

APPENDIX E

Summary of Thematic Session A: ASEAN ESC Cities Part 1

This session was chaired by Dr. Vann Monyneath (Chair, AWGESG), and co-chaired by Ms. Natalia Derodofa (Senior Officer, Environment Division, ASEAN Secretariat. A total of seven presentations were made:

1. *“6th HLS Presentation in Thematic Session A: Balikpapan, Indonesia”* by Ms. Rosmarini, Secretary, Environment Bureau, City of Balikpapan
2. *“Malang toward Green City”* by Mr. Arif Dermawan, Programme Coordinator, Malang City Environmental Board, Government of Malang City
3. *“Chiang Rai: A livable and happy city”* by Ms. Woranut Prihira, Assistant Director, Chiang Rai Municipality
4. *“Phichit Municipality: A livable city towards ASEAN ESC”* by Mr. Anucha Srisutiruk, Deputy Mayor, Phichit Municipality
5. *“Project for support the role model of ASEAN Environmentally Sustainable Cities (ASEAN ESC Model Cities), Phanat Nikom Municipality”* by Mr. Vijai Amaralikit, Mayor, Phanat Nikom Municipality
6. *“The Role Model City on ASEAN Environmentally Sustainable Promoting Project”* by Mr. Srisuk Saenyotkham, Mayor, Renunakhon Municipality
7. *“ASEAN Environmentally Sustainable Cities Model Cities; ASEAN ESC Model Cities”* by Acting Mayor Poonsak Chotkamphonpong, Municipal Clerk, Nongteng Municipality

Ms. Rosmarini, Secretary, Environment Bureau, City of Balikpapan presented “6th HLS Presentation in Thematic Session A: Balikpapan, Indonesia”.

Balikpapan is a seaport city in the east coast of East Kalimantan Province in Indonesia, and is well positioned to act as role model for other cities. The city was founded on 10 February 1897. Balikpapan has a major port, airport, oil refinery, and industries.

The Mayor of Balikpapan is Mr. Rizal Effendi. The total area of the mainland is 503.3 km² (194.33 square million). The population of the city in 2014 was 701.066, with a density of 1.400/sq. km.

Balikpapan won the ESC Awards in 2011, the Indonesian Most Livable City in 2013, and the

ESC Awards in 2014 for 3 cleans category.

The topography is hilly (85%) and flat land (15%). The soil contains yellow-reddish podsolitic, alluvial, and quartz sand. Balikpapan has a tropical rainforest climate, with an average temperature of 27 degrees Celsius.

The city's main challenges include a lack of energy efficiency, environmental impacts from industries, and rapid population growth. The city's main priorities include utilization of industrial chemical waste, waste management, transportation & green living, emission reductions, and green infrastructure. The Model City Program for Balikpapan activities includes three indicators: ***clean land, air & water.***

For clean land, the strategy towards eco-city focuses on solid waste management (SWM) program, e.g., sanitary landfill, green schools and waste bank (3R), and Manggar Landfill, known well as the best landfill operation in Indonesia and ASEAN countries.

For clean water, we promote and built an offsite sanitation system for education on waterborne housing along the coast.

For clean air, the city encourages the people to keep the open space (ratio 52% : 48 %) usually for green space (protected forest, mangrove, botanical garden, etc.).

Mr. Arif Dermawan, Programme Coordinator, Malang City Environmental Board, Government of Malang City presented "Malang toward Green City."

Malang has a population of 836,373 and a land area of 11,006 ha. It is located 380 to 667 meters above sea level.

As an ASEAN ESC Model City, Malang has focuses on the main issues of gender and school-based public awareness on wastewater management. The scope of the project is 20 environmental cadres of Kelurahan Kradjan and Kelurahan Kauman, and 20 environmental teacher-cadres from ten elementary and junior high schools.

The projects are expected to have the following development impacts:

1. Comprehensive understanding of the environmental cadres on waste management and communal wastewater. They are expected to be the driving

forces in their area.

2. Understanding of environmental teacher-cadres on waste management and communal wastewater in schools, conduct and facilitate environmentally-friendly activities in schools, and pass on knowledge and good practices to students.

Malang's next program, "Management of People Movement," will have a focus on issues related to climate change, in particular related to air pollution. The number of vehicles in Indonesia keeps rising each year. The CO₂ emissions in the city total 249,120,924 kg/tj, with the three highest emissions coming from private vehicles, motorcycles, and small vehicles. Each year, a total of 278,558 people visit hospitals. The three highest number of patients visit hospitals for upper respiratory infections, primary hypertension, and influenza.

Ms. Woranut Prihitan, Assistant Director, Chiang Rai Municipality presented "Chiang Rai: A livable and happy city."

The city has an agreement with the people of Chiang Rai to conserve and build a "City of Trees", carry out non-polluting activities in the home, create a lifestyle based on efficient energy consumption, and develop plans for sustainable consumption in the home. Chiang Rai also educates children on their environmental responsibility.

City of Trees: Chiang Rai has 1,832 big trees and 143 tree species. There is an average of 38.17 trees in each community. The city carries out the conservation of ancient trees and plants trees in urban areas, including low-carbon house competition project, support to local residents to grown vegetables and traditional herbs, and expand the network of the public and private sector to develop green areas.

