Thematic Meeting 4： Japanese experience

Venue：Pearl, 1F, InterContinental Yokohama Grand

Moderator： Dr. Junichi Fujino, Programme Director, City Taskforce, IGES / Senior Researcher, Center for Social and Environmental System, NIES

Conference Secretariat/Rapporteur： Mr. Makoto Kato, Principal Researcher, OECC

Language：English/Japanese (simultaneous interpretation is provided)

	City/Organization	Title	Name
1	Kitakyushu	Executive Director, Control and Inspection Department	Mr. Yuzo Yagai
2	Toyama	Policy Supervisor	Ms. Satoko Yanagihara
3	Higashi-Matsushima	Director	Mr. Shigekazu Yagi
4	Yokohama	Executive Director for FutureCity Promotion	Mr. Yasuyuki Akimoto
5	Cagayan de Oro	Local Economic and Investment Promotions Officer	Mrs. Eileen R. San Juan
6	Danao	City Vice Mayor	Mr. Thomas Mark H. Durano
7	Cabinet Office, Japan	Counsellor	Mr. Kentaro Endo
8	The Ministry of the Foreign Affairs, Japan	Director	Mr. Mondo Yamamoto
9	JICA	Director	Mr. Naomichi Murooka
10	ICLEI	Director	Mr. Takashi Otsuka
11	Seikei University	Professor Emeritus Special Advisor for Y-PORT Center	Prof. Ryokichi Hirono
12	Takenaka Corporation	General Manager	Mr. Masazumi Shimo
13＊	Compostela	Director	Ms. Evelyn Nacario-Castro
14＊	World Bank TDLC	Senior Officer	Mr. Daniel A. Levine

＊commentator

Kitakyushu City's Experiences And Future from the SDG's viewpoint

City of Kitakyushu
Yuzo Yagai

1. Kitakyushu's Experiences

City located near to other Asian nations, rich in nature, and developed as a manufacturing area

Population: 957,000 (2016)

Area: 491.95 Km²

GDP: 3,366 billion yen (2013)

Rich nature and branded food materials

Karst Plateau Hiraodai

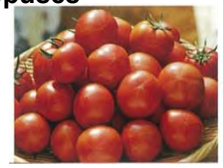
Wakamatsuhoku Beach

Ouma Bamboo Shoots

Kanmon Straits Octopuses

Kokura Beef

Buzen-Sea Oysters



Wakamatsu Special Tomatoes

Major companies in Kitakyushu area

Nippon Steel Corporation

Yasukawa Electric Corporation

TOTO Ltd.

Mitsubishi Chemical Corporation

Toyota Motor Corporation · Nissan Motor Co., Ltd.

Mitsubishi Materials Corporation

Kitakyushu's Environmental Policies

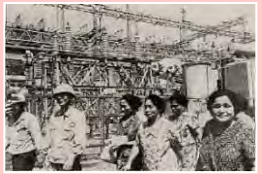
1901 Operation of Yawata Steel Works → Developed as iron-producing city

Kitakyushu Industrial Zone | Wastewater from factories | Smoke and soot



1950 Public pollution problems became serious.

Anti-pollution campaign of women's clubs



From 1960's Pollution control

Measures of the City
Installation of Environmental Pollution Control Bureau, establishment of Pollution Prevention Ordinance, conclusion of pollution control agreement

Measures of enterprises
Improvement of production process, contaminant removal and treatment facilities, plant greening, low-pollution type production technology

Conquering pollutions

From 1980's Inr'l Assistance

KITA(1980)

UNEP・Global 500 Award(1990)

Local Government Honours, Rio Summit(1992)

Cooperation to solve overseas environmental problems, 1988-

Agenda 21 Kitakyushu (1996)

Kitakyushu Eco-Town Project, 1998-

For Society with an Environmentally-Sound Material Cycle

Measures for household waste reduction (2000, 2006),
User fees System for waste disposal

Site for PCB processing decided 2001

Johannesburg Summit official document
Kitakyushu Initiative specified (2002)

For Sustainable society

Environmental Capital of the World
Grand design (2004)

Environment model city
Green Frontier Plan (2009)


Future City Initiative & International Strategic Zone
Selected as model city (2012)

1st Asian Green Growth City
by OECD (2011)

For Low-carbon society
For Symbiotic society

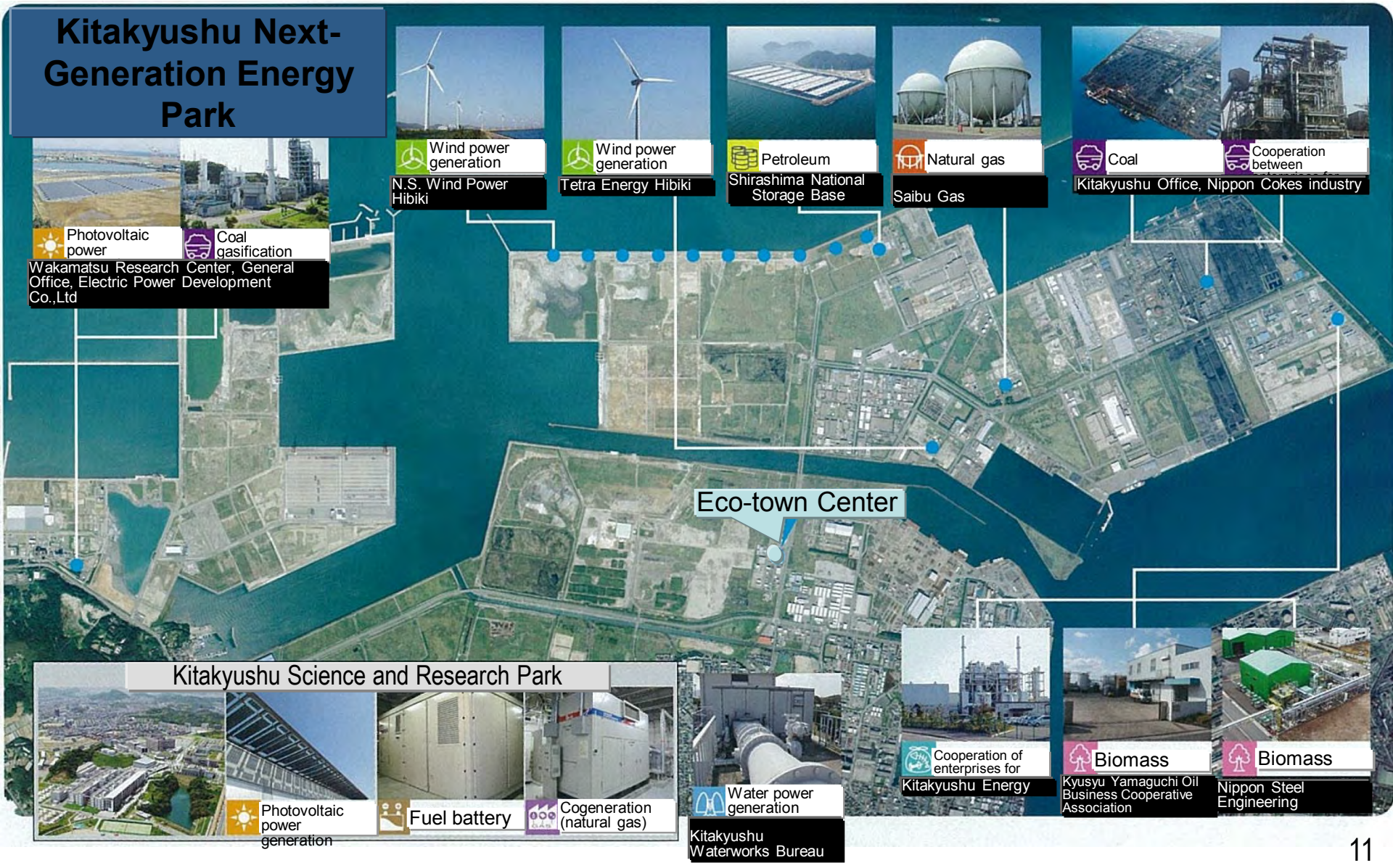
G7 Kitakyushu Energy Ministerial Meeting (2016)


New Master Plan of Environmental Policies,
- SDGs Implement Plan - (2017 scheduled

Creation of regional and global environment

Next-generation Energy Park

Formation of low-carbon society developing in each region



Kitakyushu Smart Community Development Project

Creating a new lifestyle with locally produced and locally consumed energy
Selected as one of four bases in Japan in April 2010

Smart buildings

Fuel cells

Hydrogen network

Hydrogen by-products

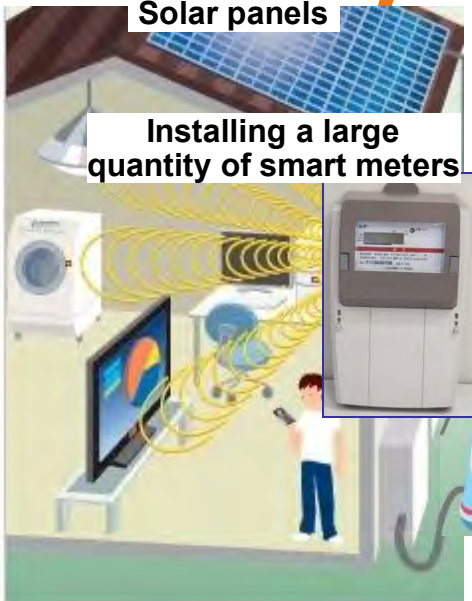
Next-generation SS

Smart housing

Power grid

IT grid

Local power conservation center



Solar panels

Installing a large quantity of smart meters

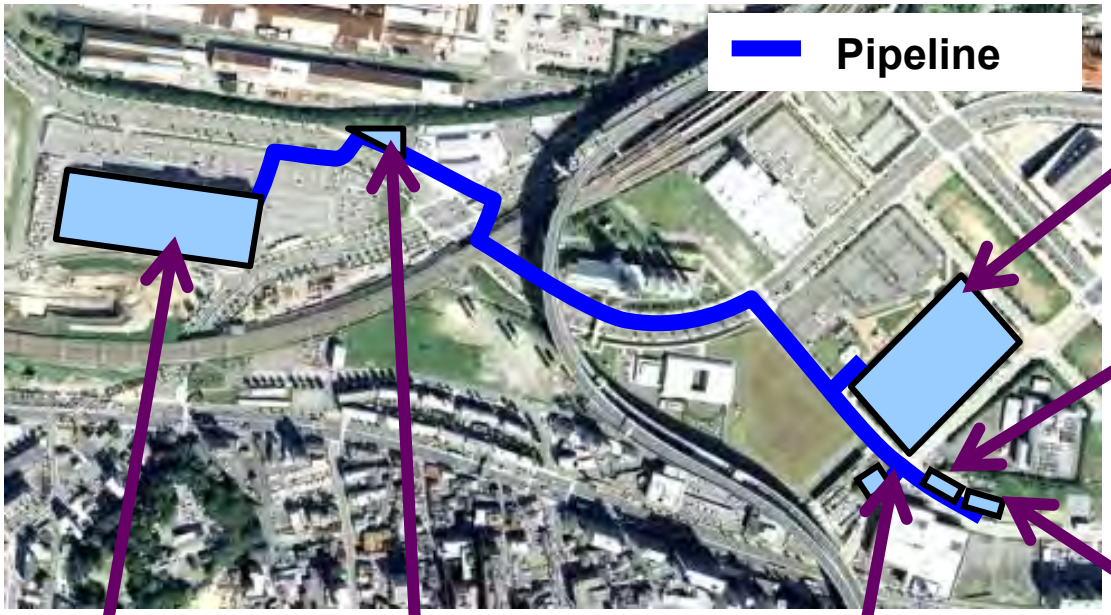
Wind power

Smart schools

Natural gas co-generation

Kitakyushu Hydrogen Town

An initiative to actively use hydrogen fuel cells for household, commercial and public facility energy, supplied to the city in hydrogen pipelines supplied from factories where it is produced. This is the world's first demonstration at a community level.



