



# Sustainable Cities

JAPANESE PERSPECTIVES ON PHYSICAL AND SOCIAL STRUCTURES

Edited by Hidenori Tamagawa

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# Sustainable cities: Japanese perspectives on physical and social structures

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# Introduction

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*Hidenori Tamagawa*

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“Sustainability” is a popular word nowadays, frequently heard in the media. It is often used in the context of global environmental issues – for example, at the environmental summits and in various environmental appeals. This book, which is an anthology of articles on urban sustainability, deals with the concept of “sustainability” from slightly different dimensions and aspects to those usually applied.

The meaning of “sustainable” here is similar to that used in the term “sustainable community”, but we aim to make it broader in concept, clearer in image, and deeper in insight, as outlined below. The authors have attempted to expand and redefine the concept of “sustainable” from various perspectives of engineering, humanities, social sciences and mental health.

As this may be the first attempt to introduce the Japanese discussion on sustainability to other nations, we hope it may trigger further discourse on the topic. The term “sustainability” is complex and still not clearly defined. At a global level, for example, the term is usually considered in the context of natural environmental protection, population growth and the economic gaps between advanced and developing countries. Here, we shall illustrate how the term is used in Japan from the following two aspects: (a) man-made systems in Japan have traditionally managed to coexist with the natural environment, but due to rapid urbanization in recent years, these systems have become damaged, and we now need to restructure them using new technologies and methods;

(b) there are yet many challenges we need to address for the well-being of citizens and to make the “urban society” sustainable.

The topics discussed in the book may sound less pressing and problematic than the many serious environmental and population issues existing in the developing countries, and one might argue that since damaged man-made systems can be restored and improved simply through technology transfer, they do not warrant international discussion. We believe, however, that the urban problems now confronting Japan and its people are not unique to that country: they will emerge when any country reaches a certain level of development. Successful technology transfer is not necessarily achieved through the simple application of technology, but is often hampered by personal, social and cultural barriers within the developing nation. We believe that the experiences of the Japanese, who have undergone an unprecedented level of rapid economic and urban growth, will surely provide precedents for urban researchers and practitioners worldwide, and will facilitate further international exchanges.

Japan first experienced industrial revolution a century ago and has since developed a flourishing modern technology, including information technology (IT). Thus the speed of modernization for Japan has been more rapid than in most of the Western world, although somewhat slower than that experienced in many of the currently developing countries. As for Japanese cities, many were destroyed or badly damaged during World War II and were subsequently reconstructed in a temporary or somewhat makeshift fashion. Thus the rapid postwar growth of Japanese urban areas was similar to that currently seen in developing countries. For example, the pattern of construction of new towns followed the Western method of developing splendid modern residential areas. However, in view of the current declining birthrate and the growing proportion of elderly people, as in the West, these ageing neighbourhoods are now urgently in need of reconstruction.

Hence, modern Japanese cities have characteristics of both those of the West and those of the developing countries. Thus the case studies and perspectives of Japanese cities discussed in this book can also be applicable to other countries that are in similar stages of development.

Rather than provide an in-depth approach to a specific field of urban studies, this book takes a cross-sectional approach by experts across a variety of academic fields and illustrates both the diversity and the shared values held by urban scholars in approaching the concept of urban sustainability.

Shared values here might be summarized as the twin notions that (a) the system is self-sufficient in principle and yet is open to the external world, and (b) the system stimulates society to be free from the illusions of eternal expansion and growth. Such a system should be positive and



ready to change in our daily lives while not sacrificing future generations. In fact we might change the spatial catchphrase “Think globally, act locally” to “Think eternally, act temporarily”. Though it is a difficult challenge, the book contains many issues and ideas for solutions to achieve such a system.

The spatial systems of buildings, apartment complexes, urban districts, small cities, metropolises, metropolitan regions, local regions and nations are all self-sufficient to some extent. At a time when concern for the sustainability of cities in difficult economic times is required, we need to generate a lively discussion on the level and type of self-sufficiency and openness of these systems, or, in other words, how they can be structured “physically” and “socially”.

Each chapter of the book consists of an independent article or editorial with introductory remarks to enable a smooth transition from one chapter to the next. The book starts with a global and general discussion of the subject, followed by consideration of conceptual approaches to sustainable systems and urban sustainability together with historical outlines of metropolitan problems. This is followed by several case studies of both technological and sociological issues in current Japanese metropolitan areas. The book concludes with an outline of a strategy for a smart, or enhanced, community.

The first chapter attempts to distinguish between problems of developing world cities and those of the West, focusing on a comparison of the experiences of cities of the Asia-Pacific region and those in the United States. Starting from the viewpoint which associates long waves of development with the Western experience, this chapter demonstrates that the current urban development context is significantly different. Specifically, it is argued that the new development context has telescoped the aspects of “urban environmental transition” (McGranahan, Jacobi, Songsore, Surjadi and Kjellen, 2001). Globalization, demographic shifts, advanced technologies and institutional and political change have led to the “time–space telescoping” of urban environmental transitions such that the urban challenges faced by cities in the past over a longer period and in a serial manner now occur more rapidly and in an increasingly overlapping manner. The implications are significant in that previous solutions to urban problems, which appeared slowly and were implemented under specific institutional contexts, are no longer appropriate.

The second chapter serves as a bridge between the discussions of the first chapter on urban sustainability from a global viewpoint and discussions in later chapters on urban sustainability in Japan. Following the rapid industrialization of the last century, Japan now finds itself in a post–industrial age with many consequent physical and sociological changes within its cities. The sustainability of cities – the major human

stage for both business and residential activities in society – is now an important issue. The focusing on Japanese cities, which are positioned at the interstice of oriental complexity and Western order, is particularly instructive for both the developed and the developing regions. Keeping in mind this systematic explanation of observed differences from a global viewpoint, we gradually move on to focus on Japanese problems and proposals.

