Editorial introduction

Special issue on “Sustainability Indicators and Analysis”

Guest Editors:

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In our long history, we human beings have accumulated remarkable wisdoms of coexisting with nature. Many of our ancestors reflected upon the human-nature relationships and knew how people should occupy the land, even in the time when people did not have too much concern about the damage that they posed on the environment. However, after the Industrial Revolution, many ugly industrial cities emerged; but the planners' prescription was only a better urban design separating the residents from unpleasant industrial hazards. It was not until after World War II when industrialization and urbanization associated with mass production and mass consumption started to prevail all over the world and the unsustainable signs became apparent, that we recognized the irretrievable damage that human inventions have brought to the ecosystem (Carson, 1962) and the limits for economic development (Meadows et al., 1972). After the World Commission on Environment and Development published the Brundtland report in 1987 and the United Nations held its historical convention Earth Summit at Rio de Janeiro in 1992, “sustainable development” or “sustainability” as a goal has begun to gain world-wide consensus. A huge amount of studies have been added to almost all research fields as well as the practices in different levels of government, involving various parties of stakeholders. However, despite decades of effort, we are still in the midst of searching for a road map towards sustainability (Biermann, 2013; Linnér and Selin, 2013). In an increasingly connected and interrelated world, it is ideal to find global sustainability in which all parts act coherently as a systematic whole. However, another way of thinking should also deserve consideration: if all the parts in the world sustain their own, we should not need to worry about our common future.

China, as one of the fastest developing economies, has drawn great attention from the rest of the world concerning its environmental impact and sustainability. Though with different research interests and perspectives, all the four papers presented in this special issue address the same question: how to contribute to a sustainable China through better understanding and better management of cities, the settlements where now more than half of its people reside in and more are predicted to reside in the coming decades.

The first paper titled “The Framework of Social Sustainability for Chinese Communities: Revelation from Western Experiences” (Wang, 2014) points out that while social sustainability has been studied and tested in both theoretical research and practical implementations in western countries, it has

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not been given enough concern in China. Relevant theories and thoughts have been reviewed to retrieve how the social sustainability idea is developed, and how it has been implanted in urban planning and integrated within local community development policy, especially in the US, UK and Canada. The author argues that the western-originated social sustainability idea should be understood and redeveloped in a distinctive Chinese context. Following these findings, a framework of social sustainable communities for China is summarized which includes three layers: individual needs, social network and community development. The author concludes that future attempts in developing social sustainability indicators and the corresponding community planning mechanism should be encouraged in China.

The second paper “How Eco are China’s Eco-Cities? An International Perspective” by Zou and Li (2014) focuses on the quality of China’s eco-cities. To tackle the problems and challenges posed by the rapid urbanization and to pursue urban development in sustainable manners, the Chinese government has taken vigorous efforts in developing eco-cities across the nation. There have been a large amount of eco-city related studies and practices addressing how the indicator system should be designed. However, the authors could not find many on the quantity or target/threshold of the indicators. To examine the quality of China’s eco-cities from an international perspective, the authors selected two renowned eco-cities, Kitakyushu from Japan and Hamburg from Germany, and then compared the performances of these cities with the national eco-city standards of China. They have identified the gap between economic-related indicator values, suggesting lower economic levels and energy efficiencies of Chinese eco-cities. Targets concerning the waste sector are also lower in China than in the other two cases. The environmental indicator values show China needs to raise its standards for environmental quality. Discussions and suggestions are made based on the outcomes of comparisons in an attempt to provide reference for the future development of eco-cities in China.

From 2000 to 2010, urbanization in China experienced a remarkable growth rate, increasing from 36.22% to 49.68%. The third paper “The Research on China’s Urban Spatial Expansion and Its Time-space Stability Since 2000” by Wang and Qi (2014) analyses the urban land expansion patterns in the 263 prefecture-level cities in China. Two types of urban land expansions are examined, including administrative division expansion and urban built area expansion. By plotting the increase rates for each city on maps, regional urban growth patterns are identified. The paper further standardizes the yearly change of the two types of expansion, by which the authors are able to trace the “time-space” path of the growth for individual cities in a two-dimensional coordinate system. This also enables the categorization of the 263 cities according to their growth path. Furthermore, three indicators are proposed to measure if a city’s relative position among the 263 cities is stable.

The final paper “Transitional Spatial Pattern of Housing Prices in Beijing: Factors and Implications” (Wang and Gao, 2014) analyses the situation and the changes of housing prices between 2005 and 2012 in Beijing. Using GIS-based spatial analysis methods including global spatial autocorrelation, local spatial autocorrelation and spatial interpolation analysis, they are able to understand the spatial patterns and the changes of housing prices in Beijing. They find that the urban area has sprawled in line with a “pie” model, with the housing prices increasing rapidly and spreading from the urban centre to the outer areas of the central city. At the same time, some high-grade housing areas and low-grade housing areas are identified, indicating a trend of socio-

spatial differentiation. Then, a hedonic price model was conducted to find the influencing factors. The results show that besides location and environment, property rights, construction of transportation networks, and population change have played key roles in the transition of the spatial pattern of housing prices in recent years.

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