sustainable economy, society, and environment. www.sustainablemeasures.com

The Community Visioning and Strategic Planning Handbook (2000). National Civic League, 19 F Street, NW, Suite 204, Washington, DC. This publication is available for download at www.ncl.org/publications/online/VSPHandbook.pdf (There may be a charge for this publication.)





Community Profile

This section is intended to stimulate ideas, help you gather baseline information about your community and encourage participants in any decision-making process to inform themselves in order to be more effective. It is not intended as a formal evaluation but rather as a starting place to discover key information about where you live, to get a sense of how sustainable your community is, and to help you determine where to apply your efforts.

Population

When was your community first settled? What was the population in 1950? Now?

Over the past 10 years, the population has:

increased decreased remained the same.

What are the main reasons for the change or lack of change?

What percentage of the population are under 25? Over 25?

How many households are in your community?

Leadership

Who are the leaders in your community in various spheres of influence: political, economic, social, cultural, government, spiritual? What are their views on sustainable community development? How could they be persuaded to get involved?

Social and Cultural Characteristics

How active are local residents in community affairs?

How active are non-profit organizations in your community? Make a list of the areas of interest for local non-profit groups – try to identify potential allies.

Do facilities exist for child care? Senior citizens? The disabled? The homeless?

Make a list of the cultural facilities in your community, i.e., museums, dance centres, public galleries, community media

Are there opportunities for community involvement in policing?

Education

What percentages of residents graduate from high school? University?

Do local schools or universities offer classes on environmental sustainability?

Does your city offer/support education on environment and community development?

Local Policies

Does your City have a sustainable community development plan? How is it monitored? Is citizen participation encouraged in local governance decisions?





Checklist of Sustainable Practices

Market Mechanisms

If investors want to invest in social or green enterprises, do local financial institutions offer ethical investment services?

How do local social and green enterprises get financing?

Land Use

Are high density areas well serviced by public transit? Are future developments approved with transportation efficiencies in mind?

What is the local perception of high-density? Mixed use?

Are new developments high or low-density? Are they mixed-use or residential only?

Is there vacant industrial land that could be rehabilitated for housing?

Does your community have lots of natural open spaces? Sport, and recreational areas? What proportion of the community land area is: green space? agricultural?

residential? commercial? industrial? recreational? For example, how much green space is available for every 100 households?

In the last five years, the availability and condition of open spaces has:

improved worsened remained the same

Does your community restrict or prohibit the use of pesticides?

Does your city use pesticides on public green space?

Are there adequate and separate children's play areas?

In the last five years, the availability and condition of these children's play areas has: improved worsened remained the same

Does your community have?

Vacant lots, boulevards, parking lots or other under-used land that could be converted to green space? Which locations? Who owns them?

Is there an urban reforestation program? Are the trees in the city healthy? Are numbers increasing or decreasing? Are there bylaws that protect trees?

Is there a green roof program? (see **Glossary**)

Transportation

What are the primary means of transportation people use in your community?





Checklist of Sustainable Practices

MODE	MOST	SOME	A FEW	NONE
private automobile				
public transit				
walking				
bicycle				
water transport				
trails				
other (specify)				



Transportation continued

How many kilometres of dedicated bicycle paths or bicycle routes exist in your community?

How many kilometres of dedicated foot paths exist in your community?

Can bicycles be taken on public transit?

Public transportation is used by

- most some a few none of the community.

Public transportation is affordable ? Widely available? Easily accessed?

In the last five years, the quality and service of public transportation has:

- improved worsened remained the same

What changes would improve public transportation in your community?

Do the following exist in your community:

- Road tolls and gasoline taxes to support public and non-auto transportation
- HOV lanes or transit-only lanes on local roads
- Park and ride facilities Car Coops
- Bicycle Clubs Traffic Calming initiatives

Waste Reduction

What strategies are employed to handle local solid waste?

- Land-fill Burning Transport to another region

Do the following exist in your community:

- Local recycling program
- Methane gas extraction at the local land-fill
- Recovery enterprises at or near the land-fill
- Materials waste exchange Scrap lumber collection
- Composting programs

Does the local government have a purchasing policy that could help create a market for goods that have recycled content?





Checklist of Sustainable Practices

Energy

What are the primary sources of energy for household and business use in the community? i.e. hydroelectricity, coal-fueled power generation plants, wind turbines, etc.

Is there ecologically responsible energy production anywhere in your community? Are there untapped renewable energy resources available?

*Please see Energy in the Overview of this publication

ENERGY TYPE*	CURRENT PRODUCTION YES/NO	EXISTING POTENTIAL LOW/MODERATE/HIGH
(Example) Solar thermal	Yes (small scale)	Low to moderate – cool, rainy, overcast climate
Biomass		
Deep-lake Cooling		
Geothermal		
Micro-hydro		
Solar		
Voltaic (electric)		
Thermal (heat-based)		
Tidal/Wave Energy		
Wind Power		

What percentages of households in the community have electrical service?

Does the local energy provider buy energy from small-scale producers? What programs are in place?

Does the local energy provider offer retrofit or rebate programs for energy efficient measures?

Is there a program in your community to encourage green building? What does it include? New buildings? Retrofits? Industrial sites? Public facilities?

Do any local NGOs, the local government or utility company offer energy audits?

What would you identify as the two main problems with the community's current energy supplies?

Does the local government have green standards for newly built public buildings?





Checklist of Sustainable Practices

Water & Sewerage

Where does the community's drinking water come from? i.e. groundwater, reservoir, lake, river

Is the source being replenished or depleted on an annual basis?

How is the source managed and protected?

Is drinking water treated to make it potable? Are hazardous chemicals used?

How many households in your community have piped-in drinking water?

Most Some A few None.

What proportion of the community has access to shared public water sources (i.e., public well, standpipes, etc.)

Most Some A few None.

In the last five years, potable water service has:

Improved Worsened Remained the same

Currently, the potable water service is:

Very good Good Average Poor

Are there any water-related health issues in the community?

What are the two main problems with the local water service?

Are grey water recovery systems used in your community? Who do they serve? How much water is being recovered? If it is a regional system, how can other households or businesses get involved?

Does the local water service have a leak detection program: For households? For businesses?

Does the local water service have a leak detection program in place for their own distribution pipes?

Are water conservation fixtures (i.e. aerated showerheads, low-flush toilets, etc.) available in the local market? Where? Local businesses who sell these fixtures may be interested in helping to sponsor a water conservation awareness campaign.

Who consumes the largest share of water in your community? agriculture? industrial? residential?

What happens to storm runoff? Is runoff handled by one sewage system or a separate system? Is runoff discharged directly into local aquatic ecosystems? If not, how is it treated?

Are building materials available in the local market that reduce runoff and increase infiltration? i.e. semi-porous cement and asphalt, paving bricks with openings for drainage





Checklist of Sustainable Practices



Water continued

How is this community's sewage treated, by what process? i.e. no treatment, constructed wetlands, septic tanks, chemical treatment, solar aquatic systems, etc. Where is the water treatment facility?

Is there any discharge without treatment?

What happens to leftover sludge from the treatment process?

Have local parks been xeriscaped?

How many households collect and store rainwater?

Most Some A few None

Does the local government have a rain collection program? i.e., subsidized rain collection equipment, information brochures, etc.

Food Security

Are locally grown foods available in food markets? Estimate the proportion of food available in local supermarkets that comes from local sources.

Are foods grown/produced in near-by rural areas? Make an inventory of main local food sources.

Does your community have a farmers' market?

Does the local government (or local public agencies like hospitals or schools) have a purchasing policy that favours locally produced foods? Organic foods?

