

## Special Editor's Note

Since the 1970s, Asia has been engaged in a process of rapid economic growth through industrialization, with urban populations growing rapidly. This is causing a variety of environmental problems in the region: air pollution due to increasing vehicle traffic, shortage of clean water supply, pollution of urban rivers, and an increasing volume of municipal solid waste associated with higher levels of material consumption.

In 1800, London was the only city in the world with a population of over one million, and the total population of the world's top 100 cities was less than 20 million. By 2000, the world's top 100 cities were home to 540 million people, of whom 220 million lived in "megacities" with populations of over 10 million. Moreover, 35 cities exceeded five million in population, and several hundred cities were home to over one million people. The degree of urbanization, however, varies by country, as seen in terms of the urbanization ratio—the percentage of urban dwellers compared to the national total population. In Europe and North America, the shift from rural to urban populations was completed between the nineteenth and the mid-twentieth century, when urbanization rates stabilized at 70 to 80 percent, while urbanization after the Meiji Restoration<sup>1</sup> in Japan was slightly behind Europe and North America. In contrast, developing countries in Asia and Latin America were the main global players in population growth and urbanization in the latter half of the twentieth century.

It must be noted that the impact or "footprint" of urban activities does not stop at the city limits. Cities not only affect their local environments but also have large impacts at the global level through the consumption of food, energy, and other resources. As urbanization will continue globally in the coming years, it would be no exaggeration to state that the fate of cities is the fate of the world and that urban sustainability actually means global sustainability. Following the UN Conference on Environment and Development in 1992, the idea of sustainability started to attract serious attention in governmental policies and corporate management, as well as in personal lifestyle decisions. Related to this, the term *sustainable cities* began to enter the vernacular when discussing cities.

What we must keep in mind in discussing how to build "sustainable cities" is that not all cities are alike—there is a huge difference between mature cities in developed countries and "young" cities in developing countries. In mature cities in Europe and North America, the basic infrastructure has already been built, and the challenge is now to make qualitative rather than quantitative improvements. In contrast, young cities in developing countries can not keep up with the construction of the large amount of infrastructure needed to support their enormous populations and production and consumption activities. This situation stifles economic growth and results in a variety of urban environmental problems. The phrase *young cities* does not literally mean that they are young, but it means they have only relatively recently started developing into modern cities with good public services and basic environmental infrastructure such as urban sewerage systems, solid waste collection and disposal systems, parks and green space, and so forth. Even in developed countries, not all cities are necessarily mature; many could

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1. In 1900's.

still be considered young in terms of social infrastructure. For example, many of Japan's small and medium-sized cities could still be considered young, as they still have inadequate infrastructure for sewage treatment compared to cities in Europe and North America.

Urban environmental management is one challenge facing young cities in Asia. At the same time, they face a number of other issues. While on the one hand some cities—a number of coastal cities in China, for example—are enjoying the benefits of rapid economic growth, many of these cities are also experiencing huge inflows of poorer people from the surrounding areas, and some cities are unable to control urban sprawl. While it could be said that environmental problems are one result of economic development, it is also true that without economic development, there is no effective way to solve environmental problems.

If one is to attempt a discussion on the concept of sustainable cities, it is impossible to avoid one basic question: exactly what is sustainable development and sustainability? There has already been much debate about the meaning of these terms, but it is not easy to offer a simple answer. First of all, there is a difference of opinion between developed and developing countries in terms of priority—should the emphasis be on improving human standards of living or on protecting the environment? In short, there is a diversity of opinion when it comes to the question of how humans should actually be managing the earth's ecosystems. Besides this, there are socio-political challenges like eliminating urban poverty, protecting the vulnerable people in society, ensuring equity, and securing public participation in political decision-making processes. The ways chosen to address these challenges are also important topics for sustainable cities.