Inochinotabi Museum
100kW Fuel Cell 1 unit

Hydrogen Fuel Cell
Demonstration Home
1kW Fuel Cell 7 units

Home Center
1kW Fuel Cell 1 unit

Kitakyushu Hydrogen
Station
3kW Fuel Cell 1 unit

Eco House
1kW Fuel Cell 1 unit

Eco Club House
1kW Fuel Cell 2 units

Foundation of local energy company

Through the arrangement among local enterprises and local banking facilities, Kitakyushu City and private sector founded together “Kitakyushu Power Ltd” (Local energy company)

Objectives,
(1)Support local enterprises through supplying stable and inexpensive energy,
(2)Low-carbonize through local energy production for local energy consumption
(3)Create new environmental businesses through promoting energy management

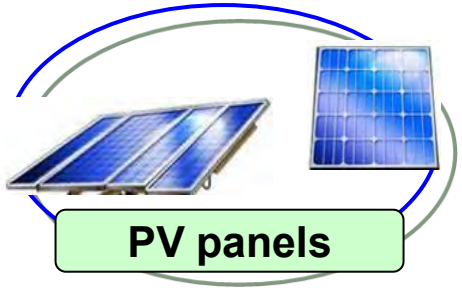
企業名	出資金	企業名	出資金
北九州市	1,450万円	西日本シティ銀行	290万円
㈱安川電機	1,100万円	福岡銀行	290万円
㈱ソルネット	1,000万円	みずほ銀行	290万円
富士電機㈱	1,000万円	福岡ひびき信用金庫	290万円
北九州銀行	290万円		

Main Missions,
（1）supply power for retailers
（2）supply energy management services

New Recycling Initiatives

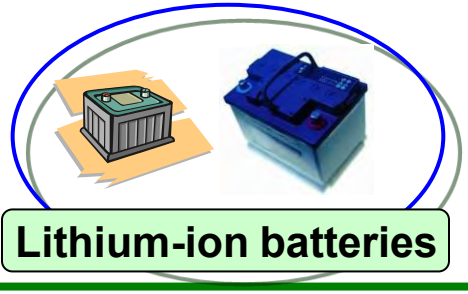
Solar Power Panel Recycling

- The city and business operators came together to develop a wide-area collection system for waste panels with the aim of becoming a base for PV recycling.
- In 2015, METI adopted the “Project to Support Advancements in New Fields”



Rare Metals Recycling

- Establishment of collection system of wastes that can serve as resource from all Japan and Asia
- Recovering and securing rare metal resources



Sorting and Recycling of Old Clothes

・Promoted a regional recycling project since May 2014, which supplies automakers in the northern part of Kyushu with collected/recycled clothing to be used as automotive interior materials.
・Recovered at public facilities and dry cleaners etc.
・Amount recovered in 2015 (April-Feb) 597 tons (2014: abt. 204 tons)

Overcoming pollution technology, provides to the world

To help improve the environment in developing countries, we promote international cooperation with accumulated environmental technologies through the pollution overcomes, in cooperation with the companies.

Trainees: 156countries, 8,207persons ('80–'15)
Dispatch experts: 25countries, 160persons

inter-city environmental cooperation network in Asia

MOU for Eco-town cooperation exchange, with Tianjin, China

Construction of inter-city cooperation network and promotion of environmental projects in Asia.

Environmental improvement of Dalian, China, Dalian Received the Global 500 Awards in 2001

Composting of food waste in Surabaya, Indonesia, Spread to 2 million households or more

Exporting Green Cities Using the Kitakyushu Model

■What is the “Kitakyushu Model” ?

- A systematic compilation of the technology and know-how of the city from the process of overcoming pollution to becoming an environmental city
- Support tools to create sustainable green cities that integrate waste, energy, water and sewage, and environmental protection.

＜Sample＞
Green Growth Promotion Plan of Hai Phong, Vietnam in 2015

■ Kitakyushu Model Framework

＜Organization of the Kitakyushu Model＞

Kitakyushu's Story

Organization of analysis of Kitakyushu history and experience, direction of the city planning by development stage, and the development of the city’s environmental infrastructure

Sustainability Framework

Support for the vision and target setting to develop a sustainable city in a superordinate urban concept that unifies each field

Methodology by fields

- Waste Management
- Energy Management
- Water Management
- Pollution Management
- Flood Disaster Risk Management

Work Procedures

①Review current situation
②Develop strategies
③Develop specific policies
④Verify & measure policies
⑤Procurement and Financing

** Work in process with The World Bank*

Toolkit (Checklists, etc.) + Case Studies (Kitakyushu, cities overseas)

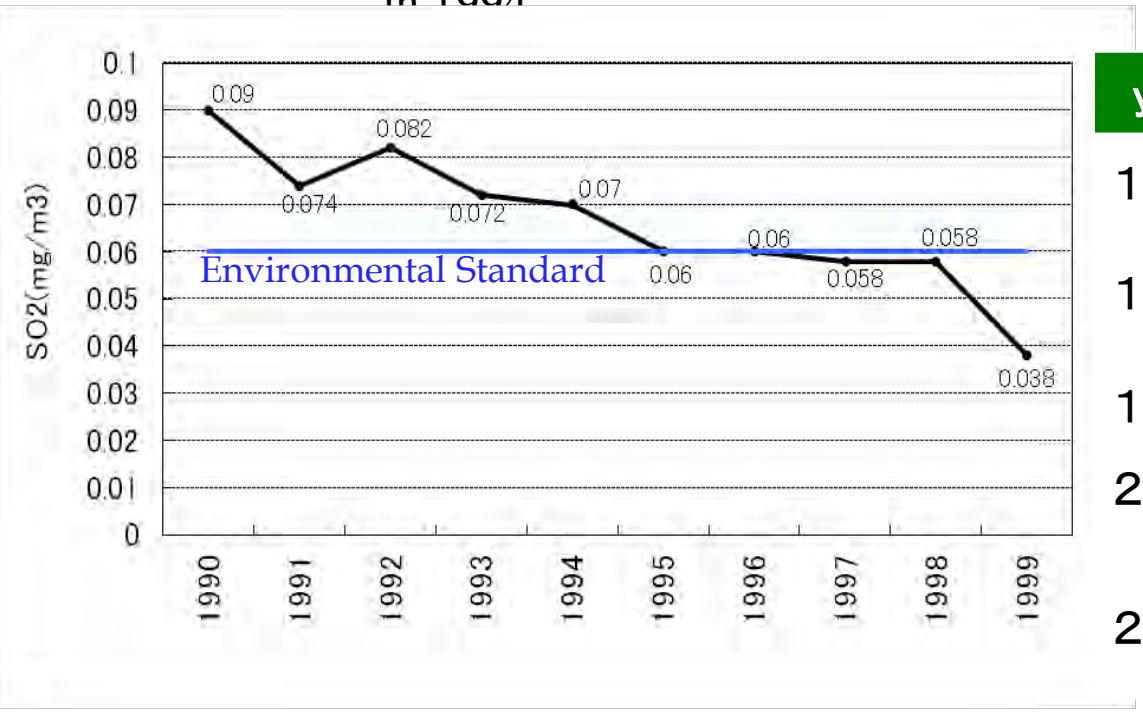
Drawing up

Master plans can be proposed to create sustainable cities and the concept of “green cities” (eco-friendly cities) can be exported overseas.

Environmental Cooperation in Dalian, China

in 1994

at present

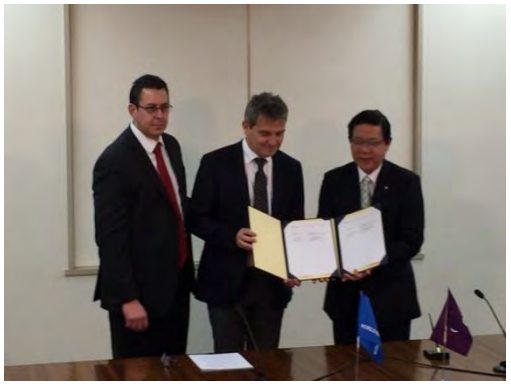


year	process
1979	Friendship-City concluded
1981	Environmental Cooperation Start
1996 | 2000	**Dalian Environmental Demonstration Zone Project**
2001	Dalian Received the Global 500 Awards from UNEP

Collaboration between The World Bank and the City of Kitakyushu, through The City Partnership Program (CPP)

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

北九州市
CITY OF KITAKYUSHU



4 Japanese cities selected for CPP as first participants (2017)

・Kitakyushu ・Kobe ・Toyama ・Yokohama

Art of Knowledge Exchange" Workshop: Feb 17, 2017

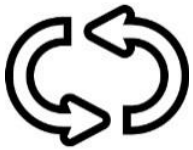
Technical "deep dives" on Solid Waste Management practices - March 22-23, 2017

2.Kitakyushu's Future From the SDG's viewpoint

4 visions with SDGs in the new Kitakyushu's environmental policy

Development of environmental movement and building of environmental bland identity based on all citizens

Realization of Super-Low-Carbon-Society in 2030 and De-Carbon-Society to come



Establishment of the Circular-System leading the world

Productive urban-development and integrative solutions of environmental, economic and social issues considering future generations

Environmental policies and SDGs' nexus

Mainly Social viewpoint

Mainly Economic viewpoint

Mainly Environmental Viewpoint

SDGs and environmental international cooperation ①

- Annual Report on the Environment (White Paper) in 2017 emphasizes on SDGs.
- The White Paper picks up the environmental international cooperation between Kitakyushu and Chinese cities.

事例　北九州市のSDGs達成に向けた取組

3 すべての人に健康と福祉を　11 住み続けられるまちづくりを　13 気候変動に具体的な対策を　17 パートナーシップで目標を達成しよう

環境未来都市に選定されている北九州市は、2016年10月、中国環境保護部の日中友好環境保全センターと、環境保護の分野で連携する覚書を締結しました。覚書では、公害対策や都市環境の改善に向けて、情報交換や人材交流を行うこととしています。北九州市では、日中友好環境保全センターの設立当初から職員を派遣するとともに、2014年度からは中国の6都市と連携し、大気汚染対策として専門家の派遣や、研修生の受入れ、共同研究等を実施しており、この活動が更に活発化することが期待されます。環境未来都市の取組を各国の地域や都市と共有し、世界的により良い環境を作る試みは、SDGsの「ゴール3（健康な生活）」、「ゴール11（都市）」、「ゴール13（気候変動）」、「ゴール17（パートナーシップ）」と強く関連しています。北九州市を始め環境未来都市を中心に積極的に取り組まれてきた都市間連携の試みも、SDGs達成に大きく貢献することが期待されます。

SDGs and environmental international cooperation ②

・On July, Hi-Level Political Forum on Sustainable Development had been held in New York.
・At the forum, Government of Japan delivered Kitakyushu City's model action. (The Phnom Penh Miracle)

MOF H P

Transfer of water distribution block technology (Phnom Penh, Cambodia)

Rate of non-revenue water (leakage, theft) 72%→8%

2005: Water declared potable (The Phnom Penh Miracle)

Directionality of the environmental international cooperation from SDGs' viewpoint

Kitakyushu:

- Achieve the SDGs by cooperation (e.g. GHG emissions, natural resource, economic growth…)
- Activate the local economy
- Create new lifestyles and industries by learning from Asia

Asian Cities:

- Achieve the SDGs by cooperation (e.g. water, health, waste…)
- Improved lifestyles
- Solutions for environmental, economic, social issues at the same time

A relationship of mutual learning and support!

