
Book Review

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Elgar Companion to Sustainable Cities: Strategies, Methods, and Outlook

by: Daniel A. Mazmanian and Hilda Blanco

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‘Ecocity’, an equivalent of sustainable city, was first appeared in a 1987 book. The term was coined by its author (Register, 1987). An increasing population plus the urbanisation of human populations around the world, especially in developing countries, compress the challenge of sustainability. Urban dwellers have faced numerous unprecedented challenges. How can we preserve and improve the wellbeing of society? How can we move toward a more sustainable future?

The need for global sustainable city frameworks and standards becomes more apparent as both the number of practical initiatives and international cooperation increase (Joss, 2015). This book provides a framework for understanding the city as a critical building block of a more sustainable future.

There are three parts for this volume. Part 1 emphasises strategies with examples of social, economic, political and environmental perspectives. Part 2 explores potential methods and tools. The final part (Part 3) envisions the future by elaborating perspectives on urban form, the economic system, governance and technologies of sustainable city.

In the introductory chapter, the authors argued that any meaningful path towards greater sustainability must weave together both intra- and intertemporal dimensions of this challenges into a more comprehensive and systems approach. The three Es of economic, environmental and equitable sustainability are the three central dimensions of sustainability. Also, the nested relationship among the three dimensions of sustainability shows complex undertaking.

Part 1 Strategies

In chapter 2, Newman traces the evolution of urban form from the walking city to the transit city to the automobile city. Reducing both vehicle numbers and miles travelled can reduce urban air pollution and traffic congestion. It has become an important climate change mitigation strategy due to Cesar Marchetti (Italian physicist) constant.

Chapter 3 provides a state-of-the art planning guide for local water agencies. According to Jiménez Cisneros, adapting the water sector to climate change will be costly

and require a ‘portfolio’ of adaptation options. She identifies the need to assess the vulnerability of the specific water services as well as of vulnerable populations. In addition to engineering solutions, she emphasises the need to consider demand management options.

In order to overcome strange bipolar phenomena with increasing rates of obesity in developed countries vs. global hunger and malnutrition, Cohen identifies five major strategies for sustainable urban food policy in chapter 4: supporting regional producers; expanding urban agriculture; improving distribution and processing infrastructure; expanding access to and use of federal food benefits; and managing food residuals.

In chapter 5, Keoleian et al. cover 13 strategies to deal with consumer products in cities. When viewed through the complete product life cycle, from raw material to ultimate disposal, through application of life-cycle assessment tools, their strategies range from incentivising and mandating, local sourcing, digital delivery and online shopping, dematerialisation in packaging, product sharing, to repair, reuse, recycling and more.

Chapple details two contrasting case studies in chapter 6. Cities should and can play a major role in fostering greening within their existing powers by adopting green standards and regulations for energy, green building incentives, environmentally preferable purchasing, and ‘buy-local’ initiatives. However, doing alone would lose momentum. These efforts need supporting policies from higher levels of government.

The investment needed to bring US infrastructure systems to a sustainable condition by 2020, as Zimmerman points out in chapter 7, is enormous due to the following reasons:

- a a pressing duty to address backlog needs for repair, replacement and renewal of existing infrastructure
- b the greater capital costs for providing infrastructure to more extensive urban areas
- c the increase of climate-driven extreme events.

With case examples and the authors’ own research into fiscal sustainability in eight different cities, Callahan and Pisano illustrate how to bring together sustainable city and regional fiscal and environmental strategies in chapter 8. City planners should look beyond today’s budgets and fiscal policies and look over the horizon. A city’s fiscal decision making should be aligned with the transition to a more sustainable economy.

In chapter 9, Miller and Jackson demonstrate the interdisciplinary and overlapping nature of urban sustainability. They discuss several tools or methods important for urban sustainability that address public health issues, such as health impact assessments (HIAs). The authors explore the shift in the health professions from the definition of health as the absence of disease to a more holistic conception of health as well-being, which encompasses the physical and social conditions that facilitate it.

Zint and Wolske present the rationale and strategies for engaging citizens and stakeholders in a city’s transition to a more sustainable future in chapter 10. A far more engaged process is required due to common resistance to change. The authors focus on knowledge of behaviour change gleaned from psychology and the lessons learned from the growing utilisation of deliberative participatory process in developing community goals and fostering new public policies. They offer a set of recommendations because an effective engagement strategy requires time and effort.

In chapter 11, Ozawa argues that public involvement in sustainability requires greater attention to strategies that build on information sharing, strengthen the adaptive capacity of relations among actors and deepen the sense of collective responsibility. Then, Ozawa discusses three strong public participation strategies: community partnerships, participatory planning, and community benefits agreement.