Make an inventory of urban space in your community that could be used for cultivation, e.g., balconies, parking lots, boulevards, rooftops, vacant lots, parks – any open space.

Determine the extent of urban agriculture in your neighborhood, including backyard cultivation.

Is there a publicly funded urban agriculture program of any kind in your community?

Identify available resources for urban farmers: information, workshops, tools, agricultural inputs, composting, seeds, starter plants, biological pest control options, etc.

Is there a local food policy council?

Community Economic Development (CED)

Local Economy

What are the principal economic activities for men in your community?

What are the principal economic activities for women in your community?

How many households in your community require social assistance?

Who provides it?





Checklist of Sustainable Practices

In the last five years, availability of employment has:

- Improved Worsened Remained the same

What % of small businesses in your community are owned by local residents?

- Most Some A few None

When locals residents shop, what proportion of products purchased are made (or grown) locally and what proportion come from somewhere else?

From where?



CED continued

ITEM	LOCAL	FROM SOMEWHERE ELSE
food		
clothing		
household goods		
toiletries/cosmetics		
other		

Housing

The availability of housing in this community is:

- Adequate Deficient

In the last five years, the quality of housing in this community has:

- Improved Worsened Remained the same

What are the two main reasons that housing in the community has improved, worsened, or remained the same during the last five years?

Does your community have affordable housing organizations? Make an inventory of available programs.

Are there community land trusts in your community?

Financing

What kind of financing options exist for small enterprises? Make an inventory:

- Bank financing Credit unions
- Community development corporations
- Community loan funds Investment Funds Local government

Does the local government (and local public agencies) have a procurement policy that favours locally owned small businesses?

Does your community have the following?

- Local currency Barter club
- Green business directory
- Co-management of resources, i.e., community forestry enterprises
- Business incubators





The Importance of Citizen Participation

“Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.”

Margaret Mead

By encouraging local citizens to participate, the process benefits from a rich pool of knowledge and talent.

At the heart of sustainable community development is a personal commitment to live within the limitations of the environments which support us. This commitment will influence the decisions we make on a day-to-day basis in our homes, schools, and workplaces. Sustainable community development creates ways in which these day-to-day decisions can result in sustainable outcomes, and for this to be successful citizen participation is essential.

Dialogue-based policy-making encourages the participation of local residents at every stage of the governance process. Encouraging meaningful participation increases citizen “buy-in” because those affected understand the reasons for the policies. They are also more likely to be committed because they have been meaningfully involved from the beginning. By encouraging local citizens to participate, the process also benefits from a rich pool of knowledge and talent – professionals, concerned citizens, academics and community group leaders.

Most forms of citizen participation are helpful, but not all forms of participation are equally beneficial.

The following criteria represent best practice guidelines for meaningful citizen participation in sustainable community development processes:

- Concerned citizens, groups and organizations must have adequate representation throughout the process, and the process should be transparent and open to monitoring and inspection by all interested parties.
- The positions and values of all stakeholders must be redefined in ways that incorporate environmental sustainability as essential to decision-making. The dialogue must be more than mere bargaining and compromise among existing interests.
- Different forms of knowledge must be integrated into the decision-making process – in particular, scientific and technical knowledge should be integrated with lay knowledge and both converted into practical forms suitable for decision-making.
- The development process should be organized around the understanding that societies must learn their way towards sustainable development. Openness to experimentation, divergent points of view, longer-time horizons, and iterative cycles should be encouraged (Meadowcroft 2004).

The mechanisms for citizen participation can take many forms, including:

- Community visioning and public consultation are good starting points for bringing citizens and stakeholders into a sustainable development process. Problems can be identified, knowledge, values and priorities shared, and key community leaders and organizations identified.
- Neighbourhood Councils are informal associations of neighbours, organizations and public agencies that represent a neighbourhood to local governments. They disseminate information on local issues and activities, bring people together for planning and problem-solving, and





The Importance of Citizen Participation

create opportunities for residents to build their skills in group and public participation.

- Co-management strategies share decision-making over resource management between community representatives and public agencies. Co-management is widely recognized as an effective way to involve citizens in environmental monitoring, and for finding opportunities for managing common resources such as forests.
- Citizen advisory panels and citizen's juries are small representative groups incorporated into local government decision-making with the role of contributing the perspective of those they represent.
- Referendums allow citizens to directly vote on public policy decisions (Meadowcroft 2004; Roseland 2005).

Another effective strategy for ensuring long-term citizen participation is to place responsibility for some or all of the sustainable development process outside of local government. Local governments must learn to share decision-making responsibilities with residents. In return, local governments will gain enthusiasm and commitment from citizens whose energy and creativity are required to attain sustainability goals. Encouraging local partnerships and broad public participation offers the best prospect for a dynamic process not dependent on short term political cycles (Meadowcroft 2004).

Local governments must learn to share decision-making responsibilities with residents. In return, local governments will gain enthusiasm and commitment from citizens whose energy and creativity are required to attain sustainability goals.

To help citizens and local officials create opportunities for expanding citizen participation in local decision-making and governance we offer the following tools:

- **Citizen Participation Assessment Tool** (see following)
- **Toolkit Partnership** is a group of civil society and local government organizations from all over the world, working together to promote participatory local governance offering information on tools which promote citizen participation, a forum for discussions and articles for further reference. www.toolkitparticipation.com
- **E-Governance Institute** is devoted to gathering and analyzing data and assessing the implications of information technology on citizen participation. www.andromeda.rutgers.edu/~egovinst/Website/institutepg.htm
- **Discovering your Community** (1994) Harmony Foundation. 58 pages www.harmonyfdn.ca

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- Roseland, M. (2005). *Toward Sustainable Communities: Resources for Citizens and Their Governments* (New Society Publishers)





Citizen Participation Assessment Tool

Local governments are often the most important decision-makers when it comes to the short and long-term well-being of communities, and yet they cannot effectively implement policy decisions without the support and participation of local residents. The goal must be to increase the ability of local residents to effectively work with and influence local governments. The purpose of this worksheet is to help you: organize information, identify goals and obstacles, and formulate plans for playing a more effective role in the decisions that affect your community. The first part is an informal survey to help you gather information about levels of citizen participation in your community. The second part is a checklist of steps to take when trying to influence local governments.

Assessing Citizen Participation

The following questions are intended to stimulate ideas and to help you get a sense of the opportunities for and levels of citizen participation in your community.

Assessing Capacity

Inventory the following organizations and programs in your community:

- Community development
- Credit Unions and Cooperatives
- Community media (non-profit radio, television and newspapers)
- Environmental groups
- Youth organizations
- Transportation clubs/cooperatives
- Other groups who might be allies
- Community gardens
- Farmers Markets
- Parent-teacher associations
- Health committees
- Sports Groups
- Cultural groups
- Civic groups

Where do these community-based organizations get their financial support?

- Government (local or national)
- Religious organizations
- School/teachers
- Nongovernmental organizations
- Business group or service club
- Prosperous citizens
- The community as a whole
- Donors from outside community





Citizen Participation Assessment Tool

What buildings do people in your community regularly use for meetings?

- Community centre
- Personal homes
- Religious buildings
- Health centre/school
- Government buildings
- Business/commercial buildings
- Other (specify)

How would you describe the level of community involvement where you live?

- People tend to focus on their families and are not very involved with community decision-making. OR
- People have a high level of interest and involvement in making the community a positive place to live

Which members of the community participate most in solving community issues? After you have answered the question, consider why this is the case.

Gender: Men/Women

Age: Youth/Adults/Elders

Employment: Employed/Unemployed/Self-employed

Opportunities for Involvement

What opportunities exist for public input at the local government level?

