The 6th

Asia
Smart
City Conference
in Yokohama

Y-PORT CENTER
Yokohama Urban Smart Solution

"FutureCity"Yokohama

The 6th Asia Smart City
Conference in Yokohama
Report
October 25-27, 2017

Contents

Asia Smart City Conference

Thematic Meeting (1 Wastes and Sludge Treatment)
Results of discussion

1. Remarkable ongoing, emerging efforts toward Smart City Development
• There is no shortage of best available technologies in waste water and solid waste treatment.
• Various efforts have been made (reuse of treated water and sludge, roadmap and feasibility study, integrated approach)
• Sensor and GPS in use.
• Advanced WtE technology can deliver better environmental performance over the regulation.

2. Major needs and challenges in Asian Cities
• Specific and cost effective technology is needed.
• Government procurement system limits adoption of new technologies; Capacity to evaluate technology is crucial.
• The budget is limited.
• Leadership and setting the targets and goals is needed.
• Social system to adopt tipping fee and segregation at the point; stakeholder participation.

3. Suggested Actions for Asian Cities toward Smart City Development
• Strong leadership and commitment of government.
• Integration of smart technology in project design.
• Explore PPP, joint venture, direct rending to finance capital intensive investment.
• Improve procurement; lifecycle cost and DBO contract.

Thematic Meeting 1
Wastes and sludge treatment in smart cities

Thematic Meeting 3
Use of ICT/Big Data

Thematic Meeting 2
Approaches towards energy saving/
low carbon urban development

Thematic Meeting 4
Japanese experience

01 The 6th Asia Smart City Conference Outline

Wednesday 25 October 2017	Site Visit
PM	**Site Visit** organized by City of Yokohama **Water and Environment Solution Hub Yokohama** - Hokubu-Daini Wastewater Treatment Plant - Hokubu Sludge Treatment Plant **Kohoku Newtown**
Thursday 26 October 2017	**Parallel events**
AM PM	**Smart Urban Development Conference** organized by World Bank/ADB **Yokohama Youth Event 2017** **Follow-up Event of the 50th ADB Annual Meeting Yokohama 2017** organized by Yokohama National University (YNU), Yokohama City University (YCU) and City of Yokohama
Evening	**Welcome Reception** hosted by City of Yokohama
Friday 27 October 2017	**The 6th Asia Smart City Conference** organized by City of Yokohama
AM PM	**Thematic Meetings** **Lunch & Business Matching** **Plenary Session** **Roundtable Session**

Since 2012, Yokohama, a FutureCity, has hosted the Asia Smart City Conference in which the mayors of emerging Asian cities, experts from international organizations and others gather to share their expertise and work together to build sustainable cities. At this year's 6th conference, mayors and other representatives from 25 cities as well as the Japanese government, international organizations, academic institutions, private companies and numerous other organizations and institutions attended. Following four thematic meetings in the morning and the plenary meeting in the afternoon, the contributions and the dialogues given throughout the conference were integrated into the 6th Asia Smart City Conference Declaration (Yokohama Declaration), which was introduced at COP23 in November. At the lunch venue, private enterprises from Yokohama displayed unique technologies and services to foster business matching opportunities among cities, private enterprises and donor organizations. Integrated parallel events, one presented by the World Bank and Asian Development Bank, were also held at the conference.

Sector Representation

- Cities — 21%
- Embassy — 3%
- Japanese Government — 7%
- International Organization — 16%
- Academic — 8%
- Company — 42%
- Others — 3%

02 DAY 1, DAY 2 Parallel events

- Yokohama Infrastructure Tour -

1. Date	October 25, 2017 (Wed) 13:00-17:30
2. Participants	Approx. 50 attendees
3. Locations	Water and Environment Solution Hub Yokohama (1-6-8 Suehirocho, Tsurumi-ku, Yokohama) Kohoku Newtown (Tsuzuki-ku, Yokohama)

- SMART URBAN DEVELOPMENT CONFERENCE -

Agenda

Urbanization is occurring at an unprecedented pace. Cities generate 80% of global GDP and are key to job creation and the pursuit of shared prosperity. Yet one billion city residents live in slums today, and by 2030 one billion new migrants will arrive in cities. Cities are the engines of economic growth, and in the past three decades, there have been dramatic shifts in demographic structure within cities adding challenges to cities in planning developments and service provisioning. Many cities in middle to lower income countries are still in need of core infrastructure including clean and adequate water supply, electric supply, sanitation facilities, efficient urban public transport, affordable housing for the poor. Could the strengthening of ICT connectivity and utilization of big data accelerate and improve the quality of urban services through innovation, enhanced efficiencies and enabling citizens to adopt local policies and implementation? This conference seeks to further the dialogue on the practical how-to of utilizing smart solutions and data in efficient and effective urban development globally. The conference will engage a variety of stakeholders from development organizations, the private sector, public sector and academia.

Opening Keynotes

Moderator	Daniel A. Levine, Senior Officer of TDLC Program, World Bank Group
Speakers	• Masato Miyazaki, Special Representative for Japan, World Bank Group • Takashi Matsuo, Representative for Japan, Asian Development Bank • Kazuko Ishigaki, Director, International Planning for Construction Industry, policy Bureau, Ministry of Land, Infrastructure, Transportation and Tourism (MLIT)

Session 1 : Smart Mobility

Moderator	Daniel A. Levine, Senior Officer of TDLC Program, World Bank Group
Speakers	• Ki-Joon Kim, Principal Transport Specialist, Asian Development Bank • Benjamin Butcher, Manager, Global SI Service Business Development Division, Global Business Unit, NEC Corporation • Yoshihisa Hagino, R&D General Manager / Head of Transportation Consulting Unit, Navitime Japan Co., Ltd. • Satoshi Kubota, General Manager, Nippon Signal Co., Ltd.

Session 2 : Smart and Efficient Buildings

Moderator	Stuart Kay, Chief Sustainability Officer, GreenPlace Assets
Speakers	• Ronald Ping Hei Wu, Private Sector Specialist, World Bank Group • Benoit Rulleau, Chief Technology Officer and Senior Vice President, Kansai Airports • James Brew, Senior Sustainability Architect, Nikken Sekkei • Masaya Tachibana, Senior Engineer, Shimizu Corporation

Session 3 : Smart Service Provision

Moderator	Yuko Okazawa, Urban Specialist, World Bank Group
Speakers	• Kremena Ionkova, Senior Urban Development Specialist, World Bank Group • Chee Anne Rono, Team Leader, Consultant for Promoting Smart Systems, Asian Development Bank • Takashi Ueno, Chief Engineer, WBC Center, METAWATER • Taisuke Watanabe, General Manager, International Consulting Department, EX Research Institute • Pierre Flamand, Manager, International Affairs, Japan Sanitation Consortium

Session 4 : Smart Procurement

Moderator	Koichi Omori, Senior Communications Officer, World Bank Group
Speakers	• Kofi Awanyo, Lead Procurement Officer, World Bank Group • Hiroshi Esaki, Professor, Graduate School of Information Science and Technology, The University of Tokyo • Takao Ikegami, Business Information Advisor, World Bank Group

Session 5 : Capstone - Smart Urban Planning

Moderator	Megha Mukim, Senior Urban Economist, World Bank Group
Speakers	• Dr. Sameer Sharma, Additional Secretary (Smart Cities), Government of India. • Barjor E. Mehta, Lead Urban Specialist, East Asia and the Pacific, World Bank Group • Gil-Hong Kim, Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, Asian Development Bank • Toshiyuki Iwama, Representative, Japan International Cooperation Agency • Alfonso Vegara, Founder and Honorary President, Fundacion Metropoli/ Special Advisor for Y-PORT Center

Session Summaries

Session 1 : Smart Mobility

The transport sector has the potential to improve people's lives and livelihoods in health, their environment, and their quality of lives. In this session, the discussion was around the concept of smart mobility, what value it holds, how it can benefit the people, what happens if data is not available (in developing country context), the challenge of data gathering, and the application of the data for smart mobility. The main messages that drew attention were: 1) data is a key for traffic prediction, therefore it is critical for transport planning; 2) Institutions can be protective in providing data, so breaking those barriers is very important; and 3) it is important to have open mind to data, and also "not-perfect" data.

Session 2: Smart and Efficient Buildings

This session discussed the current situation of smart and efficient buildings, definition of value within assets, and key elements for creating new assets by looking at both public and private sectors. The major points that were raised include: 1) "well-being" component is necessary for project planning in addition to sustainability; 2) linking buildings in terms of sharing energy is one important solution for energy efficiency; 3) financing for technology is crucial; and 4) government and civil society partnership is essential for creation of smart buildings. Another important point that was highlighted was that the definition of assets is "people's happiness."

Session 3: Smart Service Provision

Session 3 covered two major service provisions, water and waste management. The discussion was around how recent technologies can be applied on the ground to increase efficiencies in service delivery and management, the obstacles of applying "smart" technologies in water and waste management, and how to make technologies both applicable and attractive for the developing world. The obstacles that developing world is encountering are that those countries are still in the stage of obtaining core infrastructure service provision such as water supply and drainage, and they require strong leadership and tailor-made technologies. The discussion also went around the "infra-crisis" of Japan as Japan is entering the aging society. It was mentioned that obtaining data and utilizing those big data are crucial as a countermeasure.

Session 4: Smart Procurement

Japan's PM Shinzo Abe has announced the concept of Quality Infrastructure Investment (QII) in 2015, and the idea has been gradually accepted by the world. This session explored how smart procurement by focusing on "Value for money principle" is replacing old procurement which prioritizes inexpensiveness of goods. By introducing experiences, panelists agreed that the quality should be taken into consideration for procurement. The World Bank's new procurement framework incorporates the idea of value for money and utilizes rated criteria for procurement. Also, the importance of early and long-term engagement was raised during the discussion.

Session 5: Capstone – Smart Urban Planning

IoT and other technologies are generating massive volumes of data, both structured and unstructured. This session focused on how cities and their stakeholders are utilizing these data points for urban planning and management, how the data is managed and shared beyond individual silos and how it is utilized to improve service provisioning. The concern of smart technologies and digital divide was also discussed. Panelists shared their perspectives and insights by introducing their past experiences. The keys for smart urban planning have been agreed as: holding a vision through strong leadership, good balance between government and related stakeholders, citizen initiatives, and allowing strategies to be revised as it is implemented.

01 The 6th Asia Smart City Conference Outline

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02 DAY 1, DAY 2 Parallel events

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03 DAY 3 Conference Outline

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04 DAY 3 Conference Summary

04 DAY 3 Conference Summary

05 Appendix

05 Appendix

- Yokohama Youth Event 2017 -

Follow-up Event of the 50th ADB Annual Meeting Yokohama 2017

1. Date	Thursday, October 26, 2017 (14:00 ～ 17:00)
2. Venue	Conference Center 301, Pacifico Yokohama
3. Hosted by	Yokohama National University, Yokohama City University, City of Yokohama

4. Participants

83 (Audience: 49)

Yokohama National University (YNU)

Team Leader: Fumihiko Nakamura (Executive Director, Vice President, YNU)
Gen Hayauchi, Nano Yamaguchi, Takashi Hirose, Nanami Aizu, Yusuke Ishii, Megumi Yasue, Xiaoran Tong, Gou Yamaguchi

Yokohama City University (YCU)

Team Leader：Michiko Ashizawa (Associate Professor, Department of Economics and Business Administration of YCU)
Tuomas Salmi, Marika Hirayama, Minhyuck Choi, Yuna Otsuka, Kaede Sugiyama, Fuko Tanaka, Rina Anzue, Momoyo Kanie, Hinako Imade, Hiroki Terada

Discussion Participants

Takashi Matsuo (Representative for Japan, ADB)
Gil-Hong Kim (Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)
Ki-Joon Kim (Principal Transport Specialist, ADB)
Chee Anne Rono (ADB Team Leader -Consultant for Promoting Smart Systems)
Bindu N. Lohani (Special Advisor for Y-PORT Center/President, The Resources Center)
Alfonso Vegara (Special Advisor for Y-PORT Center/Founder and Honorary President, Fundación Metrópoli)
Yan Zhang (Economist, ADBI)
Prachi Gupta (Economist, ADBI)
Yasuaki Nakamura (Deputy Director, International Affairs Bureau, City of Yokohama)
Hiromichi Hishinuma (Manager, International Affairs Bureau, City of Yokohama)
Daisuke Nakayama (Manager, Climate Change Policy Headquarters, City of Yokohama)
Kei Sano (Manager, City Resources & Waste Recycling Bureau, City of Yokohama)
Alexandre Martin (CIR, City International Affairs Bureau, City of Yokohama)

5. Program

1. Keynote Speech: "What was discussed in the 50th ADB Annual Meeting in Yokohama" Takashi Matsuo (Representative for Japan, ADB)

2. Presentation & Discussion by Yokohama National University (YNU)
   "Issues on Smart City Development in Asian Countries：Especially in the fields of Mobility, Settlement, Environment and Disaster Prevention"

3. Presentation & Discussion by Yokohama City University (YCU)
   "Japanese Companies' Infrastructure Investment in Asia：Case Study of Projects in Cebu and Da Nang through Public-Private Partnership"

4. Closing Remarks: Ki-Joon Kim (Principal Transport Specialist, ADB)

※YNU and YCU student representatives shared their thoughts about the Youth Seminar by giving speeches at the Closing Session of the Asia Smart City Conference on Oct 27. (See page 59-60)

【Presentation & Discussion by YNU】

"Issues on Smart City Development in Asian Countries：
 Especially in the fields of Mobility, Settlement, Environment and Disaster Prevention"

【Summary】Smart Cities should be discussed not only as a technical aspect, but also as one of the components of a Livable City. We studied four aspects of a 'Livable Smart City': 'settlement', 'environment', 'mobility', 'disaster'. In "settlement", we suggested the importance of rehabilitation of slums from architectural points of view, care for elderly poor people and a respect for current Asian Food. In "environment", we suggested the importance of choosing the sites for projects, care for the existing environment and environmental education. In "Mobility", we suggested a strategy to create a comfortable medium-sized city by lowering dependence on automobiles and establishing a safe pedestrian space. In "Disaster" we proposed stockpiling of food and supplies through infrastructure and in cooperation with local communities.

※Facilitator：Fumihiko Nakamura（Executive Director, Vice-President of YNU）

Gil-Hong Kim
(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

Slum settlers are in a critical state due to the climate change impact. We need to take serious action, and we can use some of the ideas from your slum improvement project. ADB is now improving elderly care services in Chinese cities through a multi-sector approach.

Alfonso Vegara
(Special Advisor for Y-PORT Center/Founder and Honorary President, Fundación Metrópoli)

I suggest that we should think of cities not only in terms of hardware and software, but also street-ware. Streets can connect people, and can be places for innovation.The key issue that the world is facing today is "Beyond Smart". What lies beyond smart are livable smart cities for all.

Chee Anne Rono
(ADB Team Leader-Consultant for Promoting Smart Systems)

We have to expect a disruption caused by digital economy and smart city technologies brought on by the IoT and the fourth industrial revolution. Many jobs will change or cease to exist. We have to think about how our education can be relevant in a future with smart cities. Technology is a prerequisite for smart cities, but the most important thing is to create smart people who can harness that technology.

Bindu N. Lohani
(Special Advisor for Y-PORT Center/President, The Resources Center)

Urbanization is one of our biggest challenges. As young people flock to cities, rural farmers are an ageing population, and we must find new infrastructure techniques. Sustainable Transport Initiatives (STIs) play an important part in this, and we need to establish a system to properly manage the financial aspects of such initiatives.

Thoughts about the event (Representative of YNU：Gen Hayauchi)
During the discussion, new metrics were introduced, such as resilience, governance and finance. We have decided to incorporate these themes in our further studies of "Livable Smart Cities" as the next step of current smart cities. Thank you very much for this wonderful opportunity and discussion.

