Introduction: Cities and Sustainability

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INTRODUCTION:

CITIES AND SUSTAINABILITY—ECOLOGY, ECONOMY, AND COMMUNITY

by Lynn Scarlett*

Globally, the 21st century unfolds as the Era of Cities. The United Nations Population Fund signaled the milestone of 2008 as the first time in history that over half the world's population—some 3.3 billion people—were living in urban areas.[1] In the United States and other industrialized nations, some eighty percent of their populations dwell in cities and their suburbs. Discussions of sustainability must thus encompass cities and their economic, social, and environmental conditions.

Renowned city analyst Jane Jacobs, in *The Economy of Cities and Cities and the Wealth of Nations*, describes cities as central engines of economic development; she lauds their diversity and dynamism.[2] Her purpose was not to highlight the many familiar woes of traffic congestion, squalor and poverty, pollution, or crime. But, in her praise of cities, Jacobs introduces concepts that anticipate present discussions of cities and their sustainability. She discusses social capital, local action, and "biomimicry," in which she perceives "nature as a source of inspiration."[3] These concepts anticipate themes important to current discussions of sustainability.

In 1983 the World Commission on Environment and Development, or Brundtland Commission, thrust the concept of sustainable development onto the world stage with its report *Our Common Future*.[4] Its focus centered on environmental degradation and its effects on economic and social well-being. The report defined sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs."[5] A decade later, participants at the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, reaffirmed this vision of sustainable development, declaring that: "human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature."[6]

By 2010, the word "sustainability" now often supplants the antecedent term of "sustainable development," subtly signaling that sustainability implies something more than traditional notions of development, where the focus, however much concepts of environment and society were included, always seemed to veer toward the achievement of economic prosperity. It is in the world's cities that the broad and inclusive concept of sustainability has especially taken root. Hundreds of cities—in the United States and elsewhere—have developed blueprints for sustainability that encompass environmental, economic, social, and governance goals. In the United States, ICLEI-Local Governments for Sustainability rates city achievements of milestones for numerous sustainability goals.[7] SustainLane ranks cities in sixteen different areas for their performance on environmental, transportation, housing, land use, energy, emergency preparedness, infrastructure, communications, innovation, and other dimensions.[8]

Reflecting Jane Jacob's insights, some of this urban focus on sustainability translates the concept of biomimicry into practice.[9] Cities are re-examining the urban form, exploring how to use "nature" to provide basic urban services. Trees, permeable ground surfaces, natural stream channels, wetlands, and other natural systems and their components reduce stormwater, absorb air pollutants, help purify water, and provide shading to reduce summer air conditioning needs.[10]

Philadelphia, recognizing these benefits of biomimicry, plans to reduce stormwater overflows using trees, open spaces, and permeable landscapes—a "green legacy for future generations."[11] The city proposes to transition thirty-four percent of its lands to permeable surface, which will absorb and reduce runoff to meet sewage overflow requirements, while also producing cleaner air; cleaner water; and greenhouse gas reductions.

Some city greening efforts are achieving environmental results and reducing city costs to provide essential infrastructure. For example, "the City of New York invested over $1.5 billion to protect and restore the Catskill Mountain watershed to sustain the city's water quality, rather than spending up to $9 billion on filtration plants. Using ecosystem services concepts, Seattle reduced the volume of runoff by 98 percent in one neighborhood with extensive use of green infrastructure that cost 25 percent less than traditional alternatives."[12]

Putting "nature" within cities adds aesthetic value, but nature and its components also reduce the urban environmental footprint and can reduce costs for energy and other services. "U.S. Forest Service analyst Greg McPherson has documented energy conservation benefits from urban tree canopy. Planted as windbreaks, trees can reduce heat loss for avoided heating costs of 10 to 12 percent."[13] Tree shading, "according to another Forest Service study, can save 100 kilowatt-hours" in annual electricity use.[14]

Though urban greening is an important tool for sustainability, these efforts sometimes face implementation barriers. In the United States, regulations crafted in a context of more traditional "gray" infrastructure do not always accommodate use of natural systems and biomimicry. Sometimes, lack of clearly developed measures of natural system benefits impede use of these bio-systems. Sometimes hurdles arise from disconnected agency bureaucracies, fragmented government jurisdictions, and coordination difficulties.

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* *Lynn Scarlett, a Visiting Scholar at Resources for the Future, served for eight years at the U.S. Department of the Interior, where she was the Deputy Secretary and Chief Operating Officer from 2005-2009.*

These hurdles point to the centrality of two other concepts Jane Jacobs introduced in her discussions of cities, "social capital" and local action. In short, people matter. Early literature on sustainability emphasized the three-pronged goals of sustainability—social, economic, and environmental benefits. But more recent discussions (and practice) of sustainability describe people both as beneficiaries of sustainability and as practitioners, innovators, and decision makers. Local communities, through direct engagement in articulating their concerns and priorities, are critical to helping define what is desirable and what is doable. Local people have "local knowledge"—the knowledge of time, situation, and experience. Such local knowledge helps ensure that urban innovations to enhance environmental, social, and economic benefits reflect local priorities, cultures, and circumstances.