City of Waste Minimization: Chiang Rai also carries out waste minimization activities, including the 3Rs, waste management at source, and waste and wastewater management with the participation of the public.

City of Energy Efficiency: Chiang Rai aims to increase the use of public transportation and bicycles to make the city more energy efficient. A community-based tourism bicycle route is 13.42 km long and takes about one hour to complete.

City of Sustainable Consumption: To improve sustainable consumption in the city, Chiang

Rai promotes the growing of non-toxic vegetables, improvement of the process of self-reliant production, use of short-distance transportation, prohibition of rice stubble burning, and expansion of agricultural areas.

Mr. Anucha Srisutiruk, Deputy Mayor, Phichit Municipality presented “Phichit Municipality: A livable city towards ASEAN ESC.”

The vision of Phichit Municipality is one of a “livable city with efficient management and effective service to make people satisfied.”

The goals of this vision are the creation of a healthy and well-being city, environmental management, and low carbon city. The vision also includes a future pathway.

Under the first goal of the vision, a healthy and well-being city, Phichit Municipality’s strategy is to build the livelihoods and well-being of the community by preserving and protecting environmental services and highlighting the communities’ common goals and participatory processes. The second goal of the city, environmental management strategy, focuses on Phichit Municipality’s strong commitment to ESC and ideas through the action plan of a livable city. The third goal of the vision, low carbon city strategy, focuses on four points:

1. Creating a city of trees: Increasing the CO₂ absorption factor, tree surveys and conservation, tree planting at special events, and focus on perennial trees
2. Minimizing waste: Sanitary landfills and household waste separation, organic fertilizer from organic waste, waste bank and waste reuse/recycling, and creation of product value from recycled waste
3. Energy efficiency: Electric and fuel savings, supporting alternative energy
4. Sustainable consumption: Environmental behavior, such as self-sufficiency, eco-friendly products and services, recycling wastewater, and adapting recycled materials into festivals or other activities.

The future pathway for the city includes a focus on the development of a knowledge hub and learning center for environmental management, sharing experiences, and passing on key lessons learned to other municipalities.

Mr. Vijai Amaralikit, Mayor, Phanat Nikom Municipality presented “Project for support the role model of ASEAN Environmentally Sustainable Cities (ASEAN ESC Model Cities), Phanat Nikom Municipality.”

Under the concept of Clean and Green Land, Phanat Nikom focuses on waste management and urban greening.

Under waste management, the city carries out waste separation projects by local people, public schools, and the Department of Public Health and Environment.

Phanat Nikom Municipality also purchases recycled waste that has been separated and conducts joint meetings about the use of biodegradable plastic. Other activities include a cotton bag campaign and creation of eco-friendly products from organic waste.

In the city, the total amount of green areas is 91,012 km², or 7.43 m²/person. This is higher than the standard criteria of the Ministry of Natural Resources and Environment in Thailand (5 m²/person), but lower than the criteria of the World Health Organization, which is 9 m²/person. Under this program, the city and communities also register trees. At this time, 969 trees (66 species) have been measured.

Mr. Srisuk Saenyotkham, Mayor, Renunakhon Municipality presented “The Role Model City on ASEAN Environmentally Sustainable Promoting Project.”

The vision of Raenu Nakorn Municipality is that of a “cultural city with a good environment for a happy life.”

The municipality’s strategy & SWOT analysis as ASEAN ESC role model focuses on four groups: arts, cultures, and traditions; Phu Thai cuisine; handicrafts; and way of life.

In implementing its plan as an ASEAN ESC role model, the municipality carries out various activities:

1. Phu Thai culture plan: Strategy to develop knowledge and understanding of passing on the culture of Phu Thai in both formal and non-formal education system through public relations, traditional dance competitions in schools and communities, and providing entertainment for guests and ceremonies
2. Phu Thai cuisine: Strategy and action plan to support non-toxic food ingredients, establish learning center, and create a cuisine network and partnership.
3. Phu Thai handicrafts: Strategy and action plan to support eco-friendly

products, local traditions and knowledge in cloth weaving, sewing, lacing, and yarn knitting, public relations, and marketing.

4. Phu Thai local and eco-tourism: Strategy and action plan to enhance knowledge on local eco-tourism economics, support the community's homestay lifestyle, and traditional dance learning center.

Through the municipality's activities on ESC, Raenu Nakorn has conserved and preserved its local sustainable resources, ensured food safety, preserved and promoted local wisdom, promoted the Phu Thai lifestyle to ASEAN nations, supported Phu Thai village tourism management and local economy, and carried out waste recycling.

Acting Mayor Poonsak Chotkamphonpong, Municipal Clerk, Nongteng Municipality presented "ASEAN Environmentally Sustainable Cities Model Cities; ASEAN ESC Model Cities."

The concepts of Nongteng as a livable and environmentally-sustainable city are economic sufficiency, Buriram cast management, and public participation. As a livable city, Nongteng focuses on quality of life, community culture and identity, and economic sufficiency. The city also focuses on sustainable natural resources and environmental management, networks of partnerships, and the ASEAN environmental learning center.

As an ASEAN ESC Model City, Nongteng focuses on water management in the agricultural sector, increasing green areas, decreasing energy consumption, and rebalancing sustainable development.

