

INTRODUCTION

On our shelves is an abundance of books with some variant of the word “sustainable” in the title. Put “cities” or “urban” in the mix, alongside “smart” or “livable,” and you need a new bookcase! But this literature is not designed for active learning in the college classroom. What is needed, and what we want this book to provide, is a way for you to gain both the theory and the concepts of urban sustainability—a “hands-on” understanding of the what, why, and how of sustainable cities.

There is so much packed into urban sustainability that it’s easy to get lost. Anyone can become deflated by the complexity involved, struggling with the thought of needing to account for the interaction effects of urban and environmental “systems”—urban forms, land and ecosystems, climate and energy, human development, economic growth, housing and transportation, and community well-being.¹ Too often, the principles and goals of urban sustainability hover as platitudes, making urban sustainability seem unapproachable and overwhelming.

This book separates urban sustainability into a set of manageable topics. Our disciplinary slant is more social science and less biophysical environment, and the activities we chose are not exhaustive (we do not cover buildings, for example). But they do include what is arguably the essential subject matter of urban sustainability.

Using a menu of suggested classroom activities, we provide a practical way to engage with these topics and work through their thorniest aspects. Our goal is to ground what might otherwise sound nebulous, like the need to “respect nature” or “promote neighborhood diversity.”

Many of the activities require making a proposal. We start with the identification of problems to be addressed and then work through possible interventions and what criteria to apply to determine how to proceed. Where should policy interventions be prioritized, and where would intervention have the most impact? We want to help you decide what information is needed to fully understand a particular sustainability problem and how to address it.

CHAPTERS

CHAPTER 1: THE SUSTAINABLE CITY

In our first chapter, we lay out the parameters of our subject, including some historical background and our own working definition of *urban sustainability*. We then present some theoretical underpinnings, along with the values and principles we believe are central to the topic.

CHAPTER 2: URBAN ECOSYSTEM SERVICES

Nature plays an important role in city life. But how can humans and nature coexist in the city? How can the dichotomy between conservation and development be framed as an integrated system of flows between natural and built environments? This chapter explores the use of ecosystem services as a framework for considering the benefits humans receive from nature, specifically applied to the urban environment.

CHAPTER 3: THE RURAL-TO-URBAN TRANSECT

The transect is an analytical method that organizes the elements of cities (lots, blocks, types of spaces) in ways that preserve the integrity of different kinds of environments, whether more urban or more rural. These environments vary along a continuum that ranges from less intensity—rural—to high intensity—urban. How can we determine what elements in a given place are more “rural” and what elements are more “urban”?

CHAPTER 4: GREEN SPACE

The ecological, economic, and health benefits of urban green space have long been recognized, yet challenges to allocating scarce urban space to greenery require careful planning and consideration of other urban sustainability goals. How can we measure green space, and what are the possibilities and challenges for increasing green space in cities?

CHAPTER 5: DENSITY

Urban sustainability means that cities should be compact rather than sprawling. What are the social, economic, and environmental gains associated with density, and under what conditions does density cease to offer clear benefit (e.g., when density becomes crowding)? How can cities grow inward and upward gracefully, increasing in density in ways that are welcomed rather than resisted?

CHAPTER 6: NEIGHBORHOOD DIVERSITY

A fundamental goal of urban sustainability is that neighborhoods should be socially and economically diverse—mixed in income, mixed in use, and actively supportive of places that commingle people of different races, ethnicities, genders, ages, occupations,

and households. How realistic is such a goal? What levels of mix currently exist? How can we measure existing levels of mix and suggest areas of the city where increasing social diversity makes the most sense?

CHAPTER 7: MOBILITY

Urban sustainability requires multimodal forms of transportation, especially walking, biking, and shared mobility such as public transit and bus rapid transit. What are the costs and benefits of investing in public transit and bicycle infrastructure? What areas of the city will reap the most benefit from such investments? What interventions should be made to help improve the ability of people to get around in the city without relying on a car?

CHAPTER 8: RESOURCE PLANNING IN CITIES

With nearly 4.5 billion people living on approximately 2 percent of global landmass, and projections of the world's urban population to increase from about 55 percent today to 70 percent by 2050, cities represent a great experiment in the allocation of scarce resources. Cities have put forth ambitious targets for net zero, carbon-free energy, water conservation, and waste reduction. What strategies can they employ? What type of governance is needed? How is success measured?

CHAPTER 9: ENVIRONMENTAL JUSTICE

Environmental justice has been posited as a framework, discourse, norm, value, rule, behavior, executive order, and social movement. What are the historical causes of environmental injustices? How are social conditions and built environments precursors to environmental and health disparities? How can city climate action strategies and urban planning better address environmental injustices and ensure that social equity is at the forefront of all sustainability solutions?

We hope you will use this book as a reference—a book you can consult to find essential resources and perspective in the pursuit of creating sustainable cities. And if this book adds some increment, no matter how small, of advancement toward a more sustainable human habitat—by giving you, as future leaders, the knowledge you need to make cities more just and equitable, more green and healthy, more progressive and thriving—we will have achieved our goal.

We challenge you to step out of your comfort zone and think more like a generalist than a specialist, which is, to us, a key tenet of what it means to be a practitioner of urban sustainability.