
Editorial

Zhenjiang Shen*

School of Environmental Design,
Kanazawa University,
Kakuma Machi, Kanazawa City, 920-1192, Japan
E-mail: shenzhe@t.kanazawa-u.ac.jp
*Corresponding author

Katsunori Suzuki

Environmental Conservation Center,
Kanazawa University,
Kakuma Machi, Kanazawa City, 920-1192, Japan
E-mail: suzukik@staff.kanazawa-u.ac.jp

Mitsuhiko Kawakami

School of Environmental Design,
Kanazawa University,
Kakuma Machi, Kanazawa City, 920-1192, Japan
E-mail: kawakami@t.kanazawa-u.ac.jp

This special issue focuses on urbanisation and environmental issues in Asian countries. The objective is to provide an insight on urbanisation process, environmental issues and trans-boundary pollution control from multidisciplinary viewpoints.

Urban growth takes place at urban and regional level and is advanced by domestic social and economic development policies, while land use and transportation system changes occur in a highly dynamic system that involves many forces such as economic development, population growth, and policy decisions. The study 'A cellular automata model incorporating land tax for predicting urban growth' looks at the possibility of simulating urban growth process using a cellular automata (CA) model incorporating tax and geographic conditions in the city of Makassar, Indonesia. In addition to geographic condition constraints such as rivers, flood prone and nature conservation areas, the CA model with incorporated tax constraints reflects impact of economic development. Using the CA model, it is possible to simulate the policy impact on the urban growth and provide a basis of further investigation of environmental issues using simulation methodology.

Water management is taken as one example of environmental issues in this issue. In order to coordinate urban management with domestic water demand through a policy measure of total amount control of household water consumption, the policy intervention of total amount control is supposed to be implemented. In the work 'Agent-based modelling of water price negotiation for domestic water management in deurbanisation society of Kanazawa City, Japan', the authors argue that water supply cost of local water

utilities became government financial burden in de-urbanisation process due to decreasing population in the city. An agent-based model of household water consumption simulation (HWCSim) is built to simulate the volume of household water consumption. The simulation result shows that the volume of household water consumption could be basically regulated through government adjustment of water price.

Over the last several decades, public awareness of water quality issues has grown substantially across the world. Water pollution is any chemical, physical or biological change in the quality of water that has a harmful effect on any living thing that drinks or uses or lives (in) it. In the work ‘Long-term environmental impact assessment of agricultural land transition – a comparative case study’, the authors addressed this issue through a comparative study on two watersheds where agricultural policy was shifted from promotion to reduction. Even though agriculture is often blamed to be a leading source of water environment degradation, it was concluded that the reduction of agricultural activities could lead to the opposite results if policy change was not well designed.

As a result of urbanisation, natural resource consumption grows and waste discharges increase. In the work ‘Development and validation of performance measures for green manufacturing (GM) practices in medium and small scale industries in Vidharbha region, India’, GGM is a term used to describe manufacturing practices that do not harm the environment during any part of the manufacturing process. A survey was undertaken by the authors in 2009 to determine the extent of awareness and implementation of GM practices within various manufacturing industries in the Vidharba region of Maharashtra, India. The authors conclude that the adaptation of GM by industries are still at very early stage with much work to be done to raise levels of awareness and to convince them regarding the potential benefits of GM in India.

In addition, global environmental issues such as greenhouse gas emissions and regional trans-boundary air pollution such as acid deposition become international problems in Asian developing countries. Tropospheric ozone is a colourless gas formed by reactions of nitrogen and hydrocarbons and harmful for human health and ecosystems including crop production. Air pollution control systems are necessary. The work ‘The effect of ground level ozone on vegetation: the case of spatial variability of crops in the People’s Republic of China’ aims to show how spatial variability of crops in China could reduce the effect of ozone on crops. The authors find that wheat and soybeans are more sensitive to ozone compare to rice and maize in the total area of China.

Environmental pollution during rapid economic development is reaching worrying proportions in China and other Asian areas, where urbanisation is progressing along with industrialisation. We do hope this special issue can serve as a fine reference for researchers and practitioners on urban and regional frameworks on urbanisation and environmental issues.

All submitted manuscripts were peer-reviewed by at least two referees. The guest editors would like to thank the reviewers for their hard work, time and valuable comments and suggestions that make this special issue possible.