Under their objective of a "livable city and people, and efficient sustainable environmental management," Nongteng has seven strategies:

1. Supporting natural resources and environmental conservation/restoration
2. Effective community environmental management
3. Network/partnerships on environmental management in all levels
4. Integrated water management: Increasing green areas and green agricultural activities
5. Energy consumption and renewable energy consumption
6. Efficient waste management
7. Role model as ASEAN Environmental Management Learning Centre

The city has implemented a variety of activities, including water for household consumption,

water for agricultural sector, increasing green areas, renewable energy use and decreasing mainstream energy, rebalancing the environment, efficient waste management, and silk weaving from natural dyes.

Through these activities, the city has become more efficient in environmental management, shared their experiences and practical processes involving local people in Thailand and ASEAN, solved problems of local people affected by economic growth, community expansion, and urbanization, and gained knowledge to bring about efficient environmental management in communities, sub-districts, and national levels.

Discussion:

Question to the panelists:

Is there a set of criteria available to certify that cities are environmentally sustainable cities?

Answer:

Currently ASEAN ESC criteria comprise three areas: clean air, clean land and clean water. These are guidelines set at the regional level however the individual circumstances and capacities of each country differ significantly, raising the question of by what means these indicators can be effectively implemented. As a part of these efforts, the ASEAN ESC Community Draft Action Plan was presented in Plenary Session 1 and it is hoped that this long term vision can incorporate an examination of these issues.

Moreover, ASEAN has established the ASEAN ESC Awards which take place every three years. Under these awards there is also a special category entitled "Certificate of Recognition". In order to determine the recipients of these awards, national governments are requested to nominate cities which are then assessed under the ESC guidelines. This is one of the ways in which ASEAN is endeavouring to encourage cities to be more environmentally sustainable. The Singapore Biodiversity Index is also being used at the regional level as a reference.

Answer:

It is agreed that such indicators need to take into account the capacity and circumstances of each country. In Thailand for example a strong emphasis is not only placed on quantitative data such as air quality, but also "soft" indicators such as citizens' happiness and support for cultural activities. Ultimately cultural context will determine the motivation of each country or city to implement indicators. It was interesting to hear of the Japanese indicators in the FutureCities

Initiative Forum yesterday, but it is important to consider what the aim of such indicators is relative to local capacity and plan accordingly.

Summary of Thematic Session B: Capitalising on Opportunities for Air Quality Action

This session was chaired by Ms. Mary Jane Ortega (Member, Board of Trustees of Clean Air Asia), and co-chaired by Mr. Boyd Jouman (Senior Vice President (Environment), IRDA). A total of five presentations were made.

8. *“Opportunities for leapfrogging air quality action”* by Ms. Kaye Patdu, Air Quality Program Manager, Clean Air Asia
9. *“Roll-out of Clean Air Plan Development in the ASEAN Region”* by Mr. Roland Haas, Programme Director, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
10. *“Work on Air Pollution Prevention and Control in Shenzhen, China”* by Dr. Zijuan Lan, Habitation and Environment Commission, Shenzhen Municipal People's Government
11. *“Air Quality Improvement Measures in Seoul Metropolitan Area”* by Ms. Nakyung Hwang, Deputy Director, Air Quality Management Division, Ministry of the Environment, Republic of Korea
12. *“Environmental Sustainability Programs”* by Engr. Elisa P. Madrazo, City Environment & Natural Resources Office, City of Davao

Ms. Kaye Patdu, Air Quality Program Manager, Clean Air Asia presented “Opportunities for leapfrogging air quality action.”

Clean Air Asia is an international NGO based in the Global South that promotes better air quality and livable cities by translating knowledge to policies and actions that enable Asia's 1,100+ cities to reduce air pollution and greenhouse gas emissions from transport, energy, and other sectors.

Clean Air Asia offers its partners actionable guidance, high-level expertise in air quality management for administrators and policymakers, and partnerships, collaboration, and cooperation as drivers for meaningful and lasting change.

Seven out of 10 cities in developing Asia have poor air quality, and there is a need to address the issue of air pollution because of its impact as the single largest environmental health risk. Asia carries the largest air pollution-related burden, with 3.3 million deaths linked to indoor pollution, and 2.6 million deaths linked to outdoor pollution.

There are various opportunities for leapfrogging air quality action, including the following:

1. Global recognition of importance of addressing air pollution
2. Co-benefits of addressing air pollution and climate change
3. Use of technology and new tools to bridge the gap for data
4. Available regional training systems on air quality and many knowledge sharing platforms

The Guidance Framework for Better Air Quality in Asian Cities provides guidance document for decision makers on how to address key issues in air quality management in Asia (six guidance areas).

Mr. Roland Haas, Programme Director, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) presented “Roll-out of Clean Air Plan Development in the ASEAN Region.”

GIZ is owned by the Federal Republic of Germany and organized as a private-sector entity. GIZ supports the objectives of the German government, with operations in 130 countries and 17,000 staff. It is commissioned by public and private sector bodies both inside and outside Germany, and its main commissioning body is the German Federal Ministry for Economic Cooperation and Development.

The “Cities, Environment, and Transport” (CET) Programme is hosted by Thailand and has three individual components: transport and climate change (TCC), clean air (CASC), and sustainable port development (SPD). GIZ works on the regional (ASEAN bodies), national (ASEAN Member States), and subnational level (cities, ports) to implement these components.

