

MAKING CITIES MORE SUSTAINABLE IN ASIA: BRIDGING THEORY AND PRACTICE

1 Context/Rationale

Asian cities are rapidly urbanising and play an increasingly prominent role as engines for national economic growth. Presently, this growth is coupled with high rates of energy and resource consumption, which in turn exacerbates pressures on the management of solid waste, wastewater, air pollution and greenhouse gas emissions. With reference to relevant theory and case-studies, this session highlighted city government strategies to address these challenges, bringing together representatives from the OECD and Wuppertal Institute as well as panelists from overseas and from Japanese local government. In addition to sharing insights on how to design and implement local sustainable development strategies, participants also discussed how Japan's Joint Crediting Mechanism (JCM) can help balance economic and environmental priorities.

2 Objectives

- To present and jointly reflect upon how strategies for sustainable development are planned and implemented.
- To stimulate discussions on how theory or good-practice approaches could be designed to accommodate diversity.
- To showcase approaches to transferring low-carbon expertise and technology, in the context of North-South city-to-city partnerships with private sector support.



3 List of Speakers

[Moderators]

Hiroyuki Kage Executive Director, Vice-President, Kyushu Institute of Technology / Director, Kitakyushu Urban Centre, IGES

Eric Zusman Leader / Principal Policy Researcher, Integrated Policies for Sustainable Societies Area, IGES

[Speakers]

Ryoko Nakano Deputy Area Leader / Senior Policy Researcher, Integrated Policies for Sustainable Societies Area, IGES

Johannes Venjakob Project Co-ordinator, Future Energy and Mobility Structures, Wuppertal Institute for Climate, Environment and Energy

Tadashi Matsumoto Senior Policy Analyst, Regional Development Policy Division, The Organisation for Economic Co-operation and Development (OECD)

Nobuhiro Kino Director, Office of International Cooperation, Global Environment Bureau, Ministry of the Environment, Japan

So Platong Acting Governor of Siem Reap Municipality, Siem Reap Province, Ministry of Interior, Cambodia

Amir Rusli Senior Researcher, WtE Project Coordinator, Sanitation and Landscape Division, Batam City, Indonesia

Ir. Ayu Sukenjah Head of Division for Environmental Rehabilitation, Environmental Management Agency, Bandung City, Indonesia

Nuanphan Phawawes Sanitation Technical Officer, Professional Level Vehicle Emission Control Sub-Division, Air Quality and Noise Management Division, Department of Environment, Bangkok Metropolitan Administration (BMA)

Norihiko Nomura Executive Director, Climate Change Policy Headquarters, City of Yokohama

Satoru Yokota Executive Director, Kawasaki Environment Research Institute

Reiji Hitsumoto Executive Director, Office for International Environmental Strategies, City of Kitakyushu

4 Key Messages

Although the backing for ambitious city-level environmental policies by senior figures such as Mayors is vital, actions cannot be sustained without the backing of the citizenry.

For green growth and environmental policies to be effective, a long-term vision must be shared by all stakeholders.

Cities must look to examples from research as well as national and international city networks in order to ensure that plans consider and incorporate the good practices.

5 Summary of Presentation

IGES

Launching the parallel session, Ryoko Nakano gave a short framing presentation to outline concepts underpinning the urban sustainable development discourse in Asia. After pointing to the importance of integrating social, environmental and economic considerations, she introduced the audience to the concept of sustainability transitions. Whilst the concept has been used for quite some time, it was noted that over the past decade Dutch scholars have reinvigorated discussions, emphasising features such as niche development as well as regime and landscape change. The speakers were then invited to introduce city efforts seeking to bridge across from theory to practice.

Wuppertal Institute for Climate, Environment and Energy

Johannes Venjakob introduced the research approach of the institute, used to guide projects on transitions research. The framework entails defining targets and understanding socio-technical systems in their natural environment, defining socio-ecological targets as well as identifying trade-offs and synergies. On the basis of these preparatory activities, multi-level experiments on sustainability transitions are planned and carried out.

