

APPENDIX E

SUMMARY OF THEMATIC SESSION 2

Thematic Session 2A: Public-Private Partnerships for ESC

This session was chaired by Mr. Adolfo Guerrero, Head of China Office, Senior Private-Public Partnership Infrastructure Specialist, Cities Development Initiative for Asia (CDIA). A total of 5 presentations were made:

1. *Private-Public Partnerships in Sustainable Urban Infrastructure Developments* by Mr. Adolfo Guerrero, Head of China Office, Senior Private-Public Partnership Infrastructure Specialist, Cities Development Initiative for Asia (CDIA);
2. *Abengoa Water* by Ms. Aranzazu Mencía, Vice-President of Business Development, Abengoa Water;
3. *PPPs for Sustainable Urban Infrastructure* by Mr. Sharad Somani, Partner - Infrastructure Advisory, KPMG;
4. *International Partnerships for Expanding Waste Management Service of Local Authorities* by Dr. Choudhury Rudra Charan Mohanty, Environment Programme Coordinator/Expert, United Nations Centre for Regional Development (UNCRD); and
5. *Myeongpum Maeul: New Village, New Partnership* by Mr. Uk Young Kwon, Specialist for Community Cooperation, Korean National Park Service;

Presentation Summaries (in order of presentation)

Mr. Adolfo Guerrero, Head of China Office, Senior Private-Public Partnership Infrastructure Specialist, CDIA presented 'Private-Public Partnerships in Sustainable Urban Infrastructure Developments'. The presentation began with an overview of Asia's urban challenge now and in the future. It is projected that by 2020, over half of the population in Asia will live in urban areas. This poses serious demands on urban infrastructure; with an estimated \$100 billion a year investment needed for urban environmental infrastructure in the Asia-Pacific region (current spending is approximately \$40 billion a year). Whether the investment gap can be seek within the Private sector, cities face serious challenges to develop urban private-public partnerships (PPPs), among which are lack of national support, lack of local public and private capacity, lack of funding, and lack of services to citizens. CDIA is a demand-driven program supporting medium-sized Asian cities with urban infrastructure development in the sectors of: urban transport; water and sanitation; solid waste; urban renewal; drainage and flooding; industrial infrastructure; and energy. Its message to cities is that infrastructure development leads to: economic benefits; social benefits; environmental benefits; and poverty reduction. Where the organisation focuses its attention in terms of implementing an infrastructure investment project are in the infrastructure investment programming stage, and pre-feasibility studies/project structuring phase. Solutions to the obstacles currently faced by urban areas planning to invest in their infrastructure can be found through flexibility when looking into

projects, an innovative approach, and ensuring capacity in the private as well as public sector. A case study developed by CDIA in India showcased the potentiality on how well environmentally oriented projects can contribute to make feasible projects to involve private sector partners.

Ms. Aranzazu Mencía, Vice-President of Business Development, Abengoa Water presented 'Abengoa Water'. The presentation shared with the audience the experience of the company as technology provider, operators and equity investor, developing water infrastructure projects together with public authorities through public private partnerships. Their experience includes two case studies for developing water desalination plants for two large Asian cities: Chennai (India) and Qingdao (China). With two totally different approaches to the project and the involvement and commitment of the public authorities, the projects have been developed and are already providing long term reliable and sustainable new sources of water for the cities at an affordable price.

Mr. Sharad Somani, Partner - Infrastructure Advisory, KPMG presented 'PPPs for Sustainable Urban Infrastructure'. The presentation began with an introduction of Public-Private Partnerships (PPPs), in a nutshell, as not just, 'Public Party Pays' and 'Private Party Performs', but focussing on service delivery, appropriate risk allocation, spurring innovation and professional management. They are a medium- to long-term contractual agreement between the public and private sector, and mark a fundamental shift in service delivery from asset creation to service procurement.

In response to the question of whether cities need PPPs, the following arguments were put forth: there is a direct correlation between development of cities and national growth; there is a constant demand from urban population for continuous improvement of services; urban infrastructure projects need sustained and dedicated investment; urban infrastructure needs asset management and maintenance best practices; and there is a constant need to innovate and implement contemporary technology, which are best addressed by private sector.