CASC is implemented in 12 cities in 8 countries and has an objective to develop clean air plans for small cities and support implementation. Some key activities include road map elaboration, public participation, refinement of air quality monitoring data, emission inventory development, immediate action plans, CAP development, and training development.

Working on regional projects allows for regional integration at the working level, finding solutions to the same problems, south-south cooperation, exchange of experts, economies of scale, harmonization of approaches and methods, and mainstreaming environmental and climate issues in ASEAN bodies to “trickle-down” to member state authorities.

Dr. Zijuan Lan, Habitation and Environment Commission, Shenzhen Municipal People's Government presented "Work on Air Pollution Prevention and Control in Shenzhen, China."

Shenzhen has a land area of approximately 2,000 km² and a population of about 10.6 million. The city's GDP is approximately 1.6 trillion.

The city has seen the number of days with haze decrease annually since 2004, after an obvious period of increase. The concentration of PM_{2.5} has decreased year by year, with the city's efforts to control air pollution over the past 10 years.

The city has taken measure to optimize its industrial and energy structures:

1. Industry: Keep heavy pollution industries out, eliminate backward production capacity, encourage the development of eco-friendly industries.
2. Energy: Control the amount of heavy oil, preferred natural gas and electric energy, encourage the development of clean energy.

Shenzhen controls pollution emissions of major sources to effectively reduce the amount of pollutants. The city also uses various economic means, such as financial subsidies, market mechanisms, and government procurement, to effectively promote pollution control.

With strict performance reviews, the city is able to effectively improve the work efficiency of responsible departments and ensure that pollution control plans can be carried out.

Ms. Nakyung Hwang, Deputy Director, Air Quality Management Division, Ministry of the Environment, Republic of Korea presented "Air Quality Improvement Measures in Seoul Metropolitan Area."

In the early 2000s, Seoul Metropolitan Area (SMA), the area with the highest population density in Korea, had 1.3-1.4 times higher levels of nitrogen dioxide (NO₂) and particulate matter (PM₁₀) than other areas. The level of air pollution in SMA was 2~3.9 times higher as compared to other major cities in developed countries.

In order to improve the air quality in SMA and bring it up to the standards of cities in the developed world, the Korean government enacted the "Master Plan for the Metropolitan Air Quality Management" in 2003. The plan incorporates a comprehensive strategy through

measures such as cap and trade programs for sulfur dioxide and nitrogen, stricter emission standards for on-road mobile sources, mandatory purchase of low-emission vehicles, and others.

Due to such efforts, both PM10 and NO2 levels have improved over the past decade with their emissions being reduced, as compared to the 2004 levels, by 32% and 20%, respectively. Moreover, the annual concentrations of PM10 and NO2 in Seoul have also decreased steadily since 2004.

Engr. Elisa P. Madrazo, City Environment & Natural Resources Office, City of Davao presented “Environmental Sustainability Programs.”

Davao City is located in southern part of Mindanao, Philippines with an estimated population of 1.5 million.

Davao City declared an Airshed on February 12, 2013 through a Memorandum Circular No. 2002-02 by the Department of Environment and Natural Resources (DENR). The City, DENR and other concerned agencies came up with systematic and scientific anti air pollution programs and emission standards and recently there were about 6 (six) monitoring station.

The assessment is made to determine the present Air Quality of Region XI and the Davao City Airshed with respect with the National Ambient Air Quality Guideline Values of the Philippine Clean Air Act of 1999. As mandated, the Environmental Management Bureau Region XI should provide the general public with updated air quality to protect them from the ill-effects of criteria pollutants and to provide cautionary statements in case of elevated level of criteria pollutants. This is to minimize acute and chronic effects of air pollutants.

The monitoring instruments are all located within the City of Davao which is considered as the economic hub of Region XI. Assessment of Air Quality of the Region therefore is made through deduction method on the condition that Davao City's Air Quality remains in the GOOD to FAIR air quality index and conduct regular monitoring of Air Quality.

Davao City has implemented various ordinances for air pollution including deployment of Anti Smoke Belching Unit on the streets, a New Comprehensive Anti – Smoking Ordinance, Implementation of Fire Cracker Ban and Ecological Solid Waste Management Ordinance.

The City has also enhanced and developed islands on the roads, preserved and rehabilitated urban greenery and forest area, establishments of coastal park, rehabilitated coastal banks, desiltation of riverbanks, uplands and watershed areas.

Discussion:

Question to Dr. Zijuan Lan, Habitation and Environment Commission, Shenzhen Municipal People's Government:

What is the best way of encouraging a move to cleaner fuels, particularly when industries frequently complain of the costs involved? Are there strategies other than cap and trade that you can recommend?

Answer:

The City of Shenzhen encouraged the transfer by providing a subsidy to affected industries. The level of this subsidy was discussed prior to the implement with associated stakeholders to ensure support and success.

Cap and trade is more efficient than setting limits to emissions. A cap and trade system is a good way to get better results. Another method is to bring stakeholders together within a voluntary system. This was implemented in China involving four cities between 2007 and 2011 with emissions occurring during this timeframe being monitored by the government. The scheme was successful with emissions reductions being recorded.