Pastor focuses on environment justice from several aspects in chapter 12. The greater the inequality of place – city, state or nation, the lesser both economic viability and sustainability. The definition of environmental justice has evolved into a more holistic concept that goes well beyond the initial focus on environmental and health harms to minority and underrepresented populations. The focus must extend beyond the conventional city lines to the metropolitan or regional scale in order to achieve justice and realise sustainable development.

Part 2 Methods

Urban metabolism (UM) analysis, a major assessment method to determine the biophysical flows within a city, is demonstrated in chapter 13 by Kennedy, etc. UM is systems-oriented because we need to broaden the checking angles including patterns of urban energy production and consumption, materials, especially building and infrastructure materials, water use and the resulting solid waste, and air and water pollution, etc. However, the traditional methods, such as greenhouse gas (GHG) inventories or ecological footprints, focus on population and economic projections, as well as the existing land uses in an area.

Developing sustainable cities indicators has been explored by Portney in chapter 14. There is no simple and single conclusion regarding the best method if any after six cities' cases are compared. Agreeing which indicators are the most relevant for a given city and having available systematic and reliable data for measuring them are two big challenges. There could not be sustainable effort credible or effective without some method of continuous measuring over time.

In chapter 15, Michael et al. observed that many cities have initiated local climate action plans (CAPs). The analytic core of CAPs is the inventory of GHG emissions and the forecast of emissions based on growth projections. Setting target for future emissions and identifying the actions to achieve such targets are planned. The authors outline this planning process into several phases and steps and provide a list of resources to further help communities develop such plans.

In line with Greve and Boswell, the appropriate scales for planning for climate change adaptation are regional and local. Adaptation plans need not be stand-alone plans but could be integrated throughout existing city government functions or plans, such as local hazard mitigation plans or public health plans. The authors stress the long-term monitoring of systems and feed-back loops and notice the potential roadblocks of short-term political administrations in chapter 16.

Rose presents an ecological economics framework, a useful approach, in chapter 17. He shows a set of guideposts for cities extending from the lesson learned in resilience in becoming more sustainable. An emergency plan for critical resources under extreme stress should be examined for their more permanent potential under normal condition. That is, we need to evaluate the cost-effectiveness of resilience.

In chapter 18, Nijaki prefers a systems approach towards sustainable procurement. Cities can lead by example and through the purchasing of goods and services; they can

not only model sustainable behaviour but affect the marketplaces within their sphere of influence. The city will also be able to ensure that equity and justice in procurement practices and job training and capacity building are woven into a single whole: the triple bottom line.

Part 3 The future

By looking backward to move forward (chapter 19), Banerjee systematically reviews urban theories and movements. A less dogmatic approach to design is not only preferable but more objective. We could debate the long-term sustainability of ecological versus anthropocentric approaches. We should take into account human values and political processes, as well as incorporate ecological values into our valuation processes for a better future.

In chapter 20, Blakely claims that the field of local economic development has always incorporated the idea and practice of sustainability. Sustainable economic development must be based on the human, natural and community resources indigenous to a place rather than on external drivers, and that it should add value to the entire community.

Fiorino contends in chapter 21 that we need to add a fourth dimension to our framework for sustainability, which is a design for a governing system capable of performing the permanent tasks of any effective governmental system in order to provide political stability, freedom and rights, effective and accountable institutions, and legitimacy, with the needs and complexity of the triple bottom line.

In chapter 22, Tomlinson argues that IT can facilitate the transition to sustainability in cities. Organised around four themes in IT, cities will be more efficient and more intelligent. That is, an IT smart city would be better equipped to collect and monitor more data, develop optimisation models and management systems, and manage material and information flows throughout the city in a variety of arenas. Eventually, the quality of life for all involved will be dramatically improved.

Mazmanian and Blanco summarise the volume in chapter 23. The proposed strategies focusing on social aspects of sustainability also reveal the systemic nature of the approach. Two editors find that economic, fiscal and institutional aspects of urban sustainability pose formidable challenges. The volume indeed provides a portfolio of different methods useful for achieving greater sustainability in our cities.

A new vision of regional and city smartness driven by a 'people in place centred design' approach is emerging. Marsal-Llacuna et al. (2015) propose the construction of synthetic indices using principal component analysis (PCA). Also, they propose the use of real-time data instead of historical statistics as the basic information with which to construct a set of indicators to explain the initiative.

The volume is really for everyone, including policy makers, city planners, scholars, practitioners, citizens, and students interested and/or involved in the role of cities in the movement toward sustainability.

Overall, this pioneering book on sustainability is very impressive and well-written. I have only one minor suggestion here. An additional chapter on big data's potential contributions to sustainable cities could be added in the second edition. The volume has been organised in an extremely coherent way by two editors. This wonderful volume is really thought-provoking. How can we, as common citizens, contribute to sustainable city and sustainable Earth?

References

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