Cities may find it challenging to implement PPPs because of a lack of institutional capacity, a socio-political apprehension from city leadership leading to unwillingness to charge despite willingness to pay by citizens, absence of contemporary accounting systems, lack of creditworthiness (and thereby difficulty attracting investors), multiple stakeholders making such partnerships difficult to maintain and lack of primary information on assets.

The roadmap for addressing challenges include strengthening institutional capacity, implementing adequate reporting and accounting systems and processes, financial governance and rating of finances, political will and support, an enabling framework, planning ahead, investing in project development resources, and community involvement.

Dr. Choudhury Rudra Charan Mohanty, Environment Programme Coordinator/Expert, UNCRD presented 'International Partnerships for Expanding Waste Management Service of Local Authorities (IPLA)'. The IPLA, launched at CSD-19 in New York in May 2011, is a dynamic knowledge platform as well as a decentralised network to address the needs of local authorities and cities, and to share knowledge, communicate across national boundaries and work to spread best practice in order to accelerate the uptake of waste related infrastructure and services at various stages of waste management such as avoidance, prevention, minimization, segregation, collection, transport, recycling, recovery, reuse treatment and disposal. The objectives of IPLA, which are mainly catered towards fostering public-private-partnerships and creating conducive investment climate for expanding waste management services of local and

municipal authorities, have hundreds of registered partners and members comprising of national governments, city authorities, municipalities, private sectors, donors, NGOs, and scientific research and development institutions. UNCRD, in close collaboration with its global, regional, sub-Regional secretariats, and registered members, provides overall international coordination support in implementing IPLA objectives. Zero waste and resource efficient society are inherent requirements for environmentally sustainable cities (ESC). At the same time, moving towards zero waste is inherently a multi-stakeholder process which calls for partnerships within and between communities, businesses, industries, and all levels of government. IPLA aims to foster such multi-stakeholder processes with the understanding that partnerships – (i) offer alternatives in which governments and private companies assume co-responsibility and co-ownership for the delivery of solid waste management services; (ii) combine the advantages of the private sector (dynamism, access to financial resources and latest technologies, managerial efficiency, and entrepreneurial spirit, etc.) with social concerns and responsibility of the public sector (public health and better life, environmental awareness, local knowledge and job creation, etc.); and (iii) provide win-win solutions both for the public utilities and private sector—if duly supported by appropriate policy frameworks. Such partnerships could lead to savings in municipal budgets where waste management usually consumes a large portion. The private sector, on the other hand, may use this opportunity to convert waste into environmentally friendly products and energy that could also serve as income generating opportunities.

Mr. Uk Young Kwon, Specialist for Community Cooperation, Korean National Park Service presented 'Myeongpum Maeul: New Village, New Partnership'. Among 122 villages in 20 national parks, 50 villages (about 41%) were located in three marine national parks. Because the average population in these villages is aging and labour productivity is at its limits, it is necessary to build a foundation for higher value-added tourism within national parks. This is done through the establishment of traditional towns, which harmonise with the nature of the marine parks. After a local government investment of \$1 million, the number of visitors has increased 10 times compared to 2010 (about 52,000). KNPS plans to establish 50 Myeongpum Maeuls by 2020 and make them prestigious eco-friendly towns which support biodiversity of marine national parks and sustainable tourism.

Discussion

- Public sector must adopt the know-how of the private sector.
- PPP in the water sector must be focused on performance rather than cost.
- There are some successful cases of PPP, waste treatment and composting plants.
- Long term contracts in the water sector are necessary for sustainability.
- Public sector must take initiative to maximize the profits for each party.

Thematic Session 2B: Adaptation for Cities

This session was chaired by Dr. Xiaoming Wang, Principal Scientist and Adjunct Professor, Leader for the Sustainable Cities and Coasts theme of the Climate Adaptation Flagship, Commonwealth Scientific and Industrial Research Organisation (CSIRO). A total of 7 presentations were made:

Introductory Presentation by Dr. Xiaoming Wang, Principal Scientist and Adjunct Professor and Theme Leader for Sustainable Cities and Coasts, CSIRO Climate Adaptation Flagship;

Climate change in Can Tho city and Mekong Delta: status and ability to cope by Mr. Ky Quang Vinh, Master, Climate Change Coordination Office, Can Tho City;