Question to Ms. Kaye Patdu, Air Quality Program Manager, Clean Air Asia:

What work is on-going in the region to deal with the problem of trans-boundary pollution?

Answer:

Clean Air Asia works on urban air quality issues, mainly working directly with cities. In terms of trans-boundary issues, Clean Air Asia has been working with Chinese cities within the Yangtze (Shanghai and surrounding cities) and Pearl (Guangdong and Hong Kong) River deltas. It has been found that it is important to have collaboration within the region so that individual cities/provinces can reduce air pollution by themselves. Recognising the importance of the movement of air pollution within different regions is also crucial. Within ASEAN we experience haze within Singapore, Malaysia and Indonesia. There are efforts on-going in terms of identifying hot spots and what can be done to address them. Strong collaboration is required.

All ASEAN nations have now ratified the ASEAN Agreement on Trans-boundary Haze Pollution as of 2014, we should therefore start to see reductions in the coming years.

Question to Ms. Kaye Patdu, Air Quality Program Manager, Clean Air Asia:

Please explain further about the walkability app.

Answer:

The app came about from improving a global walkability survey which was implemented in twenty three cities across Asia with support from ADB. The survey accounts for the different area types such as commercial, residential and industrial. As this survey was done by partner universities and Clean Air Asia it was labour intensive and limited in scope. With support from Shakti Sustainable Energy Foundation the app was created to scale up the survey responses and raise awareness of the issue to a critical mass. The app is currently on Android with iPhone in the pipeline.

Question to Mr. Roland Haas, Programme Director, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ):

Please explain the change post-2015 from three projects to two under your programme. Among the approaches used, which do you think is best for the cities?

Answer:

The decision to end Clean Air for Smaller Cities and Sustainable Port Development was taken by the relevant German Ministry following the completion of the second phase. It was acknowledged however that it was important to continue similarly themed work in order to sustain the achievements of the projects. Sustainable Mobility in Metropolitan Regions came out of the desire to incorporate concerns regarding land and shipping emissions into a wider metropolitan area so that related rural issues could also be included and examined.

The most successful approach was the involvement of the local universities and the municipalities which helped create ownership. Frequently academia and local government officials had not previously collaborated. Focus on awareness and public participation was also a key to success. Systematic approach such as the use of data and creation of action plans was much appreciated.

Summary of Thematic Session C: Decarbonising Cities

This session was chaired by Dr. Tadashi Matsumoto (Senior Policy Analyst, Regional Development Policy Division, Organisation for Economic Co-operation and Development), and co-chaired by Dr. Junichi Fujino (Senior Researcher, National Institute for Environmental Studies). A total of twelve presentations were made.

13. *"Iskandar Malaysia: Being A Smart City in the context of Low Carbon Cities"* by Ms. Ivy Wong, Vice President, Environment, Iskandar Regional Development Authority (IRDA)
14. *"Toyama: Creating a Compact City"* by Mr. Masashi Mori, Mayor of Toyama
15. *"Developing a Low Carbon Society under Collaboration between Bandung and Kawasaki"* by Dr. Akira Ogihara, Manager, Project and Research Section, Urban and the Environment Division, Kawasaki Environment Research Institute, City of Kawasaki
16. Comments by Mr. Deosdino Chrishna Swastama, Environmental Rehabilitation Division, City of Bandung
17. *"Smart City Management and City to City Collaboration"* by Mr. Toru Hashimoto, Director, International Technical Cooperation, City of Yokohama
18. Comments by Ms. Tassanee Artwichit, Sanitary Technical Officer, Department of Environment, Bangkok Metropolitan Administration (BMA)
19. *"Creating Low-Carbon Cities in Asia through Intercity Cooperation"* by Mr. Kengo Ishida, Executive Director, Asian Center for Low Carbon Society, Environmental Bureau, City of Kitakyushu
20. *"Haiphong Action toward Green Port City"* by Ms. Cao Thi Lan Anh, Deputy Head, Legislation Division, Department of Natural Resources and Environment, City of Haiphong
21. *"Ho Chi Minh City – Osaka City Cooperation Project for Developing Low Carbon City"* by Mr. Makoto Mihara, City of Osaka
22. *"Low-carbon Ho Chi Minh City Development with Joint-Crediting Mechanism"* by Dr. Dao Anh Kiet, Director, Department of Natural Resources and Environment, Ho Chi Minh City
23. *"Project to Create Low-carbon City of Kyoto"* by Mr. Takuya Matsuura, Section Manager, Environment Policy Bureau, City of Kyoto
24. Comments by Ms. Rotchana Phouangmanivang, Head of Environmental Division, Department of Natural Resources and Environment of Vientiane Capital

Ms. Ivy Wong, Vice President, Environment, IRDA presented *"Iskandar Malaysia: Being A Smart City in the context of Low Carbon Cities"*

Iskandar Malaysia, as represented IRDA, is very honoured to be the first city to host the International Forum on “FutureCity” Initiative outside of Japan and marked the occasion through the signing of a Memorandum of Understanding with the City of Toyama. Collaboration will focus on the areas of micro-generation and transportation.