October 27, 2017
The 6th Asia Smart City Conference (ASCC)

Aiming for a Sustainable Value-Added Creation City with Extensive Social Capital

Satoko Yanagihara
Policy Supervisor, Toyama City

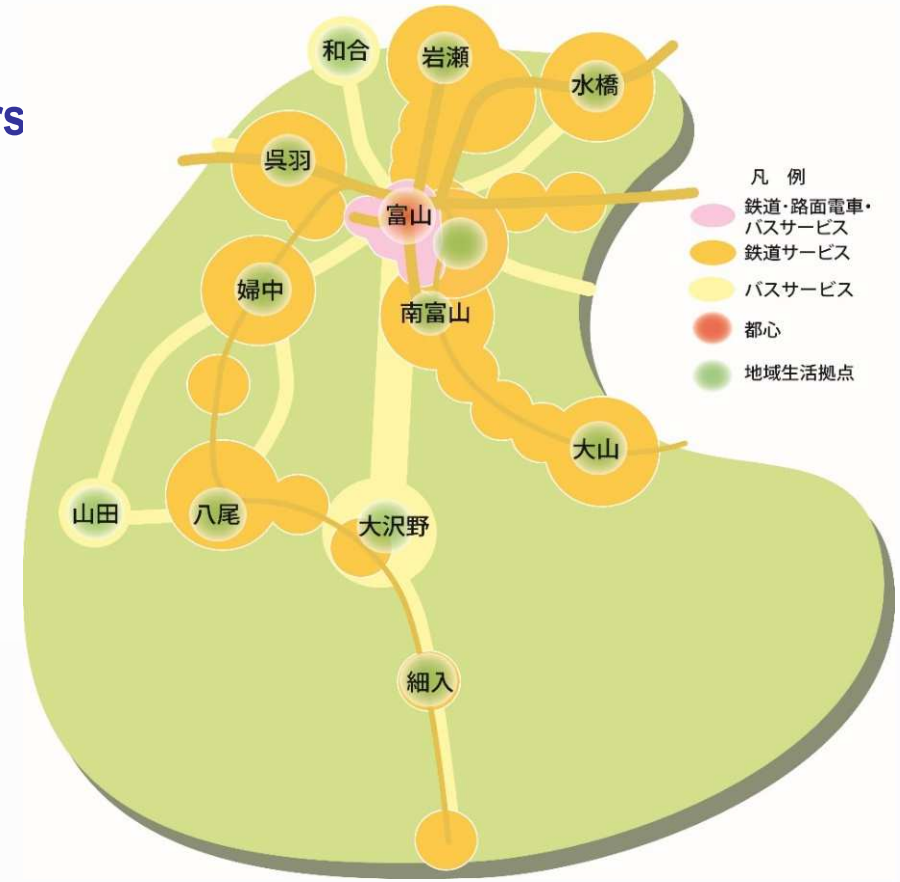
Urban Vision–Developing a Compact Community with Public Transport

By revitalizing public transport, including railway track lines, and by concentrating various city functions such as residential, commercial, business and cultural buildings along public transport lines, we can create a compact city.

<Concept Illustration>

Targeted city structure: Dumplings and skewers

Skewer: Public transport offering a higher level of service
Dumplings: Population centers connected by the skewers, allowing pedestrian access to various city amenities



<Three pillars for the Strategy>

① Revitalizing public transport

② Encouraging residents to relocate to zones along public transport lines

③ Revitalizing the city center

Formation of an LRT Network

環境未来都市 とやま FUTURE CITY TOYAMA

People-friendly and eco-friendly LRT network fosters "connections"

City Train loop Line (opened Dec. 2009)

Services extended to below Shinkansen's elevated tracks

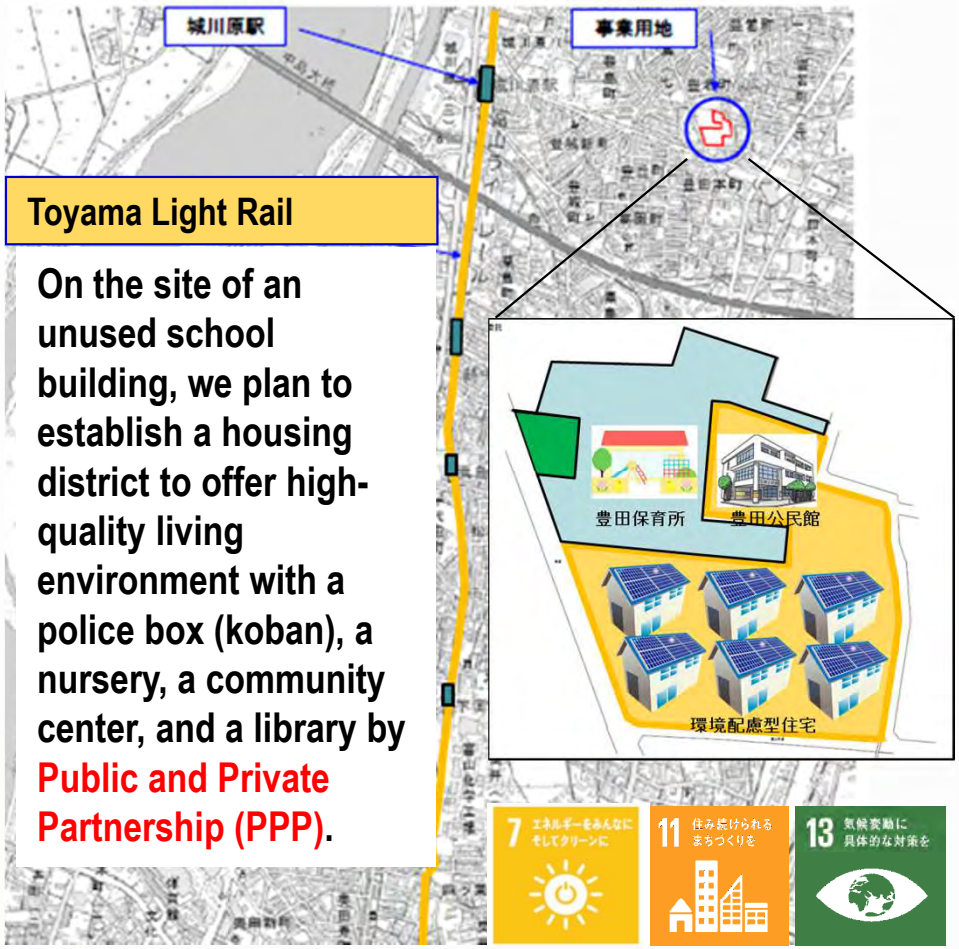
Toyama Light Rail (opened Apr. 2006)

City train Line

Improvement of Safe and Environmental Smart Community Model

環境未来都市 とやま FUTURE CITY TOYAMA

By utilizing idle land along public transportation lines, we create an eco-friendly, safe, secure and comfortable community. This plan offers high quality, convenient and eco-friendly living environment along public transportation lines.



Toyama Light Rail

On the site of an unused school building, we plan to establish a housing district to offer high-quality living environment with a police box (koban), a nursery, a community center, and a library by Public and Private Partnership (PPP).

Community Center and Library

House

Solar power

Lithium-ion batteries

Fuel cell co-generation system

Basic Concept

1. Promotion of the compact city concept
2. Low carbon emission/Low energy consumption
3. High quality of life through a PPP

Sixth-Sector Industrialization Farming Utilizing Ushidake Hot Springs –Wild Sesame Project

環境未来都市 とやま FUTURE CITY TOYAMA

This is an Environmental Future City Project to build a plant cultivation factory in the Yamada region that faces aging and isolation and promote “wild sesame” as a local product; it utilizes a sixth-sector industrialization model that covers production, processing, and retail/sales with goals of creating local jobs and realizing a healthy long-lived city.

Hot house factory near Ushidake hot spring

Large excellent farming land (24ha)

Wild Sesame (Perilla):

A medicinal plant of the mint family known as “ju-nen” or “ten years” because it is believed to add ten years to your life.

Program effects

- Sustain mountain farming village life through local advancement and regional vitalization by creating a new local product
- Promote a sense of purpose for seniors by employing local seniors at the plant factory
- Realize a healthy long-lived city by using wild sesame, which contains valuable elements, in meals for hospitals and schools
- Utilize untilled land by moving to outdoor cultivation (from 2013)

International Promotion of Wild Sesame–Concluded an Agreement with the University of Gastronomic Sciences and Conducting Joint Research Between Japan and Italy

環境未来都市 とやま FUTURE CITY TOYAMA

Concluded a first-ever cooperation agreement as a non-Italian local government entity with Italy's University of Gastronomic Sciences in May 2015 to begin Japan-Italy joint research to develop global healthy oil with an ideal blend of wild sesame oil and olive oil as part of the wild sesame sixth-sector industrialization promotion effort; announced "blended oil" results in spring 2017 following two years of research.

Toyama Mayor Mori (left) and Vice President of the University of Gastronomic Sciences and Vice Director of the Slow Food Association Silvio Barbero (right) conclude the agreement.

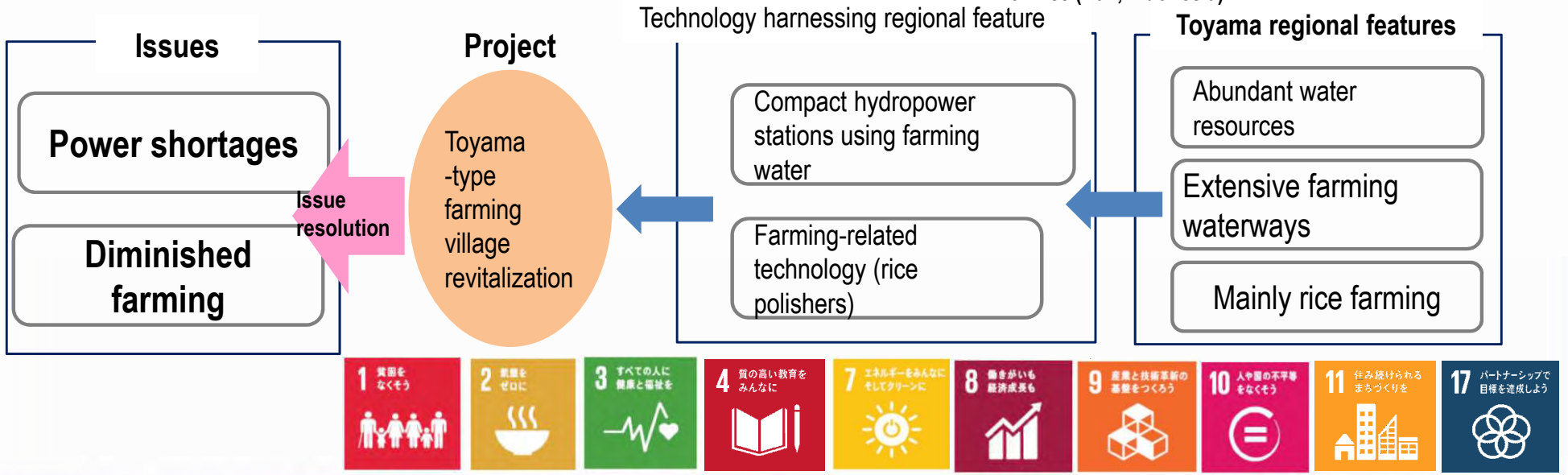
Shared vision

International Promotion of the Toyama-Type Farming Village Revitalization Using Renewable Energy