DRR (disaster risk reduction) and CCA (climate change adaptation) in Indonesia by Dr. Eko Teguh Paripurno, Geological Engineering Department, University of Pembangunan Nasional Veteran (Indonesia);

Natural Hazards/Disasters: the Philippine experience by Undersecretary Benito Ramos, Administrator, Office of Civil Defense, Department of National Defense (Philippines);

Climate Change Adaptation: assessing the capacity of and helping water services providers in Asia to adapt to climate change impacts by Mr. Arijanto Istandar, Team Leader, Water and Sanitation, USAID/Waterlinks;

Urban Climate Resilience of Thai Cities by Dr. Pakamas Thinphanga, Senior Researcher, Thailand Environment Institute Foundation (TEI); and

The experiences of ACCCRN process in Indian Cities by Dr. Shiraz Akhtar Wajih, President, Gorakhpur Environmental Action Group, Asian Cities Climate Change Resilience Network (ACCCRN).

Presentation Summaries (in order of presentation)

Dr. Xiaoming Wang, Principal Scientist and Adjunct Professor and Theme Leader for Sustainable Cities and Coasts, CSIRO Climate Adaptation Flagship gave an introductory presentation based on his experiences in Australia. His presentation started with an overview of climate hazards that happened recently in Australia. As indicated, Australia is very urbanised with population concentrated in coastal areas. Questions are therefore faced by many coastal cities on how climate change would affect on human settlements located along the coastal areas and how cities respond to the changes. According to Dr. Xiaoming, climate adaptation is defined as initiatives and measures to reduce the vulnerability, and a readjustment of natural and human systems vulnerabilities to resilience. While sustainability are very much related to population as well as buildings, infrastructure and resources that are used to maintain urban functions, the climate impact concerns more on changes in productivity, resilience, liveability and sustainability in cities and coasts as a result of climate change. Adaptation is required to minimise the impact by implementing policy, planning and governance, developing knowledge and technology, and targeted investment. Considering the coastal planning and management policy in Australia, the main objective of which is to avoid or minimize the exposure of communities to the risks and to incorporate a coastal hazard adaptation strategy, there are needs

to take into account climate change and subsequent climate hazards caused, for example: the introduction of sea-level rise factor and an increase in the maximum cyclone intensity in the planning process. Finally he shows some experiences in using geographic information system (GIS) for disaster planning and management. He further emphasized that knowledge of adaptation timing, long term view in policy planning, and early action in adaptation may all cause significant difference in benefits that communities may achieve.

Mr. Ky Quang Vinh, Climate Change Coordination Office, Can Tho City, Viet Nam presented 'Climate change in Can Tho city and Mekong Delta: status and ability to cope'. He briefly introduced the city, which is low-lying and flat, experiencing flood during July-November. Main concerns related to disasters are flood, river shore erosion, tornado storm and thunder, which caused disasters that happened recently in the city. To respond and manage future climate hazards, the city established a natural disasters and climate change risk coordination office for natural disasters and climate change risk management, and for adaptation planning and policy development. The office has already prepared a climate change response activity plan for 2011-2015, which includes soft and hard options. The soft part includes the training of local staff about climate change, and the development of a web site for sharing information. The hard options refer to for example, the construction of resilient buildings to climate change, dykes and environmental treatment constructions. He also indicated that, to meet long-term planning goals for climate change adaptation, development of knowledge, technology and facilities together with financial and international support are required. The lessons learned are: cities need a good climate change adaptation and activity plan; and to build a climate resilient city we require the support from local government and participation of local people, especially the vulnerable urban population. A well-adapted city for climate change is not only a good place to live, but a good place to have a livelihood for all people.

Dr. Eko Teguh Paripurno, Geological Engineering Department, University of Pembangunan Nasional Veteran, Indonesia presented 'DRR (disaster risk reduction) and CCA (climate change adaptation) in Indonesia'. He gave a brief introduction to Indonesia and its environmental status, and explained the recent disasters happened in the country. The major disasters concerned earthquakes, tsunamis, volcano eruptions, floods, landslides, typhoons and drought. As a result, the disaster management policies e.g. the law 24/2007 for disaster management and national action plan for disaster risk reduction (NAP-DRR) were introduced in Indonesia. Meanwhile, the key climate change policies including a national action plan for climate change, national development strategy for climate change adaptation, mitigation agenda reduction of greenhouse gas emissions have also been developed. He emphasized that DRR and CCA should be viewed as one rather than two distinct objects. The integration of DRR and CCA can be done through legislation, institution, education and dissemination, and implementation. The role of the national government is to mainstream DRR and CCA, which would increase the effectiveness of spatial plans, improve programming and planning, and enhance institutional capacity of local governments. Finally he presented some case studies to explain the local actions in implementing the government plans.