Iskandar Malaysia has been established as a region encompassing five different local governments with a vision towards becoming a strong, sustainable metropolis of international standing. In developing a framework towards this vision, IRDA considered not only how to grow but also how to grow sustainably. This is done through three key areas – wealth generation, wealth sharing and resource optimisation and low carbon which will lead to environmental sustainability, green growth and improved quality of life.

Iskandar Malaysia has also incorporated elements of the Smart City Concept which will further help inform the collaboration with the City of Toyama, particularly in terms of the smart economy, smart mobility and smart environment. The City of Toyama’s expertise in public transportation will help inform IRDA’s thinking in this regard.

The region is further prioritising reductions in its carbon footprint particularly through green buildings and energy. The creation of a society that is aware of their carbon footprint and can take action is also an important element of the work. IRDA has further created Green Economic Guidelines (GEG) manuals for the region for each of its nine promoted economic sectors.

Mr. Masashi Mori, Mayor of Toyama presented “*Toyama: Creating a Compact City.*”

Toyama has a vision for the compact city of the future. This vision includes the establishment of a compact city based on efficient public transportation, increase in the quality and range of civic life amenities, and taking full advantage of the city’s strengths.

The development of a LRT network is a key to modifying the current dependency on automobiles and creating a compact town where everything is within walking distance. Toyama is planning to connect the bullet train with the north and south tram lines, as well as improve life for the elderly by establishing pedestrian-friendly areas downtown where preventative care facilities are networked with city services.

Toyama is also involved in activities to promote local industries, including geothermal uses

for rural agriculture, waste-to-energy projects for agriculture, and micro-hydroelectric power for agriculture.

Toyama has been recognized internationally for its compact city policies, and is the only city chosen in Japan for the Rockefeller 100 Resilient Cities initiative.

With its compact city strategy, Toyama can achieve environmental benefits, economic values, and social values in order to create a sustainable society that has a balance between economic and social values, and the environment.

Dr. Akira Ogihara, Manager, Project and Research Section, Urban and the Environment Division, Kawasaki Environment Research Institute, City of Kawasaki presented “Developing a Low Carbon Society under Collaboration between Bandung and Kawasaki.”

Kawasaki, called “Industrial City Kawasaki,” has a population of 1.45 million people and developed as a manufacturing city and has recently transformed itself into a city of high-technology and industry, and as a base for industrial technology and research and development.

Kawasaki suffered extensive pollution problems during the period of high economic growth in Japan. As a result of the city’s antipollution measures, various technologies and know-how were developed from the initiatives of businesses, residents, and the government.

Kawasaki has collaborated with Bandung through the UNEP/IETC Eco-Town Project and Asia-Pacific Eco-Business Forum since 2006. The priority areas for collaboration include promotion of environmental awareness (mainly on the segregation of solid waste), air pollution, water pollution, solid waste management, environmental technologies, and climate change.

In FY 2014, a kick-off workshop and site survey were carried out, as well as field surveys and stakeholder meetings. Sampling and monitoring, site visits in Japan, and workshops were also conducted.

Other activities included capacity development for low-carbon city development, training workshops on waste management, and capacity building training workshops. An analysis on

issues for scaling technology and knowledge transfer for scaling low-carbon development also focused on building capacity, engaging stakeholders, mobilizing resources, and sharing what was learned.

Mr. Deosdino Chrishna Swastama, Environmental Rehabilitation Division, City of Bandung gave comments on City of Bandung's collaboration with the City of Kawasaki.

The City of Bandung, under the guidance of the new mayor, has opened many opportunities for stakeholders' involvement in sustainable development and environmental cooperation under the city's vision of creating a modern city which strengthens its culture and local wisdom, conserves natural resources and is wise in managing its environment.

In order to achieve this aim, the City of Bandung has established networks with both within and outside the city. As a part of this the City of Bandung has started collaborating with the City of Kawasaki with the assistance of IGES at the beginning of 2014. The City of Bandung has particular problems in solid waste management and energy efficiency which they would like to overcome. The partnership is currently very promising, although there have been initial obstacles such as a lack of technical knowledge as well as time needed to fully understand each city's context. The City of Bandung looks forward to continuing its collaboration with the City of Kawasaki.

Mr. Toru Hashimoto, Director, International Technical Cooperation, City of Yokohama presented "Smart City Management and City to City Collaboration."

Smart City Management goes beyond Smart City Technology. As a Future City, Yokohama will have natural infrastructure to support the city, energy to support life and relationships with people, world-class culture art, cooperation of medical and nursing care to support life, uninterrupted low-carbon energy network, net-zero energy building group, advanced urban infrastructure for water and sewerage, activation of the city for growth industry and culture are, life sciences and state-of-the-art research institute for environmental science, and multi-generation support community.

Yokohama has a number of demonstrations in the city, including BEMS (optimization of energy use), HEMS (optimization of electricity consumption), CEMS, SCADA, FEMS, and EV (electric vehicles).

The Minato Mirai 21 District is a showcase for urban development in Yokohama. Urban planning includes a greener city center, integration of history, culture, and art, and utilization of renewable energy towards low carbon emissions.

Yokohama is transferring its experiences via the Y-Port Project, which is international technical cooperation based on public-private partnership and drawing on the resources and technology of Yokohama.

Yokohama is supporting Cebu's urban development efforts through public-private partnerships, together with support from both national governments, the cities, and local businesses, private sector, and academic organizations.