【Presentation & Discussion by YCU】

"Japanese Companies' Infrastructure Investment in Asia：
 Case Study of Projects in Cebu and Da Nang through Public-Private Partnership"

【Summary】We studied Japanese involvement in Asian city infrastructure business, focusing on waste management. Waste doesn't just make the landscape ugly, but it is also the source of diseases and natural disasters. We did a fieldwork in Cebu-city and understood that to solve the waste problem, social awareness has got to change. We introduced the G30 campaign that was implemented by Yokohama City, as a successful model. Using this model as an example we pointed out 3 reasons why this campaign—that was thought to be impossible—turned out to be a success; the strong leadership of the mayor, the co-operation between the garbage collectors and the planning staff, and lastly the awareness raising campaign on the new responsibilities of the garbage collection workers.

※Facilitator：Tuomas Salmi（Student of YCU）

Prachi Gupta
(Economist, ADBI)

Unlike Japan, waste segregation isn't a part of the school syllabus in many developing countries. New waste segregation infrastructure should be established to address health hazards currently faced by waste collectors, in a way that limits loss of employment.

Yan Zhang
(Economist, ADBI)

Private firms should be involved the social welfare. Showing that profit can be made by introducing technology to social welfare will play an important role in motivating firms to promote such measures.

Takashi Matsuo
(Representative for Japan, ADB)

Compared to early 90s, Japan's environmental consciousness has increased significantly. Asian countries face a lot of difficulties in changing the mentalities of their populations and implementing waste segregation. However, once this barrier has been overcome, the next stage will come much faster and recycling will become possible.

Ki-Joon Kim
(Principal Transport Specialist, ADB)

To realize these projects, we need the leadership of a strongly motivated mayor. Furthermore, to be able to mobilize society as a whole, we need to involve the young people, and make them a part of these projects.

Thoughts about the event (Representative of YCU：Tuomas Salmi)
Some say that Japan has special social capital that made G30 possible, but we think that any country has the potential for great social capital. It isn't always logic that decides what is possible; what matters the most is our passion. I hope that with strong passion and the will to do the right thing, we can all contribute to making Asia a better place for everyone.

【Closing Remarks : Ki-Joon Kim (Principal Transport Specialist, ADB)】

I hope that all of you young people will reflect about the new challenges the world is facing, and what you can do about them. I bid you to find new and different ways to solve these challenges, and act bravely upon them. Your doing so will pave the way to the future.

03 DAY 3 Conference Outline

Thematic Meetings		
09:30-12:00 *4 meetings run in parallel*	**Thematic Meeting 1**	Wastes and sludge treatment in smart cities
	Thematic Meeting 2	Approaches towards energy saving/ low carbon urban development
	Thematic Meeting 3	Use of ICT/Big Data
	Thematic Meeting 4	Japanese experience

Lunch	
12:00-14:00	**Lunch & Business Matching** Display unique technologies and services of private enterprises in Yokohama at the lunch venue and provide opportunities for business matching among cities, private donor organizations.

Plenary Meeting	

Group Photo & Opening Session — 14:00-14:40

Opening Speech — Fumiko Hayashi, Mayor, City of Yokohama
Keynote Speech — Iwao Horii, Parliamentary Vice-Minister for Foreign Affairs, Japan
Keynote Speech — Yasuo Takahashi, Vice Minister for Global Environmental Affairs, Ministry of the Environment, Japan
Keynote Speech — Masamichi Kono, Deputy Secretary-General, OECD

Networking Break — 14:40-15:00

Roundtable Session 1 — 15:00-16:00

Moderator
Bindu N. Lohani, Special Advisor for Y-PORT Center/President, The Resources Center

Panelists
Gil-Hong Kim, Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, Asian Development Bank
Fumihiko Nakamura, Executive Director, Vice President, Yokohama National University
Alfonso Vegara, Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli
Junichi Fujino, Programme Director, City Taskforce, IGES/ Senior Researcher, Center for Social and Environmental System, NIES
Daniel A. Levine, Senior Officer, TDLC, World Bank Group

Roundtable Session 2 — 16:00-16:40

Moderator
Bindu N. Lohani, Special Advisor for Y-PORT Center/President, The Resources Center

Panelists
Atsushi Koresawa, Director, Regional Office for Asia and the Pacific, UN-HABITAT
Lena Ng, Chief Investment Officer, Business Development, AMATA Cooperation PCL
Takashi Otsuka, Director, Japan Office, ICLEI
Efren Carreon, Regional Director, MCDCB Secretariat - NEDA RO VII, Province of Cebu

Closing Session — 16:40-17:00

Closing Remarks — Kazuhiko Takeuchi, President, IGES
Student Speeches — Gen Hayauchi, Yokohama National University
Tuomas Salmi, Yokohama City University
Declaration of the 6th Asia Smart City Conference

- Participants List -

\<Cities\>

Akhtar Ali
■ Fiji ■ Nausori, Suva

Chief Executive Officer/Special Administrator,
Nausori Town Council

Kishor N. Kshirsagar
■ India ■ Mumbai

Deputy Municipal Commissioner,
Municipal Commissioner's office

Suhono Supangkat
■ Indonesia ■ Bandung

Director, Institute for Innovation and
Entrepreneurship Development

Ma'ruf Suria Erwin Bin Mohamed Adros
■ Malaysia ■ Penang

Town Planner, Planning Department,
University Technology Mara

Wan Junaidy Yahaya
■ Malaysia ■ Seberang Perai

Director, Corporate and International Affairs

Mohamed Fazeen
■ Maldives ■ Male

Councilor

Baasanjav Sanjaa
■ Mongolia ■ Ulaanbaatar

Specialist in charge of Information Technology,
Department of Administration

Maria Adelaida C. Lacsamana
■ Philippines ■ Baguio

City Environment & Parks Management Officer,
City Environment & Parks Management Office

Eileen R. San Juan
■ Philippines ■ Cagayan de Oro

Local Economic and Investment Promotions Officer,
Trade and Investment Promotions

Efren Carreon
■ Philippines ■ Province of Cebu

Regional Director, MCDCB Secretariat - NEDA RO VII

Tomas R. Osmeña
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City Mayor, Cebu City Government

Evelyn Nacario-Castro
■ Philippines ■ Compostela

Director, MCDCB RPOD PMO

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■ Philippines ■ Consolacion

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Thomas Mark H. Durano
■ Philippines ■ Danao

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Nilo V. Seno
■ Philippines ■ Mandaue City

City Councilor

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■ Philippines ■ MCDCB

Division Head, MCDCB Secretariat - NEDA RO VII

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■ Philippines ■ Naga

City Councilor

Lakambini G. Reluya
■ Philippines ■ San Fernando

Municipal Mayor, Mayor's Office

Mahahewage ACM Wickramaratne
■ Sri Lanka ■ Colombo

Chief Dispensary Medical Officer,
Department of Health

Bui Viet Duong
■ Vietnam ■ Ho Chi Minh

Manager, Departments of Information and
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Shigekazu Yagi
■ Japan ■ Higashi-Matsushima

Director, Reconstruction Department

Yuzo Yagai
■ Japan ■ Kitakyushu

Executive Director,
Control and Inspection Department, Environment Bureau

Taisuke Matsuzaki
■ Japan ■ Kobe

Director, ICT Development,
Creative City Promotion Department,
Planning & Coordination Bureau

Satoko Yanagihara
■ Japan ■ Toyama

Policy Supervisor

Fumiko Hayashi
■ Japan ■ City of Yokohama

Mayor

Yasuyuki Akimoto
■ Japan ■ City of Yokohama

Executive Director for FutureCity Promotion,
Climate Change Policy Headquarters

\<Japanese Government\>

Kentaro Endo
■ Cabinet Office

Counsellor, Office for Promotion of Overcoming Population
Decline and Vitalizing Local Economy in Japan

Yasuo Takahashi
■ Ministry of the Environment

Vice Minister for Global Environmental Affairs

Iwao Horii
■ Ministry of the Foreign Affairs

Parliamentary Vice-Minister for Foreign Affairs

Yusuke Sai
■ Ministry of the Environment

Researcher

Mondo Yamamoto
■ Ministry of the Foreign Affairs

Director, Development Assistance Policy Coordination Division,
International Cooperation Bureau

\<International Organization\>

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Senior Director concurrently Chief Sector Officer for Sector
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■ C40

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Alastair M. Morrison
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■ ICLEI

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Kazuhiko Takeuchi
■ IGES

President

Junichi Fujino
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■ JOIN

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Masamichi Kono
■ OECD

Deputy Secretary-General

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Team Lead and Project Advisor,
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Atsushi Koresawa
■ UN-Habitat

Director, Regional Office for Asia and the Pacific

Daniel A. Levine
■ World Bank Group

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Belal Hossain
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■ Embassy of the Federal Republic of Germany

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Ricky Ichsan
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Louie A. Belleza
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Attache, Economic Section

Bui Viet Khoi
■ Embassy of the Socialist Republic of Viet Nam

Counsellor, Science and Technology Office

<University>

Hidefumi Imura
■ Japan ■ Yokohama City University

Advisor to the president

Fumihiko Nakamura
■ Japan ■ Yokohama National University

Executive Director, Vice President

<Company>

Lena Ng
■ Thailand ■ AMATA Cooperation PCL

Chief Investment Officer, Business Development

Motoyuki Okada
■ Japan ■ Finetech Co., Ltd.

President and C.E.O

Takeshi Konishi
■ Japan ■ GUUN CO., Ltd.

Senior Managing Director, Blue Economy Laboratory

Akihiko Tobe
■ Japan ■ Hitachi, Ltd.

General Manager, Smart Society Division,
Urban Solutions Business Unit

Kaoru Kikuyama
■ Japan ■ JFE Engineering Corporation

Vice President, Marketing Division,
Global Business Development Department

Hiroshi Abe
■ Japan ■ Macnica, Inc.

Manager, New Business Development Department

Seiji Fujinaga
■ Japan ■ NEC

Senior Manager, Global SI Service Business Division

Masazumi Shimo
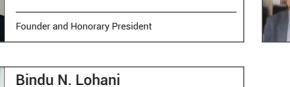■ Japan ■ Takenaka Corporation

General Manager,
Environmental Engineering Department Head Office

<Special Advisors for Y-PORT Center>

Alfonso Vegara
■ Fundación Metrópoli

Founder and Honorary President

Ryokichi Hirono
■ Seikei University

Professor Emeritus, Faculty of Economics

Bindu N. Lohani
■ The Resources Center

President

04　DAY 3 Conference Summary

Thematic Meeting 1

Wastes and sludge treatment in smart cities

Moderator　**Gil-Hong Kim**
**(Senior Director concurrently
Chief Sector Officer for
Sector Advisory Service Cluster of
the Sustainable Development and
Climate Change Department, ADB)**

Our session will be waste water and waste treatment in smart cities. It is a very big challenge for cities to manage the waste caused by very rapid urbanization in a smarter way because there are limits on landfill and water.

Our discussion will demonstrate on three areas. One is "what are your ongoing efforts?" The second one will be "what will be our challenges?" The third will be "what will be the proposed actions we can take for moving towards smarter cities?"

Yasushi Hieda
(Senior Researcher, OECC)

In order to get clear images on smart approaches, I would like to introduce four cases.

First is the Yokohama 3R dream plan, they call it Yokohama Slim Plan. This is Yokohama city's ongoing medium term basic plan for waste treatment. Yokohama has so far succeeded in reduction of GHG emissions from waste disposal over 10%. The second case is the Tokyo Metropolitan government's activities for successfully reducing the amount of waste to final disposal landfill. From 1989 to 2015, the ratio of generated waste to final disposal was reduced from 60% to 17%. The third case is the activities in Bengaluru in India making dry waste flow. They build dry waste collection centers to reduce the cost and increase the profit in the reused and recycled market. The last case is Yokohama's city's waste water and sludge treatment systems. They promote conservation of resources and reduction of cost by utilizing power generation and heat generation through disposal.

From these cases, we can find the following trends in waste and sludge treatment. Many countries have already made efforts to reduce, reuse, and recycle their waste and should continue these efforts in efficient and economically sustainable ways. To reduce the cost, we are supposed to go to the direction of a centralized system with applying the smart technology and schemes. Such as GPS, biotechnologies, IT technology, etc.

Nilo V. Seno
(City Councilor, Mandaue City)

This is the story of our neglected Butuanon River which runs through the heart of Mandaue city. I used to swim in that river. Now it is the worst river in the country, becoming a dumping site for both solid and liquid waste by industries and households.

Now what are the city's initiatives? The city has recently upgraded its land use plan and the Butuanon River is identified as Green Corridor. This means that the development in the area is restricted to green initiatives like parks, esplanade and lowering the carbon emissions. We also have a master plan for the river. Now another initiative of the city is to study and protect the lush mangroves of the river. These mangroves have thrived and serve as natural filters of not only polluted water but also solid waste. As part of our awareness campaign, the city of Mandaue will be hosting the fourth international river summit.

Now our story is far from over. We will still be meeting many challenges along the way but we are certain of our goal, to improve the water quality of Butuanon River and bring it back to life.

Kishor N. Kshirsagar
**(Deputy Municipal Commissioner,
Municipal Commissioner's office, Mumbai City)**

Mumbai is a very big city, having a population of 13 million. So, there is a huge load on the infrastructure. A single of the four medical colleges and hospitals in Mumbai has 1200 beds and services 3000 patients per day in the outpatient department. It generates a lot of waste water. The challenge was to treat the waste water generated through various hospital initiatives to remove physical, chemical, and biological impurities from the water.

Then, we built a water treatment facility through local technologies. The process is as follows. First, at the electro coagulation center, the electrophoresis happens, and impurities like metals and chemicals are separated from the water. Then, the same thing goes to the cycling tank where the water remains on top and sludge comes down. By the ozonization plant and the mechanical filters, the treated water goes to the gardening purpose. The parameters of treated water BOD less than 30 milligram per liter, COD less than 250 micrograms per liter and PH is between 6.6 to 9. All that machinery is just in a place of 10 meters by 2 meters and came in a very small budget just $5000 USD for the total set up.

Mahahewage ACM Wickramaratne
(Chief Dispensary Medical Officer, Department of Health, Colombo City)

My topic is how to make the city a smart city. One investor, selected through the PPP scheme, installed 120 bus shelters in the city providing Wi-Fi, charging facility, vending machines and so on. Number two is trash bin project with Wi-Fi facilities and charging facilities. Number three is the smart street light project. We have called for proposal to make all the street lights LED. This will reduce energy consumption by more than 50%. The central government has decided to make the Colombo City a mega city. There is a special organization called Megapolis Authority. They are introducing the LRT system.

Maria Adelaida C. Lacsamana
**(City Environment & Parks Management Officer,
City Environment & Parks Management Office, Baguio City)**

I am going to present to you green and integrated waste water management in Baguio city, which we have managed for 20 years.

Most of these were technical assistance programs initiated through our partners with assistance from ADB. We got $35,000 for the conduct of the preparation of sewage and septage roadmap until 2035 and a pre-feasibility study for possible technologies that can be adopted by the city to process our waste water.

We have been given a grant in the 1980s for an activated sludge treatment facility by JICA. Today it is 31 years old and the coverage of our BSTP covers 51% of the city's total area. We still have 1% that uses communal septic tanks and the remaining 48% are using private septic tanks.

There are seven priority projects based on the roadmap. We have adopted the water and food security and energy nexus in project development. We are currently utilizing waste water for the management of our parks and on an experimental basis as input for agricultural use. With the increased volume of water we expect that we can reuse this for power generation and to produce power to initially meet the requirements of our plant.

There are challenges. We do not have, for example, in-house technology experts.

Moderator **Gil-Hong Kim**

(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

Malé City, do you have a comment as a commentator?