- Letters to officials
- Petitions
- Public Meetings
- Presentations to Council or Committees
- Positions on Public Advisory Committees or Advisory Councils

What committees/departments exist in the local government to make decisions about community issues?

- Parks and Recreation/Environment
- Transportation/Land-use Planning
- Housing
- Water and Sewage
- Cultural Affairs
- Waste Disposal and Recycling
- Other (specify)

Do any of the committees have opportunities for public input? i.e. accept public presentations at meetings, host public forums

What form of communication is expected/allowed where opportunities for input exist? i.e. public presentation, written report correspondence, video/audio, skit, visual art





Citizen Participation Assessment Tool

Whom do you contact in local government with a concern about:

parks and green space
pesticide spraying
public transit/traffic/bicycle routes
solid waste disposal/reuse and recycling programs
energy, heating and cooling
drinking water
sewage treatment/runoff management
local food availability – urban agriculture/community gardens/open air markets
housing
public safety

What other opportunities exist for public participation?

Public consultations/meetings
Neighbourhood Councils
Community Visioning Programs
Co-management strategies
Citizen advisory panels

How might your local government respond to a Neighbourhood Council established by you and your neighbours? Does one exist?

Access to Information and Media

What is the local government's overall policy for making information about your community available to the public? Is the information available on-line? Is there a city archive? Who can access it?

Where can the public access city bylaws and ordinances?

Is there a local library? Is there a local law library?

What opportunities do residents have to contribute to local media? Are there community media organizations. i.e. community radio, television, or newspapers? Do local papers publish letters to the editor or op-ed articles?

Quick Case Study of a Community Action

It is important to understand the strengths and weaknesses of your organization and community in order to take full advantage of the strengths and to know where outside help and capacity building would be most effective. The following questions are designed to get you thinking about the skills and experience that are available in your community for increasing citizen participation in local decision-making.

Choose an action from recent history where citizens influenced local decision-making. Try to answer the following questions (It may be helpful to speak with some of the people who were involved):





Citizen Participation Assessment Tool

What was the central issue? Who wanted the change? Who was benefiting from the status quo? Who was opposed to change? Why? How was opposition overcome?

Who was involved from the community? Who were the community leaders?

What alliances were established that helped to make the intervention successful?

What kinds of resources did they have access to? Financial? Meeting space? Office space? Communications equipment (phone, fax, internet)? Office supplies?

How did they gather information relevant to the issue?

How did they recruit volunteers and mobilize citizen support?

Were citizens comfortable taking a public stand? What skills did citizens bring to the effort? What skills were lacking?

How did they raise public awareness of the issue? How did they deal with local media? How could they have been more effective?

What strategies did they use to lobby for support from local officials?

What were the biggest obstacles faced by the organizers? How were they overcome?

Why was the intervention successful? What lessons were learned? What changes in strategies, tactics and methods would have reduced barriers, increased success or made the campaign easier and more effective?

A Checklist for Influencing Local Government

- Organize your citizens group with the broadest possible representation from within your community. Governments take more seriously groups who demonstrate widespread participation and support.
- Obtain up-to-date information about your community so that you have a current and reliable picture of your community and its management. If you are not accurate or well informed it is easy for those who oppose your ideas and concerns to cast doubt on your credibility.
- Educate yourselves about the civic process. Understand how local governance and budgetary decisions are made and by whom. Learn how ideas get considered and subsequently translated into policy and programs.
- Once you feel you have an accurate sense of the state of affairs in your community, develop a practical vision of what you want to achieve. Avoid trying to do too much. Choose one, two or three key issues to focus on. Make sure your objectives are practical and doable and that your ambitions and resources are a good match.
- Develop a set of indicators that will measure and show your progress. As people see the results of your initiative your support will grow. Tie the indicators to community goals where possible.





Citizen Participation Assessment Tool

- Build allies for your initiative
 - look for organizations and individuals who share your goals and will help you build broader support.
 - It can be helpful to meet with city staff before the politicians. Determine what work is underway within various municipal departments. Explain your initiative to them in practical terms. Is it possible to build on municipal projects already underway? Could a pilot program be developed? Are there staff members who support your initiative?
 - Work with elected officials to persuade them to give their political support. Inform them about your community support.
- Go to City Council when you are prepared:
 - Organize a steering group made up of respected individuals from the community, preferably representing key sectors. Choose a pleasant, articulate spokesperson.
 - Develop a written plan which is clear and practical, and includes;
 - Key information (facts, figures, policy summaries, etc.) about your community that is pertinent to your initiative.
 - Explain the goals, objectives and outcomes sought -- where possible demonstrate how they fit with any stated municipal priorities.
 - Identify supporters on Council and in municipal departments (with their consent).
 - Demonstrate community support for the initiative through petitions, letters of support, membership numbers, press clippings, etc.;
 - Present a practical financial plan for the sustainability measure being recommended. It is more important to demonstrate that you have realistically considered costs than to have the money for the project from the outset. Part of what you may be asking of local government is start-up or operating funds.
 - Describe how you will evaluate and measure the effectiveness of the project, including indicators to measure and determine success.
 - Include a draft timetable for setup, implementation and evaluation.

Adapted from ORTEE 1995 – see **Resources** below

Resources and Further Reading

Citizen Participation Handbook for Public Officials and Other Professionals
Serving the Public. Hans & Annemarie Bleiker. Published by the Institute for
Participatory Management and Planning. [www.consentbuilding.com/cphb_](http://www.consentbuilding.com/cphb_limit.htm)
[limit.htm](http://www.consentbuilding.com/cphb_limit.htm)

Citizen Participation. Published by the Planning Department of the Municipality of
Anchorage, Alaska www.muni.org/planning/CP_Handbook.cfm

A Citizen's Handbook: A Guide to Building Communities by Charles Dobson.
Published by Vancouver's Citizen's Committee. [www.vcn.bc.ca/citizens-](http://www.vcn.bc.ca/citizens-handbook)
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Interest Research Group. [www.opirg.trentwomenscentre.ca/component/](http://www.opirg.trentwomenscentre.ca/component/option,com_bibliography/func_display/Itemid,366/catid,121)
[option,com_bibliography/func_display/Itemid,366/catid,121](http://www.opirg.trentwomenscentre.ca/component/option,com_bibliography/func_display/Itemid,366/catid,121)

ORTEE (1995). Sustainable Communities Resource Package (Toronto)





Community Action Workshop Agenda

The **Community Action Workshop Manual** (2001) was created by Harmony Foundation to provide community groups with the practical tools for learning about critical environment and development issues and working together to plan and implement effective local projects. This indispensable tool provides step-by-step instructions for leading the workshop, analyzing issues, identifying local assets and needs, developing an action plan, and more!.

Combined with **Green Cities: a Guide for Sustainable Community Development** (and our other issue profiles) the **Community Action Workshop Manual** is a powerful tool for positive change.



We hope you will find **The Community Action Workshop Manual** (125 pages) a valuable resource and a comprehensive guide to leading your Community Action Workshop. The Workshop is broken into five modules, for maximum flexibility.

Pre-Workshop Communication and Planning

- Activity 1: Planning the Workshop
- Activity 2: Setting Ground Rules

Understanding the Big Picture

- Activity 1: Welcome, Opening Remarks, Introductions and Overview
- Activity 2: Analysing Our Issue
- Activity 3: Values and Behaviour: Widening Our Circle of Concern

Focussing Our Community Vision

- Activity 1: Profiling Our Community
- Activity 2: Defining a Problem
- Activity 3: Mapping Our Assets
- Activity 4: Creating Our Vision

Moving From Awareness to Action

- Activity 1: Developing Our Action Plan
- Activity 2: Meeting the Challenges
- Activity 3: Measuring Success
- Activity 4: Planning for Follow-Up
- Activity 5: Community Action Workshop Closure

Taking the Next Steps

- Activity 1: Preparing to Launch





Defining Exemplary Leadership for Sustainable Community Development

Exemplary leadership is not about style or power, but rather about building relationships based on trust, respect and shared commitment.