環境未来都市 とやま FUTURE CITY TOYAMA

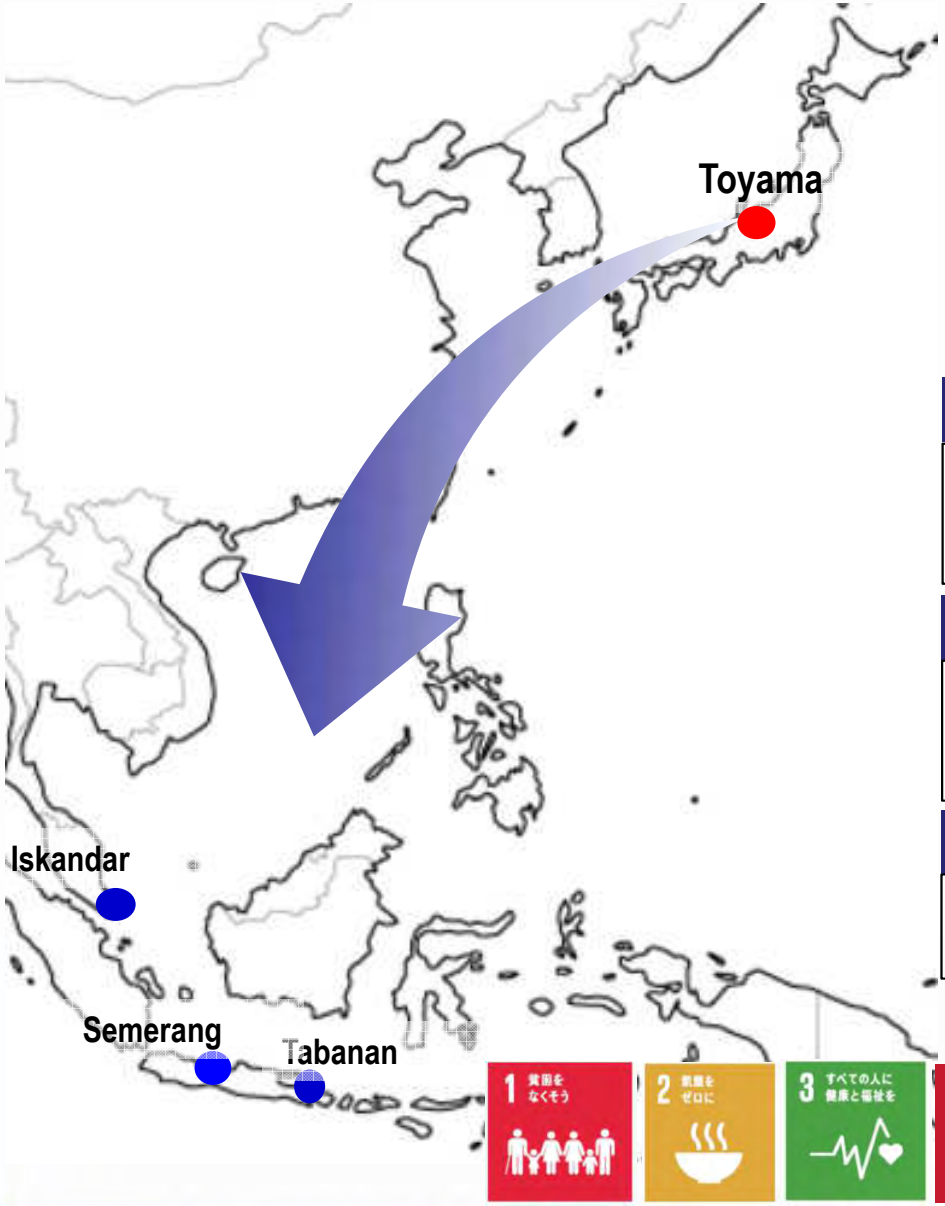
Promotion of the Toyama-type farming village revitalization model that employs compact hydropower stations using farming water and farming-related technology (rice polishers), taking advantage of Toyama's local features, to resolve issues of "Power shortages" and "Diminished farming".

March 21, 2014: Concluded a cooperation agreement for project implementation with Tabanan Province (Bali, Indonesia)



International Promotion of the Environmental Future City Project –Collaboration with Southeast Asian Countries

環境未来都市 とやま FUTURE CITY TOYAMA



Toyama City's technology and knowhow

Tabanan, Bali (Indonesia)

2014.3 –Concluded an agreement
Promotion of compact hydropower station and solar power technology

Iskandar Development Area (Malaysia)

2015.2 –Concluded an agreement
Promotion of compact hydropower station and solar power technology

Semerang (Indonesia)

2016.12 –Cooperation request
Promotion of compact hydropower station technology

PIONEERED BY THE ROCKEFELLER FOUNDATION 100 RESILIENT CITIES

Community development for reconstruction in HigashiMatsushima City

Never forgetting that day and together for the future
- United HigashiMatsushima

HigashiMatsushima City

"HigashiMatsushima Method": Recycling of rubbles caused by the disaster

■ Rubbles caused by the disaster: 1.098 million tons
99% of the total amount to be recycled
(110 times of general waste generated annually in HigashiMatsushima)



① Rubbles from disaster-stricken houses etc. are divided on site into 14 categories

② Primary treatment using mobile construction machines

③ Final treatment to divide rubbles into 19 categories through strict manual sorting

"Waste" if mixed, "resources" if sorted

This initiative through industrial-administrative-public cooperation (local construction association + HigashiMatsushima + citizens) can be implemented in any community with preparation in advance.

■ **Total recycling rate of the disaster waste: 99.22%**
including 2,160,800 tons of tsunami deposits which were entirely recycled

Amount of rubbles caused by the disaster

Wood/wood scraps	371,000t
Mixed waste	79,000t
Concrete pieces	404,000t
Asphalt pieces	34,000t
Metals	25,000t
Incombustible mixed waste	185,000t
Total	1,098,000t
(Recycled amount	1,073,000t)
(Incinerated amount: fishing nets, plastics	28,000t)

(Difficult-to-process objects: asbestos, PCB, etc. 3,115t)

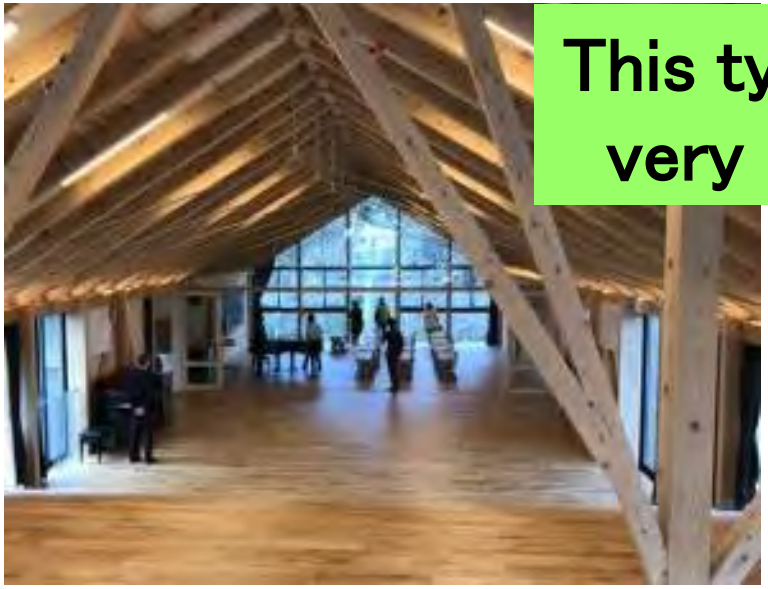
Unit price for treatment of the disaster waste conducted by Miyagi Prefecture

	Project cost (million yen)	Treated amount (thousand tons)			Treatment unit price (10 thousands yen per ton)
		Rubbles	Sand	Total	
Kisennuma	113,893	1,138	893	1,977	5.8
MinamiSanriku	32,982	556	167	723	4.6
Ishinomaki	194,230	3,589	736	4,326	4.5
Onagawa	17,297	577	0	577	3.0
HigashiMatsushima	58,067	1,098	2,161	3,259	1.8
Shiokama	15,863	239	10	249	6.4
Shichigahama	16,688	228	304	532	3.1
Takashiro	15,222	242	108	350	4.3
Natori	31,799	741	222	963	3.3
Iwanuma	25,860	473	154	627	4.1
Watari	47,876	495	361	856	5.6
Yamamoto	43,888	784	856	1,641	2.7
Total	613,665	10,160	5,919	16,079	3.8

Note: Treated amount was rounded off to one decimal point.
Total is thus approximate.
Source: Kawakita Shinpo (6 July 2014)

Made from trees in the area
Natural and Healthy Elementary School

Tree house



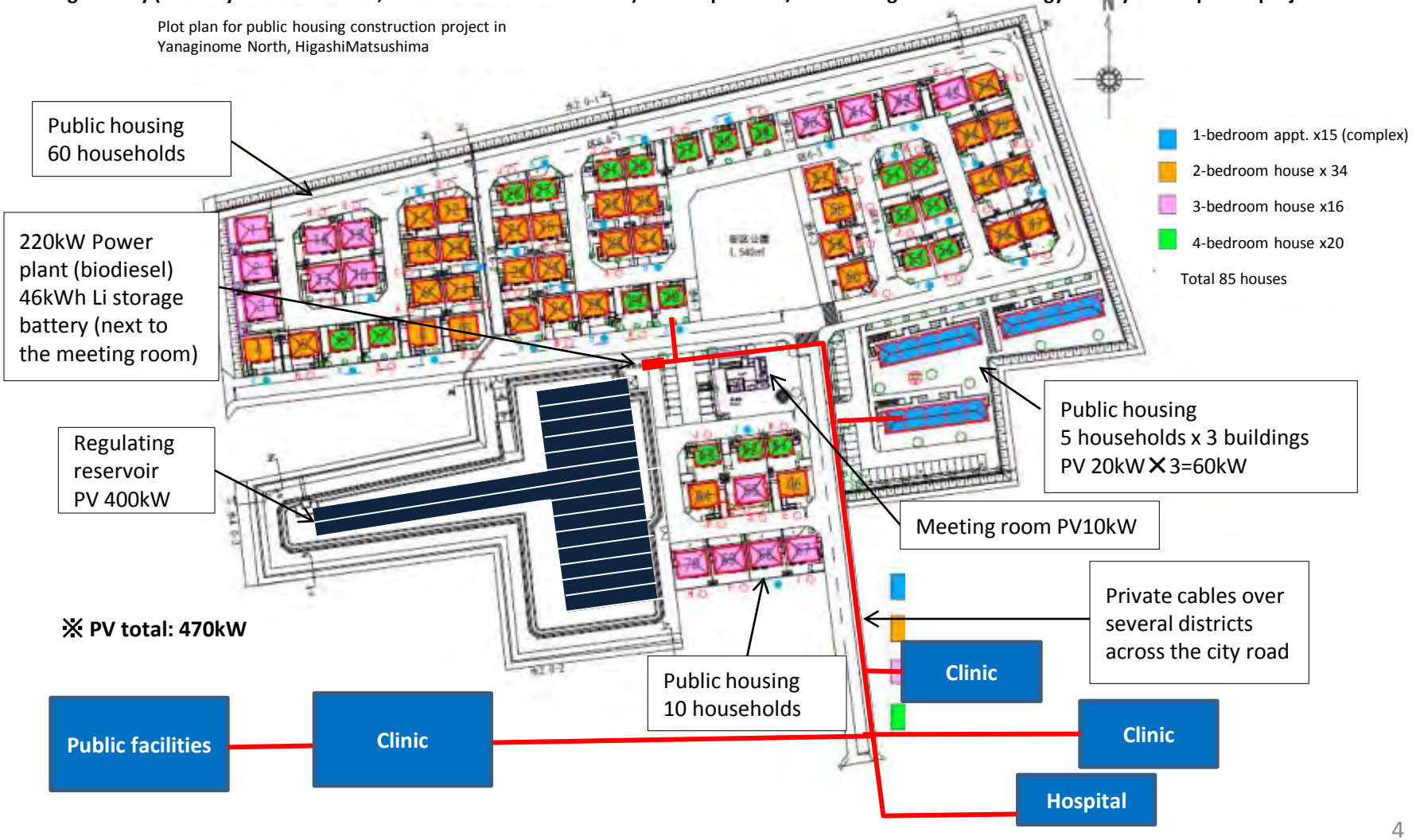
This type of school is very rare in Japan.