Undersecretary Benito Ramos, Administrator, Office of Civil Defense, Department of National Defense, Philippines presented 'Natural Hazards/Disasters: the Philippine experience'. The Philippines is susceptible to a number of natural hazards, including typhoon, earthquakes, tsunamis, and volcano eruptions. Previously, disaster management in the country tended towards a reactive approach. Recently, a proactive approach has been adopted in Disaster Risk Reduction and Management (DRRM), or RA 10121 (2010), providing a legal mandate. DRRM includes disaster prevention and mitigation, disaster preparedness, disaster

response, and disaster rehabilitation and recovery. Their recommendations are to establish early warning systems in areas prone to natural hazards, to carry out more research on disaster risk reduction and management, and to raise awareness of disaster mitigation and develop response strategies at a community level.

Mr. Arijanto Istandar, Team Leader, Water and Sanitation, USAID/Waterlinks (www.waterlinks.org) presented His presentation covered the following topics: assessment of the “readiness” of water and wastewater service providers in addressing climate change impacts and partnering to build climate resiliency and adaptation. . He gave a background to climate change vulnerability in urban water services delivery in Asia and emphasized the importance of capacity building to cope with those challenges. The main objectives of the ECO-Asia and WaterLinks rapid assessment are to gather and analyze the levels of service provider readiness, identify capacity building needs, and document good practices for knowledge exchange. Key elements of readiness evaluated include being aware of climate change impacts, having capability to assess and identify risks to services delivery operations, integrating climate change into the planning process, and taking actions to build resiliency against climate change. . Further he explained the on-going assessment in Asia including water and wastewater service providers from Vietnam, Thailand, Indonesia, Philippines, Singapore Australia, and India. The assessment process entails an inception workshop, assessment survey, survey result analysis, dissemination workshop, and final report on readiness. ECO-Asia and WaterLinks seek potential cooperation with ASEAN to hold the dissemination workshop in May 2012. After his presentation, Ms. Carla Berina, Head Sustainable Development Manila Water Company and Executive Director Manila Water Foundation presented a case study of Manila Water. In her presentation, she explained the climate change adaptation programmes in the Manila Water Company in aligned with the Philippines national response to climate change. Mitigation activities are greenhouse gas accounting, CDM projects, energy and fuel saving initiatives and adaptation, climate proofing, disaster risk reduction, ground water resources management, new water resources, and water shade initiatives. For these activities, water balance database, scenario generation tool and policy analysis tools are adopted.

Dr. Pakamas Thinphanga, Senior Researcher, Thailand Environment Institute Foundation (TEI) presented ‘Urban Climate Resilience of Thai Cities’. She gave an introduction to the recent flood disaster in Thailand, which created impacts on both national economy and the livelihood of local communities. Uncontrolled land use change and weak governance were identified as significant factors contributing to the socio-economic vulnerabilities of communities. To develop urban climate resilience, she addressed, a shared learning/dialogue, multi-stakeholder participation process for vulnerability assessment, identification of priorities, and linking knowledge and practices for building resilience practices are required in Thailand. She further highlighted that building resilience in the urban context required long-term strategies and shared lessons learned, on what are the urgent and immediate issues that cities are facing. Finally, she also introduced on how TEI has been supporting local communities in making adaptation plans and strategies, building partnership with relevant institutions, and creating space for shared learning.