Achieving the goals and long-term benefits of sustainable community development requires a new kind of leadership which understands that success depends on the willing and enthusiastic participation of all citizens. Exemplary leaders are those who can articulate the shared needs and aspirations of the community, and reassure stakeholders that the risks necessary to achieve a brighter future are worth taking.

The genius of successful leadership is to offer a dynamic vision which motivates people to get involved because the vision's message and messenger are credible, realistic and forward-looking. The more inclusive the vision, the greater the number of people who will want to support it and work to achieve its goals (OL 2003).

Exemplary leadership is not about style or power, but rather about building relationships based on trust, respect and shared commitment. Exemplary leaders earn trust by providing authentic opportunities for others to get involved, ask tough questions, and offer their own creative ideas.

Leadership studies describe two predominant styles reflecting very different relationships between leaders and those they lead (Horning). *Transactional* leaders manage, direct and reward others for meeting their goals while *transformational* leaders motivate, encourage and empower others to meet shared goals. Transactional leaders seek order and control and tend to dispose of many problems before they understand their significance. Transformational leaders mentor rather than direct, and realize that encouraging creativity and thinking outside the box encourages innovation in addressing problems and opportunities.

Transformational leadership thoroughly examines problems rather than rushing to a short-term fix. Longer-term solutions are emphasized and strategies which seize opportunities while preventing future problems are preferred. Transformational leaders listen to others, allow room for changing decisions, and avoid premature closure on important issues. Transformational leadership not only tolerates diversity in personalities and ideas, but seeks them out with the understanding that creative strength comes from diversity (Hanson and Middleton 2000).

Organizational Leadership

To be effective in stewarding organizational change, leaders must have the ability to keep their organization focused on achieving its primary mission, while inspiring and mobilizing employees and stakeholders to embrace change as an exciting opportunity to learn (Doppelt 2003). In sustainable community development this means re-orienting the organizational culture to respect the inherent limitations in natural systems and our responsibilities to act accordingly.

Leaders must offer constant reassurance that short-term discomfort will be rewarded, individually, organizationally, and societally. In all cases leaders must be clear that the goal is valued and worth the effort.





Defining Exemplary Leadership for Sustainable Community Development

Strong leadership reassures people that the process of change will have beneficial outcomes. Participation in the decision-making process also reassures those made anxious by change that their needs have been considered and their concerns addressed.

Strong leadership reassures people that the process of change will have beneficial outcomes.

Delegation is an essential part of organizational leadership and has many benefits for both the individual and the organization. It expands the expertise and capabilities that can be brought to bear on a problem, builds productive relationships, and shares the work. There are six aspects to effective delegation (Maser 1999):

- Choose people who are willing to get the job done and support them. Generally speaking, motivation and dependability are far more important than skill level and experience.
- Delegate specifically: match particular people with particular tasks. People enjoy using their expertise, and they enjoy being challenged and expanding their experiences.
- Define the task with specificity and communicate it concisely. Accomplishing tasks requires accurate knowledge of what is expected – poorly defined or communicated tasks waste time and increase the risk of delays and failure.
- Monitor the progress of the tasks to ensure that the energy expended will result in a useful outcome. Use positive reinforcement and guidance rather than reprimands to improve effort and results.
- Encourage creativity and allow for different styles of working. Creativity is the key to unlocking the opportunities that are hidden in every problem and crisis. Ownership, which accompanies creativity, flourishes when people are allowed to work in the manner they feel will be most effective. A creatively charged team who feel ownership over the project offers the best case prospect for success.
- Always encourage and reward effort. A strong leader shows appreciation and recognition for work well done and shares credit with those who have contributed.

The day-to-day decisions of leaders within an organization also have an important impact on organizational culture and the degree to which, as a whole, the organization will embrace the values of sustainability.

Exemplary leadership is about relationships, personal courage and vision. Trust, intellectual stimulation, and a sense of being respected and appreciated are essential to persuade people to give their time and energy to a new idea or project. Leaders who build these solid foundations are rewarded with commitment and loyalty.

The day-to-day decisions of leaders within an organization also have an important impact on organizational culture and the degree to which, as a whole, the organization will embrace the values of sustainability. For instance, budget priorities send a powerful message throughout an organization. If the priorities have been influenced by sustainability themes, this will have an impact on employees at every level of the organization. A leader willing to allocate resources





Defining Exemplary Leadership for Sustainable Community Development

Exemplary leadership is about building relationships based on trust, respect and shared commitment.

for voluntary efforts towards sustainability, i.e., waste reduction or compliance with a water pollution regulation, sends a powerful message. Similarly, the criteria used to recruit, reward, promote, retire and discipline staff are also means of embedding an organization's culture with the priorities of sustainable development (Hanson and Middleton 2000).

When leaders pay attention to particular things on a regular basis – for example, by including them in plans and decisions, measuring them, counting them and discussing them – it underlines for everyone in the organization that these issues are important and form part of core operating priorities. When staff who fail to implement or embrace these new priorities are brought into line, the messages are doubly reinforced. In all instances, the language used by leaders is particularly important because it influences and guides organizational learning and discourse, qualities that have a long-term systemic impact on decision-making (Hanson and Middleton 2000).

Introducing organizational change is never easy, but rarely impossible. Leadership which builds relationships based on trust, respect and shared commitment will be vital to our success in achieving sustainable community development.

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Defining Exemplary Leadership for Sustainable Community Development

Fourteen Attributes of Strong Leadership

(Adapted from Giampalmi 2004. See **Reference** previous page)

- 1 **Courage** – Having the courage of your convictions means being able to respectfully tell others that their vision is out of date, and listening with an open mind when others tell you that your own vision is out of date.
- 2 **Integrity** – Integrity and honesty are the foundation of open communication: if people trust you, they will take the time to listen to your ideas.
- 3 **Business Acumen** – Having the business savvy to understand and seize opportunities created by pursuing sustainable community development.
- 4 **Ability to identify and define** the correct question, to understand what is important, and to openly explore options to find effective solutions.
- 5 **Passion** – a well-spring of energy and motivation and commitment to the task
- 6 **Balance** – Successful leaders balance their public and personal lives, cultivate outside interests, and are able to draw inspiration and ideas from a rich variety of social, emotional and intellectual involvements.
- 7 **Compassion** – Leaders lead people not machines; they are understanding of individual needs, and create an atmosphere of inclusion and mutual respect and loyalty.
- 8 **Open-mindedness** – Exemplary leaders integrate different kinds of knowledge. They are not constrained by traditional boundaries between what is and is not considered “relevant”. For example, there may be solutions to poverty or health issues to be found in the creative arts.
- 9 **Sense of Humour** – Studies show over and over how beneficial laughter is physiologically and psychologically. People feel better, think better and perform better when they are enjoying what they do and working in a positive environment.
- 10 **Acceptance of failure** is part of success – Strong leaders understand that failure will happen, and they retain enthusiasm despite failure, continuing to strive for success by transforming it into a stepping stone. Punishing failure rather than learning from it inhibits creativity and discourages innovation.
- 11 **Vision for Legacy** – Leaders think long-term, framing their visions in terms of what future generations need and will think of today’s decisions. They are not preoccupied with either short-term political or financial ambitions.
- 12 **Recognizing opportunities** – Not only do leaders recognize opportunities, they act on them
- 13 **Being productive** rather than busy – Strong leaders use time, talent and energy effectively and lead by example.
- 14 **Leaders lead** – Leading means taking risks, challenging your own assumptions and beliefs and even risking your popularity to make a difference in the lives of those you serve. Leaders who play it safe may have to face the fact they aren’t really leaders after all.