The case of the city of Bottrop, a former coal-mining town that experienced considerable structural change due to industrial decline, illustrates this approach. Wuppertal Institute was asked to support the development of a proposal for a model city competition held by a business association. The proposal, focusing on a pilot region encompassing 70,000 inhabitants and 14,500 buildings, was selected as the winner of the competition and Bottrop was awarded the title of InnovationCity Bottrop. The master plan for the project was developed by a private firm and can be categorised into four broad categories, namely (1) Elaboration Phase; (2) Design Phase; (3) Innovation Phase; (4) Innovation Compendium. Recently, a blueprint for urban retrofitting has been developed based on InnovationCity Bottrop and there are plans to translate this publication into English in the near future. A key feature of the innovative project design is the project management structure, involving a broad range of stakeholders such as citizens, politicians, craftsmen and industry / commerce. The project is supported by a private sector board of 62 companies. Furthermore, the project features a scientific board (26 institutions) as well as an inter-ministerial working group. Since its launch, the InnovationCity Management GmbH has facilitated approximately 200 projects, retrofitting residential areas and commercial spaces as well as by launching renewable energy, electric mobility and broader urban development schemes.

OECD

Tadashi Matsumoto focused his presentation on three main points: (1) the organisation's approach to urban green growth; (2) key issues for Asian cities; (3) an overview of urban green growth dynamics in Asia. He emphasised the OECD position that green and growth can go hand-in-hand, seeing no conflict between pursuing economic growth and doing so in a green manner. Moreover, cities are important in the debate on green growth, being both a part of the problem as well as the solution. This is particularly important in Asia, which is vulnerable to climate change and natural disaster, whilst also facing on-going problems such as air pollution. The OECD, therefore, advocates an approach to urban sustainable development that builds upon policy complementarities to achieve sustained growth, social cohesion and environmental sustainability. An integrated policy framework should address and link sectors such as energy, land use/transport, buildings, water, solid waste green goods and services. At the same time, desired outcomes of green jobs and innovation, inclusiveness, climate change adaptation and mitigation, healthier local environment/urban attractiveness must be considered.

An initial study carried out by OECD involved four cities, including Stockholm, Paris, Chicago and Kitakyushu. The OECD is now turning its attention to Asia with the release of a concept paper in June 2014 and city case studies to be completed during 2014-15 covering Bangkok, Hai Phong and Johor Bahru. Knowledge sharing workshops will take place this year in Bangkok (6-7 August) and Tokyo (14-16 October).

Ministry of the Environment, Japan

Japan is supporting leapfrog development, a concept which focuses on the simultaneous achievement of a low-carbon, resource recycling and naturally symbiotic society with economic growth, avoiding the high energy dependency and polluting path previously taken by now-developed countries. Japan is supporting this through the Joint-Crediting Mechanism (JCM) whereby there is an effort to transfer leading low-carbon technologies and experience with mitigation actions. These actions are carried out in cooperation with developing countries and resulting reductions in greenhouse gases GHGs (in the form of credits) are to be used to offset Japan's domestic emissions. Thus far Japan has signed bilateral agreements with 11 countries and funds are being made available to support project conception, development and implementation. Further, 15 feasibility studies have been supported across the Asian region thus far. To pave the way for the project development stage, additional funds have been sourced from JICA and the ADB. Development towards low-carbon cities in Asia is being supported through the development of three platforms – a local government platform, a business platform and a research platform – to ensure a comprehensive approach. The local government platform is particularly crucial as it is the previous

achievements of cities that have made JCM possible. Without continued local government efforts the JCM project could not succeed.

City of Siem Reap, Cambodia

Siem Reap is urbanising swiftly as a result of population and tourism growth. Against this backdrop, local government officials face increasing pressure to develop transport infrastructure (sidewalks, parking lots, signposts, etc.), expand wastewater systems (sewerage and drainage facilities), improve solid waste management (lack of sanitary landfill, public awareness) and address other livelihood issues such as squatting. Cambodia has recently created a Clean City programme to assess the environmental performance of cities. The assessment is informed by data on seven basic indicators, which are further sub-divided for a more detailed assessment (environmental arrangement and management; cleanliness; waste management; awareness raising; green areas; health safety, security and urban arrangement; tourism infrastructure and facilities). In order to improve the city's performance on these indicators, Siem Reap has undertaken a variety of solid waste, wastewater, road network, tourism and public service projects. One of the main projects is the EcoMobility project, which aims to alleviate transportation problems by means of park and ride schemes and improved auto-rickshaws licensing and regulation procedures. It is envisaged that the intervention will lead to increased incomes for the drivers, a more reliable service and lower levels of pollution.