Mohamed Fazeen

(Councilor, Malé City)

The City of Malé consists of three islands. The government of Maldives decided to use a nearby lagoon as a landfill, but the landfill is limited. Now Malé City needs new solutions. I hope to learn more ways to do so from this conference.

Moderator **Gil-Hong Kim**

(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

Colombo City, can you just describe trash bins with Wi-Fi to us?

Mahahewage ACM Wickramaratne

(Chief Dispensary Medical Officer, Department of Health, Colombo City)

Those have sensors that can give signal on how much waste is there.

Moderator **Gil-Hong Kim**

(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

That is interesting and smart.
The large-scale investment is still challenging. Is it governance issues, priority setting, resource issues, technology issues and institutional issues? So, what's your view on that?

Kishor N. Kshirsagar

(Deputy Municipal Commissioner, Municipal Commissioner's office, Mumbai City)

What I have presented today is a small model limited to a hospital. But, over and above, Mumbai city disposes 2500 MLD sewage in the sea. That is a very serious concern as far as environment is concerned. So, we are looking for a technology which will be cost effective and space saving, because Mumbai has got a big space crunch.

Maria Adelaida C. Lacsamana

(City Environment & Parks Management Officer, Baguio City) City Environment & Parks Management Office, Baguio City)

That is the same predicament that we have had. We have a procurement system that sometimes confuses the local government, particularly when we give preference to technologies that will have to be sourced out from outside. Another thing is that we do not have the in-house capacity to evaluate the technology proposals.

Nilo Seno

(City Councilor, Mandaue City)

We are beset with two problems, the liquid waste problem and the solid waste. For a while, we have already partnered with JICA for a water provider in the MCWD. We are now in the stage of conducting a feasibility study. There will be a lot of stages and phases for this project to be fully implemented. And, insofar as the solid waste is concerned, we have also a budgeted an amount for the acquisition of a processing plant. Perhaps the International River Summit next year will give us some ideas.

As for the feasibility study, they are already identifying areas where to put the water treatment plant and other areas to develop into parks. Some settlers along the river will be transferred to safer areas because these is flooding at times.

Moderator **Gil-Hong Kim**

(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

Does it require some consultation with the stakeholders. Because resettlement issues may come.

Nilo V. Seno

(City Councilor, Mandaue City)

We are also implementing a land use plan so that we will be able to identify the areas where we will be transferring—or perhaps limiting—the influx of industries so that we can reduce the waste water volume that goes into the river.

Moderator **Gil-Hong Kim**

(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

This session, we will discuss more about technologies and how they can help development agency partners.

Kaoru Kikuyama

(Vice President, Marketing Division, Global Business Development Department, JFE Engineering Corporation)

As for waste management, we have got an integrated approach. We can basically treat every type of garbage and waste; hazardous waste, municipal waste and industrial waste including medical waste. We have two types of technologies over there. The one is incineration stoker plant. The other one is gasification.

After those plants treat the waste, of course we either generate power or the residue is used as a recycle part for construction material such as cement. In terms of sewage sludge, we methanize. We can generate power through it. We can also use it as carbonized fuel after it is dried up. Those carbonized fields can be used for coal fired power plant. As for the NOx, SOx, HCl, we achieved far less than the standard level.

In the case of waste energy, we have a 40 year history with the technology. We built and there are lessons learnt and we try to keep innovating our technology in order to achieve the best practice.

We have a multi waste treatment facility, just commissioned this month in Toyohashi. This is world first technology. What we treat is food waste, switch sludge and human waste, altogether three different types of waste are treated in one system. Most importantly we can reduce CO_2 emissions by 3900 tons per year. This is a really good solution that we would like to promote in many other areas in the world as well.

Kathrin Zeller
(Network Manager, W2R Network, C40)

I work for C40, an international NGO and city network founded in 2005. By now we are 91 and as we are working with mega cities, we represent about 11% of the global population and about 25% of global GDP. Our city members do not have to pay any kind of membership fee. The currency we work in is cooperation. A second thing that we require the cities to do is to set goals and targets from the perspective of climate change. Our research shows that it is three times more likely that a city will really act if they have objectives and targets and a clear development path.

C40 works around these six major topics. One of our topics is waste and water management. I'm the network manager for the waste to resources network. This network works more with cities that are still doing the transition from dump sites to landfills trying to get a 100% coverage of the collection system. However, the waste to resources network deals with more ambitious cities. The waste to resources network focuses on the top of the waste management hierarchy. We try to incentivize the minimization strategies, and divert from landfills. In standard reports on emissions, the waste sector in cities in their overall inventory always looks like a very small part between 1% and maximum 10%. There is, however, actually a lot you can do and that it has a huge impact.

Before I stop just one last example from one of our most ambitious and very smart cities, New York. From social policy, they are using partnerships to exchange products before they get disposed.

Takeshi Konishi
(Senior Managing Director, Blue Economy Laboratory, GUUN CO., Ltd.)

I am going to talk a little bit about the commercial scale plastic recycling in Cebu in the Philippines we have just set up this May 2017. This waste plastic recycling project was adopted as a financing program by the Ministry of the Environment. It is potentially to be able to cover about half of the generated waste plastic from the metro Cebu area.

We use manual segregation to sort out the contaminants. After that, the waste plastic is shredded, and is finally compressed and covered with stretch film. This baled plastic is called "fluff fuel". This is used as an alternative fuel by cement manufacturing or power generation companies. The generators shoulder a small amount of the tipping fee for waste management. This is sustainable waste management and we can reduce carbon dioxide emissions at the cement manufacturer. According to our forecast, if we process 50 tons of waste plastic per day, we can reduce carbon dioxide by more than 11,000 tons per year. We can prevent floods and also we can create new job opportunities.

Hiroshi Sagawa
(Deputy Director, Social Infrastructure Finance Department, JBIC)

I want to relate JBIC possible financing scheme to waste energy and some issues relating to the waste energy project from the point of the lender. Though we have a lot of experience about financing power projects, we don't have enough experience regarding water and waste projects. But, we are really willing to expand our financing support to water and waste projects.

JBIC is a Japanese governmental financial institution and our main task is to support the activities of Japanese companies. This loan supports the equipment export activities of Japanese companies. If municipalities buy some equipment from Japanese companies, we can offer financing to the municipalities. The next one is overseas investment loans. This means if the Japanese companies make joint ventures with local companies, and if the municipality gives concessions to the joint venture, we can consider financing that project.

I think a lot of parties face funding issues. So, a lot of municipalities considered using the PPP scheme. PPP is risk allocation between the government and the private sector. Waste energy projects have a lot of specific risks like waste supply. The lender has to consider the offtake risk; not only one offtake, but many offtake risks. And there are challenges such as tariffs, foreign exchange, etc.

Kishor N. Kshirsagar
(Deputy Municipal Commissioner, Municipal Commissioner's office, Mumbai City)

What is the interest rate of providing funds?

Hiroshi Sagawa
(Deputy Director, Social Infrastructure Finance Department, JBIC)

JBIC is as I said ECA and the ECA has to obey the conditions regulated by the OECD guidelines. Our finance is higher than the ODA but maybe more competitive than commercial loans. It depends on the creditworthiness of the project.

Moderator **Gil-Hong Kim**
(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

And country risk will be considered?

Hiroshi Sagawa
(Deputy Director, Social Infrastructure Finance Department, JBIC)

Risk premium will be decided automatically between the OECD guidelines and countries

Kishor N. Kshirsagar
(Deputy Municipal Commissioner, Municipal Commissioner's office, Mumbai City)

In case of the PPP model, would you like to finance to the government or to the company?

Hiroshi Sagawa
(Deputy Director, Social Infrastructure Finance Department, JBIC)

We don't have any bias.

Tomas R. Osmeña
(City Mayor, Cebu City Government, Cebu City)

Like EXIM bank, you finance Japanese exports to other countries? I am just wondering if they will fund a local government unit directly. Because in the past we were able to borrow from OECF, but it had to go through a government bank. And, OECF was charging at that time 2.7%, but the Philippines government charged Cebu city 6%.

Hiroshi Sagawa
(Deputy Director, Social Infrastructure Finance Department, JBIC)

JBIC is former J-EXIM. We don't prohibit lending money to local governments. But, the ratio of the tax from the residents would be decided by the central government. That is a risk. So, we have to more carefully check the creditworthiness of the local government and the independence of the local government from the central government.

Maria Adelaida C. Lacsamana
**(City Environment & Parks Management Officer,
City Environment & Parks Management Office, Baguio City)**

What is the level of preparedness of project proposals that you finance?

Hiroshi Sagawa
(Deputy Director, Social Infrastructure Finance Department, JBIC)

A feasibility study needs to be done. As a function, we have the feasibility study but our feasibility study's budget is not large as some others, like JICA.

Moderator **Gil-Hong Kim**
(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

JFE and GUNN you have a lot of external experience and also good technology. From your business experience, what are the biggest challenges in making it happen in cities of developing countries?

Kaoru Kikuyama
**(Vice President, Marketing Division, Global Business Development Department,
JFE Engineering Corporation)**

From my experience visiting South East Asia and South Asia, or even Middle East, the challenges are very common. They don't have enough of a social system yet. In the case of most countries, it's not high enough to get enough return out of our investment. From the political side, what is more important is a very steady commitment from the local government and involving public participation. In order to motivate the public to participate, we need to have a strong political leadership, which is very committed.

Takeshi Konishi
(Senior Managing Director, Blue Economy Laboratory, GUUN CO., Ltd.)

It is a little bit difficult to explain how to segregate waste. We already have the contract with the private companies located in Cebu, especially companies in the industrial areas. In addition, waste management costs consists of not only tipping fees, but also transportation costs. That's why we located our facility in a convenient area. Accessibility and proximity is very important.

Kishor N. Kshirsagar
**(Deputy Municipal Commissioner,
Municipal Commissioner's office, Mumbai City)**

Is there any technology developed for the segregation which will do all the process mechanically?
The manual segregation method wouldn't last long because of the foul smell. That's why it needs to be mechanized.

Takeshi Konishi
(Senior Managing Director, Blue Economy Laboratory, GUUN CO., Ltd.)

In the Philippines case we have a manual segregation and mechanical segregation.
In the case of the Philippines, the electricity is very expensive. The combination of the manual and automatic is the best.

Kaoru Kikuyama
**(Vice President, Marketing Division, Global Business Development Department,
JFE Engineering Corporation)**

Some presenter mentioned already that when they are introducing the WTE, sometimes they realize that they do not have real professional expertise. Therefore, their evaluation process is not smoothly done. They only go for the cost. You need to introduce a plant as properly environmentally monitored because in the long run, it will be more economical than just buying a cheap one.

Maria Adelaida C. Lacsamana
(City Environment & Parks Management Officer, Baguio City)

The city government of Baguio procured a recycling system for solid waste management. I think that's several years ago, but the bog down of the equipment was basically because there was no technology transfer. We did not have people who were technically trained to run the equipment. Those are the concerns that we are meeting although we would want high quality technology.

Moderator **Gil-Hong Kim**
(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

Maintenance and operation of traditional infrastructure technologies is sometimes costlier. That's why we are gradually using this TBO contract. Of course, it is really costly but if we look at this kind of experience, then each cost is more economically justified.

Maria Adelaida C. Lacsamana
**(City Environment & Parks Management Officer,
City Environment & Parks Management Office, Baguio City)**

Operational maintenance is very important. I'm sure a lot of Japanese companies provide training to local people and when the time comes, we can provide operation maintenance services.

Takeshi Konishi
(Senior Managing Director, Blue Economy Laboratory, GUUN CO., Ltd.)

Regarding the training, although our facility in the Philippines is very simple, we have the same type of facility at our headquarters in Yokohama. So, the first thing we did was invite the local management to our headquarters factory and trained them.

Kathrin Zeller
(Network Manager, W2R Network, C40)

It depends on the region that you are located in. For example, in Japan or on islands you don't have space. You generally end up deciding that an incinerator would be the best solution whereas in the United States or in Australia, for example, there is so much space that they can landfill forever. There are various different parameters that influence the decisions. Another thing is that the mixture of stakeholders also changes over this process.

Kishor N. Kshirsagar
**(Deputy Municipal Commissioner,
Municipal Commissioner's office, Mumbai City)**

Incineration means the burning of everything whatever comes which causes increased emissions of noxious gases, such as CO2. So, in Mumbai we have banned incineration. I think we'll have to think more than the incineration part. Something which will be environmental friendly,

Moderator **Gil-Hong Kim**
(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

Some technologies are quite advanced, and minimize those kinds of emissions.

Kathrin Zeller
(Network Manager, W2R Network, C40)

It's obvious that every technology has advantages and disadvantages. So, it's important to be aware of them and choose what kind disadvantages you want to deal with and what kind of advantages you want.

Kaoru Kikuyama
(Vice President, Marketing Division, Global Business Development Department, JFE Engineering Corporation)

The polluting aspect of incineration is actually far lower than the environmentally allowed level. For example, our plant generates one-tenth of the standardized allowance for NOx and SOx . So, our technology is already able to make it very clean, compared to simply burning your garbage in your backyard. One more important thing is that if you land the garbage in a dump, the methane gas emitted is much higher than environmental standards.

Moderator **Gil-Hong Kim**
(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change Department, ADB)

Japan adopted the 3R quite a long time ago and I feel this is the best practice. And now we can see many new technologies coming up and the cost is coming down quite significantly. Then, if we look at the life cycle cost perhaps it's time for us to look at the new way of doing our business. Of course, we need to understand the pros and cons of different technologies that require some capacity building. This kind of discussion is very useful in understanding the concerns, difficulties and limitations faced by mayors or city governments, as well as the concerns and constraints of the private sector and development agencies. Thank you very much for your very proactive discussion and very frank opinions. I will summarize our discussions and will briefly report back during our plenary session in the afternoon.

Thematic Meeting 2

Approaches towards energy saving/ low carbon urban development

Moderator **Fumihiko Nakamura**
(Executive Director, Vice President, Yokohama National University)

This session's topic is 'Energy and Transport in Smart Cities'. The objective of the session is to share needs and challenges and showcasing good practice and smart city solutions currently deployed in Asian cities.
First, our reporter, Ms. Masami Tadokoro will explain the key point of this session to make the discussion fruitful what points we should consider.

Masami Tadokoro
(Senior Researcher, OECC)

Let me give you a brief overview of the topics that will be discussed in the thematic meetings focusing on the approaches towards energy saving and transportation. I would like you to keep in mind the following three questions – what kinds of technologies or solutions have been introduced so far in your cities or in your towns? What do you expect the city to deliver for future development in the next 5 or 10 years? The third question is: "As the city officer or technical supplier, what is the best course of action to follow in the future?"
In order to get a clear idea on smart approaches as mentioned here let us now look at some concrete best practices and some demonstration projects implemented in the past.
The first best practice example is Blockchain, based Microgrid Power Project demonstration in New York. There are houses putting solar panels on the roofs. A pair of computers is connected to the panels, crunch the numbers on how much electricity is generated and write that number to Blockchain. TransActive Grid can be a kind of energy market platform enabled by Blockchain technology.
Next is, a JUMPSmart Maui. JUMP is Japan-US Island Grid Project. UMP Smart Maui implemented in Maui, Hawaii is public-private partnership to develop the best technologies for optimizing renewable energy use. Maui is an island, they faced issues seriously which included three points. – As first point, they heavily depended on summer power plant and crude oil. The second point is the use of diesel as the major fuel for vehicles. The third point is the cost. Gasoline cost is so expensive. Of course electricity cost is more expensive than mainland USA. So, the solution is to introduce a lot of renewable energy as main electricity source. The project promoted the use of EVs and EVs can now also be used as a source of energy.
The third best practice is share and charge community. The share and charge is a network for various types of charging stations and this aims to enhance e-mobilist to connect to charging stations anywhere, anytime by linking the supply and demand of charging by using applications. So, by using smartphone the e-mobilist who is driving the EV can easily find EV charging stations close to them. This is implemented in Germany.
The fourth best practice is Regenerated Electricity of Train Demonstration Project. Echizen Railway and Fukui Prefecture have collaborated to demonstrate this project. What they did is they implemented the project to find how much electricity can be generated when applying the brakes of a train. Electricity generated is transferred to the electricity storage in the station and charged to the EV charging station near the station. They are also putting solar panels on the roof. Regenerated electricity and renewable energy can be a buffer electricity to promote resilience for disaster recovery.
The last example is here in Minato Mirai. This is the YSCP, Yokohama Smart City Program, which is a next generation energy and social verification system. The purpose of the smart grid here is to balanced energy efficiency in the district.
These are classified according to whether they are decentralized projects, or centralized projects, or use smartphones or low technology. This classification or technology scenario is important for planning.