Fast Facts on Global Trends

Population

Since 1950:

- world population has more than doubled
- food production has almost tripled
- energy use has more than quadrupled; and
- the overall level of economic activity quintupled (Kates and Parris 2003).

In 1950, 30% of the world's population lived in cities. In 2000, it had risen to 47%. By 2030, it is estimated that 60% of the world's population will live in cities (UN 2002).

Almost all of the population growth expected in the next 25 years will occur in urban centres (UN 2002).

About 32% of the world's urban population or nearly 1 billion people reside in slums or slum-like conditions. This number has increased 36% since 1990 and is expected to double by 2030 unless action is taken (UN-HABITAT 2003).

In 1950, there were eight cities with populations over five million. In 1975, there were twenty-two. In 2000, there were forty-one. The number is expected to grow to fifty-nine cities by 2015 (UN-DESA 1999).

In 1950, there was one city with a population over 10 million. In 1975, there were five. In 2000, there were nineteen. The number is expected to grow to twenty-three by 2015 (UN-DESA 1999).

Almost 400 cities in the world contain more than 1 million people (National Academies' Committee on Population 2003).

Transportation

40.6 million passenger vehicles rolled off the world's assembly lines in 2002, five times as many as in 1950. The total number of cars on the planet is expected to reach one billion by 2030 (Economist 1996; Renner 2003; Worldwatch 2004).

As much as 20% of all energy consumed during the life of a vehicle goes into its manufacture which requires huge amounts of raw materials including steel, iron, rubber, lead, water and plastics (Pinderhughes 2004).

Vehicles account for: 25% of world oil consumption; 30-50% of urban land use (roads, off-street parking etc.); 80-90% of nitrogen oxides and hydrocarbons; and 90-95% of ambient carbon monoxide levels in some cities (During 1992; Renner 1988, WRI 1996).

From 30%-50% of available land is devoted for roads and off-street parking in automobile-oriented cities (Renner 1988).





Fast Facts on Global Trends

Waste Management and Recycling

Municipal authorities routinely spend 20-30% of annual budgets on waste disposal and management, seventy percent of this can be attributed to transportation costs (UN-HABITAT 2001).

Seventy percent of U.S. landfills will be full by 2025. In London (UK) and the surrounding region, landfills will run out of room by 2012 (Cetron and Davies 2005).

Energy

In developing countries, biomass fuels such as wood, charcoal, plant debris and animal waste are used by some two billion people and make up close to 50% of household energy demands (Pasztor and Kritoferson 1992).

Indoor smoke from cooking fires kills an estimated 500,000 people in India each year, mostly women and children (Cetron and Davies 2005).

The world used 57 million barrels of oil per day in 1973. In 2002, it was 76 million. Consumption is expected to reach 110 million barrels daily by 2020 (UNEP 2005; Cetron and Davies 2005)

Fossil fuels provide 90% of the world's energy supply (EIA 2004).

The United States, with 5% of the world's population, consumes 30% of all oil consumed (Adam 2002).

Energy consumption and carbon emissions from developing countries are expected to surpass consumption and emission levels in developed economies (EIA 2004).

Energy demands account for up to 40% of the debt burden of developing countries (Pinderhughes 2004).

Water

Over the last 100 years water consumption grew two times faster than world population and is expected to increase another 40% by 2025. Since 1950, global per capita water supplies have decreased by 58% (Geographical 2003; Postel and Wolf 2001).

Currently, 1/3 of the world's population live in water-stressed areas. By 2025, an estimated 2.8 billion people living in 40 countries or 2/3 of the world's population will be living in areas that regularly experience water stress (UNEP 2002).

Domestic use accounts for 10% of water consumption globally. Industrial consumption accounts for 20% of global water use. And agriculture accounts for 70% of global water use. Industrial demand is expected to double in the next 20 years (Environment 2003, UNEP 2002).

Continued...





Fast Facts on Global Trends

Agricultural water use has increased 175% since 1970 (Matilda 2002; Postel 1997).

Sixty percent of illnesses worldwide are water related; water shortages were responsible for 7 million deaths in 2002 (Economist 2003).

As much as 50% of the water in piped systems worldwide is lost to leakage (Economist 2003).

Between 25-50% of a city's water needs could be met using "greywater" (Pinderhughes 2004).

Green roofs can reduce runoff by 60% (NRDC 2001).

Food Security

To meet human nutritional needs over the next forty years, global agriculture will have to supply as much food as has been produced during all of human history (Cetron and Davies 2003).

Since the late 1970s, an estimated six million hectares of agricultural land have been lost annually to desertification and severe soil degradation. (Speth 2002).

An estimated 5 to 10 million hectares of agricultural land fall out of production each year because of the severe environmental degradation caused by industrial farming practices (Lacy 2003).

Among the many consequences of over-fertilization are fifty oxygen-starved ocean dead zones, including one in the Gulf of Mexico that is the size of New Jersey (Speth 2002).

Food wastes (including packaging) account for 1/3 of all solid waste in industrialized countries (Pinderhuges 2004).

The food system causes 15% of global greenhouse gas emissions (Pirog 2001)

In North America, food travels on average over 2,000 km from source of production to place of consumption (Roseland 2005).

It takes 36 times more energy to move a head of lettuce from California to New York than the head of lettuce contains (Shrybman 2000).

Air Quality and Climate Change

If air pollution were halted instantly, it would take an estimated 200 years for carbon dioxide and other greenhouse gases to return to preindustrial levels (Cetron and Davies 2005).

In the United States alone, medical researchers estimate that some 64,000 people each year die from cardiopulmonary disease as a result of breathing particulates. In sub-Saharan Africa, the toll is between 300,000 and 500,000 deaths per year. Pollution-related respiratory diseases kill about 1.4 million people yearly in China and Southeast Asia. (Cetron and Davies 2005).





Fast Facts on Global Trends

Biodiversity

Tropical forests declined at an estimated rate of 12.3–14.2 million hectares per annum from 1990 to 2000 (Kates and Parris 2003)

Eleven percent of birds, 25% of mammals, and 20% to 30% of all plants are estimated to be nearing extinction. The chief cause for species loss, according to University of Colorado scientists, is the destruction of natural habitats by logging, agriculture, and urbanization. Some 30 million acres of rain forest are destroyed each year (Cetron and Davies 2005).

One-quarter of bird species are now extinct, and another 12 percent are listed as threatened. Also threatened are 24 percent of mammals, 25 percent of reptiles and amphibians, and 30 percent of fish species. The rate of extinction of birds and mammals today is estimated to be 100 to 1,000 times the rate that species naturally disappear. About two thirds of plant and animal species are thought to be in the tropics, and one recent estimate is that 15 percent of these species already have been doomed by tropical deforestation (Speth 2002).

Tropical forests still are being cleared at the rate of one acre per second (Parris 2003)

In 1960, 5 percent of marine fisheries were either fished to capacity or over-fished. Today, 70 percent of marine fisheries are in this condition (Speth 2002).