【Model project for “FutureCity” Initiative】

“HigashiMatsushima Smart Disaster-preventive Eco Town”

*** Using subsidy (Ministry of Environment, Global Environment Bureau) for independent/distributing low carbon energy society development project**

Plot plan for public housing construction project in Yanaginome North, HigashiMatsushima



International exchange after the disaster

Memorandum on agreement on cooperation for reconstruction (Banda Aceh City, Indonesia)

Disaster-prevention education (Banda Aceh City)

≪Main fields of cooperation≫

① Urban planning, disaster-prevention planning
② Education, health, culture
③ Tourism, trade, small- and medium-scale industries
④ Technical development, communication system development

≪Example of the project≫

●Reception of trainees from Banda Aceh (HigashiMatsushima)
30 trainees in total
(As of June 2016)

⟷

● Training on 10-year reconstruction project as an advanced reconstruction site
・Information sharing (Banda Aceh)

HigashiMatsushima and JICA agreed on regional revitalization and promotion of reconstruction through international cooperation on July 31, 2015.

Crown Prince Frederik's visit

HigashiMatsushima “FutureCity” Initiative model

東松島市
環境未来都市事業例

“Reconstruction forest”
Relaxing forest

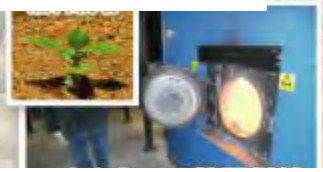
Nature as medicine

Coastal tsunami surveillance system

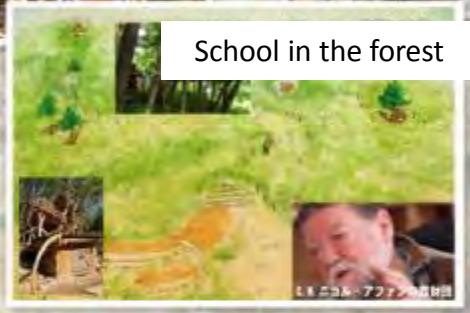
Smart house

Collective housing

Cultivation of fuel



Biomass thermoelectricity supply



School in the forest

Wooden city initiative

Smart pole

Small independent power source at public facilities used as shelters

Wind-generated power

Demonstrative field for the use of renewable energy

OkuMatsushima “Kizuna” Solar Park

あの日を忘れず　ともに未来へ　東松島一心

宮城県東松島市

「東松島方式」災害廃棄物のリサイクル

■震災がれき発生量109万8000ｔ
　全体の99％をリサイクル
（東松島市で発生する一般廃棄物110年分）



①被災した家屋等は、現場分別により１４品目に分別

②可搬型の建設機械等を活用した一次処理作業

③徹底した手作業により１９品目に分別による最終処理

「混ぜれば“ごみ”、分ければ“資源”」
産官民（地元建設業協会+東松島市+市民）連携によるこの取組みは、事前の準備により、どの地域でも、十分に実現できる取組みです。

■全量リサイクルした津波堆積物216万0800ｔを加た、災害廃棄物全体リサイクル率９９．２２％

震災がれき発生量

木材・木くず	３７万１,０００t
混合ごみ	７万９,０００t
コンクリート殻	４０万４,０００t
アスファルト殻	３万４,０００t
金属類	２万５,０００t
不燃物混合類	１８万５,０００t
合計	１０９万８,０００t
（リサイクル量	１０７万３,０００t）
（焼却量（漁網・廃プラ）	２万８,０００t）
（処理困難物(石綿・ＰＣＢ等)	３,１５５t）

宮城県が受託した震災廃棄物の処理単価

	事業費（百万円）	処理量（千トン） がれき	土砂	計	処理単価（1トン当たり万円）
気仙沼市	113,893	1,138	839	1,977	5.8
南三陸町	32,982	556	167	723	4.6
石巻市	194,230	3,589	736	4,326	4.5
女川町	17,297	577	0	577	3.0
東松島市	58,067	1,098	2,161	3,259	1.8
塩釜市	15,863	239	10	249	6.4
七ケ浜町	16,688	228	304	532	3.1
多賀城市	15,222	242	108	350	4.3
名取市	31,799	741	222	963	3.3
岩沼市	25,860	473	154	627	4.1
亘理町	47,876	495	361	856	5.6
山元町	43,888	784	856	1,641	2.7
計	613,665	10,160	5,919	16,079	3.8

（注）処理量は小数点第１位を四捨五入しているため、合計が合わないことがある

出展：河北新報（2014.7.6）より

スマートスクール　自然環境の「教育・学習」を重視
オール国産材の小学校木造校舎

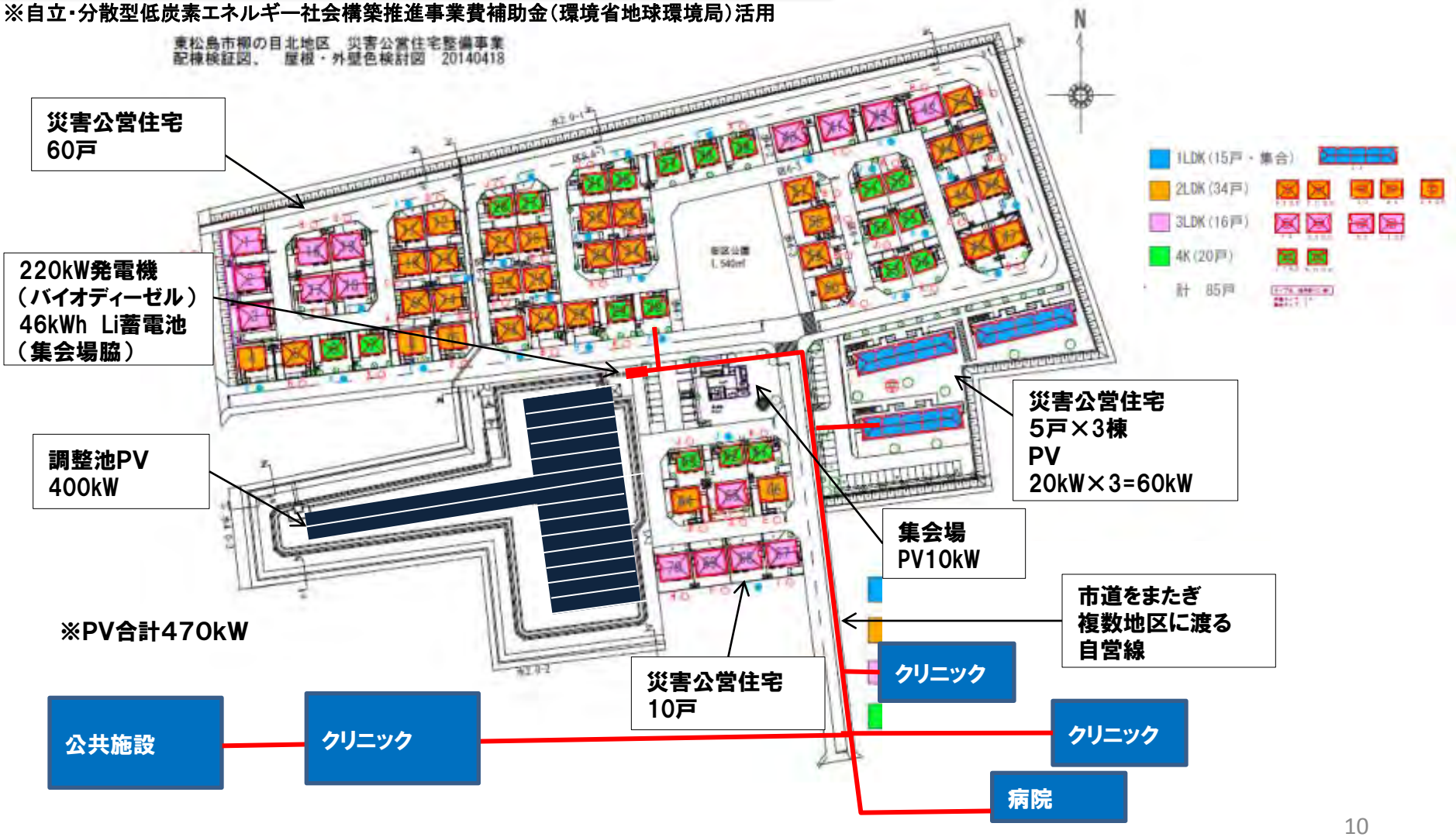
CWニコルアファンの森財団
により先行整備された
「ツリーハウス」

オール国産材の「森の学校」
木造で復興した「宮野森小学校」

【環境未来都市構想の先導事業】

「東松島スマート防災エコタウン」

※自立・分散型低炭素エネルギー社会構築推進事業費補助金（環境省地球環境局）活用



震災を契機とした国際交流の取り組み

復興に向けた協力と連携の合意に
関する覚書(インドネシア バンダ・アチェ市)

防災教育
(バンダ・アチェ市)

≪主な協働分野≫
①都市計画、防災計画
②教育、健康、文化
③観光、貿易、中小産業
④技術開発、通信システム開発

≪具体的事業の一例≫

●バンダ・アチェ市から研修生の受け入れ(東松島市)
計30人
H28．6月現在

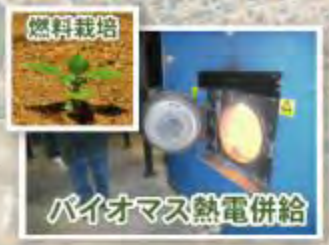
⟷

●復興先進地として10年間の復興事業の研修・情報共有（バンダ・アチェ市）

東松島市・JICA
国際協力を通じた地域創生と
復興の推進について合意　2015．7．31

デンマーク王国皇太子訪問

東松島市
環境未来都市事業例



再生可能エネルギー利用の
実証フィールド

"FutureCity"Yokohama

27th October 2017
ASCC

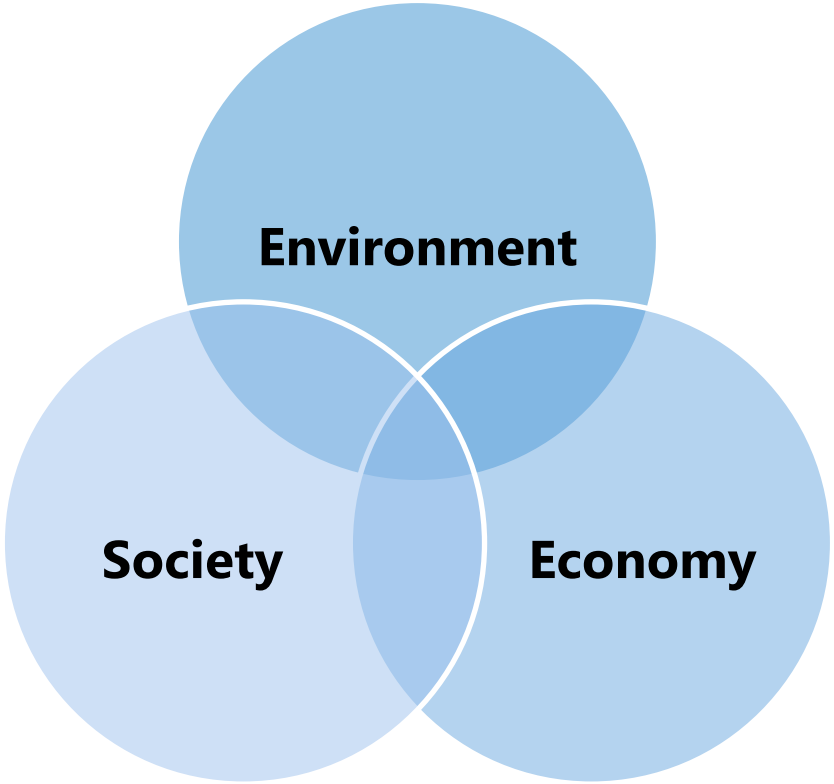
International Cooperation of FutureCity Yokohama

Yasuyuki Akimoto
Executive Director for FutureCity Promotion
Climate Change Policy Headquarters
City of Yokohama

FutureCity Yokohama

"FutureCity"Yokohama

Increase the value of the city from the 3 perspectives



Conduct 42 projects in 5 categories

Environment	Low-carbon and Energy Saving
	Water end Environment
Responding to the Super-Aging Society	
Regional Vitalization	Creativity
	Challenge

Cooperation with Bangkok

"FutureCity"Yokohama

◆Bangkok Master Plan on Climate Change 2013-2023

- Yokohama City supported JICA's Project for Bangkok Master Plan on Climate Change 2013-2023 (formulated in 2015).