In cooperation with Bangkok, Yokohama is focusing on energy management, public transport, waste and wastewater; participation by the private sector, academia, and local communities; call for participation by the Thai and Japanese governments and international organizations; and information sharing.

In the implementation of the Bangkok Master Plan, Yokohama is supporting policy development and capacity building in the first stage; sustainable development and technical cooperation in the second stage; and mobilizing advanced technology and incentives for the development of a low-carbon city in the third stage.

Through the active cooperation with aid and international organizations and private sector participation, Yokohama is promoting collaboration with Asian cities.

Yokohama is also developing creative and innovative urban solutions, such as collaboration with private companies in the city, as well as the Asia Smart City Network.

Ms. Tassanee Artwichit, Sanitary Technical Officer, Department of Environment, Bangkok Metropolitan Administration (BMA) gave comments on City of Yokohama's collaboration with the City of Bangkok.

BMA has collaborated with the City of Yokohama on its Master Plan for Climate Change under the JCM project in both the planning stage and receiving capacity development for implementation. BMA has also collaborated with City of Yokohama in other areas such as solid waste management, energy, transportation and urban green planning. BMA has

learned from Japan's experiences and has been able to adapt these ideas to the Thai context.

Mr. Kengo Ishida, Executive Director, Asian Center for Low Carbon Society, Environmental Bureau, City of Kitakyushu presented "Creating Low-Carbon Cities in Asia through Intercity Cooperation."

Kitakyushu is a base for the export of Green Cities. It aims to become the World Capital of Sustainable Development, making use of its designation as an Eco-Model City, Environmental Future City, OECD Green City Programme Model City, and the establishment of the Kitakyushu Asian Center for Low Carbon Society.

The Kitakyushu Model was developed as a support tool to systematically arrange information on the technologies and know-how of Kitakyushu from its experiences in overcoming pollution to its quest as an environmental city. Kitakyushu is utilizing the Kitakyushu Model to promote the export of customized infrastructure packages to cities overseas.

The export of a green cities model and development of master plans is carried out in four steps: basic research, formation of project proposals by sector, development of green city master plan, and overseas business development. This flow has been followed for the cities of Surabaya, Hai Phong, Thailand, and Iskandar Development Region towards the creation of an Asian Green Growth Model.

A project on low-carbon city planning was carried out in Surabaya as a JCM feasibility study in 2013) on potential CO₂ emission reductions in the energy, transportation, solid waste, and water resource sectors.

Local companies have also carried out overseas development of the Kitakyushu Smart Community Project for cogeneration in industrial estates. Energy management projects in hotels and commercial facilities have also been carried out for LED lighting and cogeneration systems. Other projects include intermediate treatment facilities for recycling of waste and waste power generation from urban waste.

Kitakyushu is working with the City of Hai Phong on the development of a low-carbon city plan. The main sectors targeted are waste, energy, transport and conservation of Cat Ba

Island, in addition to water and sewage, rainwater drainage, environmental protection, and green production.

Ms. Cao Thi Lan Anh, Deputy Head, Legislation Division, Department of Natural Resources and Environment, City of Haiphong presented “Haiphong Action toward Green Port City.”

Hai Phong is a port and industrial city with a population of over 1.8 million people. It is the third largest city in Viet Nam and a hub for marine economic development. It plays an important role in economic and social security. The city is an important traffic hub for the key economic region of Tonkin. The port is one of the key economic areas in northern Viet Nam, and is one of the biggest industrial and commercial centers in Viet Nam.

The city faces various challenges including a weak management system and policies, limited research on climate change effects, slow change to the socio-economic structure to deal with climate change, and lack of indicators and standards to evaluate climate change and its effects on the city.

Waste has not been classified at sources and the landfill is reaching capacity. The city lacks a waste treatment facility and in many cases, hazardous waste and regular waste are buried together. There is a large amount of solid waste generated from fertilizer plants and thermal power plants.

Hai Phong is also facing increased energy demand due to population growth and economic development. The city has a high rate of energy loss and low energy efficiency. The city uses old and outdated technology and production lines, as well.

Infrastructure for transportation does not meet the needs of transport vehicles and there are many traffic jams. Most people use private vehicles and the public transport system does not meet demand.

Some main rivers that supply water to the city are contaminated by domestic sewage, industrial wastewater, and sewage from rural areas. The city does not have monitoring data on rivers.

Drainage is not dredged regularly and there are often floods during the rainy season. The city does not possess a sewage treatment plant. Industrial zones sometimes do not operate

wastewater treatment systems and many factories and hospitals do not have wastewater treatment systems, and must discharge untreated wastewater into the environment directly.

Water quality is poor. Air pollution is high, and there is pollution in craft villages.

To address these issues, Hai Phong is aiming to become a Green Port City with support from Kitakyushu and JICA. The city aims to manage investment, focus on industrial production, and encourage projects in other sectors to improve water quality, waste management, and sanitary conditions, as well as improve public transport, conserve energy, and encourage green consumption.

Mr. Makoto Mihara, City of Osaka presented “Ho Chi Minh City – Osaka City Cooperation Project for Developing Low Carbon City.”

Osaka has focused its efforts into developing global warming action plans and managing progress through the PDCA cycle (plan, do, check, action) for solid waste management (waste-to-energy) and renewable energy.