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General Resources

- Bangladesh Centre for Advanced Studies** (Bangladesh) promotes people-centred sustainable development by advancing scientific, technical and local knowledge through research and people's participation. www.bcas.net/index.asp
- Catalytic Communities** (United States) provides virtual and physical space for low income communities to network and share information on topics such as environmental health, cultural preservation, livelihood issues; education and capacity-building, community organizing, health and safety, and communications. www.catcomm.org
- The Center for Alternative Development Initiatives** (Philippines) is dedicated to the study, encouragement and implementation of sustainable development. www.cadi.ph
- Centre for Community Enterprise** (Canada) provides resources for community revitalization through community economic development. Publisher of Making Waves magazine. www.cedworks.com
- Centre for Sustainable Community Development** (CSCD) (Canada) at Simon Fraser University, which works to support and enable the sustainable development of communities through research, education, and community mobilization in Canada and internationally, www.sfu.ca/cscd
- www.consultnet.ie** (web-based) provides up-to-date practical information on improving your efficiency, effectiveness and the working environment in the spirit of sustainable development. www.consultnet.ie/Sustainable%20Development.htm
- Conservation Economy** (United States) a training and consultancy group that assists businesses, governments, and non-profits in making the transition to sustainability. www.conservationaleconomy.net
- The Development Organisation of Sichuan** (China) is dedicated to poverty relief in rural China by implementing small-scale village-based projects promoting development through education, small credit schemes, service provision, and environmental improvement. www.dors.org.uk
- Ecocity Builders** (United States) is dedicated to reshaping cities, towns and villages for long term health of human and natural systems. Their areas of focus include increasing biodiversity in urban areas, urban agriculture, walking, bicycling and transit. www.ecocitybuilders.org
- The Environmental Action Programme** (Jamaica) is dedicated to building Jamaica's capabilities to manage and preserve the environment within the context of sustainable development. www.enact.org.jm
- Environmental Justice and Climate Change Initiative** (United States) supports energy efficiency, renewable energy, and conservation policies while seeking the fair treatment of people of all races, tribes, and economic groups in the creation and enforcement of environmental protection laws. www.ejcc.org
- Global Development Research Centre** (Japan) is information clearing house, research and educational centre on initiatives in education, research and practice, in the spheres of environment, urban, community, and economy at scales that are effective. www.gdrc.org
- Heifer Indonesia** (Indonesia) uses sustainable smallholder livestock projects and capacity building of local NGOs and grassroots organizations as a development strategy to reduce hunger and poverty in rural farm families in Sumatra, Indonesia. www.heiferindonesia.org
- International Centre for Sustainable Cities** (Canada) government, private sector and NGO partnership for practical demonstration projects on urban sustainability. www.icsc.ca
- International Council for Local Environmental Initiatives** (Canada) is a membership association for municipal governments with the mission to build a worldwide movement for global sustainability focusing on improving environmental conditions through cumulative local actions. www.iclei.org





General Resources

International Institute for Sustainable Development (Canada) advocates policies on international trade and investment, economic policy, climate change, measurement and indicators, and natural resources management beneficial to the global economy, environment and social well-being. www.iisd.org

Nimbkar Agricultural Institute (India) undertakes research and development in agriculture, renewable energy, animal husbandry and sustainable development. www.nariphaltan.virtualave.net

The Palni Hills Conservation Council (India) is a group of ecologists, environmentalists, botanists, wildlife enthusiasts and proponents of sustainable development devoted to promoting sustainable development in India. www.palnihills.org

People in Action (web-based) is a web guide containing resources on a variety of topics including sustainable development and ecology. www.peopleinaction.info/sustainabledevelopment

PolicyLink (United States) promotes equitable economic development, reduction of local and regional disparities, multiple bottom line investing, and meaningful community voice, participation, and leadership in all development strategies. www.policylink.org

Smart Growth Online (United States) promotes strategies for sustainable urban growth including community and stakeholder collaboration, mixed land uses, the creation of a range of affordable housing options, and the creation of walkable communities. www.smartgrowth.org

Sustainability Now (web-based) is an informational site of the sustainability committee of the Association of Professional Engineers and Geoscientists of British Columbia that promotes sustainable practices in the engineering field. www.sustainability.ca

The Trust for Sustainable Livelihoods (Trinidad and Tobago) exists to help people in the Caribbean better manage the natural resources on which their livelihoods depend. www.sustrust.org/profile.html

UN-Habitat (United Nations Human Settlements Programme) is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all. www.unhabitat.org

United Nations Development Program (United Nations) is the UN's global development network, an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. www.undp.org

United Nations Environment Program (United Nations) provides leadership and encourages partnerships in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations. www.unep.org

Urban Age Institute (United States) supports urban innovators and delivers programs around the globe, and publishes the quarterly Urban Age Magazine, and partners with other organizations to host programs for city leaders. www.urbanage.org

Working Group on Environmental Justice is an interdisciplinary effort based at Harvard University to examine issues of environmental justice within the US and around the world. www.ecojustice.net

Worldwatch Institute (United States) research organization focussing on social and environmental sustainability offering a blend of interdisciplinary research, global focus, and accessible writing on the interactions among key environmental, social, and economic trends. www.worldwatch.org





Glossary

	Definition
Artificial Wetlands	Small scale technology, artificially reproducing wetland conditions in an urban setting. Rock, gravel, sand, soil, roots and vegetation are employed to filter out toxins and organic material from waste water
Brownfield Development	The redevelopment of industrially polluted land for habitation
Cogeneration	A highly efficient process that generates electricity and heat at the same time from the same energy source.
Community Development Corporations	Organizations that bring together resources and expertise to provide financing for small businesses and initiatives that have difficulty obtaining credit from conventional financial institutions.
Community Garden	Land made available by a local government, usually at little or no cost, to citizens for the purpose of gardening.
Community Visioning	Process that uses stakeholder dialogue to identify community issues and community goals, and build consensus among participants
Conservation Covenant	A legal restriction registered on the title or deed to real property that limits what the owner can do based on agreed to conservation criteria
Demand Management	Policies designed to influence citizen behaviour in a way that affects the use of some resource or community asset.
Double/Triple Bottom Line Accounting	Refers to the business practice of entrenching other considerations alongside profitability such as ecological sustainability and social justice
Eco-Industrial Parks	Specially designated areas where industries are located near to each other to take advantage of waste streams. Waste from one industry feeds into the production cycle of another industry and so on, reducing waste and management costs.
Green Maps and Directories	Directories that list locally owned green businesses to encourage citizens to spend their money in ways that contribute to local wealth support ecological sustainability
Green Roofs	A layer of soil and living vegetation on top of a roof surface that captures rainwater, provides opportunities for urban agriculture and helps to regulate household heat
Grey Water Recycling	Using filtered but untreated grey water (which holds low levels of organic waste) for non-drinking purposes such as irrigation or toilet water.





Glossary

High Occupancy Vehicle (HOV) Lanes	Road lanes restricted to use by vehicles carrying two or more passengers.
Infill Development	The redevelopment of underdeveloped, abandoned, or spoiled urban land for renewed habitation
Micro-enterprise Loan Programs	Provide small loans for micro-entrepreneurial activities, and help low-income people gain access to capital.
New Urbanism	An approach to developing sustainable housing solutions based on higher density models. Emphasizes mixed use zoning, efficient housing density to encourage transit and utility efficiencies, a mixture of public and private housing, and the inclusion of green space and community facilities
P3's (Public-Private-Partnerships)	Partnership programs that blend the best of public agencies and private enterprises to deliver public goods in a efficient and cost effective manner
Rain Harvesting	Collecting rainwater that would normally runoff into culverts to use for watering green spaces
Road Pricing	Motorist pay directly for driving on particular roads. Peak-hour road pricing increases the fee for using particularly congested roadways during high volume periods
Sustainable Community Development	A balanced, multi-stakeholder approach to environmental, economic, and social issues, mobilizing local citizens and resources to resolve community identified issues.
Swale	A (usually marshy) depression in a tract of land
Urban Agriculture	Small-scale decentralized organic production in unused urban space such as vacant lots, school grounds, parks, yards, boulevards, balconies, roof tops etc.
Urban Metabolism	Considering the urban environment as web of component processes that require inputs and produce outputs, where dysfunction in one process has implications for the proper functioning of other processes
Water Stress	Defined by the United Nations as an area where total annual fresh water supply is less than 1,700 m ³ per capita (1.7 million litres per person per year).
Xeriscaping	An environmentally sensitive alternative to conventional landscaping that use native and /or drought resistant species



Green Cities Declaration and San Francisco Urban Environmental Accords



UN World
Environment
Day 2005

In 1950 less than one person in three lived in a town or city. Today nearly half the world's population is urban.