First, however, Chapter 2 considers the general concept of “sustainability”, which serves as a theoretical basis for general sustainable systems. An attempt is made to illustrate clear images of sustainability, “dynamic balance”, “stable balance” and “probabilistic equilibrium” by the use of many easy-to-understand metaphors and in a way that demonstrates how “sustainability” can be applicable to diverse subjects. The author, who has specialized in the analysis of urban space, then concludes the chapter by focusing on sustainability of urban land use. A simple conceptual model, such as that employed here, can provide a useful reference frame for the consideration of urban areas as dynamic systems. Similar models are introduced in Chapters 7 and 10.

Chapters 2 and 3 describe the general outline and historical perspectives of Japanese metropolitan environmental problems, and provide a helpful introduction to the Japanese situation for readers who may not be familiar with it.

Chapter 3 also discusses the issue of sustainability from a broad economic perspective within the grand framework of civilization. The author refers to the issue raised by Karl Polanyi and Yoshiro Tamanoi – namely, that the word “economy” conjures up for us of two different spheres – and discusses two steps to make the economy (in real and practical terms) sustainable: firstly, by linking agriculture and industry based on organic production; and, secondly, by creating an autonomous and regional-based group or a community between the community economies at local level and the global economy. From this point of view, the author proposes a society whose regional wealth consists not only of properties and stocks but also of the social capital which enriches people’s freedom.

The author of Chapter 4, Tokue Shibata, has been involved for many years in environmental administration in the Tokyo Metropolitan Government. Beginning with a discussion of the garbage disposal problems that Tokyo confronted in its early days of urbanization, he cites numerous cases where “land” is at the root of Tokyo’s environmental problems. The author shares his wealth of accumulated experience with readers to provide insights into the future “recycle-oriented and sustainable city of Tokyo”.

Subsequent chapters focus on specific, current cases in Japan. Chapter 5 looks at the sustainability of cities from the perspective of energy-

conscious buildings and urban planning. The author, Takashi Kawanaka, has experience in various projects related to this theme, and proposes a set of formulae for energy-conscious urban planning. He follows this with reviews of the current Japanese legislative urban planning system from the viewpoint of “formulae” applications.

Control of automobile use is a significant issue in saving energy in modern cities, and Chapter 6 examines this issue in relation to a retail development control system. The author, Kyoshi Takami, is a young researcher of transportation planning, and he gives a detailed introduction of two cases abroad, drawing on policy issues to be addressed by Japan.

Chapter 7 discusses urban sustainability from the view of population stability. The authors, Nobuhiro Ehara and Hidenori Tamagawa, conducted a quantitative study in the Tokyo Metropolitan Region using National Census data from 1970 to 1995, and identified 25 districts where the population had remained stable. By analysing the population age structure of these districts the authors were able to determine that the trends affecting young people seem to be the key to the population stabilization of these districts.

In the next two chapters the focus is on urban citizens, not as “mass” but as major players in urban life. Chapter 8 discusses citizens’ environmental protection movements in Kamakura City in the medium- to long-term perspective. Its authors, Junko Ueno and Masahisa Sonobe, are both sociologists and recognize that citizens’ movements aimed at the protection of the environment are an important way in which ordinary people can become involved in the governmental decision-making processes. They compare and contrast cases of “anti-development movements” and “environmental protection movements” and, in this highly motivated analysis, illustrate differences, such as “sustainability of the movement itself”, and similarities, such as the concept of “joint right of possession”.

Chapter 9 focuses on the “emotional” aspect of urban citizens. Through a survey of the rebuilding of public apartment complexes, the author, Yoko Shimizu, who is an expert of community health care, examines how a changing living environment influences residents’ lives, and how personal networks and exchanges among neighbours are maintained or altered. This important study is likely to attract considerable attention in this field, since the number of apartment complexes built during the high-growth period now in need of renovation or replacement is increasing nationwide.

Finally, Chapter 10 looks again at the issue of sustainability from a general perspective. Based on the assumption that a sustainable city requires a radical change of local communities, the author, Osamu Soda, demonstrates images of the “shape”, “mechanism” and “resources” of

sustainable communities, and examines the principles of the driving forces leading to these images. At the centre of the discussion are the ecological concepts referred to in Chapters 2 and 7. The author interprets and organizes these concepts from a social scientist's perspective, and concludes with an outline of the "smart human community".

We hope that this book will give readers an opportunity to learn about some of the Japanese experiences in this field and set them on a journey to explore further the sustainability of cities: a journey that has just begun.

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Most of the world's population will soon be living in cities, making it crucial to examine how cities can be developed on a sustainable basis.

Japan is one of the most urbanized countries in the world and offers a remarkable series of lessons for sustainable urban planning. This book draws together experts from engineering, humanities, social sciences and mental health to introduce Japanese experiences and compare them with international research.

Rapid urbanization has damaged natural and human systems in Japan and many planners are seizing upon new technologies and scientific methods as opportunities to restructure cities. However, others are focusing on the well-being of citizens and seeking to make urban society more sustainable. This book examines the tensions between sociological and technological approaches and the dichotomy between planning professionals and civil society.

The authors believe that the urban problems now confronting Japan and its people are not unique to the country and will emerge when any country reaches a certain level of development. They draw upon the experiences of Japan to provide insights for urban researchers and practitioners worldwide, particularly in rapidly-urbanizing developing countries, and to encourage international comparative research.

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