Akhtar Ali
(Chief Executive Officer / Special Administrator, Nausori Town Council, Nausori, Suva City)

Currently we are facing the problem of rapid urbanization and growth which is impacting our existing resources in terms of transportation, mobility and energy. Our transportation mode is cars and buses. There are a lot of opportunities for getting into hybrid vehicles now. There is a high importation bill for Fiji. Due to rapid urbanization there are also very serious waste management issues. There are other issues pertaining to challenges in terms of shortage of housing.

Hopefully, we will have 100% renewable energy by the year 2030 by initiatives such as establishing car parking meters changed from electricity to solar powered systems. We are lucky to have quite a substantial amount of water in Fiji so 80% is generated through Hydro Power. We encourage cycling and carpooling, promote use of alternative fuel and introduced an E-Ticketing system and promote subsidies on purchases of new busses.

Carmelino Jr N. Cruz
(City Councilor, Naga City)

Visayan Electric Company (VECO), the electric service provider of most towns and cities in Metro Cebu, which has a many needs and is vulnerable to disasters. For coping with the growing consumer demands, we have need of additional power generation facilities, and we need clean energy. So, we have partnered with the Philippines National Oil Company Renewable Corporation to supply energy to our local government center using solar panels. We are also a pioneer in prepaid electricity. In partnership with VECO we have introduced prepaid electricity to three commercial buildings renting to small businesses. And we have implemented rigorously solid waste management programs and waste is used to generate electricity.

We have had an increase in both the number of new vehicles registered—worsening the traffic situation in the city—and mass transport system needs. The big projects for mass railway transit are taken care of by the national government.

Lakambini G. Reluya
(Municipal Mayor, Mayor's Office, San Fernando City)

Our big challenge is mobility and accessibility of people and goods. The best effort that we can do right now is the implementation of our seaports, improvement of our seaports and reclamation projects. Our town is identified as the Central Spine RORO Project which means the Philippines nautical central spine highway from Luzon, connecting Visayas and Mindanao. We already have an existing port, but we need to expand it. We will build a community for our displaced fisher folks. We will construct government centers, private offices and parking areas. For now, everything is a work in progress.

Yusuke Sai
(Researcher, The Ministry of the Environment, Japan (MOEJ))

I will introduce the JCM scheme, Joint Crediting Mechanism. Japanese government provides financial support to Low Carbon Air Project. We call it the JCM Model project program. The use of the project is so wide - energy saving equipment for industrial areas, control system for transportation, etc. We are doing this project all over the world in the 70 countries that we have the JCM partner agreement with. Next, I introduce the City to City Collaboration Program. Japanese cities have experience and knowledge to promote low carbon society and Japanese government expects Japanese cities to help developing countries and cities to promote low carbon societies. There is, for example, a project in Da Nang city, Vietnam in cooperation with Yokohama City, whose aim is to replace the existing low efficiency water pumps with new ones. We have 15 JCM model projects developed by the City to City Collaboration Program. We expect that more projects will be established and expanded all over the world.

Lena Ng
(Chief Investment Officer, Business Development, AMATA Cooperation PCL)

We have signed a MoU with the Ministry of Energy, passed by the Prime Minister's Office on March 14, to work on Smart City development. We have also signed a MoU with the Ministry of Digital Promotion to incorporate development of E-commerce, digital utilization, and promote use of the IoT. For smart development, we also signed a MoU with the National Taiwan University, as well as with YUSA and the city of Yokohama to consider the possible areas of collaboration together. In this field, we have identified eight pillars—energy, mobility, manufacturing, community, aerospace, promoting innovation through the science city, smart education and the environment.

We will be implementing the roofing for all factories. Our goal in terms of sustainability as a smart city is to be self-reliant and energy efficient.

Tsutomu Yoshigi
(Senior Director, Project Department, JOIN)

Our organization was established as a joint fund, by both the Japanese government and private companies in Japan, to promote infrastructure and urban development, focusing on PPP schemes. PPP is very complicated but has good merits, because government can use their money efficiently and private companies can provide state of the art technology and their expertise, but the problem is that infrastructure is a very long-time project and requires contributions from many entities. So, our role is to provide know-how and hands-on help as well as money.

Recent examples are the development of housing and commercial facilities in Indonesia and also in a new city in Philippines. We have a partnership with a Philippines special agency called BCDA. We are making a master plan for the newly developed city. Because a railway provides a good Smart City scheme, I believe that Japanese companies and the Japanese government have especially good experience to provide in the field of smart lifestyle using public transportation. I think that railways are the key for us, so we cooperate with the Japanese government and the Philippine government as well as JICA and other international institutes to provide good mobility to this new city.

Alastair M. Morrison
(Senior Water Sector Specialist, Department of Mitigation and Adaptation, Green Climate Fund)

The Green Climate Fund was set up by the United Nations Fund for Climate Change. It is a global organization set up after the Paris Agreements to channel funds to developing countries to mitigate climate change, to reduce their CO2 and other greenhouse gas emissions and to adapt, build resilience, and build safer, smarter cities that are more sustainable. We work through national entities; governments—typically the Ministry of Finance or the Ministry of the Environment in the client countries; accredited entities—which include organizations, the World Bank, the Asian Development Bank, JICA and others; and commercial banks. Our model is very much country-driven and it is slightly different from other programs in that way. We are also keen to have national entities. These are organizations from the countries themselves and nationally accredited entities. We can provide funding and finance so that they have a safer, sustainable lifestyle. It is our priority that 50% of our resources should go to small islands, developing states, least developed countries, and African states. Some projects in our pipeline: We have a big Green Cities Project in Ethiopia. We are working with ADB on affordable housing in Mongolia.

Motoyuki Okada
(President and C.E.O, Finetech Co., Ltd.)

Today, we would like to explain briefly what we are doing under the theme of 'Energy Savings and Low Carbon Society Development' from Finetech. Finetech Company is an R&D-based company for energy saving technology development, renewable energy technology development and new material development, in collaboration with academia, our government and businesses. Finetech is a board member of YUSA and supports Yokohama city's Y-PORT initiative.

We own the Smart Green Park which is located in the northern part of Tokyo. This is a one-stop showcase for renewable energy and energy saving technologies. This year, we received many dozens of domestic and global delegations, during which we discussed about how we approach partner countries to create projects. Finetech is now collaborating with Thailand and Indonesia, joining with their JCM program. In Thailand, we are now have a big PV solar system on the rooftop of a factory and in Batam, we are now conducting a feasibility study for street lights implementation in Batam Island. So this scheme is very beneficial and very strong.

Moderator **Fumihiko Nakamura**
(Executive Director, Vice President, Yokohama National University)

We have finished all the presentations. Now, I invite the two commentators and ask them to make brief, general comments. I ask the first commentator mainly touch on energy and the second, on transport and energy. After that, we will open the floor for you to have a discussion.

Shikibu Oishi
(Senior Advisor for Trade Policy and Economics, Economic and Scientific Affairs, Embassy of the Federal Republic of Germany)

Germany stands for a very strong promotion of renewable energies and the long-term plan is to have a renewable energy share of 80% by 2050. Renewable energies bring a lot of benefits and one benefit is to save money from energy imports. Another point is the participation of civil society. Germany puts a very strong focus on the participation of the civil society to implement the energy transition and without the acceptance of the public, this would not be possible. Furthermore, cooperation between regions and local governments is important. We have a good example now between Germany and Japan. Among matching cities in terms of size and economic background, we have started strong exchange.

Suhono Supangkat
(Director, Institute for Innovation and Entrepreneurship Development, Bandung City)

I have four points that will be considered for the session. One is the city model; the second is energy and transport; the third is collaboration model between cities, companies and local involvement; and the fourth is local involvement in the city. The city is a complex system. The problem in developing cities is integration between sectors.

In my country, IMS, Smart Indonesia Initiative Association, we proposed what we call a Smart City Model that contains the resources, enablers and domain. There is also energy and transportation. Energy is needed by all components of the city. The problem with energy is managing it properly. I think developing cities need to know how to design, propose, and implement smart mobility.

We talked with the smart generation yesterday. I think the millennial generation has many ideas, and we should involve them in smart waste management, smart water management, etc.

Moderator **Fumihiko Nakamura**
(Executive Director, Vice President, Yokohama National University)

Thank you very much for your very interesting comments and ideas about financing, participation, collaboration, modeling, and especially on the role of the city. Smart City discussions often tends to move to technology development and sometimes they miss the role of the city, what a future city is. I am very happy to have listened to all the presentations because most of them were concrete and they were connected to city issues.

Are there any comments, questions or opinions to other speakers, commentators?

Lakambini G. Reluya
(Municipal Mayor, San Fernando City)

We would like to signify our intention to join your JOIN. So can you be our big brother?

Tsutomu Yoshigi
(Senior Director, Project Department, JOIN)

As I said we are focused on PPP. That means the main player is the private sector. I think politicians or government officials should provide leadership and I hope I can support your activities as well.

Lakambini G. Reluya
(Municipal Mayor, Mayor's Office, San Fernando City)

We have the Taiheiyo Cement Philippines, Inc. and we have a good relationship with them in terms of link and collaboration. So, we would propose to them that we need to tie up with the private sector in other countries. We need to tie up with private sector in other countries to develop fully because Japan is way ahead of us. So, please visit us and help us to come up with big projects.

Moderator **Fumihiko Nakamura**
(Executive Director, Vice President, Yokohama National University)

As a professor in transportation planning, I am expecting good things from JOIN. All middle to large cities are very important in the future, but most of them still don't have good public transport systems. We need to finance them. Japan has a lot of experience; therefore, I think collaboration could be possible.

Akhtar Ali
(Chief Executive Officer / Special Administrator, Nausori Town Council, Nausori, Suva City)

Most cities are facing similar challenges, but the solutions for different cities may not be the same. Currently, climate change is really impacting and creating havoc in almost all towns and cities. Next week is going to be a big event in Bonn, Germany in terms of COP23, Fiji will be the President of COP23 and I think we are fortunate that Fiji will lead the climate change process, taking up the Paris Agreement further. For that, we are going green in terms of our sustainability. I think this is an opportunity to draw on many elements to learn about smart systems concepts, in order to ensure that we do develop our towns and cities in a smart way and ensuring that we become sustainable in future.

Shikibu Oishi
(Senior Advisor for Trade Policy and Economics,
Economic and Scientific Affairs, Embassy of the Federal Republic of Germany)

I think most of the industrialized countries are feeling the impact from extreme weather events more and more, and not only the most vulnerable countries. This really helps to raise the awareness about the need to build more resilience. I think it is also the responsibility of advanced nations that have the funds and technical skills and knowledge to support countries that are more vulnerable.
In Japan there is a very strong interest in a German model that is called Stadtwerke which is basically a local energy utility company run by the city government. My question would be how is the local energy utility organized in your countries and cities?

Suhono Supangkat
(Director, Institute for Innovation and Entrepreneurship Development, Bandung City)

In Indonesia, a lot of convenience stores are closed and moved online which means the transportation needs more consideration. In many big cities in Indonesia the transportation now is a very high consideration. We have GO-JEK, comparable to Uber and Grab. Grab and Uber are for cars but if you go to Jakarta or Bandung or somewhere like that, it is with a bike or small car. Transportation is the main issue in cities, including energy and so on.

Moderator **Fumihiko Nakamura**
(Executive Director, Vice President, Yokohama National University)

Two commentators raised another new aspect - one is the local city level application. Another one is GO-JEK, one of my research topics. Similar ones are observed in Thailand and Vietnam that are much more advanced than the Japanese taxis and can save energy, but sometimes there is a gray line between legal and illegal. So, there are lots of arguments.

Lena Ng
(Chief Investment Officer, Business Development, AMATA Cooperation PCL)

We work very closely with the government of Thailand and the government of Thailand has launched the Eastern Economic Corridor. Thanks to the Japanese government, we have also received strong support especially on the high-speed train connection all the way from Bangkok to the Rayong Province. So, we really hope that we can work very closely for this middle linkage centering on Thailand. We must think about the context while we are developing smart cities, like what some of these regional transport movements are, what will impact us on the geopolitical situation, and how the government of Japan would develop the important strategic roadmap.

Moderator **Fumihiko Nakamura**
(Executive Director, Vice President, Yokohama National University)

High-speed rail is one of the very interesting issues. According to the statistics, it is a comparison between airplane service and railway service and from the energy saving point of view, high-speed rail trains are very efficient. Although a bit slow, they can also carry freight transport. I know there is lot of talk, but as a scholar, I will say high speed rail system has much potential for the future cities.

Alastair M. Morrison
(Senior Water Sector Specialist, Department of Mitigation and
Adaptation, Green Climate Fund)

A few comments were raised about developing countries and their commitments to climate change. That is why the Green Climate Fund was established . We are a major mechanism and are scaling up, and we look forward to working with you all either as donors and contributors or as clients in the future.

Carmelino Jr N. Cruz
(City Councilor, Naga City)

We can promote the support from communities, and stakeholders. So, we look forward to also engage with Green Climate Fund because our climate change adaptation is quite a new concept for Filipinos.

Moderator **Fumihiko Nakamura**
(Executive Director, Vice President, Yokohama National University)

In this 30-minute discussion I got a lot of interesting points. Some of them are related to transportation and some of them to climate change issues and both might be connected.
There is lot of collaboration amongst sectors. Collaboration between private and public sectors and the participation of cities is getting a consensus amongst the stakeholders was also discussed.
I said in the beginning of the discussion that sometimes smart is strongly related to information and communication technology. That is true, but it might just be the tool. The goal being becoming resilient and sustainable.
Normally we share success stories, but we should also share the problems. This kind of sharing is also very important.

Thematic Meeting 3

Use of ICT/Big Data

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

 First, the objective is to combine digital technology and urban intelligence together to create Smart City concept.

 Key components for an intelligent city of the future is leadership – governance. Second is connecting with society. It is important also to consider the environmental systems of the city and the urban structure. And the technology allows us to integrate this component and to have better cities

 If we combine these emerging technologies like big data with this way of design the physical aspect of the city, we approach to the smart cities.

 One of examples where physical and digital has been connected is Columbia where a project called the Digital Diamond are developed. And in Singapore, they have "the Bintang Project".

 We have representatives from different very innovative cities around the world. We have also here leaders of technology and leaders from academia. I expect at the end of the session, we can really have a better understanding of how to integrate the different components.

Makoto Kato
(Principal Researcher, OECC)

 As an assistant for the moderator, I would like to give you just a brief framing type presentation regarding what we are going to talk about in this morning session. Question number 1 is, what is big data and how to contribute to development of smart city? Question number 3 is what is your experience of to be utilization of ICT and the big data?

 You remember like 10 years ago while nobody thought for ICT related technology and big data is so close to our lives. But if you are approaching towards 2010, there is huge technology advancement for the utilization of ICT like use of big data for different purposes including for the local government governance. It is the same in this Minato Mirai area and Seoul Metropolitan City. There are potentials and needs for us to utilize ICT and big data for traffic management, air pollution, etc.