In this context, when we consider the environmental impacts of urban activities and the sustainability of cities, we encounter the question of balance with the “environmental space” or “eco-space” of cities. We must consider both the *absolute measures* of urban activity (for example, urban population, area, or resource consumption of the city), and the *intensity* of each item per unit of area. For example, because rivers have a self-purifying function, if the concentration of pollutants discharged from urban activities is low, the river will clean itself up at the local scale. However, if the urban area is large, even if the environmental load is small at the local scale, the total load will be large and may exceed the environmental space of the region. Above all, the most important thing needed to control the environmental burden is growth management, which means the exertion of control on the expansion of urban populations and economic activity. Many difficulties arise, however, when attempting to control and coordinate all of these measures.

The above is the thinking that underlies this issue of *IRES* on the Environmentally Sustainable City. We invited renowned authors who have been working on various topics related to urban environmental management to write papers that could inspire discussion on the issues involved in developing sustainable cities in Asia. We also sought contributions from other authors on several topics that were not covered by the invited papers. This volume starts with three overview papers on basic questions in urban environmental management and the state of urban environments in Asia. The later papers cover specific topics in air, water, and solid waste, and the issue concludes with two papers discussing the role of civil society and international cooperation among cities for achieving sustainable urban development.

Gordon McGranahan focuses on the importance of scale to understanding urban environmental burdens and sustainability. He discusses the environmental burdens within urban areas in contrast to environmental burdens within larger urban regions and those on the global scale. He discusses the role of indicators such as ecological footprints in understanding the impacts of cities upon the global ecosystem, and discusses the policy agenda to resolve the question of burden sharing between high-income and low-income settlements. Hidefumi Imura, Sudhakar Yedla, Hiroaki Shirakawa, and Mushtaq Memon contribute a review of the state of urban environments in Asia. Their paper presents basic trend data on urbanization and environmental quality and discusses transport management strategies for air quality, financing for water supply and sanitation, and improving efficiency in material cycles. Peter Newman discusses sustainability assessment and cities. Referring to recent attempts in Australia, he discusses how to integrate environmental matters with economic and social considerations, taking up three types of systems: complex and strategic projects; policies, programs, and plans; and buildings and developments.

Shobhakar Dhakal and Lee Schipper focus on urban transport in Asia. Many Asian cities lack appropriate public transport services, and rely heavily upon vehicular traffic to respond to increasing demands for mobility. A number of past studies show that health risks from air pollutants emitted from mobile sources are high, and air pollution control is one of the big challenges for Asian cities. In this context, their paper analyzes the development of urban transport and the factors behind it, and discusses emerging policy issues. Absar Kazmi and Hiroaki Furumai present a paper on urban wastewater treatment in Asia. Many Asian cities do not enjoy sewerage services because very rapid increase in urban population and financial shortages make it difficult for them to make the large investments necessary for the construction and maintenance of urban sewerage systems. This paper discusses the factors behind the low coverage of sewage services, assessing conditions in different countries. Atsushi Terazono, Yuichi Moriguchi, Yuko Sato Yamamoto and others take up relatively new issues related to material cycles. Building a sound material-cycle society has taken its place on the policy agenda in developed countries such as Japan, and many Asian countries are showing growing interest in the topic. Thus there have been emerging initiatives among Asian countries, and the authors discuss solid waste management in Asian cities from this perspective.

The last two papers discuss the roles of civil society and international cooperation. Nurul Amin sheds light on the role of the informal sector in urban environmental management. His paper traces the origins of the informal sector and urban environmental paradigms, and examines their points of intersection in solid waste management and water supply and sanitation. The paper then proposes strategies to strengthen the market-force-propelled beneficial role of the informal sector in urban environmental management. The last paper, by Mushtaq Memon, Christine Pearson, and Hidefumi Imura, discusses opportunities and challenges to local governments in international cooperation. The writers take up the experiences with the Kitakyushu Initiative, and discuss the major concepts that form the basis for inter-city cooperation to facilitate local capacity building.

This entire issues, with the papers I have briefly introduced, identifies major issues on the policy agenda for urban environmental management, particularly for rapidly growing Asian cities. Yet there are many important issues that it does not cover, such as urban sprawl, slums, and squatting, which have

their roots in poverty. In the trend of globalization and industrialization, Asian cities may be split into two groups: cities that are enjoying economic growth, and those that are marginalized from it. How to build sustainable cities based on global partnership is a big challenge for both mature and young cities in Asia.



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