United Nations' World Environment Day 2005 in San Francisco brought together Mayors from Cities from around the world. They addressed how urban settlements can empower people to become active agents of sustainable community development; to create a healthy, just and prosperous future based respect for to each other, other species and future generations.

Green Cities Declaration

Recognizing for the first time in history, the majority of the planet's population now lives in cities and that continued urbanization will result in one million people moving to cities each week, creating a new set of environmental challenges and opportunities; and

Believing that as Mayors of cities around the globe, we have a unique opportunity to provide leadership to develop truly sustainable urban centers based on culturally and economically appropriate local actions; and

Recalling that in 1945 the leaders of 50 nations gathered in San Francisco to develop and sign the Charter of the United Nations; and

Acknowledging the importance of the obligations and spirit of the 1972 Stockholm Conference on the Human Environment, the 1992 Rio Earth Summit (UNCED), the 1996 Istanbul Conference on Human Settlements, the 2000 Millennium Development Goals, and the 2002 Johannesburg World Summit on Sustainable Development, we see the Urban Environmental Accords as a synergistic extension of these efforts to advance sustainability, foster vibrant economies, promote social equity, and protect the planet's natural systems.

Therefore, be it resolved, today on World Environment Day 2005 in San Francisco, we the signatory Mayors have come together to write a new chapter in the history of global cooperation. We commit to promote this collaborative platform and to build an ecologically sustainable, economically dynamic, and socially equitable future for our citizens; and

Be it further resolved that we call to action our fellow Mayors around the world to sign the Urban Environmental Accords and collaborate with us to implement these actions; and

Be it further resolved that by signing these Urban Accords Environmental Accords, we commit our cities to moving vital issues of sustainability to the top of our legislative agendas. By implementing the Urban Environmental Accords, the signatory cities aim to realize the right to a clean, healthy, and safe environment for all members of our society; and

Be it finally resolved that all of us, as Ambassadors of the Urban Environmental Accords, work with all due speed to implement the 21 actions contained in these Accords over the next seven years, recognizing that by working together and sharing best practices, our individual actions can result in a better world for all people and all creatures with which we share this planet.

"It is vital to balance the needs of the environment, the economy, and social equity to develop a way of living that can sustain our planet and our people into future generations."

Host Mayor Gavin Newsom, San Francisco on the occasion of World Environment Day 2005

Green Cities Declaration and San Francisco Urban Environmental Accords



Urban Environmental Accords: Vision and Implementation

The implementation of the Urban Environmental Accords should be a participatory process that ensures equity and inclusion of all citizens, with consideration of impacts on all the Earth's inhabitants. The implementation process of the Accords should treat all citizens equally without disproportionate influence towards any group. Any actions towards implementation should be done only after a careful analysis of the best available information on a wide range of alternatives. The selected course of action pose the least threat to human health and the health of natural systems.

The call to action set forth in the Accords will require some financial investment by signatory cities. The actions, when effectively implemented, will most often result in cost savings due to diminished resource impacts and consumption.

The 21 actions that comprise the Accords are organized by urban environmental themes. They are proven first steps toward environmental sustainability. However, to achieve long-term sustainability, cities will have to progressively improve performance in all thematic areas.

Without roughly a seventy-five per cent decrease in greenhouse gas emissions, science indicates that the planet's ecosystems will be dramatically altered from their current state. The seventy-five per cent threshold is an important practical and symbolic target. To meet this seventy-five per cent 'solution', we will need a suite of low carbon energy sources to grow from their current very small market share to major new technology sectors.

The Accords are intended to function as a progressive learning process toward sustainability. Signatory cities shall work to implement the following Urban Environmental Accords. Between now and World Environment Day 2012, cities will work to implement as many of the 21 Actions as possible. The goal would be for cities to pick three actions to adopt as policies or laws each year. At the end of the seven years cities that have implemented:

19 to 21 Actions	shall be recognized as a	Global Sustainable City
15 to 18 Actions	shall be recognized as a	Regional Sustainable City
12 to 17 Actions	shall be recognized as a	National Sustainable City
8 to 11 Actions	shall be recognized as a	Local Sustainable City

Energy

Action 1 Adopt and implement a policy to increase the use of renewable energy to meet ten per cent of my city's peak load within seven years.

Action 2 Adopt and implement a policy to reduce my city's peak load by ten per cent

Green Cities Declaration and San Francisco Urban Environmental Accords

through energy efficiency, shifting the timing of energy demands, and conservation measures within seven years.

Action 3 Adopt a citywide greenhouse gas reduction plan that reduces the jurisdiction's emissions twenty five per cent by 2030 and which includes a system for accounting and auditing greenhouse gas emissions.



Waste Reduction

Action 4 Establish a policy to achieve zero waste to landfills and incinerators by 2040.

Action 5 Adopt a citywide law that reduces the use of a disposable, toxic, or non-renewable product category by at least fifty per cent in seven years.

Action 6 Implement “user-friendly” recycling and composting programs, with the goal of reducing per capita solid waste disposal to landfill and incineration by twenty per cent in seven years.

Urban Design

Action 7 Adopt a policy that mandates a green building rating system standard that applies to all new municipal buildings.

Action 8 Adopt urban planning principles that advance higher density, mixed use, walkable, bikeable, and disabled-accessible neighborhoods which coordinate land use and transportation with open space systems for recreation and ecological restoration.

Action 9 Adopt a policy or implement a program that creates environmentally beneficial jobs in slums and/or low-income neighborhoods.

Urban Nature

Action 10 Ensure that there is an accessible park or recreational open space featuring environmental education, arts, or organic community gardens—particularly in lower income neighborhoods—within half-a-kilometer of every city resident by 2015.

Action 11 Conduct an inventory of existing canopy coverage in your city; and, then establish goals based on ecological and community considerations to plant and maintain canopy coverage in not less than 50% of all available sidewalk planting sites.

Action 12 Pass legislation that protects critical habitat corridors and other key habitat characteristics (e.g. water features food-bearing plants, shelter for wildlife, use of native species, etc.) from unsustainable development.

Transportation

Action 13 Develop and implement a policy which expands public transportation coverage to within half-a-kilometer of all city residents in ten years.

Green Cities Declaration and San Francisco Urban Environmental Accords



Action 14 Pass a law or implement a program that eliminates leaded gasoline (where it is still used) and that phases down sulfur levels in diesel and gasoline fuels, concurrent with using advanced emission controls on all buses, taxis, and public fleets to reduce particulate matter and smog-forming emissions from those fleets by 50 per cent in seven years.

Action 15 Implement a policy to reduce the percentage of commuter trips by single occupancy vehicles by ten per cent in seven years.

Environmental Health

Action 16 Every year we will identify one product, chemical, or compound that is used within our city that represents the greatest risk to human health and adopt a law to reduce or eliminate their use by the municipal government.

Action 17 Promote the public health and environmental benefits of supporting locally grown organic foods. Ensure that twenty percent of all city facilities (including schools) serve local and organic food within seven years.

Action 18 Establish an Air Quality Index (AQI) to measure the level of air pollution and set the goal of reducing by 10per cent in seven years the number of days categorized in the AQI range as “unhealthy” or “hazardous.”