Dr. Shiraz Akhtar Wajih, President, Gorakhpur Environmental Action Group, Asian Cities Climate Change Resilience Network (ACCCRN) presented the experiences of ACCCRN in Indian cities, taking the example of Gorakhpur city. The ACCCRN group is currently working with three Indian Cities: Surat, Indore and Gorakhpur. ACCCRN has adopted the urban climate resilience framework for their resilience planning. It includes 3 different stages: stage 1 – engagement, shared learning, multi stakeholder intervention; stage 2 – vulnerability analysis;

and stage 3 – development of strategy action, identify priority, and activities. The framework was then demonstrated by the case study of Gorakhpur city. The city faces flood risks during June to September. The analysis has been taken to identify climate change causes (natural, behavioural, policies and politics), effects (water logging, solid waste, sewerage), impacts (problems and response), and are to be addressed for Climate Change adaptation actions. Further, urban resilience framework is applied with consideration at level of system, agents and institutions. The fragile system, low capacity and weak institutions would be exposed the most to the hazards in the city. Thus, a dynamic process is required to include understanding of vulnerability, building of resilience, and shared learning. Approaches for city resilience strategies range from capacity building, citizens group, education, school programmes, to surveillance and monitoring. Resilience measures are influenced by basic infrastructure, social institutions, economic base and natural environment.

Discussion

- Risk to natural hazards is being faced by all countries at different levels and scales, especially in EA, where the countries are most vulnerable to the natural hazards under climate change, and may incur significant damage and loss due to high population.
- In response to the risks, relevant policies at national scale (Philippines, Indonesia), and guidance at local city and community scale (India, Vietnam) have been reasonably developed. However, implication of climate change in relation to natural hazards seems not explicitly considered at the national level, although the resilient city concept starts to be put into practice (India and Thailand). For the water sector in Philippines has also been taking the effect of climate change into management.
- There seem lack of links between national policy and local planning in response to natural hazards, especially considering climate change. Downscaling of national policy to local scale, and up-scaling of local implementation to meet national policies are the issue that should be addressed.
- There is a common view that knowledge and information are important, awareness and shared learning process and stakeholder engagement may enhance the resilience of cities to face the challenge of natural hazard under climate change. However, there seem gaps on what the knowledge and information exactly are, and how they may assist in the policy-making, planning process as well as management.
- There are more challenges in policy making and planning process to manage natural hazards and adapt to climate change, when considering population growth, urbanization, land use change, as well as governance.
- We still have to answer the question on how we could build long-term capacities, although there is an awareness of the needs to shift from reactive to proactive management (Philippines). It is especially important for our cities considering future climate change. Integrating disaster risk reduction (DRR) and climate change adaptation (CCA) becomes one of options that should be considered.
- There are needs to take multilevel approaches in policy/planning that cross local and national scale to maintain consistency and effectiveness.

Thematic Session 2C: Sustainable Low-Carbon Scenario Development

This session was chaired by Dr. Junichi Fujino, Senior Researcher in Center for Social and Environmental Systems Research, National Institute for Environmental Studies (NIES). A total of 6 presentations were made:

1. Future Environmental City Initiative and AIM Activities by Mr.Junichi Fujino, National Institute for Environmental Studies (NIES)
2. Sustainable Low Carbon Scenario Development :LCS for Iskandar, Malaysia by Mr.Boyd Dionysius Jouman, Senior Vice President, Planning & Compliance, Iskandar Regional Development Authority (IRDA), Malaysia
3. Low Carbon Green Growth Pilot City of Gangneung City, Gangwon Province, Republic of Korea, by Ms.Toh Eun ju, Policy Coordination Division Green Environment Policy Office Environmental Policy Department, Republic of Korea
4. The Pilot Study of Demonstration Voluntary Agreements for Industrial Environmental Management in China by Ms.Zhou Ninghui, Deputy Director for General Affairs, Environmental Protection Bureau, Nanjing City Government, China
5. Sustainable Low-Carbon Scenario Development : the experience of Sibü by Mr.Yong Ing Chu,Assistant Secretary, Sibü Municipal Council, Sarawak, Malaysia
6. Nakornnont Green Growth & Low Carbon City by Mr.Permpong Pumwiset, Head of Environment and Health Promotion Division, Nonthaburi, Thailand

Presentation Summaries (in order of presentation)