City of Batam, Indonesia

Batam is a free trade zone and free port located on an island 20km south of Singapore with an economy focused predominantly on transshipment, trading and services. Batam boasts a great deal of modern infrastructure with nine cargo and sea ports, an international airport as well as comprehensive electricity, road, telecommunications, water and gas networks. Nevertheless, due to dramatic increases in population, Batam is starting to suffer from environmental problems. Moreover, with its limited space, Batam is seeking high technology solutions and, as the population grows from 1.2m to 3m, it aims to develop three new cities for an additional one million inhabitants. A focus on green growth will therefore be vital for the zone's future.

Batam has received a great deal of domestic and foreign investment with a total of USD15.7bn received up to December 2012. Batam has formed a JCM-supported partnership with Yokohama to help strengthen local government capacity. Investment is actively sought and, to encourage further inflows, an integrated investment service unit has been established, providing under-one-roof support for investment licenses and permits. The government of Batam is confident of its attractive investment climate, citing preferential taxation policies, a strategic location, modern infrastructure and a healthy environment as key strengths.

City of Bandung, Indonesia

The representatives of Bandung provided an overview of the city's on-going low carbon city development work. Bandung is the capital of West Java Province and the third largest city in Indonesia. A central tenet of Bandung's low-carbon strategy is the concept of leapfrog development, by which Indonesia aims to develop without the environmental degradation experienced by developed countries in the past. Bandung is very interested in green technology and there are six components to Bandung City's plan – urban green / open space; public street lighting; sustainable solid waste management; wastewater treatment; clean water supply and sustainable transportation. With international support, it is anticipated that urban green open space will increase from 12% (2013) to 23% (2018) and public lighting will be improved from 27,091 (2013) to 36,000 spots (2018). The waste diversion rate to landfill is expected to fall from 69% (2013) to 25% and waste sent to waste-to-energy plants is estimated to reach 35% by 2018. Furthermore, efforts will be made to increase wastewater treatment coverage from 64% (2013) to 74% (2018) by constructing communal septic tanks as well as a sewerage conveyor pipe to connect riverside properties to the city's domestic wastewater plant. Lastly, improvements to the transportation system are being planned to reduce emissions. Projects under consideration include a Mass Rapid Transportation (MRT) system as well as further bike-sharing and pedestrian schemes.

City of Bangkok, Thailand

Bangkok is currently facing a variety of environmental problems which are being addressed in the 12 year Bangkok Development Plan (2009-2020). The plan covers waste reduction and recycling; water quality management; flood control and drainage; global warming mitigation and energy conservation; forest conservation; expansion of green areas; efficient air and noise pollution control. In parallel, there are further plans related to transportation (multimodal transport); better air quality (actions integrated across government and public stakeholders); solid waste management (aiming for 27% final disposal rate by 2026). Bangkok also has drawn up plans to combat global warming through improved traffic management; the promotion of renewable energy; improved building energy consumption / efficiency; improved solid waste and wastewater management; expanded park areas. The city is implementing these plans with a mix of domestic and international support. Other on-going work includes the OECD Green Growth programme in which Bangkok is being assessed over a period of 12 months, with a report being produced giving targeted advice on green growth strategy-making. Bangkok has also recently signed an MOU with Yokohama City on promoting sustainable urban development, to include assistance from both government and private sector stakeholders.

City of Yokohama, Japan

Yokohama presented its past and future city development activities. Yokohama, the largest designated city in Japan, is an international port city near Tokyo. Experiencing rapid growth during the post-war years, Yokohama successfully overcame its environmental problems by adopting six strategic projects in 1965 based on public-private partnerships. The projects initially faced considerable public opposition, but by holding large meetings with up to 6,000 citizens, the Mayor managed to address many concerns and broad approval was eventually secured. Whilst not on the same scale, public meetings are still being held with over 100 citizens attending today. In recent years, work has focused on four projects: the Yokohama Green-Up Plan; Yokohama Smart City Project; Yokohama Partnership of Resources and Technologies (Y-PORT); FutureCity Yokohama. The Yokohama Green-Up Plan aims to improve urban greenery through forest and farmland conservation as well as greenery promotion, paid for through the Yokohama Green Tax. Yokohama has improved the quality of water and coverage of the sewerage system. Yokohama Smart City aims to make Yokohama the world's leading smart city through a Central Energy Management System (CEMS) involving numerous private companies. Y-PORT is an international technical cooperation project based on public-private partnership and drawing on the resources and technology of Yokohama. The FutureCity project aims to create a city beneficial for all its inhabitants through the environment (low-carbon and energy saving technologies), economy and society (with an emphasis on the ageing society problem).