 More examples are the Google Map, smart parking by GPS, my SOS app., and the special technology to recognize your face and then to check used in Japanese international airports. If you combine many of these kinds of technologies, I think that the city is becoming smarter. This is the case for Copenhagen, Denmark.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

 First, we would like to begin by sharing good practices. Then, Asian cities, please.

Bui Viet Duong
(Manager, Departments of Information and Communications, Ho Chi Minh City)

 We have approximately 10 million people. At the end of last year, our city recognized that we had to implement the smart city to tackle all the challenges. Nowadays infrastructure is really burdened from the overcrowded populations. So, to implement smart city, we need to develop technology framework in the fields of e-government, anti-flooding, environment, health, and food safety. So, for the period of 2016 to 2020, we implement a program, and are going to develop a project to introduce ICT.

 Firstly, we need to develop and share database and open data ecosystem. The second one would be for forecasting social and economic development. The third one would be the smart city operation centers. And I think the last is security.

 There are many challenges. They are shortage in manpower related to ICT technologies, fast growing and changing technologies, finance, legal framework, central government's delegation to the city level, and the participation and involvement of the citizens.

Sunghoon K. Moon
(Team Lead and Project Advisor, Strategic Planning and Communications, Seoul Urban Solutions Agency)

 Seoul Metropolitan Government has applied big data analysis to policies since 2013. Government has been doing big data analysis in 23 projects, such as traffic like late night Owl Buses, welfare, business, tourism, safety and more. Furthermore, Seoul Metropolitan Government is launching big data campus to create social innovation through citizen participation.

 We capture the voices of citizens through our various e-government systems to come up with project selection. Now, the City of Seoul is blessed with abundant data sources because we are into our third decade in terms of e-government. We get data from private companies as well, but we understand that there are some legal frameworks.

 To introduce big data analysis, firstly, we understand big data is not in itself a solution, rather it is a powerful mechanism to understand the problems and an intelligent way of generating solutions. Secondly, we need minimal data pool. Thirdly, we need to understand your or each city's institutional frameworks and legal frameworks.

Taisuke Matsuzaki
(Director, ICT Development, Creative City Promotion Department, Planning & Coordination Bureau, Kobe City)

 I would like to talk about "Creating 'Government Technology' Market in the Era of big data". We develop Smart City based on safe local development.

 We made smart phone applications of photos and materials of the Great Hanshin-Awaji Earthquake to pass on the earthquake experiences to the future generations. We call this "time slip walk". And we implemented demonstration experiments of smart phone applications for guarding children and we launched their products. In addition, we make simulations for the earthquake in Kobe by the super computer produced in Kobe in 2011. This method of visualization helps people conceptualize how they should think about their city.

 Furthermore, we established Data Academy as human resource development, which leads to businesses. We name this "government tech market". We create systems for supporting entrepreneurs from it. Now, we are realizing "government technology market".

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

 Next, technology companies, please.

Akihiko Tobe
(General Manager, Smart Society Division, Urban Solution Business Unit, Hitachi, Ltd.)

I am involved in creating Kashiwa-no-ha Smart City. We had Great East Japan earthquakes. That gives us idea to create safe and sound city. So, we created backup of energy system in the city. In that case, the important thing is to apply the big data, or the AI is not the priority. How we achieve the smart in your cities is very important to think about. We should not expect much to the big data or AI. The important thing is issues that you are going to aim at.

Seiji Fujinaga
(Senior Manager, Global SI Service Business Division, NEC Corporation)

By the year 2020 and in the same year, we understand the IoT devices will go up to even trillions over the world. In such technology trend, NEC is focused on the seven things of social value creation, which are totally compatible with the 17 goals set out by the sustainable development goals. NEC will take the initiative to solve these social issues in accordance with global movement and accompany the customers innovative challenges. Our approach is to provide value with leading edge AI technologies and highly reliable and integrated ICT platform in the areas of computing, networking and security. Concretely speaking, using the sensor technology and image recognition technology, NEC visualizes the real world and then makes new value by analyzing and processing such visualized data. I would like to cite two reference cases. One is for Kyoto City of Japan where the local police introduces crime prediction system for the patrolling activities and another is for Tigre City of Argentina where video analytics and face recognition solutions are provided by NEC.

Hiroshi Abe
(Manager, New Business Development Office, Macnica, Inc.)

I would like to talk about a tool for the use of smart energy. Our tool is what we call demand response. It is the art of lowering power consumption in critical times and coordinating multiple distributed resources on the grid for the grid's benefit. In the Philippines, for example, there are a lot of power shortages. Our solutions are to avoid having to continuously build new power plant by taking more control over the load. And in the Kansai area in Japan, we are connecting to multiple residential storage systems and we are providing the grid operator with monitoring forecast and controllability over this residential storage.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

Next, from the academic side.

Hidefumi Imura
(Advisor to the president, Yokohama City University)

I would like to talk about how we should educate the students who will really need smart city or the development of smart city technologies. I think this new research field or education field. There are three elements. One is the solution-oriented thinking. Second is data science. And we need latest kind of technical methods, data engineering. The first student enrollment will start in the university next year April 2018. We would emphasize multidisciplinary approach because data science is just a data science, but how to apply this science to various social, cultural, technical and many other issues. Data science has wide range of application, smart urbanization, medicine, tourism, disaster prevention, marketing, and etcetera. And people with education of data science will have a capacity to work in the global business environment. The principle of data science education is to visualize useful information from Big Data.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

Now, let's listen to the experiences of Seberang Perai City.

Wan Junaidy Yahaya
(Director, Corporate and International Affairs, Seberang Perai City)

We had had three districts, and we combined them to make it one municipality, then we started smart city. Firstly, we shared vision with communities and the stakeholders. Now, we did for strategic planning for year 2008 until 2012. We measured KPI for every individual activity to show our performance to the public and the stakeholders. We created innovation and technology. Then, for the social cohesion, we believe that bottom up imperative reconstructed country and strengthened the good governance.
We have developed strategic plan for the year 2014 until 2018. We make efforts towards cleaner, greener, safer, and healthier Seberang Perai and we enhanced the technology system to improve MPSB services.
In addition, we have citizen application technology system, e-complaint, CCTV to monitor online, e-court, Geographic Information System, the e-filing, etc.
Smart city is the conjunction of the stakeholders, institution, and technology, and will enhance quality of urban services and reduce cost, recourses and consumption activity.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

Now, commentators, how do you think about the best practice of the presenters?

Dionisio Ledres Jr.
(Assistant Regional Director, MCDCB Secretariat - NEDA RO VII / Consolacion City)

Consolacion City is too small and way far back to come to doing smart city. But, hearing from the presentations today, I have many takeaways that I would like to share with the mayor.

Efren Carreon
(Regional Director, MCDCB Secretariat - NEDA RO VII, Province of Cebu)

Metro Cebu, comprising of 13 local governments and which is experiencing rapid urbanization, had been collaborating with the help of the City of Yokohama in crafting the roadmap for sustainable urban development for Metro Cebu, which was completed 2 years ago. That helps to solve urban issues like traffic, flooding, and of course disasters. This is an opportunity for us to further enhance the roadmap by learning more on ICT and Big Data solutions to some of the problems, in particular, the transportation system and early warning systems.
There are some general concerns on applications. In a developing country like the Philippines, affordability of new technology or smart technology is a major issue. And the security and privacy of information would be perhaps a challenge. In this case, he presentation of Ho Chi Minh City is useful.
I forgot to mention that the City of Yokohama has been instrumental in bringing technology from the private companies here in Japan, such as the waste recycling plant.
It is difficult to integrate 13 separate local governments, but we look at common problems like flooding, traffic and even the natural resources.

Maria Teresa S. Alambra
(Division Head, MCDCB Secretariat - NEDA RO VII)

The problem with utilizing ICT using Big Data has not gained much ground as far as the MCDCB organization is concerned because there are 13 LGUs which have their own authority or jurisdiction where they are very realistic in how they manage their own jurisdiction. So, it is difficult to bring in ICT and big data. But they experience the event of flooding itself, so they are very open to share some of their data and even to cooperate with each other. Another area is on traffic because traffic in Metro Cebu is worsening,

Another is using the cell phone as part of your data capturing service. We came into a memorandum of understanding of agreement with telecom companies and get some of their data to be shared to the national government for planning purposes only. In this case, we are trying to work with LGUs first, since they have a lot of data already at their disposal. And we use it for crime prediction.

Bui Viet Khoi
**(Counsellor, Science and Technology Office,
 Embassy of the Socialist Republic of Viet Nam)**

City of Vietnam like Ho Chi Minh City and Danang City, and Hanoi just started to have plan for developing smart city, so currently we are still lacking a lot of knowledge in urban planning and technology expertise to share with you, but we hope to continue to have cooperation from Japanese cities and Asian cities in terms of smart city building.

Moderator Alfonso Vegara
**(Special Advisor for Y-PORT Center / Founder and Honorary President,
 Fundación Metrópoli)**

Technology companies, please give advice on technology to cities.

Akihiko Tobe
**(General Manager, Smart Society Division,
 Urban Solution Business Unit, Hitachi, Ltd.)**

We are going to provide train systems and trains themselves to prevent the traffic congestion and public pollutions problems, and elevators and escalators when you come to the tall buildings. In this case, you need to think about your policy and priorities.

Seiji Fujinaga
(Senior Manager, Global SI Service Business Division, NEC Corporation)

It is effective to consider our solution about bus rapid transit because of less investment, less time for implementation, etc. and its coverage penetrated over the cities and inter-cities. Not for city levels, though, we could also have good experience by supplying ICTs for the stadiums and the areas.

Hiroshi Abe
(Manager, New Business Development Office, Macnica, Inc.)

In Japan, the local production for local consumption of energy is popular, which will be also popular all over the world.

Moderator Alfonso Vegara
**(Special Advisor for Y-PORT Center / Founder and Honorary President,
 Fundación Metrópoli)**

I would like to hear about the operation center of Ho Chi Minh City a little more.

Bui Viet Duong
(Manager, Departments of Information and Communications, Ho Chi Minh City)

We established the operation center as a part of the vision 2025 to have all the data at real-time as well as to have the strategy to forecast and boost economics of our city.

Moderator Alfonso Vegara
**(Special Advisor for Y-PORT Center / Founder and Honorary President,
 Fundación Metrópoli)**

Ms. Sunghoon Moon, how do you go from data to policy making?

Sunghoon K. Moon
**(Team Lead and Project Advisor, Strategic Planning and Communications,
 Seoul Urban Solutions Agency)**

I believe data is a critical part of becoming a smart city and that is because data really gives us a better understanding of how to make our citizen's lives. I do want to mimic what the gentleman from Hitachi has also said about Big Data or AI. That is to say, they in themselves are not solutions. They are instruments in providing the solutions, but for us to really tailor our solution into the problems, we need to have a good grasp of what the problems are.

Moderator Alfonso Vegara
**(Special Advisor for Y-PORT Center / Founder and Honorary President,
 Fundación Metrópoli)**

We would like to hear about urban innovation from Kobe.

Taisuke Matsuzaki
**(Director, ICT Development, Creative City Promotion Department,
 Planning & Coordination Bureau, Kobe City)**

A branch office of 500 Startups, the Silicon Valley-based venture capital was established in Kobe for revitalization of local communities which leads to innovation.

Moderator Alfonso Vegara
**(Special Advisor for Y-PORT Center / Founder and Honorary President,
 Fundación Metrópoli)**

Mr. Wan Yahaya, Is there any cooperation with other local governments in Penang State?

Wan Junaidy Yahaya
(Director, Corporate and International Affairs, Seberang Perai City)

We are a bit competitive, and we think which one is faster. For example, Seberang Perai City established the first the anti-bribery system in Malaysia.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

There are countries having many islands in Southeast Asia. Mr. Efren Carreon, I would like to hear about the smart island.

Efren Carreon
(Regional Director, MCDCB Secretariat - NEDA RO VII, Province of Cebu)

There are four island provinces that comprise the region. Challenges are connectivity in terms of transportation. Transportation needs to be intermodal and we are modeling now the Mega Cebu concept. We have been interacting with World Bank for the bus rapid transit for Metro Cebu. In this case, the private sector would oversee the operation and management of these buses.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

Professor Imura, what do you from the establishment of the new department?

Hidefumi Imura
(Advisor to the president, Yokohama City University)

We have already lot of experts in mathematics, etc. but we need persons to visualize what we can't see in the flood of information to find solutions. I am very ambitious to give very much complicated and very much integrated education to the students.
We invite not only people from academia, but also practitioners. We need collaboration between scientists and practitioners to find a solution.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

Dr. Bui Viet Khoi, how about urban diplomacy and cooperation between cities?

Bui Viet Khoi
(Counsellor, Science and Technology Office, Embassy of the Socialist Republic of Viet Nam)

We know that there are MoU between Yokohama and Da Nang City about cooperation in smart city. But I see that the cooperation up to now not yet bring a lot of presents. I think Da Nang has lack of financial resources and technological expertise, so I think Da Nang may needs more help from central government and the Japanese partner.

Makoto Kato
(Principal Researcher, OECC)

I just would like to introduce your advice and review on whether this accurately captured your presentation and comments. One is remarkable ongoing emerging efforts towers in smart city development. Then, the second one is major needs and challenges in Asian cities. And number three is your key message to provide suggestions on actions for Asian cities towers for smart city development.
I just would like to introduce a little bit more about the suggestions. Firstly, in many Asian cities, they started applying ICT and big data to provide solutions such as mobility, health, education, etc.
Secondly, some local governments established the platform or alliance type mechanism and facilitate access for better use of the Big Data and then accelerating innovation. In addition, they mentioned about alliance in greater urban areas, like wider use of data and ICT technology. And technology suppliers have helped standardizing datasets and tailor-making for optimum use for specific needs of cities. Challenges in Asian cities, I think, are development of strategic master plans or roadmaps. Then for better utilizing ICT and big data, national and local government authority needs to provide an approach to legal framework. Furthermore, like Professor Imura's presentation, we need multidisciplinary approaches to urban solution issues.
Thirdly networking should be further accelerated among multiple stakeholders including local governments, national authorities, technology suppliers, citizens, and other beneficiaries of application of ICT technology and data.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

I'd like to ask the technology companies about how cities which don't have big budgets can finance implementing technology.

Akihiko Tobe
(General Manager, Smart Society Division, Urban Solution Business Unit, Hitachi, Ltd.)

As a technology supplier as one of private companies which have limited resources, if we share the real issues and your priorities, maybe we can think together what we can contribute to because we have past experiences.

Seiji Fujinaga
(Senior Manager, Global SI Service Business Division, NEC Corporation)

If one operation center is connected by cloud services and co-shared with other cities, it can make sense economically.

Hiroshi Abe
(Manager, New Business Development Office, Macnica, Inc.)

As for costs, because 30-40% of costs of a smart city are those of constructing and operating energy facilities, we can reduce them if we use solar power generation or wind generation instead of thermal power generation and we can invest saved costs in others.

Makoto Kato
(Principal Researcher, OECC)

The smart city conference is a marketplace for you to exchange your opinions. Yokohama City Government is actively engaged in the interaction between other cities and Asian pioneers such as Kobe, Cebu Seoul, etc.

Moderator **Alfonso Vegara**
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

Finally, I would like to introduce super intelligence. Super intelligence is human intelligence plus artificial intelligence. We need both intelligences to develop smart cities. I would like to conclude this meeting with this comment.

Thematic Meeting 4

Japanese experience

Moderator **Junichi Fujino**
(Programme Director, City Taskforce, IGES / Senior Researcher, Center for Social and Environmental System, NIES)

In this session, we would lile to discuss how to make efforts of municipalities more SDGs-like by cooperating between Japanese municipalities, Government, companies, and other entities.