◆Overseas Expansion of Private Companies in the City utilizing JCM

- Yokohama City supports the JCM project proposal of private companies in the city as part of Y-PORT project.

  Projects adopted as JCM projects

  July 2016 : Energy saving of a paint factory (Finetech.Co.Ltd.,)

  April 2017: Introduction of energy efficient equipment to Bangkok Port（Yokohama Port Corporation）

Workshop for Bangkok Master Plan on Climate Change

Open Seminar for Bangkok Master Plan on Climate Change

Cooperation with Barcelona

"FutureCity"Yokohama

◆**2011**

Yokohama City received World Smart City Award (City Category) in Barcelona.
Yokohama City started to attend SCEWC, Smart City Expo World Congress in Barcelona.
(Since then, Yokohama City attends SCEWC every year.)

◆**2013**

MOU for Smart City Development Cooperation (Renewed in 2015)
Sending staffs of Yokohama City to Barcelona City.

◆**2017**

Starting cooperation in Smart Illumination Yokohama.
Commissioner of the festival LLUM BCN will attend the International Symposium of Smart Illumination Yokohama on Nov. 2nd.

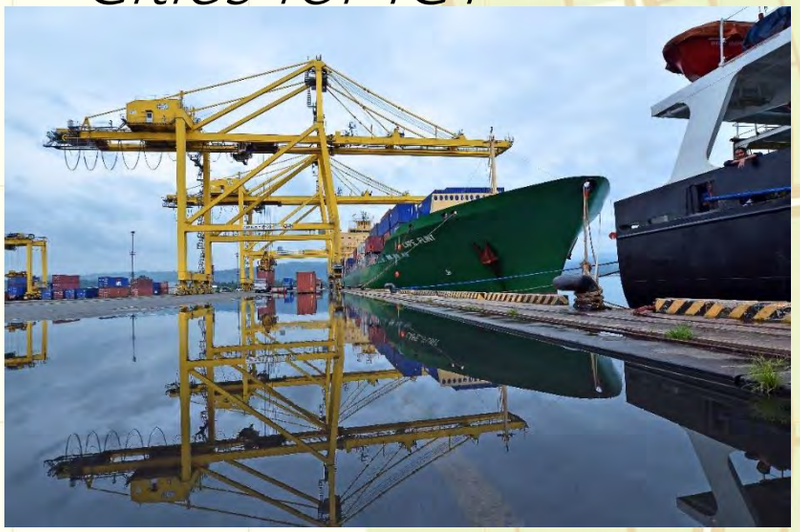
Presentation at SCEWC

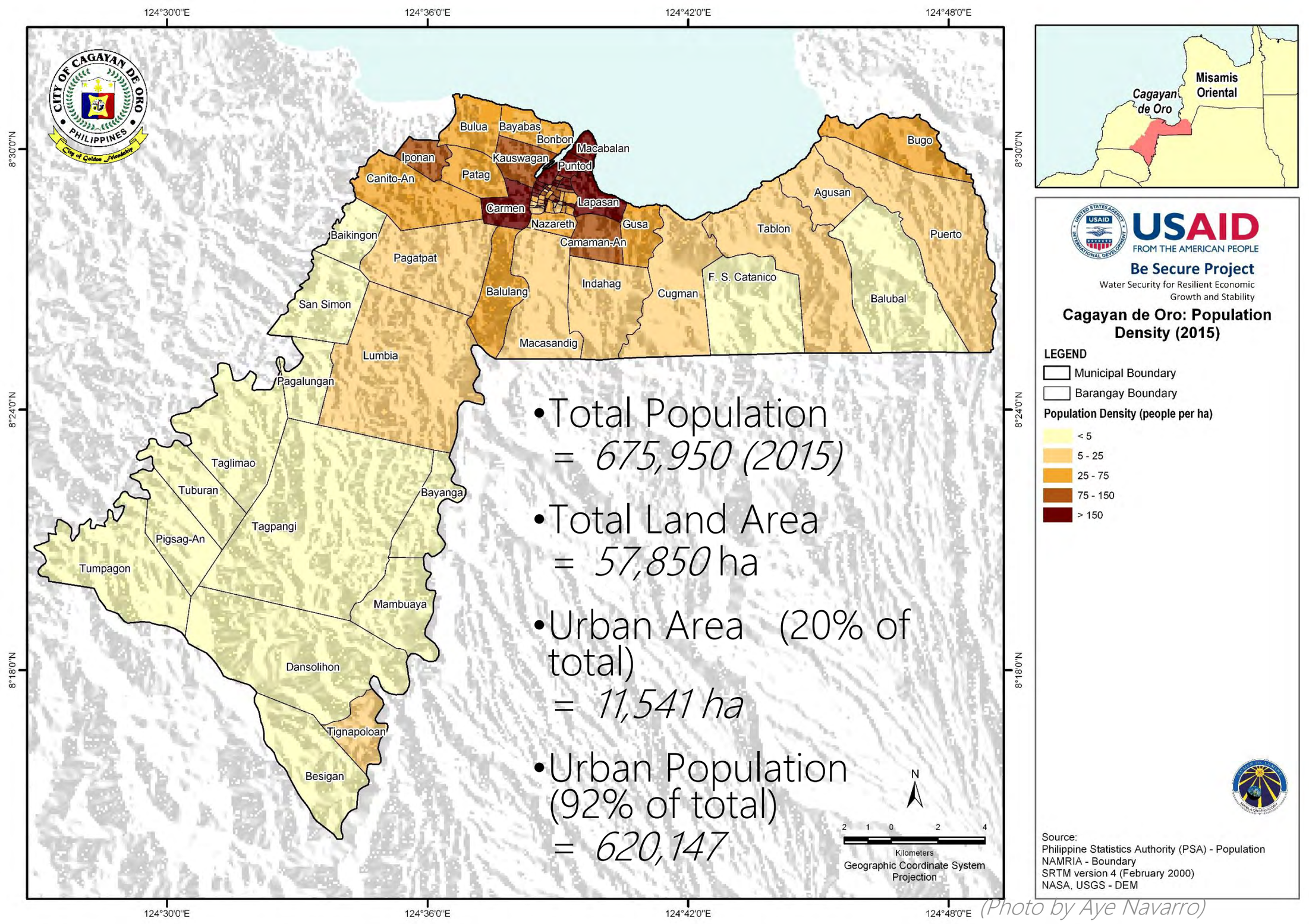
Meeting with BARCELONA GLOBAL

Smart Illumination Yokohama 2016
(Photo: Amano Studio)

Philippines:
Cagayan de Oro City

- *Logistics, Education, Trade and Financial Center of Northern Mindanao*
  - *14 Higher Educational Institutions*
- *Among the Philippine's Most Competitive Cities*
- *One of the Next Wave Cities for ICT*





- Total Population = *675,950 (2015)*
- Total Land Area = *57,850* ha
- Urban Area (20% of total) = *11,541 ha*
- Urban Population (92% of total) = *620,147*

(Photo by Aye Navarro)

Urban Land Challenge: Urban Sprawl and Flooding

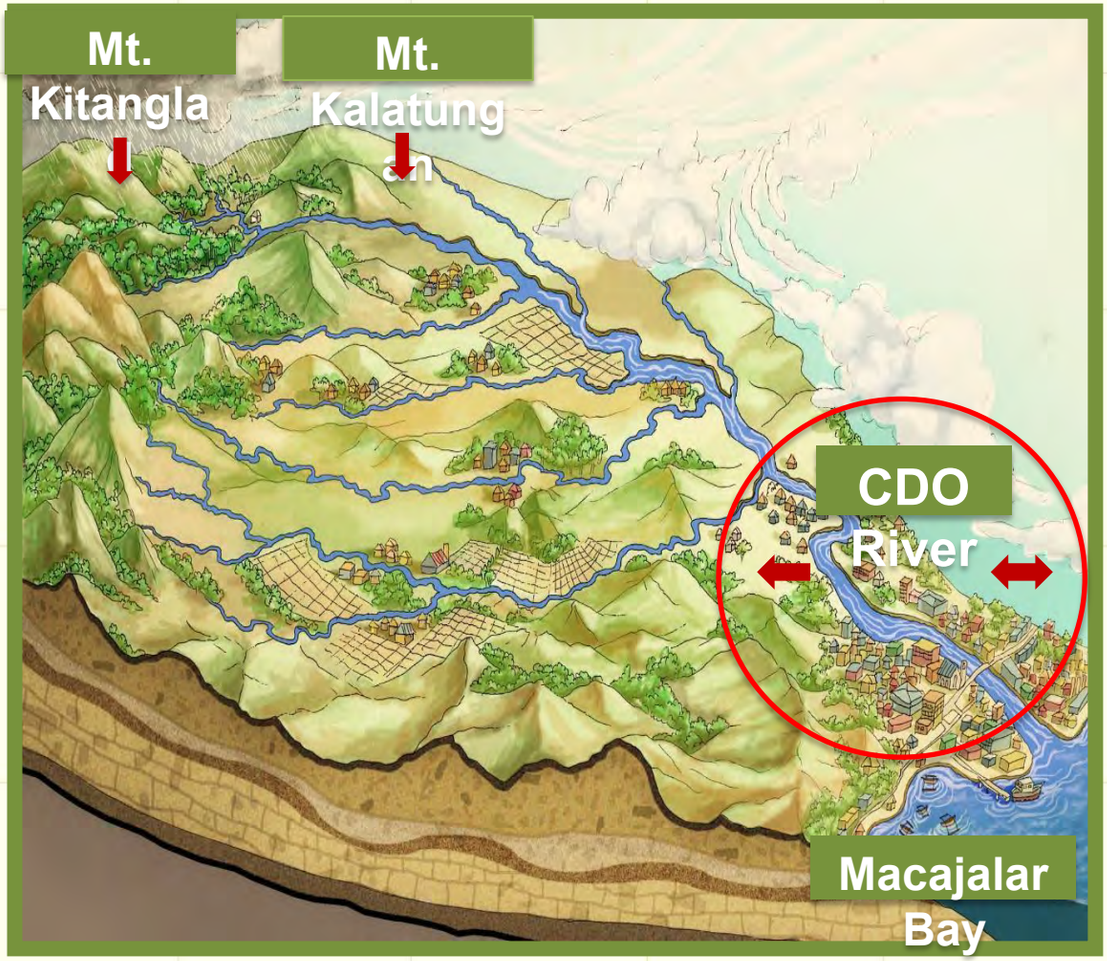
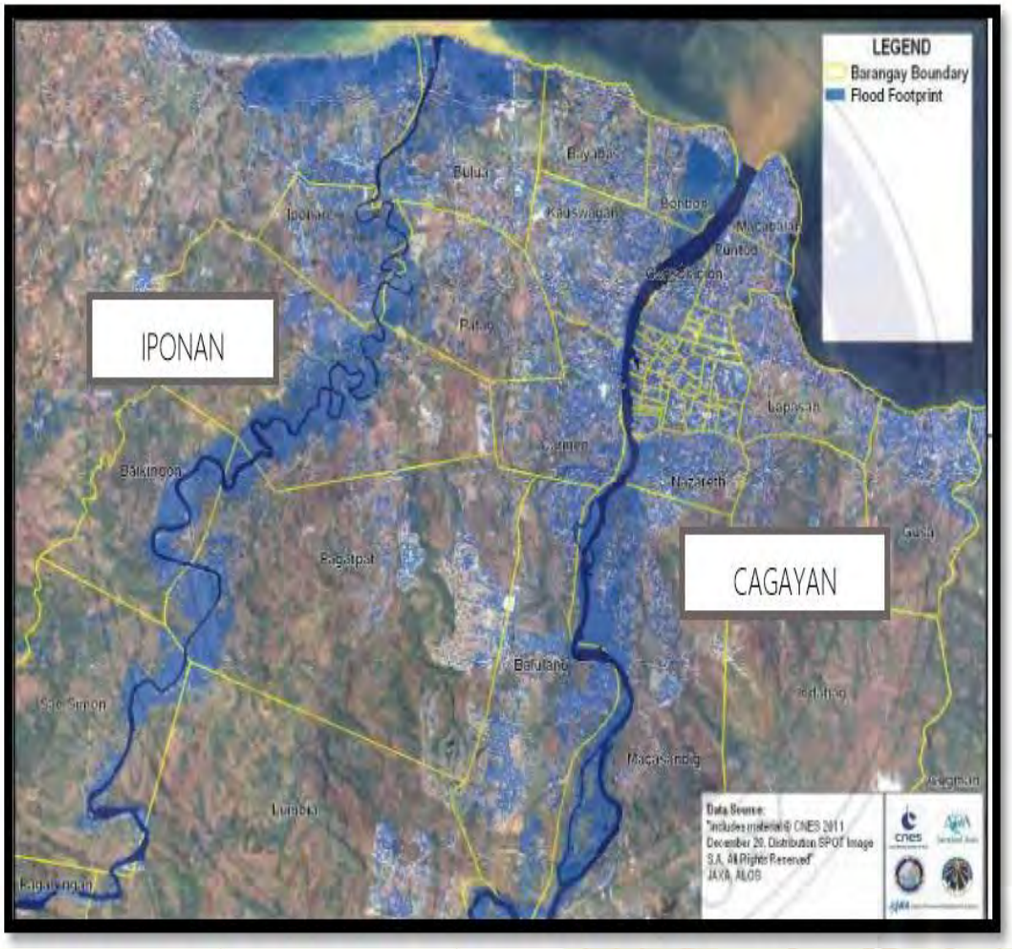