Nearly four decades ago, British economist E.F. Schumacher critiqued economic development practice in his work, *Small Is Beautiful: Economics As If People Mattered*.[15] Looking at less-developed economies, he argued that technologies appropriate to circumstance that reflect the capacities and resources available to local communities were more likely to be used and sustained than (often) large-scale technologies designed in industrialized nations.[16]

While "small" may not always be preferable, Schumacher's important insight was in his focus on economic and social decision processes that directly engaged those affected by decisions. This same insight has increasingly emerged globally in collaborative conservation initiatives.[17] Such initiatives, often self-generated through local action, bring local people together, sometimes with varying needs and interests and values, to explore jointly how to address problems of water quality, biodiversity, forest health, and economic opportunity and how to sustain local traditions and cultures.

But city sustainability efforts, too, are increasingly viewing sustainability as both about outcomes *and* about governing and social processes. Strengthening citizen engagement in decision making is not new—indeed, concepts of "participatory democracy"

have a long pedigree. However, over the past two decades, application of the concept has gained momentum. Two decades ago, when the City of Seattle proposed to address the city's waste management needs by designating sites for as many as four incinerators, city officials faced an upheaval from multiple neighborhood groups.[18] In a departure from its initial top-down decision process, the city changed gears, formed citizen task forces, and used their deliberations as the basis for overhauling its waste management vision for the city.[19] Waste reduction and recycling became the centerpieces of the city's waste management plans.

Seattle implemented this new vision through use of pay-as-you-throw fees that rewarded recycling and waste reduction. The city's use of these market incentives in its fee structure reflected another emergent phenomenon in sustainability efforts—the use of market-based policy tools that align personal and economic decisions with environmental and other goals. Drawing upon this concept, for example, Bellevue, Washington began charging stormwater fees based on amount of impermeable surface, which directly relates to amount of stormwater runoff generated. Such fees created, in effect, incentives for land managers and developers to retain or create permeable surfaces.

These city experiences are precursors to key themes unfolding across the sustainability policy landscape. First is the growing addition of market-based tools to the policy tool kit. Second is the importance of public engagement in decision-making.

Today, as cities re-examine how to address city infrastructure, waste management, climate change adaptation, transportation, and other challenges, whether in developed or developing countries, the need for governing processes that engage citizens is well-recognized. How to fulfill that need, however, often remains an elusive part of the sustainability equation.

The governance challenge is how to breathe meaning into participation, beyond providing for reactive comments to pre-set policy options and plans. This challenge, as much as the challenges of technological and service innovations, now animates the sustainability dialogue.

Endnotes: Introduction: Cities and Sustainability—Ecology, Economy, and Community

[1] *See generally* U.N. POPULATION FUND, STATE OF WORLD POPULATION 2007: UNLEASHING THE POTENTIAL OF URBAN GROWTH 1, U.N. DOC. E/31,000/2007, U.N. Sales No. E.07.III.H.1 (2007), *available at* http://www.unfpa.org/swp/2007/presskit/pdf/sowp2007_eng.pdf.

[2] *See generally* JANE JACOBS, THE ECONOMY OF CITIES (1969); JANE JACOBS, CITIES AND THE WEALTH OF NATIONS (1984).

[3] Gert-Jan Hospers, *Jane Jacobs: Her Life and Work*, 14 EUR. PLAN. STUD. 723, 732 (2006).

[4] THE WORLD COMMISSION ON ENVIRONMENT AND DEVELOPMENT, OUR COMMON FUTURE (1987).

[5] *Id.* at 8.

[6] United Nations Conference on the Human Environment, Rio de Janeiro, Braz., June 3-14, 1992, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992), *available at* http://www.unep.org/Documents.Multilingual/Default.asp?documentid=78&articleid=1163.

[7] *The STAR Rating System*, ICLEI-LOCAL GOVERNMENTS FOR SUSTAINABILITY, http://www.icleiusa.org/programs/sustainability/star-community-index/concept-overview/rating-system/the-star-rating-system (last visited Nov. 3, 2010).

[8] *Overall Rankings*, SUSTAINLANE, http://www.sustainlane.com/us-city-rank-ings/overall-rankings (last visited Nov. 3, 2010).

[9] For a discussion of the concept of biomimicry, see generally JANINE BENYUS, BIOMIMICRY: INNOVATION INSPIRED BY NATURE (1997).

[10] *See generally* Lynn Scarlett, *Green, Clean, and Dollar Smart: Ecosystem Restoration in Cities and Countryside*, ENVIRONMENTAL DEFENSE FUND (Feb. 2010), http://www.edf.org/documents/10811_Green,_Clean_and_Dollar_Smart.pdf.

[11] WATERSHED INFORMATION CENTER, PHILADELPHIA WATER DEPARTMENT, OFFICE OF WATERSHEDS, http://www.phillyriverinfo.org (last visited Nov. 4, 2010).

[12] Lynn Scarlett, *Cleaner, Safer, Cheaper*, 27 ENVT'L. FORUM 34 (2010).

[13] *Id.* at 36.

[14] *Id.*

[15] *See generally* E.F. SCHUMACHER, SMALL IS BEAUTIFUL: ECONOMICS AS IF PEOPLE MATTERED (1973).

[16] *Id.*

[17] *See e.g.*, TOMAS KOONTZ, ET AL., COLLABORATIVE ENVIRONMENTAL MANAGEMENT: WHAT ROLES FOR GOVERNMENT? (2004).

[18] *See generally* DEWITT JOHN, CIVIC ENVIRONMENTALISM: ALTERNATIVES TO REGULATION IN STATES AND COMMUNITIES (1993).

[19] *Id.*