Water

Action 19 Cities should develop policies to increase access to adequate and safe drinking water for all by 2015. Cities with potable water consumption greater than 10 liters per capita per day will adopt and implement policies to reduce consumption by 10per cent by 2015.

Action 20 Protect the ecological integrity of the city’s primary drinking water source (i.e., groundwater, rivers, lakes, wetlands and associated ecosystems)..

Action 21 Address storm water pollution and reduce the volume of wastewater discharge by ten per cent in seven years through the expanded use of recycled water and the implementation of a sustainable urban watershed planning process that includes participants of all affected communities and is based on sound economic, social, and environmental principles.

Summary of Actions Called For In the Accords

Energy Renewable Energy | Energy Efficiency | Climate Change

Waste Reduction Zero Waste | Manufacturer Responsibility | Consumer Responsibility

Urban Design Green Building | Urban Planning | Slums

Urban Nature Parks | Habitat Restoration | Wildlife

Transportation Public Transportation | Clean Vehicles | Reducing Congestion

Environmental Health Toxics Reduction | Healthy Food Systems | Clean Air

Water Drinking Water Access | Source Water Protection | Waste Water Reduction



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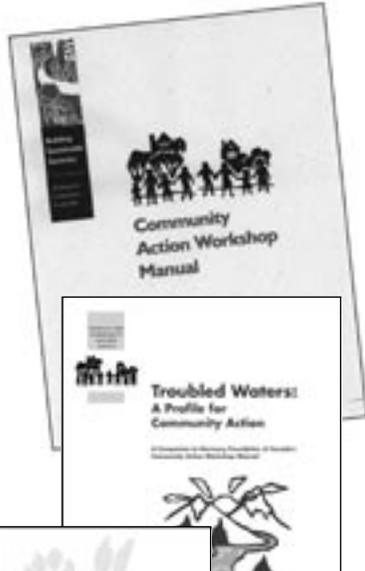
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Five exciting publications for positive community action!

Since 1985, Harmony Foundation has been providing quality education resources to help people around the world build the knowledge and skills to take action on environment and development issues and address the opportunities and challenges of creating sustainable communities.



The **Community Action Workshop Manual** (126 pages, 2001) provides a proven process for cooperative community project planning applicable to a wide range of environmental issues. An invaluable resource for groups seeking to move from concern to action, the manual contains activities, facilitation strategies, and stepwise instructions to run a successful Community Action Workshop.

The **Profiles for Community Action** provide clear, readable information about pressing environmental issues. Each contains a thorough overview of the issue, extensive resource listings, and inspirational success stories describing how groups have taken effective action on these issues in their own communities. The Profiles are required reading for anyone concerned about today's most pressing environmental issues. Combined with the **Community Action Workshop Manual** they are powerful tools for positive change.



The latest Profile is entitled **Green Cities: a Guide for Sustainable Community Development**. An official document of UN World Environment Day 2005 and the San Francisco Urban Environmental Accords, it was released June 3, 2005. It offers a comprehensive and effective approach to sustainable community development.

Troubled Waters: A Profile for Community Action (78 pages, 2003), **Biodiversity: A Profile for Community Action** (66 pages, 2001), and **Climate Change: A Profile for Community Action** (72 pages, 2001) have produced excellent results.

To purchase a copy or to view an extract of these publications please visit www.harmonyfdn.ca



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SELECTED HARMONY FOUNDATION PUBLICATIONS



Harmony Foundation has created a variety educational publications for educators, youth, home and family, the workplace, and communities, including;

ACTION IN YOUR HOME

Home & Family Guide: Practical Action for the Environment*. Practical, room-by-room action tips to protect the environment in home and family activities. 80 pages. 1989.

Robert Bateman's ecoTIPS. A booklet on priority environmental issues with renowned naturalist Robert Bateman providing practical tips for home, work, school and in your community. 13 pages. 1996.

Green Garden Project: Guide to Organic Gardening. A booklet on organic methods of lawn and garden care. 13 pages. 1998.

ACTION IN YOUR WORKPLACE

Workplace Guide: Practical Action for the Environment*. Workbook including 500 specific actions and 24 pages of worksheets to improve workplace environmental practices on energy, hazardous materials, waste, water, transportation, purchasing, property management, education and community relations. Foreword by Hon. Maurice Strong, 176 pages. 1992.

ACTION IN YOUR COMMUNITY

Community Action Workshop Manual. An indispensable tool for planning environment and development projects in your community. Provides step-by-step instructions for leading the workshop, analysing issues, identifying local assets and needs, developing an action plan, and more! 132 pages. 2001.

Green Cities: a Guide for Sustainable Community Development. A comprehensive guide to sustainable community development with a clear overview, profiles of successful community initiatives and many helpful resources. (in press). Foreword by Hon. Maurice Strong. 2005.

Climate Change: a Profile for Community Action. Examines climate change through a clear overview and profiles successful community initiatives from around the world. Includes many helpful resources. 77 pages. 2001.

Climate Change: Global Issue/Northern Issue. A supplement to the Climate Change profile, examines how climate change is affecting the north and successful Northern community initiatives. 12 pages. 2001

Biodiversity: a Profile for Community Action. Examines bio-diversity and its decline through a clear overview and profiles successful community initiatives. Includes many helpful resources. 71 pages. 2001.

Troubled Waters: a Profile for Community Action. Examines freshwater issues through a clear overview and profiles successful community initiatives. Includes many helpful resources. 78 pages. 2003.

Strengthening Our Communities: A Guidebook for Community Youth Programs. Provides practical information on how to organize and coordinate community youth programs, including project partnerships, mentoring programs and community service projects. 48 pages. 1997.

Discovering Your Community: A Cooperative Process for Planning Sustainability*. A comprehensive workbook to help community groups research and plan successful sustainable community development projects. It includes success stories from other communities and worksheets. 58 pages 1994.

Community Workshops for the Environment*. Manual to organize and lead practical environmental action workshops. No waiting around for the environmental "experts" to get your group started on community education and other projects. 60 pages. 1991.

Climate Change Community Action Workshop Manual. Comprehensive manual provides information to lead a Community Action Workshop on climate change. Includes clear background information, inspiring community success stories and step-by-step instructions for leading the workshop . 162 pages. 2000.

*Cette publication est aussi disponible en français.

For an order form and more information please visit www.harmonyfdn.ca

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Harmony Foundation of Canada is a charitable organization dedicated to achieving environmental progress through informed and cooperative action. Harmony's education programs and materials provide the knowledge and skills to help people and organizations improve their practices and achieve their environmental goals.

Harmony's innovative programs have been recognized through a variety of honours including the United Nations Environment Programme's **Global 500 Award** (1992), a **Commonwealth Foundation Fellowship** (1994), and the **Ethics in Action Award** (1998).

Since 1985, Harmony Foundation has:

- Developed *Building Sustainable Societies Program* to encourage, support and promote cooperative community action for the environment. Combining leadership training, the *Community Action Workshop Manual* and a series of issue specific guides and profiles, the program offers the tools to create practical community and school projects.
- Established the *Institute for Environmental Values Education*, which provides educational publications and training opportunities for educators and community leaders from around the world.
- Created a series of *Youth Vision* projects providing young people with life and workskills through community service
- Developed *Green Works*, a ground-breaking training program to assist organizations to develop workplace environmental programs.
- Designed *ECOMmunity*, a multi-stakeholder training program to assist communities in the development of a sustainable community plan.
- Provided many learning resources for schools, workplaces, community groups and individuals to encourage improved environmental practices.
- Advised numerous communities, organizations, education institutions and government agencies on the development of policies, programs and educational initiatives



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