Figure 11: Flood Footprint Taken After TS Sendong (December 20, 2011)



- Water is Cagayan de Oro' s boon and bane (*Business Risk Assessment by WWF)*
- *Typhoon Sendong (International Name: Washi) ravaged the City in 2011*

Damage to the City:

- 700 bodies recovered, over 1,000 missing and some 5,000 families displaced
- About 4,301 houses were totally washed out and 14, 833 were partially damaged

Current Initiatives: Improving Disaster Preparedness and Response

¥ 11 Billion Mega dike w/ JICA Assistance

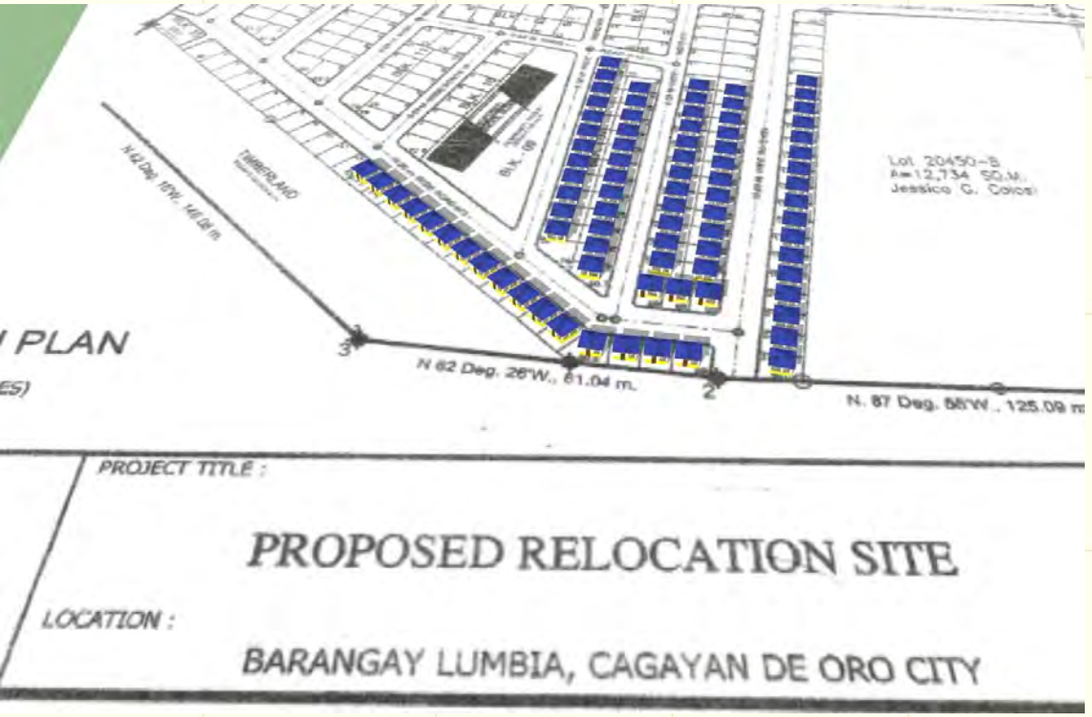
- Construction of 12 KM Mega Dike at strategic points along each side of the Cagayan de Oro River

Computer Aided Response and Emergency Dispatch

- Automating Disaster Response improves efficiency of services

Current Initiatives: Resettlement and Sanitation

Cagayan de Oro Shelter Plan



- Assistance from Japanese Non-Project Grant Aid for Restoration and Prevention

- Construction of 722 houses in Lumbia, Cagayan de Oro

Pilot Site for JICA Aided Waste Water Treatment Facility

- Pilot Project Phase 1 w/ Industry Partner: Limketkai Luxe Hotel
- Pilot Project Phase 2 w/ Government Partner: Cogon or Bulua Market
- Japanese Partner: Hinode Sangyo Corp.

Towards a Resilient CDO: Planned City Extension

Lumbia, Cagayan de Oro

MIXED RESIDENTIAL/ CIVIC CENTER/ COMMERCIAL/ TOURISM

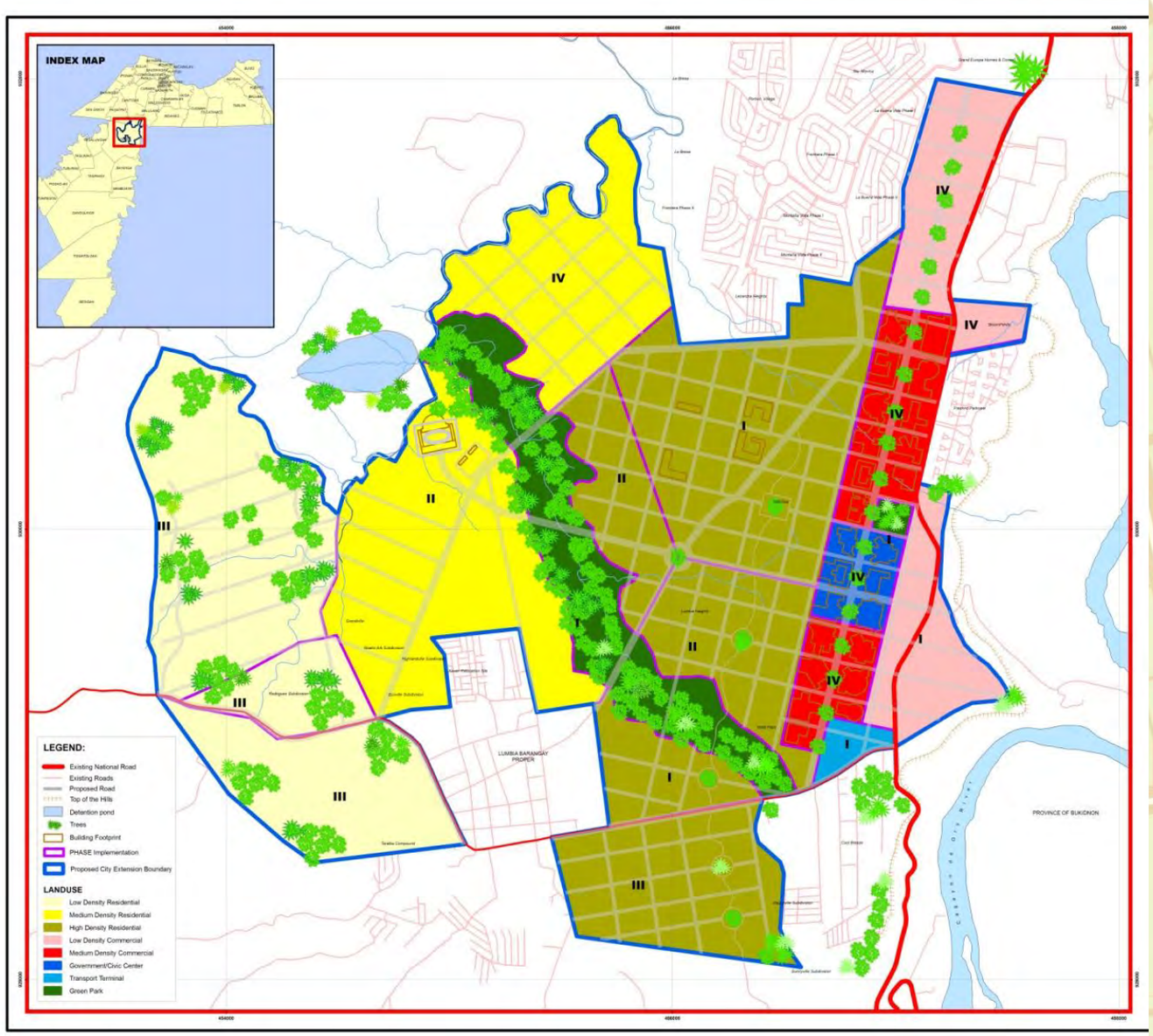
Integration of airstrip as civic urban space and backspine

Mixed residential (high and medium density), including socialized housing

City and national government offices, schools, church, evacuation center, vocational-technical skills training center, social welfare center

Agricultural tourism/ heritage tourism/ eco-tourism

Transport hub



Towards a Resilient CDO: Oro Central

- Sustainable Urban Design
- School Building cum Central Command Center in times of disaster
- Research Center for Climate Change Adaptation
- Features:

(1) 200 classrooms (serving 8,000 students);

(2) Disaster Command Station and evacuation spaces to service 10,000 evacuees; and

(3) Green Building Features—1,069 Solar Panels, 7,000 Km^2 roof Garden and 900,000 gallon Rainwater Harvesting Capacity

Thank you.

Applying SDGs to The Invigoration of Localities

October 27, 2017

Kentaro Endo

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

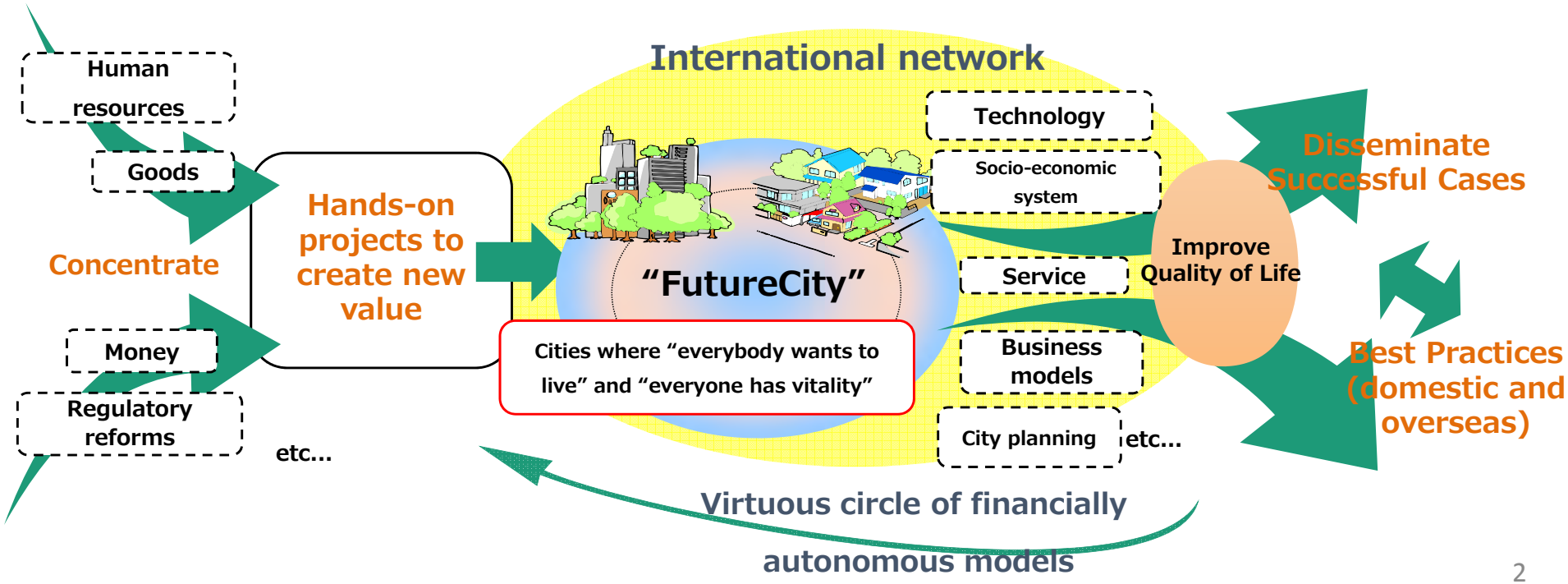
What is the “FutureCity” Initiative?