Now, United Nations promote the SDGs intensively. What is happening in Japan? Japan follows the United Nations' activity and then this year Japanese Government introduced the Japan's Voluntary National Review. This report also includes the business activity or local government activity or energy or citizen's activity because SDG's mind no one will be left behind, and every stakeholder needs to join this activity.

In Japan, Eco-Model City and FutureCity initiative has been promoted, but they have less relationship with these very fundamental, social goals such as SDG1 is like poverty or SDG5 gender or SDG10 inequality.

Yuzo Yagai
(Executive Director, Control and Inspection Department, Environment Bureau, Kitakyushu City)

During the industrial revolution, the public pollution became serious in Kitakyushu City. We have overcome it and have used its results for the international cooperation. Furthermore, we address resource circulating and efforts against global warming as new challenges, and recently we are addressing The SDGs as a pioneer in Japan.

I cite examples. One effort is "Energy Park". We actively introduce independent off-grid supply. So, fundamentally, we make efforts to cover all sorts of energies sources but nuclear energy and geothermal energy. We also promote energy management. We are experimenting with changing the price of electric power according to demand, a system called Dynamic Pressing, and we are also planning a regional backup power supply facility. We also focus on hydrogen. Not only FCV, but also, we are thinking about its use in houses and offices. In addition, we utilize a local electric power company, Kitakyushu Power Co., Ltd. We also implement resources recycling for renewable energies.

Satoko Yanagihara
(Policy Supervisor, Toyama City)

I would like to introduce Toyama City's efforts aiming at a sustainable city.

After Rapid Economic Growth, the urban area of Toyama City expanded rapidly into the suburbs due to population growth and the progress of motorization. Through recent population decline and the super-graying society, the expanded urban area has caused a lot of problems. Therefore, we try to make our city centralized and compact, using public transportation as an axis. We have LRT as a project for energizing public transportation.

We address projects aiming at a low-carbon society because we are selected as an Eco-Model City and a FutureCity. As a part of it, we developed "Safe and Environmentally Smart Model Towns".

In addition, in 2014, we developed plant-growing factories in mountainous areas suffering from aging and depopulation and promote the sixth industrialization of perilla.

We also implemented using abundant water resources from our precipitous mountains. In relation to this, we have concluded a cooperation agreement with Tabanan, Bali, Indonesia on the implementation of the project.

Shigekazu Yagi
(Director, Reconstruction Division, Reconstruction Department,
 Higashi-Matsushima City)

 Higashi-Matsushima City was damaged by the Great East Japan Earthquake. In our rehabilitation and reconstruction, our goal is to be the creative construction and to become a model of damaged cities or towns. Because of the creative construction. etc., we are selected as a FutureCity.
 First, I explain what is called "Higashi-Matsushima Method", the recycling of disaster waste. The Earthquake generate 110 times more than normal general waste generated for a year. By classifying the disaster waste into 14 categories when collecting, about 99% was able to be recycled. In this project, victims of the disaster were hired to conduct the segregation work.
 Next, I talk over Miyanomori elementary school based on the concept of the "forest school," a smart school focused on natural environment. This school focused on experiences, so is constructed with domestic timber so it can harmonize with the nature in terms of both its construction and appearance to build the environment nurturing five senses.
 Next is "Higashi-Matsushima Smart Disaster-prevention Eco-town". This is a project for the local consumption of locally produced energy within the daily area. Even if the electric power company stops the power supply due to a disaster, power can be provided for three days.

Yasuyuki Akimoto
(Executive Director for FutureCity Promotion, Climate Change Policy Headquarters,
 Yokohama City)

 Yokohama City had many urban problems during Rapid Economic Growth, and has addressed them. In such a history, we consider what city we aim at amid needs for the decarbonized society in the future. Because a big city like Yokohama City cannot secure all the energies by only renewable energies, we consider contribution through cooperation between cities, particularly cooperation with Asia to be our responsibility.
 Recently, we have a cooperation project with Bangkok, Thailand. This is support for the project for the formulation of a climate change master plan implemented by JICA.
 Next is cooperation on the smart city with Barcelona, Spain. We deepen relationship with them in Smart Illumination Yokohama and have other projects with them.

Eileen R. San Juan
(Local Economic and Investment Promotions Officer,
 Trade and Investment Promotions, Cagayan de Oro City)

 The city is in abundance of water. But Typhoon Sendong, which is influenced by climate change, raved thousands of lives and displaced families. Part of the priority agenda in the administration is to address these challenges and a major collaboration with the department of public works and highways in JICA is the construction of 12 kilometers mega dike along the sides of the Cagayan de Oro River. The local government has an ongoing program also in improving its disaster preparedness that has also been an object of assistance from various local and international organizations. In addition, the city has developed a plan identifying a planned city extension strategically located that would connect the rural villages to the urban area. Another major undertaking of the city government will be the implementation and construction of the national awarded design called Oro Central. It will be a school that will also be a command station and evacuation center in times of disaster.

Thomas Mark H. Durano
(City Vice Mayor, Vice Mayor's Office, Danao City)

 As our major economic structure, we have MinebeaMitsumi Incorporated. It's a Japanese company employing 24,000 people. And we have a sugar mill and a paper mill. While once we were an agricultural city, we are now feeling the effects of the water and power shortages as well as our garbage crisis.
 We have a waterfall that is where our major project is now. We are about to implement our dam project. It's 10,000 cubic meters water funded by Land Bank of the Philippines. We will be distributing water to Cebu City and half of that will be consumed within the city.

Kentaro Endo
(Counsellor, Office for Promotion of Overcoming Population Decline and
Vitalizing Local Economy in Japan, Cabinet Office, Japan)

 We will talk about the promotion of the SDGs by municipalities, aimed at overcoming population decline and vitalizing local economy. We promote the policy for overcoming population decline and vitalizing local economy. As for that, we have efforts geared towards the SDGs, into which we have developed the FutureCity Initiative.
 The FutureCity Initiative solves comprehensively challenges such as environment, aging population, etc., which is on a par with the idea of the SDGs. This initiative developed further, we address currently the policy for overcoming population decline and vitalizing local economy, using the SDGs. We support municipalities in visualizing local issues and advantages, developing a cross-sectional municipal organization, communicating with other stakeholders through the common language, the SDGs, etc. We hope that it will lead to total optimization of local issues, the acceleration of its solution, and the realization of overcoming population decline and vitalizing local economy.
 As a policy trend, at the meeting of the SDGs Promotion Headquarters, the Prime Minister, Chief of Headquarters put forth the promotion of the SDGs as the realization of overcoming population decline and vitalizing local economy and Basic Policy on Economic and Fiscal Management and Reform, 2017 indicates that the Government will promote the efforts of the SDGs by municipalities.

Takashi Otsuka
(Director, Japan Office, ICLEI)

 We will take you over the ICLEI activity related to the smart cities and SDGs.
 ICLEI is the global network with more than 1500 cities which has the great willingness to work towards sustainability. There are five functions of the ICLE: We get our cities and mayors connected; we get cities informed; we provide resources as well and we get cities involved in the global context, global initiatives as well as we feature the city.
 At the time of the COP 21, there was the very first climate summit of the local and regional leaders, and local government's momentum may have pushed the nation's negotiating the Paris Agreement and finally reach to the historical agreement in Paris.
 ICLEI worked together with other partners on the program so called the Global Covenant of Mayors for Climate and Energy. We also have the fundamental database on the city's action in so-called carbon Climate Registry.

Masazumi Shimo
(General Manager, Environmental Engineering Department Head Office,
 Takenaka Corporation)

 I will outline our "Decarbonized model town" initiative. This initiative is an optimization system throughout the town of energies and energy devices in the town controlled from optimization software on the cloud. We think that the optimization system builds Virtual Power Plant (VPP) which contributes to the entire power system. That also utilize new energies such as hydrogen.
 Its core technology is I.SEM, an acronym of I. Smart Energy Management. This is a combination of software technology utilizing the cloud and hardware technology which is called multi-source energy gateway (MSEG). Its characteristics are the excellence of its modifiability, etc. It has been under practical operation at the TAK Shinsuna Building since 2015.

Mondo Yamamoto
(Director, Development Assistance Policy Coordination Division,
 International Cooperation Bureau, The Ministry of the Foreign Affairs, Japan)

 Today, I would like to introduce the quality infrastructure.
 We believe that the quality of infrastructures is essential for global economic growth and that it is crucial for the smart city. Therefore, at the G7 Ise-Shima Summit, the Japanese government announced G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment, which was adopted. Demand for funds related to

Infrastructures is too great to meet, so, Japan decided to supply 200 billion dollars for support for export of infrastructures. In addition, we place great emphasis on the "Free and Open Indo-Pacific Strategy" and implement projects such as the Shinkansen in Mumbai, India, SEZ in Thilawa, Myanmar, etc. Furthermore, we need the mobilization of private funds, therefore, Japan addresses PPP together with government organizations including JICA, JBIC, etc. We also held a seminar in Tokyo in April in cooperation with OECD, etc. as communicating the quality infrastructure to the world. In addition, we promote further the international standardization of the quality infrastructure together with OECD.

Naomichi Murooka
**(Director, Urban and Regional Development Group,
Infrastructure and Peacebuilding Department, JICA)**

Let me briefly explain about JICA's approach towards sustainable urban development.
First, because of rapid urbanization and population growth, it is very clear that cities are becoming more and more important to other global issues such as environment, etc. The keywords inclusive, safe, resilient, and sustainable indicate we need comprehensive views to understand urban issues. So, as for JICA's approach for sustainable cities and societies, we believe long term and comprehensive approach is very important. As a part of the approach, we support our partners formulating long-term urban development strategy and plan. We call it master plan by technical corporations. What we think important when we support formulating master plan is as follows: First, it should be evidence based; second, it should be an integrated plan covering various sectors with priority and optimized sequential action plan; third, it should be inclusive, comprehensive, and widely supported by the people.
JICA would like to bridge your development needs and solutions, promote creation and sharing knowledge and experiences.

Evelyn Nacario-Castro
(Director, MCDCB RPOD PMO / Compostela City)

As I listened to the presentations this morning, I noted that there is really a common desire of really looking at resilience and sustainability of our cities. This desire is anchored on the importance of looking at the economy in terms of equity and the environment. There are many challenges in relation to energy, rapid urbanization, etc. Their solutions are really guided by different levels of frameworks. The importance, therefore, of standardization and collaboration comes into play and the different strategies which are made available by many of the players from the public and private sector. I also noted that there are many values and attributes earlier shared by the participants noting the importance of connection and connectivity. There are contrasts, of course, in the context of Japan and many developed countries. While there is the challenge of declining population in the cities in Japan, in the Philippines, we have rapidly growing population in the context of rapid urbanization. The importance of collaboration between the Philippines and Japan cannot be overemphasized, however. In addition, yes, planning is important, but beyond planning, what is important now is to move towards the interventions in the projects as well as the policies that needs to be laid down to promote action on the ground.

Daniel A. Levine
(Senior Officer, TDLC, World Bank Group)

If we think of the SDGs, we are beginning to have a uniform framework by which we can work across. The cities within Japan have a tremendous amount to offer in this. We are looking to harvest and to mobilize the expertise from these cities and apply them to World Bank operations globally.
From the World Bank growth perspective, the quality infrastructure is defined as economically efficient, say, it addresses safety. It addresses both environmental and social safeguard standards, economic and social contribution as well as resilience against natural disaster.
If you think of both the SDGs and the quality infrastructure They require a tremendous amount of data to look at the lifecycle of assets and to look at how the procurement and the movement of the infrastructure is dealt with for the operations of maintenance for safety things.

Moderator **Junichi Fujino**
**(Programme Director, City Taskforce, IGES / Senior Researcher,
Center for Social and Environmental System, NIES)**

Next, we will have discussions. According to the topic of this session, I hope that Asian cities will say that what you consider to be good in relation to the future cooperation with Japanese cities and that Japanese municipalities will say what you will be able to do further, and after that support organizations will comment on that.

Eileen R. San Juan
**(Local Economic and Investment Promotions Officer,
Trade and Investment Promotions, Cagayan de Oro City)**

We have the project on waste water treatment facility. We hope to not only conduct the project, but also look into capacity building, and we are asking universities in the city to get involved in the project and more engaged in technology. We look forward to some collaboration with the companies. We hope that we will also be able to engage other companies to look at Cagayan de Oro City.

Thomas Mark H. Durano
(City Vice Mayor, Vice Mayor's Office, Danao City)

I believe we should start somewhere, especially the urban planning. Urban planning here may not produce results in my lifetime, but I believe that we should start somewhere. Basically, we need the help in industry, the professionalism of the technologies right now.

Evelyn Nacario-Castro
(Director, MCDCB RPOD PMO / Compostela City)

I shared earlier the importance of collaboration in really moving towards the SDGs and, in particular, for SDG 11. I am also looking at linking up with the different LGUs, the Eco-Model Cities, the FutureCities as well as continuing the collaboration with the City of Yokohama and JICA, and of course, learning from other networks like ICLEI because these are the platforms that we can really help move in terms of the realization of the roadmap for 2050. We are, as mentioned by Vice Mayor Durano, open and open for collaboration.

Yasuyuki Akimoto
**(Executive Director for FutureCity Promotion,
Climate Change Policy Headquarters,Yokohama City)**

It appears that promoting urban development is a major goal for Asian cities. In that case, we need to consider development and conservation. That requires cooperation between Japanese cities. It is important to advise Asian cities in cooperation with also companies. In addition, we would like to get support from the national government, JICA, ICLEI, etc.

Yuzo Yagai
**(Executive Director, Control and Inspection Department,
Environment Bureau, Kitakyushu City)**

As for the SDGs in Japan, while we receive a high evaluation in terms of issues such as garbage and hygiene, we receive a low evaluation in terms of issues such as climate change and ecosystem. Multi-benefits and win-win relationship are important: We engage in international cooperation and obtain CO2 credits, and, in turn, Asian cities solve problems such as air pollution and garbage.

Satoko Yanagihara
(Policy Supervisor, Toyama City)

Toyama City's international cooperation has a short history because we have engaged in it since we were selected as a FutureCity in December 2011. The result that it seems that we get is the small hydroelectric project in Tabanan, Bali, Indonesia. We are anxious to share our experiences with areas where there is environment like Toyama. In addition, we hope that Asian cities can use Toyama's compact city concept as a reference in urban development.

Shigekazu Yagi
**(Director, Reconstruction Division, Reconstruction Department,
Higashi-Matsushima City)**

After the Great East Japan Earthquake, we signed a MOU on cooperation and collaboration towards reconstruction with Banda Aceh, Indonesia damaged by the large-scale earthquake off the coast of Sumatra. We promote cooperation on the disaster plan, education, culture, tourism, and the fishing industry, deepening relationship comprehensively.

Mondo Yamamoto
**(Director, Development Assistance Policy Coordination Division,
International Cooperation Bureau, The Ministry of the Foreign Affairs, Japan)**

We have had a diversity of tools and actors in development assistance since a couple of years. As for the trend, we hope you will give us ideas. And we would like to consider opinions that Asian people give to us through our embassies.

Kentaro Endo
**(Counsellor, Office for Promotion of Overcoming Population Decline and
Vitalizing Local Economy in Japan, Cabinet Office, Japan)**

It is important that various Japanese local governments engage in interaction with other countries including Asian countries. We will promote the SDGs policy, and because the SDGs is a common language, we pursue dialogue with local governments, the private sector, and citizens, using the common language.

Naomichi Murooka
**(Director, Urban and Regional Development Group,
Infrastructure and Peacebuilding Department, JICA)**

I think that the JICA's role is very important in bridging and matching developmental needs. We have many means, for example, as I explained, the master plan, technical cooperation, trainings and so forth.