Dr. Junichi Fujino, Senior Researcher in the Centre for Social and Environmental Systems Research, National Institute for Environmental Studies (NIES), Japan presented 'Future Environmental City Initiative and AIM Activities'. Introducing the objective of Session 2C, Dr. Fujino put forth that each city can be sustainable and self-sufficient through city planning and implementation, and from there went on to present the three main lessons in sustainable urban design for Japan's Future Cities: (1) the importance of leadership on behalf of the mayor and the ownership of city development by each stakeholder; (2) the need for city mid- to long-term city continuity plans, clarifying the vision of a sustainable city and tailoring this roadmap by identifying these needs with the needs of the citizens, and (3) to create a flexible mechanism to develop locally suited planning, and implementing it with clearly defined roles for each stakeholder. The aim is to create successful 'Future Cities' through innovative technologies, socio-economic systems, services, business models and city planning in strategically selected cities and regions. Successful cases will eventually be disseminated both within and outside Japan. The three levels of management for the Future City Initiative mean that the overall Initiative is tailored to a vision for each city, and furthermore to the action points within each city, with implementers at national level (government and other promoting bodies) providing strong support for local implementers: local government, private sector, NGOs and academia. This presentation raised three discussion points for the rest of the session: (1) how can local communities be involved in national government policy making with the academics and consultants; (2) how can local government address the good practices from other cities and

spread and scale up its own good practices to other regions; and (3) how can local governments access databases and knowledge for making sustainable city planning work with national governments and research communities?

Mr. Boyd Dionysius Jouman, Senior Vice President, Planning & Compliance, Iskandar Regional Development Authority (IRDA), Malaysia presented 'Sustainable Low Carbon Scenario Development: LCS for Iskandar, Malaysia'. IRDA is strongly promoting its "Green-focused Agenda" as its main approach towards the astute management of natural resources and planning for a low carbon society. The GFA sets the context for Iskandar Malaysia's economic, social and environmental planning and management policies. Without 'the green', there is no sustainable development. Through strong policies (backed by research), IRDA will plan, develop and manage the region's natural resources through close collaboration with all stakeholders and especially the local communities. IRDA is now working closely with Universiti Teknologi Malaysia, Kyoto University and the National Institute for Environmental Studies on Low Carbon Society research projects to realise Iskandar Malaysia's commitment to reducing its GHG emissions by 30-50% by 2025. The research currently being carried out is essential to IRDA's objectives to achieve a "strong and sustainable metropolis of international standing". IRDA has, and will, use the LCS researches to formulate economic, environmental, land use and social policies and proposals for implementation in the short, medium and long-term. Sustainable development and the goal to achieve a low carbon society are therefore at the top of the agenda. IRDA strongly believes that its approach on the green-focused agenda will help transform the region into a sustainable metropolis of international standing, through the implementation of low carbon society actions.

Ms. Toh Eun Ju, Policy Coordination Division, Green Environment Policy Office, Environmental Policy Department, Republic of Korea presented 'Low Carbon Green Growth Pilot City of Gangneung City, Gangwon Province, Republic of Korea'. The Korean government tried to put the new growth engines into perspective for the future. So since 2008, the government has established a national vision for 'low carbon, green growth'. To pursue leading the global trend of sustainable growth - in which other nations have begun to compete in the building of green cities - the Korean government is highlighting the need to create a world-class model for a low carbon green growth city. The vision for the project will encompass three main objectives: natural eco-city; culture and tourism city; and zero-carbon city. Measurable targets for the initiative include: achieving a 49% reduction in greenhouse gas emissions; 39.5% reduction in energy use; and 60% land area allocation for ecological green areas. These objectives will be met through six areas of action: eco-friendly land use (conservation of ecological areas and construction of high-efficiency structures); green transportation (promoting alternatives means of transport and improving infrastructure for non-motorised vehicles); energy efficiency (renewable energy and use of ICT to reduce energy use); green tourism and living (green touring network); natural ecology (prevention of coastal erosion); and water and resource cycles (increased efficiency of rainwater usage). The expectations for the implementation of these measures include increased CO₂ absorption, job creation, greenhouse gas emissions reduction, and increased tourism. The Korean government provides local cities with guidelines on green city development in order to disseminate the concept of green city development such as in Gangneung. Pyeong-Chang where the winter Olympic Games 2018 will be held, is near to Gangneung, and the city is expected to promote eco-friendly Olympic games by establishing a green city plan applicable to all its facilities.