City of Kawasaki, Japan

Satoru Yokota outlined Kawasaki City's recent and historical environmental achievements. Kawasaki City is a medium-sized city located close to Tokyo with a prominent manufacturing sector. Much of the industrial sector is based in coastal areas on reclaimed land. Kawasaki City has created a strong foundation for its current work based on past achievements in improving air and water quality, with sulphur oxide and dioxide levels decreasing substantially, river water quality massively improving and full sewerage coverage being developed. Green plans have been introduced ahead of other cities in Japan, with companies being mandated to provide green spaces in their work areas. Kawasaki City has also created effective policies and plans to address both the environment in general and global warming in particular, which has led to a reduction in greenhouse gas emissions of 18.3% against a 1990 baseline. In recent years Kawasaki City has established Eco-Town, Smart City and Smart Community projects. The Eco-Town was established in 1997 with the purpose of facilitating companies in developing resource recycling production and constructing the Kawasaki Zero Emissions Industrial Park, which is oriented towards waste reuse and recycling. The Smart City strategy aims to create energy efficiency through the use of ICT to assess the city energy, traffic and city planning. The Smart Community project is a pilot

project to help realise this, concentrating on building efficiency through HEMS (Home Energy Monitoring System) and BEMS (Building Energy Monitoring System).

City of Kitakyushu, Japan

Kitakyushu City presented on its environmental achievements and how these have been disseminated across Asia. Kitakyushu City, located in Western Japan, is an industrial city with a population of around 1 million. During a period of rapid post-war industrial development, it became a symbol of pollution but has since successfully reinvented itself as a model green city through partnerships with citizenry, government, academia and the private sector. Kitakyushu's Green Frontier Plan aims to reduce CO₂ emissions by 40% by 2050 along with assisting the Asian Region to reduce emissions by the equivalent of 150% of Kitakyushu's. As of March 2013, Kitakyushu City collaboration with JICA and the Kitakyushu International Techno-cooperative Association (KITA) has involved 7,059 people in 146 countries. Other successful assistance projects include the Dalian (China) Environmental Demonstration Zone leading to a UNEP award, solid waste cooperation with Surabaya, Indonesia, leading to 30% reduction in waste sent to landfill and water supply improvement in Phnom Penh, Cambodia, leading to a reliable supply of potable water and a non-revenue water ratio similar to Japan. Kitakyushu has also been internationally recognised for its achievements through, amongst others, its participation in the OECD Green Cities Programme alongside renowned international cities of Paris, Chicago and Stockholm.

6 Summary of Discussion

In response to a question on how to scale up a project like InnovationCity Bottrop, Johannes Venjakob stated that a framework to transfer the initiative to other cities in Germany is currently under development. He conceded, however, that transferring the project internationally would be very difficult, as socio-economic and political landscapes are so different.

The OECD recognised the vastly different conditions between Asian cities in emerging and developed countries. Nevertheless, there are still ample opportunities for mutual learning in the form of policy development. The city of Stockholm, which is widely known for its innovative approach to green growth, can serve as a good example in this regard. Whilst the city itself is very active in the field, there is very little cooperation with neighbouring cities. Similarly, there is a lack of cooperation between cities and neighbouring provinces in developing countries, such as in the case of Jakarta.

On the role of joint-crediting mechanism (JCM) in facilitating approaches via city-to-city collaboration, it was stressed that seemingly single sectoral problems are often interlinked. City collaboration under JCM therefore can have a much broader scope, with Japanese stakeholders from the private sector and local government practitioners not only supporting partner cities through technology transfer, but also by sharing experience in areas such as environmental management, policy making and education / capacity building.

In response to a representative from Bandung's question regarding how success in Japanese cities could be sustained, a representative from Yokohama answered that accountability and transparency are critical. Illustrating as much, following the initial work in the 1960s by Mayor Asukata, environmental policies became a central issue in elections. For example, citizens actively voiced demands for a sewer system and this could not be ignored by candidates, regardless of their political affiliation. Kitakyushu's elected leadership agreed and underlined that the impetus for the construction of the system came directly from the citizenry.

A representative from Batam asked a question on funding sources for projects and how cities dealt with funding gaps. Yokohama answered that 50 years ago, funding was scarce and the city had to address the issue in a variety of ways, for example, making land available for certain projects at low cost as well as seeking funds from the national government and international sources. Kitakyushu stated that the city has received funding from local taxation, national government and the private sector. Due to the strong support of the citizens the city was able to share the funding burden amongst all stakeholders.