Moderator **Junichi Fujino**
**(Programme Director, City Taskforce, IGES / Senior Researcher,
Center for Social and Environmental System, NIES)**

We ask Higashi-Matsushima City why you don't hesitate cooperation although you must reconstruct your own city.

Shigekazu Yagi
**(Director, Reconstruction Division, Reconstruction Department,
Higashi-Matsushima City)**

Because we hope that we will link support from countries throughout the world and all the Japan after the earthquake to other cities and towns including foreign ones and that they will know the experiences.

Takashi Otsuka
(Director, Japan Office, ICLEI)

When we are addressing the sustainability, no cities, no region in the world has ever reached the ideal sustainable situation yet. So, they always try to learn from each other. One of the examples I would like to share is the city called Bristol in UK that is the European Green Capital for 2015. When they finish the term of the European Green Capital, they put the banner, 'We don't stop here.'
There are needs of technical corporation as well as the importance of the basic plan as Akimoto-san from Yokohama and others mentioned. I would like to add one more aspect which is how to institutionalize such kind of holistic approach. Gradually, some local governments are placing such kind of institutional arrangement within the city systems to systemically address the sustainable issue. Consider the 17 SDGs: what really interests me in my work bring cities together is how local governments institutionalize systems to address sustainability.

Moderator **Junichi Fujino**
**(Programme Director, City Taskforce, IGES / Senior Researcher,
Center for Social and Environmental System, NIES)**

How about as a company?

Masazumi Shimo
**(General Manager, Environmental Engineering Department Head Office,
Takenaka Corporation)**

Because buildings are composed of the combination of various elements, we do not implement one of them, but arrange them and cooperate at maximum efficiency.

Moderator **Junichi Fujino**
**(Programme Director, City Taskforce, IGES / Senior Researcher,
Center for Social and Environmental System, NIES)**

Please explain YUSA which Takenaka Corporation, etc. join.

Toru Iwai
(Senior Manager, Project Development Department, Takenaka Corporation)

YUSA consists of 20 companies. It is a public-private platform. And YUSA is the acronym of Yokohama Urban Solution Alliance. Under the leadership of Yokohama City, it brings expertise of each companies together and make international contributions. As our company, we would like to combine our knowledge of business and governance with YUSA's idea and carry out YUSA's activities, conducting entire city development.

Moderator **Junichi Fujino**
(Programme Director, City Taskforce, IGES / Senior Researcher, Center for Social and Environmental System, NIES)

How about from the position of the World Bank lastly?

Daniel A. Levine
(Senior Officer, TDLC, World Bank Group)

One area that really strikes me is this interconnectivity between Japanese cities, which is being also very important. I think master plans and urban plans are really a critical. Also, it is super important to have the national government involved in terms of how that policy and the regulatory environment are structured.
What we do almost each month is we bring clients around a particular theme area into Tokyo, addressing a particular issue. This is called tactical deep dives.

Moderator **Junichi Fujino**
(Programme Director, City Taskforce, IGES / Senior Researcher, Center for Social and Environmental System, NIES)

Ms. Evelyn Nacario-Castro, please.

Evelyn Nacario-Castro
(Director, MCDCB RPOD PMO / Compostela City)

It is important to have mutually reinforcing goals and interest to attain aspiration. I believe that the SDGs are global aspirations which we all need to use as a guide in terms of facilitating development. These aspirations are shared whether it is in the Philippines or Japan or other countries. I believe that relationships are the premise for these platforms.

Plenary Meeting

Opening Session

Opening Speech

Fumiko Hayashi
(Mayor, City of Yokohama)

Using "Smart" as a keyword, this conference was created as a place to share issues and knowledge of urban development in Asia. Over the years, participation has been steadily increasing, encouraging networking between cities and support organizations, promoting matching needs to solutions, and has creating new cooperation opportunities.
This year has marked the 6th iteration of this conference, under the theme of "Building a Marketplace".
So far, very diverse perspectives have been discussed about Smart Cities, and what we should do right now is take all these perspectives into account and through them, take action to better the lives of all citizens. This conference is a forum where global best practices are assembled by sharing information that directly contributes to the actions and practices of everyone participating. Such best practices can emerge through leaders of eachcities sharing their vision for growth and solving of urban problems, the innovative solutions of private companies and academic institutions, and the support measures for funding and institutions offered by governments and international organizations.

I hope that these will provide you all with inspiration leading to proactive cooperation and new initiatives. Today's discussion will be compiled as the "Declaration of the 6th Asia Smart City Conference" and will be shared with the international community, including COP23, to be held next month in Bonn, Germany.

In these times of drastic change, let us redouble our cooperation, overcome the challenges faced by Asian cities and lead the way to diversified growth.

Keynote Speech

Iwao Horii
(Parliamentary Vice-Minister for Foreign Affairs, Japan)

Yokohama City has been disseminating its expertise in urban development through its innovative initiatives both domestically and internationally. The resulting idea of smart city development is in line with the position of Government of Japan in advocating development of quality infrastructure.

Infrastructure development is extremely important for the sustainable growth of the world. However, due to the huge demand for infrastructure, current investment is only at 50% of what is needed. It is imperative that the demand for funds be met and that infrastructure development keeps progressing.

From this point of view, Japan is promoting the development of quality infrastructure around the world. Nevertheless, infrastructure development is a matter that concerns all members of the international community. As such, it is necessary for the international community as a whole to promote quality infrastructure investment.

Furthermore, the role of municipalities with know-how and experience in urban development and private companies with superior technology is becoming more important. For this reason, the Ministry of Foreign Affairs had been implementing ODA and promoting cooperation between municipal governments and private companies. Through an "All Japan" effort, we will be working to set the international standard by disseminating high quality infrastructure, and will continue to promote a strong response to the international demand for infrastructure in both quality and quantity. We would like to ask for understanding and support of the leaders of Asian countries and local governments gathered here today. We hope that the sharing of various initiatives from numerous countries at this conference would be helpful in the promotion of smart city development in Asia.

Yasuo Takahashi
(Vice Minister for Global Environmental Affairs, Ministry of the Environment, Japan)

The importance of the role of cities has been mentioned in both the United Nations' Sustainable Development Objectives (SDGs) and the Paris Agreement on Climate Change. In light of this, the Ministry of the Environment has been strongly involved in many initiatives, including smart solutions for cities, which is today's theme. I would like to use the opportunity to present three of our initiatives.

The first is the strengthening of cooperation among cities. This is done to share with Asian cities the knowledge and expertise of Japanese cities who have in the past overcome pollution problems and tackled climate change. Twelves cities, including Yokohama City, are participating in this effort and have been cooperating with other cities to promote low-carbon urban development in Asia.

The second initiative is the creation of environmentally sustainable cities in partnership with ASEAN. The Ministry of Environment supports the efforts of all ASEAN countries in achieving their Sustainable Development Goals (SDGs).

The last initiative is the overseas promotion of environmental infrastructure. This strategy aims to partner Japan with other countries and improve the environment of partner countries by introducing and disseminating environmental infrastructure such as facilities for renewable energy, waste disposal, and energy conservation. I stress again the role of cities, and we believe that sharing technology, infrastructure and knowhow throughout Asia will lead to smart solutions for sustainable cities. The Ministry of the Environment also wishes to take part in the realization of this project.

It is our hope that this conference will lead to stronger cooperation among Asian cities towards further creation of sustainable cities.

Masamichi Kono
(Deputy Secretary-General, OECD)

The current wave of rapid urbanization offers opportunities for growth well-being for Asian cities. However, the agglomeration benefits can only be realized if sufficient infrastructure investment can be made to make this growth inclusive and sustainable. An OECD study entitled 'Investing in Climate, Investing in Growth' highlights that combining strong climate action with fiscal and structural reforms will boost growth in both the short and longer term and lift average economic output in G20 countries by up to 2.8% by 2050. Another OECD report, 'Aligning Policies for a Low-carbon Economy' points to many policy misalignments in various domains such as climate adaptation.

This is why OECD is supporting the development of National Urban Policy, to facilitate alignment of urban-related policies across sectors. We have already worked with six countries and are currently undertaking a study of Viet Nam.

Cities are hubs for opportunity and economic growth, yet they also concentrate inequalities. Our work has shown that income inequalities are higher in cities relative to the respective national average. Where you live affects how long you live and your chances of getting a job. There is a huge difference in life expectancy across neighborhoods in some large cities.

The OECD has been working with a global coalition of 'Champion Mayors for Inclusive Growth' since March 2016. Recently, there was a meeting in Seoul and the Champion Mayors announced the Seoul Implementation Agenda for inclusive growth in cities.

It is obvious that cities have a central role in addressing sustainability challenges, partly because they are major investors; subnational investment accounted for 59% of public investment in 2015 in OECD countries. So, choices that cities make about long-lived urban infrastructure will largely determine the extent and impact of climate change globally.

An OECD report 'Mobilising Bond Markets for a Low-Carbon Transition' demonstrates that there is much more room for global markets for municipal green bonds to grow, and in such cases national legislative frameworks can play a pivotal role. The OECD has set up the OECD Center on Green Finance and Investment and has also developed the Global Observatory on Local Finances.

Using information and communication technologies (ICT) and digital technologies, smart city policies can help make critical urban infrastructure and services more efficient and interconnected. The smart city approach sees the city as an innovation platform for resolving urban problems based on initiatives of the private sector and civil society. The smart city is a cross-cutting policy approach and it needs to be integrated into the existing urban policy frameworks.

Finally, we will be preparing a new study on the policy frameworks to support governments to advance smart city policies. We will also provide a forum for policy dialogs. We stand ready and look forward to assisting you through different programs and project.
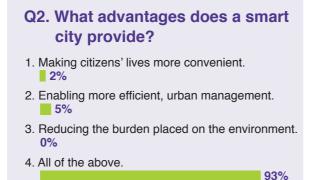
Roundtable Session

Roundtable Session1

Moderator **Bindu N. Lohani**
**(Special Advisor for Y-PORT Center /
President, The Resources Center)**

We will start Roundtable Session One. I think we are going to start with some questions.

Q1. Do you believe your city is a "smart city?"

1. Yes, it is.
   14.3%
2. Some parts of the city are.
   62.9%
3. No, it isn't.
   17.1%
4. What in the world is a "smart city?"
   5.7%

Q2. What advantages does a smart city provide?

1. Making citizens' lives more convenient.
   2%
2. Enabling more efficient, urban management.
   5%
3. Reducing the burden placed on the environment.
   0%
4. All of the above.
   93%

Moderator **Bindu N. Lohani**
(Special Advisor for Y-PORT Center / President, The Resources Center)

We all know that some parts of our cities are smart. This conference is very constructive in that we want to make the whole of our cities smart someday.
We are going to ask first five panelists. Four of them have run the four parallel sessions. Then, we are going to invite our World Bank friend. Yesterday, World Bank and ADB had their special session on "Smart Urban Development Issues".

Thematic Meeting1 :
Wastes and Sludge Treatment in the Smart City

Gil-Hong Kim
(Senior Director concurrently Chief Sector Officer for Sector Advisory Service Cluster of the Sustainable Development and Climate Change, ADB)

I will say only points. We feel there is no shortage of best available technology. There are a lot of activities and efforts have been made in various cities. Now new technologies like sensors and GPS and biotechnologies and IT technologies are being used in waste water and solid waste management. Japan has been very successfully implemented in the three R's. Many developing country cities, we cannot see really a big scaling up in the investment. Sometimes government procurement system limits eruption of new technologies and also government officers, local officers has limited capacity to evaluate technologies. Of course, financial resources are limited. Social system to adopt tipping fees or payment and segregation at the point is crucial. Strong leadership and commitment of government supported by active stakeholder participation. A project design should be simplified so that we can have better implementation for that.

Thematic Meeting2 :
An approach towards energy savings, low carbon urban development.

Fumihiko Nakamura
(Executive Director, Vice President, Yokohama National University)

Basically, the energy issues are mainly discussed in terms of the renewable energy or alternative fuel or something like that and the transport section was interrogated about how to make the environment friendly transport system. Those two aspects are related and discussion. Climate change is also related to the issues. We should focus on this point and the city should be responsible.
Collaboration with Japanese company that works very well. On the other hand, geopolitical situation is one of the key word to discuss the Smart City. Where it's located? Those are also related to the issues, not only the transport but also the energy issues. One speaker from the Japanese Government mentioned joint crediting mechanism. The other one mentioned collaboration of the Railway System. In both cases, there are going to bring the Japanese experiences. So it could be the coordination among sectors and this is a very important point to check.
I think the most impressive keyword is the city. We discuss the smart city. Technology innovation should lead everything; however, once again, it should be applied to the city advancing. Second one is the balance. There are various demands on balancing such as national governance and local governance.
As the activity process, designing the idea and implementation and manage it, those steams are very important. Of course, the next one is the collaboration and final one is finance.

Thematic Meeting3 :
Use of ICT and Big Data Source

Alfonso Vegara
(Special Advisor for Y-PORT Center / Founder and Honorary President, Fundación Metrópoli)

Collaboration between cities, technology companies and academia were really very clear in the discussion.
In technology companies, technologies have to improve our cities. We need to share a project for the future. Then, we can explore how technology can help to achieve such objectives.
In some of the cities participating in our session, there was the objective not only to create a much more efficient city with better transportation but using big data, the new technology to accelerate innovation, to create an ecosystem of innovation. In this context, the education system is key.
Other idea that we discussed is the urban diplomacy. How cities can collaborate?
Finally, it was very clear this relationship between physical and digital. In this context, we had a small dialogue about the concept of super-intelligence, which is the combination of human intelligence and artificial intelligence.

Thematic Meeting4 : Japanese experience

Junichi Fujino
(Programme Director, City Taskforce, IGES / Senior Researcher, Center for Social and Environmental System, NIES)

From Japanese cities, we discuss the possibility of experiences such as Higashi-Matsushima City's disaster waste segregation in reconstruction from tsunami, Kitakyushu City's history of overcoming public pollution being used as a reference for Asian Cities.

As smarter efforts, there was the I.SEM project which YUSA including Takenaka Corporation implements, etc. However, we discussed the importance of support from the national government and organizations such as the FutureCity initiative.

Next, from Asian cities. In Cagayan de Oro City, for example, there is the greatest industrial park where there is already JFE, one of YUSA member companies. But are there more opportunities? And in Danao City. There is current MinebeaMitsumi, which came there in 1989 and has supported local employment.

In making contributions, Japanese municipalities have not only advantages but disadvantages, so, they need to cooperate between each other and meet Asian needs.

We need various support mechanisms such as Cabinet Office's next efforts taking the SDGs into accounts and MOFA's flexible use of the ODA.

In the last part, we discussed how the cities change. Like Mayor of Kitakyushu City, Mr. Kitahashi's desire for learning the SDGs, we learn by ourselves, implement projects in Asia, and learn from one another. It needs mutual trust.

SMART URBAN DEVELOPMENT CONFERENCE

Daniel A. Levine
(Senior Officer, TDLC, World Bank Group)

I think very effective conference yesterday under the auspices of the TDLC program in collaboration with the World Bank and ADB because we could address the growing issues of not just smart cities but how we are utilizing data, how we are utilizing internet and technology, etc., to improve the way that we are doing urban projects.

we had some very good opening comments from the World Bank ADB, etc.

Our very first session was on smart mobility and essentially working on smart mobility was how we move forward it. In addition, we discussed how to learn from Japanese Private Sector experience.

We moved into our second session which was on energy efficiency and real assets and looking at buildings themselves. There was the point that the money that goes into supporting this large amount of real assets takes away from investment in other areas.

Our third session moved into looking at smart service provisions, particularly, we looked at the water sector and the solid waste management.