Ms. Zhou Ninghui, Deputy Director for General Affairs, Environmental Protection Bureau, Nanjing City Government, People's Republic of China presented 'The Pilot Study of

Demonstration Voluntary Agreements for Industrial Environmental Management in China'. The framework for introducing voluntary energy efficiency targets or emissions reductions targets falls into three broad steps: preparation, signing of the agreement, and implementation of the agreement. For the first of the three to occur, the initial willingness needs to be present, which is then followed by the planning, promotion and training phases. All parties need to agree to the terms of the agreement, which needs to include targets, duration, explicit measures, responsibilities and obligations, and other content (supervision, evaluation, etc.) Finally comes the implementation of the voluntary efficiency or reduction agreement, but it is stressed that "a good start is half the success". Pros of such an agreement include the flexibility, applicability, low cost, the potential for improving the relationship between business and government, and last but not least, the energy-savings and environmental factors. Such voluntary efficiency/reduction agreements are especially pertinent to China's current industrial climate, which has seen in recent years a rapid growth in inefficient resource and energy use. This has led to environmental pollution and ecological destruction, and the pace of growth means new challenges are being faced while old issues have not yet been resolved. The diversity of China's industry means that such voluntary agreements are an appropriate solution to issues like these, considering the agreements are well-planned and implemented.

Mr. Yong Ing Chu, Assistant Secretary, Sibul Municipal Council, Malaysia presented 'Sustainable Low-Carbon Scenario Development: the experience of Sibul'. Sibul Municipal Council (SMC), having an area of 129.5 sq. km and population of about 240,402 (2010 census) is determined to create a low carbon environment for its populace. However, due to the lack of fund and expertise, simple initiatives were engaged to reduce the emission of CO₂ into the environment. The initiatives carried out include the promotion of greenery, bicycle lane and solid waste management. On the promotion of greenery, SMC had smart partnership with private sectors/NGOs to manage open spaces into beautiful landscaped parks/gardens. Apart from that, SMC organized a yearly tree planting activity. SMC had also initiated bicycle lane by calling for a workshop among the stakeholders which include the cyclist association, neighbourhood associations, individual and government agencies to find the best methodology in managing bicycle lanes. On solid waste management, SMC had a composting centre, nine recycling centres and also organized community composting, a pilot project on waste segregation at source and community awareness by given talks to schools, NGOs and religious bodies. The latest initiative was the signing of memorandum of understanding with a company to collect/retrieve recycleable materials from SMC sanitary landfill. With these small initiatives, SMC hope to assist in reducing the emission of CO₂ into the environment.

Mr. Permpong Pumwiset, Head of Environment and Health Promotion Division, Nonthaburi, Thailand presented 'Nakornnont Green Growth & Low Carbon City'. In response to current challenges posed by increased population and infrastructure, Nonthaburi municipality, in cooperation with the French Environment and Energy Management Agency and Asian Institute of Technology, is implementing a set of measures under their slogan of "Think globally, act locally". Initiatives include a 3R programme involving: waste segregation; a composting plant; infectious waste; composting; bio-fertiliser plant; hazardous waste; plastic & foam; waste from electric and electronic equipment. A steady increase in the recycling since 2001 has resulted in a current recycling rate of 28%. Measures to reduce greenhouse gas emissions target mostly transport, with the promotion of cycling through new bicycle infrastructure (parking for 500 units); a carpooling scheme; and a mass rapid transit system. Other areas of activities include increasing green areas, and renewable energies with solar cells producing 150 kilowatt of energy a day, and saving the equivalent of over 5,000 litres of crude oil for the period from January to April 2011.

Discussion

- Cities look for more opportunities to design holistic planning and development to show their green leadership and obtain more good resources and investments from the world (such as Future City initiatives in Japan, Sustainable Iskandar, Malaysia project, and Low Carbon Green Growth Pilot programme of Gangneung City in Republic of Korea).
- At the same time it is necessary to encourage public participation to create and share visions among communities based on local history, culture, and environment. If communities have ownership of the city's plan, they will more likely provide full support to implement the plan.
- Good practices can be diffused internationally (such as Sibul, Malaysia and Nonthaburi, Thailand). One of the elements of their successes is that they have stable governance for a long time.
- The question is how to scale up good practices inside and across country, and upgrade of these actions into integrated and comprehensive actions.
- Cities tend to lack access to basic database and evidence-based policies that are needed for good and sustainable city and urban planning and management.
- Good collaboration among local cities, national governments, research institutions and related stakeholders is essential to design and achieve self-sufficient cities.

(end)