Osaka and Ho Chi Minh City are carrying out a cooperation project on the development of a low-carbon city. Osaka provides expertise and offers a support package that includes environmental technologies and administration. The low-carbon city development project focuses on land use planning, energy, transportation, solid waste management, water management, agriculture, health care, industry, construction, and tourism, and includes the cooperation of the national governments of Japan and Viet Nam, cities of Osaka and Ho Chi Minh, and companies in Osaka and Kansai region.

Support activities include policy development support and professional development for the development of a low-carbon city, and early achievement of all projects through public-private partnerships.

Some JCM projects include the introduction of energy-saving technology in buildings, eco-driving using a digital tachograph system, and integrated solid waste system, including energy recovery.

Osaka is working to achieve economic growth in the city and Kansai region, and create an economic circle that includes all of Asia.

Dr. Dao Anh Kiet, Director, Department of Natural Resources and Environment, Ho Chi Minh City presented “Low-carbon Ho Chi Minh City Development with Joint-Crediting Mechanism.”

Ho Chi Minh City signed an MOU with Osaka City to cooperate on municipal solid waste integrated management in 2011, and another MOU on a low-carbon city development program in 2013. This MOU continued the capacity building program, expanded household separation of waste at source programme in District 1, and aimed to develop the Climate Change Action Plan for HCMC for the period of 2016-2020.

The first stage of the development of the action plan is a greenhouse gas (GHG) emission inventory in HCMC. This stage will identify the total amount of GHG emissions in the city, identify the main sources and sectors of GHG emissions, and propose measures and calculate GHG emission reductions for each sector. The scope of the study will be city-wide and will be carried out from 2014-2015 in the energy, solid waste, wastewater, agriculture, and water supply sectors (2014). Detailed data will be collected for these sectors and data collection will be expanded to other sectors (industry, construction, healthcare, and tourism) in 2015. The study will be developed and conducted with technical support from IGES and Kitakyushu in check-listing and classification, data collection, GHG emission calculations, and reporting and verification.

Limitations include financial and personnel constraints in carrying out detailed objective group surveying, and a large, but not-synchronized data resource, as well as the lack of a systematic data update mechanism.

HCMC plans to continue the GHG inventory in other sectors to develop the Climate Change Action Plan, conduct capacity building for staff at different management levels, and carry out feasibility studies for migration measures, concrete support for mitigation infrastructure projects with JCM.

Mr. Takuya Matsuura, Section Manager, Environment Policy Bureau, City of Kyoto presented “Project to Create Low-carbon City of Kyoto.”

Kyoto has six visions of a society on the Kyoto Program of Global Warming Countermeasures: city for walking and with priority given to people and public transportation,

city that regenerates its forests and values, city of energy creation and community recycling, environmentally-friendly lifestyles, environmentally-friendly economic activities, and waste reduction.

Kyoto has carried out various activities to promote these six visions, including a pedestrian friendly city charter in January 2010, and a comprehensive transportation strategy formulated in January 2010 to reduce the share of automobiles on the road. Kyoto is also promoting the use of renewable energy with subsidies provided for the installation of power generation and energy saving facilities in households, promotion of power-generation projects by residents, and subsidies for energy-saving facilities for small- and medium-sized enterprises. Other activities include a biodiesel fuel project, urban "oilfield" development project, and eco-activities.

Kyoto promotes international cooperation through ICLEI, and has carried out JCM feasibility studies on GHG mitigation projects with Vientiane. Kyoto has also carried out a project on eco-life for children with the Iskandar Regional Development Authority in Malaysia modelled after the "Eco-Life Challenge." Other exchange activities include the Japan and China environmental technology information plaza, which will open in 2015 in Beijing.

Ms. Rotchana Phouangmanivang, Head of Environmental Division, Department of Natural Resources and Environment of Vientiane Capital gave comments on City of Vientiane's collaboration with the City of Kyoto.

As a developing city, City of Vientiane welcomes opportunities to work with international partners such as the City of Kyoto, particularly in the area of technology to make Vientiane a clean and green beautiful and sustainably developed city. Under the JCM project, we hope that Vientiane will be able to become a low carbon and historic city.

Discussion:

Comment:

Prior to my position in the national government of Japan, I previously worked in local government so understand cities' perspective. Cities face many environmental issues which only they can truly understand and the knowledge and experience to overcome. National governments need to provide systems and framework. Currently the framework many cities are working under is JCM. Implementation is always the key to successful work, so it is vital that the cities lead with

cooperation from their citizens as well as support from top leaders. I hope that the Mayor of Toyama will continue to support this valuable work.

Comment:

Japan took a long time to overcome its environmental problems as shown by the many different presentations from the cities today. As ASEAN is facing many problems, it is very positive that there is this opportunity for Japanese and ASEAN cities to cooperate to solve these issues. Although there is a different demographic situation with the Japanese population shrinking and ASEAN population growing, environmental issues are often caused by economic growth so Japan can lend its past experience to assist ASEAN. Another key area is the cooperation of citizens without which projects would fail. Waste separation cannot work if citizens do not comply; public transport cannot function without passengers. Awareness raising is therefore very important. In sum, such events where cities can exchange experiences are very important for the region, and I hope that such events will continue in the future.