Following that we moved into a session on smart procurement. The reason of this topic is that within quality infrastructure and with other aspects in terms of moving towards quality within urban development, procurement itself couldn't be effectively done.

Our final session was our caps down session. This was around trying to challenge how the organizations, are using data.

Lastly, it is important that in a year when we all come back together again, we will say, "Well, this is what we tried. We tried A, B and C with different data, with different approaches, and we are able to actually deliver on these sustainable solutions going forward."

Moderator **Bindu N. Lohani**
(Special Advisor for Y-PORT Center / President, The Resources Center)

We are asking the floor one more question.

Q3. Based on our discussion today, do you think your city could become a smart city?

1. Yes, I think so. **72.5%**
2. No, I don't think so. **5.0%**
3. I'm not sure. **22.5%**

Moderator **Bindu N. Lohani**
(Special Advisor for Y-PORT Center / President, The Resources Center)

Very positive note. Then, I do want to make some remarks just to capture so that we have heard some things right.

This is the 6th Conference, so, we have become a club. We have taken so many action already, but we need to elevate the level of the action to the next level.

The other second point I want to make on this one is collaboration, cooperation, partnership. We are hungry for the best practice.

It is very important that we build quality infrastructure. It may be a little costly in the beginning, but it pays off in the long run because the infrastructure life is very long.

Importance of the role of the R&D. The role of the think-tank, the role of the R&D, etc. is extremely important in bringing these technologies, know-how, etc. for corporation.

This is the theme of the seminar that we must build an innovative marketplace so that everyone can participate.

Can we bring the role of technology in the project design? In that case, there are so many new things we will have to do like life cycle analysis, etc.

There were a lot of talks on finance. Sometimes, the national legislation doesn't allow it. There is foreign exchange issue. To be able to do municipal bond, you must have good credit rating. They are also asking for concession on money. If you bring technology, they can be expensive. Can we be flexible?

We can bring better ways to do especially if we want to bring in modalities like public-private partnership. I once again want to say, therefore, that the municipalities should start working on your own credit rating, improve your governance, and improve your ability to make it credit worthy.

The next thing that came up was better policies. We need better policy for procurement as an example.

In our presentation, there was a master plan. If you don't have a plan, taking the action, it's like a dream to me. The mayors have the election life of 3 to 5 years. So, they don't want to think about 15 years plan. But 15 years plan will be required.

So Round One is over.

Roundtable Session2

Atsushi Koresawa
(Director, Regional Office for Asia and the Pacific, UN-HABITAT)

I like to start with the kind of summarizing the trends which I captured from the discussion from this morning. One is, I think, we are now under the new environment which is going to be shaped by – being shaped by global or international agenda and commitment including, of course, Agenda 2030 and Sustainable Development Goals. Number two, we are witnessing diversified forms and ways of International collaboration.

I would like to mention also the possible ways forward. One more of funding opportunities if available could further enhance this city to city cooperation. The second thing is now UN-HABITAT in cooperation with OECD providing support to countries that are revisiting their policy frameworks and developing new National Urban Policies. Lastly, I would like to extend my invitation, to all of you, to the next World Urban Forum which is a World Premiere Conference held every 2 years.

Lena Ng
(Chief Investment Officer, Business Development, AMATA Cooperation PCL)

What we are doing at Amata, Smart City? In Amata, we have a total of 730 factories. The contribution to the economy and the society is huge. Our goal is to really look into being a self-reliant, energy efficient city with renewable energy source of 20%.

With the development of the smart city itself, to me, if I were to sum up, there are five Ps. First of all, you need very good policies. Next, we need to look into what the platforms that are required are. Third I think we look in to what some of these processes that we need to streamline are. Fourth, I think you look into what some of these projects that we could have the quick assessment are. Fifth, we are looking at what smart people are.

Takashi Otsuka
(Director, Japan Office, ICLEI)

The world is looking for concrete actions. This was a keyword in the last session.

During the COP 23, the Climate Summit for local and regional leaders will be convened. This is the third Climate Summit by the local and regional leaders started in Paris in COP 21. ICLEI is preparing the Summit on behalf of the Global Taskforce of Local and Regional Governments working together with the City of Bonn, etc.

The members of Asian Smart City's Alliance not only have been taking the individual actions but they are developing collaborative actions. The people gathering here has been taking collaborative approach for years and such kind of an achievement should be shared with the rest of the world by the way like in participating in the COP 23 or upcoming other opportunities.

Efren Carreon
(Regional Director, MCDCB Secretariat - NEDA RO VII, Province of Cebu)

We are working very closely with the Mega Cebu which is a sub-regional platform for inter-local government alliance and collaboration. Because of this rapid urbanization growth, the 13 Local Government Units started to form an Alliance to look at to find common solutions to problems which are also common among the 13 Local Government Units.

Going in the next 25 or 30 or 50 years, we have the roadmap already in place, learning a lot from the City of Yokohama's experience and with the assistance of JICA. We are also conducting right now the Urban Transport Master Plan also with the assistance of JICA.

We are happy to report the Plastic waste material recycling facility which is located in one of the Local Government Units through the assistance of a private company. This will greatly reduce the amount of waste materials in the City.

Moderator Bindu N. Lohani
(Special Advisor for Y-PORT Center / President, The Resources Center)

Any questions or comments?

Sed Saad
(President, CEO Office, Minds@Works Dubai)

We look to happiness. Happiness is beyond Smart City. I talked like that yesterday. So, this is the first comment.

The second comment, we discussed about collaborations, partnerships and so on. Instead of visa, you can get back from a country, and you can have visa of the city.

Dubai is welcoming all Japanese organizations, public sectors, private sectors to come to Dubai and to try to launch any type of new technology and any type of new services.

Moderator Bindu N. Lohani
(Special Advisor for Y-PORT Center / President, The Resources Center)

I will try to summarize. One, we were reminded that there are global agendas like SDGs, the Paris Agreement, etc. And we need to start implementing at the local level. We also heard that we need to find many ways, diversified ways of international cooperation not only between countries, but between the cities. We also discussed in the last session the importance of National Urban Policies. I was very impressed to learn from Amata that we see your commitment that industrial states are going to be now smart industrial state like the city committed to energy efficiency and renewable energies,

Yeah, we need money for everything. It's been said in the earlier sessions. I think, most importantly, smart ideas, smart policies you said smart people, are a very, very good way to put all this.

I would again like to congratulate our ICLEI. You people have been doing a great job at the local level with the local leaders.

Finally, to our friend from Philippines, you did the right thing. It is important to have knowledge sharing by bringing many local governments not only within the country.

I think our whole future is dependent upon making city smart economically, socially and environmentally.

Q4. Through discussions so far, did you gain any insight into how to take the first steps to make your city a smart city?	Q5. Based on our discussion today, do you think your city could become a smart city?
1. Yes, I did. **51%**	1. Yes, I think so. **65.8%**
2. I want to think I did! **36%**	2. No, I don't think so. **10.5%**
3. I'm not sure. **13%**	3. I'm not sure. **23.7%**

Moderator Bindu N. Lohani
(Special Advisor for Y-PORT Center / President, The Resources Center)

On that very positive note once again. Let's conclude the session. Thank you very much.

Closing Session

Closing Remarks

Kazuhiko Takeuchi
(President, IGES)

Two very important global goals for transforming our world were adopted in the year 2015; one is the Paris Agreement on climate change and the other is the 2030 Development Agenda including 17 SDGs.

If we turn our attention to cities, we can see that they generate about 80% of global GDP and play an important role as the centers of social, economic activities as well as being the source of the new jobs. On the other hand, they generate about 70% of global greenhouse gases. In addition, we have seen that cities, especially in developing countries are facing various economic, social and environment challenges during rapid urbanization. These challenges are not only local issues; they are also closely linked with the global goals including the two degree target.

Some cities have already committed to those global goals and have started their actions at local level. We should do all we can do to encourage such frontrunner cities. This can be achieved through the co-design, co-creation and co-delivery of knowledge and innovate solutions through the partnership of diverse stakeholders related to the city activities. Other important factors to promote actions by cities are good institutions, appropriate funding and capacity development.

I expect that the Asia Smart City Conference keep its important role as a forum to discuss barriers and solutions through smart actions by cities.

Student Speeches

The representatives from Yokohama National University and Yokohama City University gave speeches based on discussions held at the parallel event "Yokohama Youth Event 2017", where university students took part in discussions in English with the attendees of Asia Smart City Conference. (See page 07-10)

Gen Hayauchi
(Graduate School of Urban Innovation, M1,
 Yokohama National University)

We presented suggestions for smart cities entitled "Livable Smart City". Smart cities should be studied not only from technical points of view but also with the intention of achieving livability.

For the matter of settlement, we discussed the importance of slum rehabilitation from various points of view, notably the architectural viewpoint. In the environmental field, we suggested the importance of choosing the sites for projects, care for the existing environment and environmental education. In the field of mobility, we suggested a strategy to decrease dependence on cars, utilize existing systems, providing safe and secure pedestrian spaces and creating livable mid-sized cities. Finally, for disaster prevention, we suggested to stockpile of food and materials, as well as the link between infrastructure and local communities.

We believe that we were able to reach a consensus in our session to target Livable Smart Cities as the next step for Smart Cities.

Tuomas Salmi
(Department of Economics and
 Business Administration, B2,
 Yokohama City University)

We discussed about Japanese involvement in Asian cities' infrastructure business, focusing on the garbage issue which still affects many Asian cities.

It was pointed out that garbage doesn't just make the landscape unattractive, but it is also a source of disease and natural disasters, and we need the cooperation of citizens to solve the garbage problem.

G30 started with the Mayor urging Yokohama to reduce garbage volume by 30%. There are three main reasons why this campaign, which was thought to be impossible, turned out to be a success. The first reason was the strong leadership of the Mayor. The second reason was the cooperation between the city's garbage collectors and the planning staff. The third reason was the awareness campaign that the garbage collection workers took on as a new responsibility.

There were some experts estimate that Japan has a special kind of social capital. I disagree. I think that any country has the potential for great social capital when governed correctly.

I hope that with strong passion and the will to do the right thing; we can all contribute to making Asia a better place for everyone.

01 The 6th Asia Smart City Conference Outline

02 DAY 1, DAY 2 Parallel events

03 DAY 3 Conference Outline

04 DAY 3 Conference Summary

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6th Asia Smart City Conference "Yokohama Declaration"

For the past six years, we have held the "Asia Smart City Conference" with an aim to enhance city-to-city collaboration and partnership among cities and related international institutions to achieve smart and sustainable urban growth in Asia.

"Building a Market Place for smart and sustainable urban growth" was the main theme for this sixth Conference, and discussions were held to co-create smart urban solutions for Asia and Asia Pacific. Over 20 cities, international institutions, specialized institutions, and private sector representatives came together, bringing various issues and expertise to the table, and held practical discussions aimed at realizing livable, inclusive, sustainable, and resilient cities and communities. Specifically, opinions from various specialized and technical resource persons were exchanged on the following four themes in the separate Thematic Meetings:

1) Smart ways of handling solid waste and waste water, including sludge treatment;
2) Approaches towards achieving energy saving for low carbon urban development and bringing smart mobility to communities;
3) Further utilization of advanced information and communication technologies (ICT) and big data for smart urban management; and
4) Effective modalities to bring out Japanese experiences towards smart urban development in Asia.

The plenary session of the conference integrated the results of the Thematic Meetings and the outcomes of the Smart Urban Development Conference, held jointly by the World Bank and the Asian Development Bank. Discussions on what information should be exchanged and what roles cities, organizations, and private firms should take to find concrete solutions to urban issues lead participants to the following ideas:

1. To cope with complex as well as multi-dimensional emerging urban issues, city leaders must consult with civil society, academe and businesses entities effectively while exhibiting strong leadership. Learning and co-creating best available solutions with international communities proves essential, and current digital media and networking capability facilitate city leaders' achievement of these goals.

2. In order to incorporate the best practices of successful urban solutions in various regions of the world, it is necessary to generate social innovation while creating positive awareness among citizens, governments, and business entities, and adopt new modalities of urban management.

3. Multilateral discussions by diverse participants are the source for the co-creation of effective and innovative solutions. Platforms such as the "Asia Smart City Alliance" should function as an ideal venue to exchange ideas, experiences, and innovations.

4. The 21st century is the "century of cities," and cities can provide area-based solutions effectively. Each city has a crucial responsibility to adopt the Sustainable Development Goals (SDGs), New Urban Agenda under HABITAT III, the Paris Agreement under Conference of the Parties (COP21), and other frameworks to achieve the goals of the international community.

5. It is important for cities to continually share their accomplishments in smart urban development with the international community.

We will report the content of this Yokohama Declaration to the Conference of the Parties 23 (COP23), to be held in Bonn, Germany in November this year, and to other relevant international conferences.

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Conference Photos

Networking Break

Lunch & Business Matching

Reception

Participating Cities & Organizations

Cities

	Country
Nausori, Suva	Fiji
Mumbai	India
Bandung	Indonesia
Penang	Malaysia
Seberang Perai	Malaysia
Male	Maldives
Ulaanbaatar	Mongolia
Baguio	Philippines
Cagayan de Oro	Philippines
Province of Cebu	Philippines
Cebu	Philippines
Compostela	Philippines
Consolacion	Philippines
Danao	Philippines
Mandaue	Philippines
Metro Cebu Development and Coordinating Board (MCDCB)	Philippines
Naga	Philippines
San Fernando	Philippines
Colombo	Sri Lanka
Ho Chi Minh	Viet Nam
Fukuoka	Japan
Higashimatsushima	Japan
Kitakyushu	Japan
Kobe	Japan
Toyama	Japan
Yokohama	Japan

Other organizations

Japanese Government

Cabinet Office
Cabinet Secretariat
Ministry of Foreign Affairs
Ministry of Finance
Ministry of Land, Infrastructure, Transport and Tourism
Ministry of the Environment

International Organization

Asian Development Bank
Bases Conversion and Development Authority
C40
Fundacion Metropoli
Global Green Growth Institute
Green Climate Fund
ICLEI - Local Governments for Sustainability
Institute for Global Environmental Strategies (IGES)
Japan Bank for International Cooperation (JBIC)
Japan International Cooperation Agency (JICA)
Japan Overseas Infrastructure Investment Corporation for Transport & Urban Development (JOIN)
Organisation for Economic Co-operation and Development (OECD)
Seoul Urban Solutions Agency
UN-Habitat
World Bank Group Tokyo Development Learning Center (TDLC)

Embassy

Embassy of the People's Republic of Bangladesh
Royal Embassy of Cambodia
Embassy of the Federal Republic of Germany
Embassy of the Republic of Indonesia
Embassy of the Republic of the Philippines
Embassy of the Socialist Republic of Viet Nam

University

Seikei University
Temple University, Japan Campus
Yokohama City University
Yokohama National University

Companies

ALMEC Corporation
AMATA Corporation PLC
AutoGrid Systems, Inc.
CABON FREE CONSULTING CORPORATION
Center of the International Cooperation for Computerization
Chiyoda System Technologies Corporation
Finetech Co., Ltd.
Guun Co., Ltd.
Hitachi Ltd
Inc. Ohbi.
JFE Engineering Corporation
K G CONSULTANT Co., Ltd.
MACNICA, Inc.
METAWATER Co., Ltd.
Minds@Works Dubai
Mitsubishi Research Institute
NEC Corporation
Nippon Koei Co., Ltd.
Overseas Environmental Cooperation Center (OECC)
Pacific Consultants Co., LTD.
Panasonic Corporation
SUMISHO MACHINERY TRADE CORPORATION
Sumitomo Mitsui Banking Corporation
TAKENAKA CORPORATION
The Bank of Yokohama, Ltd.
YOKOHAMA URBAN SOLUTION ALLIANCE (YUSA)
Yokohama Water Co., Ltd.