Image of the “FutureCity” Initiative

The “Future City” Initiative aims to create world-leading successful cases in order to resolve common 21st century challenges, such as environmental issues and aging populations, and to spread them not only within Japan but also around the world so that we can expand demand, create jobs, and strengthen our ability to resolve international challenges.

To this end, the Initiative creates space for implementation and focuses on the diversity and uniqueness of the individual cities and localities to encourage strengthening the local capacity to resolve issues. Through this, it creates a wide variety of urban and local models that develop autonomously in response to global environmental issues and the structural issues that Japan faces, i.e. a declining population and hyper-aging, by using local resources to generate the thee values, i.e. environmental value, social value, and economic value.

By spreading such diverse successful cases in urban/community revitalization, we will promote regional revitalization and open the way to the future of Japan.



"FutureCity" Initiative

Selected Cities and Regions

【 Eco-Model City 】

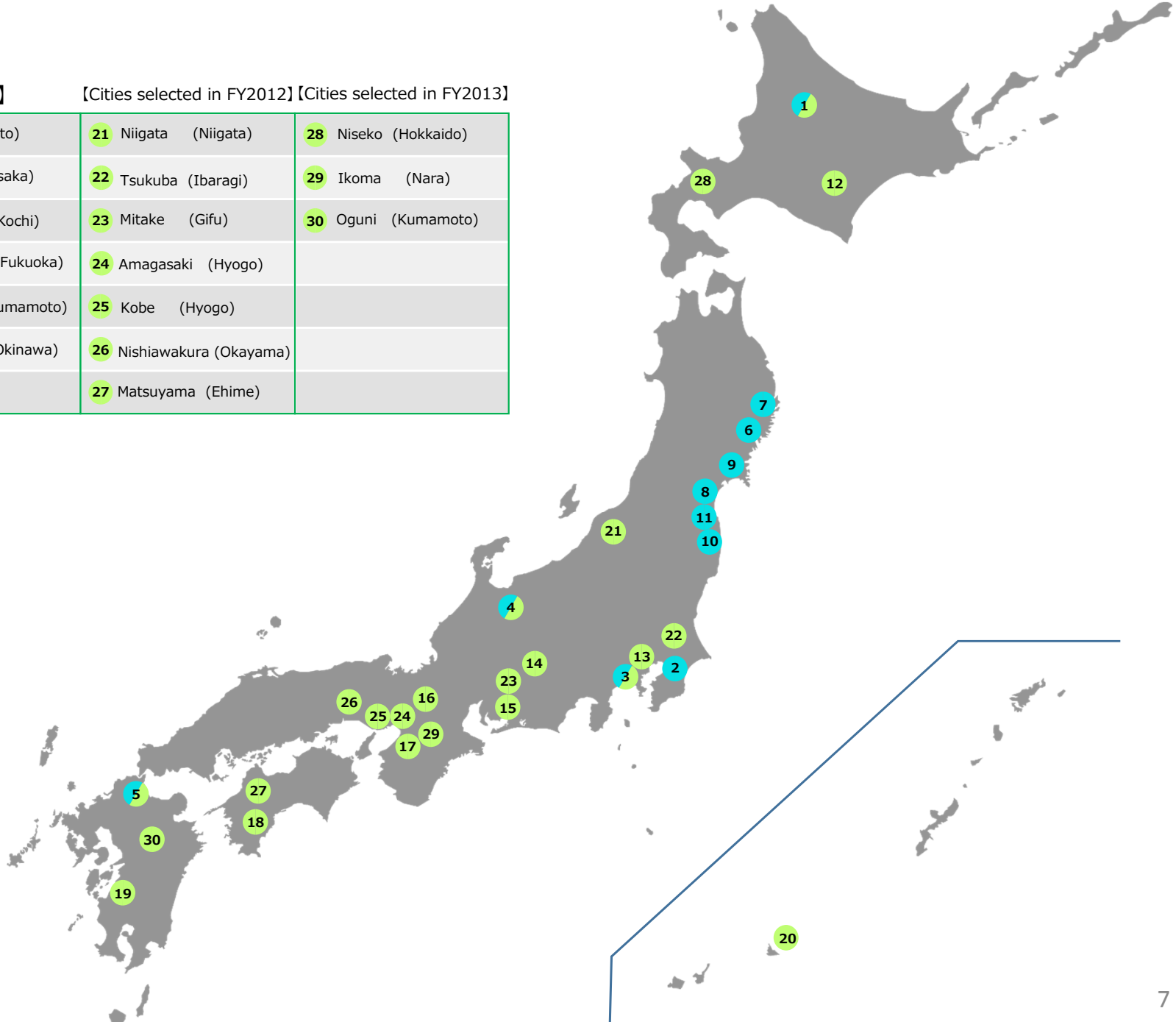
【Cities selected in FY2008】

1 Shimokawa (Hokkaido)	16 Kyoto (Kyoto)	21 Niigata (Niigata)	28 Niseko (Hokkaido)
12 Obihiro (Hokkaido)	17 Sakai (Osaka)	22 Tsukuba (Ibaragi)	29 Ikoma (Nara)
13 Chiyoda (Tokyo)	18 Yusuhara (Kochi)	23 Mitake (Gifu)	30 Oguni (Kumamoto)
3 Yokohama (Kanagawa)	5 Kita-Kyushu (Fukuoka)	24 Amagasaki (Hyogo)	
14 Iida (Nagano)	19 Minamata (Kumamoto)	25 Kobe (Hyogo)	
4 Toyama (Toyama)	20 Miyakojima (Okinawa)	26 Nishiawakura (Okayama)	
15 Toyota (Aichi)		27 Matsuyama (Ehime)	

【Cities selected in FY2012】【Cities selected in FY2013】

【FutureCity 】

1 Shimokawa (Hokkaido)	7 Kamaishi (Iwate)
2 Kashiwa (Chiba)	8 Iwanuma (Miyagi)
3 Yokohama (Kanagawa)	9 Higashimatsushima (Miyagi)
4 Toyama (Toyama)	10 Minamisoma (Fukushima)
5 Kita-Kyushu (Fukuoka)	11 Shinchi (Fukushima)
6 Kesen Koiki(Iwate)	



Outcomes of the "FutureCity" Initiative

Outcomes of the FutureCity Initiative

Environmental issues

Response to hyper-aging

Locally unique themes

Creating environmental value

- Low carbon, energy conservation
- Water, atmosphere
- Natural environment, biodiversity
- The three Rs (reduce, reuse, recycle), etc.

Creating social value

- Health and medical care
- Nursing and welfare
- Disaster prevention
- Child rearing, education, etc.

Creating economic value

- Creating employment and income
- Tourism
- New industries
- Industry-academia-government collaboration, etc.

Enhancing quality of life (QOL) for the public

Promoting invigoration of localities

"FutureCity" Initiative

Significance of promoting local government SDGs for invigoration of localities

Goals for locality invigoration

Overcoming population decline and reductions in local economies / Overcoming population decline and vitalizing local economy, as well as the establishment of a virtuous cycle

Realizing sustainable city building and regional revitalization in order for people to live with peace of mind

Synergistic effects: Overall optimization of policy promotion/increased speed of resolving regional issues

Promotion of policies that integrate the three aspects of "economy," "society," and "environment"

- community regeneration
- declining birthrate, increasing elderly population,
- education
- employment measures
- using human resources
- declining population
- environmental measures
- disaster risk reduction

Promotion of SDGs by local governments

◆Visualization of regional issues

◆Creation of systems

✓Outfitting local governments with internal execution systems

✓Further collaboration with stakeholders

◆Deciding/revising plans of local governments

✓Reflect components of SDGs in plans and establishing governance methods that manage progress

◆Wide-reaching cooperation according to issue

Horizontal deployment of locality invigoration success models within Japan, and promotion outside of Japan

Discussion at the SDGs Promotion Headquarters (third meeting) relating to working with local governments

(Excerpt from Prime Minister's statement)

"Sustainable Development Goals, or SDGs, are important efforts that all countries, both developed and developing, are responsible for. Japan's standpoint is from that of providing security for people, and through our leadership we plan to realize a society in which no one is left behind, and in which each and every individual can demonstrate their abilities. Focusing on July's UN report and September's UN General Assembly meeting, I will once again provide instructions regarding the following 3 points.

(Abridged)

Second is the promotion of SDGs in the regions. These are sure to contribute to the invigoration of localities. I request that related cabinet ministers work together to consider policies to promote regional efforts to achieve SDGs, as well as implement these policies.

Held June 9, 2017 (at Prime Minister's Office)

Held June 9, 2017 (at Prime Minister's Office)

(Statement by Minister of State for Regional Revitalization Yamamoto)

In order to implement SDGs nationwide, the promotion of efforts made by local governments throughout the country in cooperation with local stakeholders will prove invaluable.

For this reason, further developing the "FutureCity" Initiative, the creation of policies aimed at having local governments achieve SDGs, as well as the fully fledged promotion of these efforts, is sure to lead to the invigoration of localities.

“Basic Policy for Overcoming Population Decline and Vitalizing Local Economy 2017” Cabinet decision (June 9, 2017)

Overview

In order to promote the implementation of SDGs within Japan, fully fledged efforts by local governments, and stakeholders in these regions, as well as by private sector entities, will prove invaluable for achieving SDGs. In addition to this, Japan aims to be a role model in relation to implementing SDGs. We are currently making efforts within the country, as well as cooperating internationally, to make sustainable development efforts. It is necessary to contribute to these efforts by drawing on the advanced efforts of FutureCities and Eco-Model Cities. It is for this reason that in order to further develop the “FutureCity” Initiative, it will be necessary to consider the promotion of efforts by local governments towards achieving SDGs, and find an overall direction.

Specific Efforts

◎ Implementation of promotion activities related to local governments

・With the goal of finding successful examples both within Japan and abroad, and supporting the sharing of knowledge and the creation of a network for this purpose, the International Forum on the “FutureCity” Initiative will continue to be held with SDGs as a theme, aiming for the realization of independent and sustainable cities.

・In order to aim for the creation of more related to SDGs, we will provide support to local public groups to hold forums related to promoting understanconcepts ding and creating awareness of SDGs.

◎Formation of model examples of local governments achieving SDGs

・In order to promote efforts by local public groups that aim to achieve SDGs, we will consider financial support for the formation of model efforts, and obtain a definite plan. At that time we will also consider continuous follow-up support from experts with the aim of forming successful examples from other models, and obtain a definite plan regarding this too.

Quality Infrastructure and Smart City Development

Mondo YAMAMOTO

Director of Development Assistance Policy Coordination Division,
International Cooperation Bureau, Ministry of Foreign Affairs of Japan

6th Asia Smart City Conference 2017

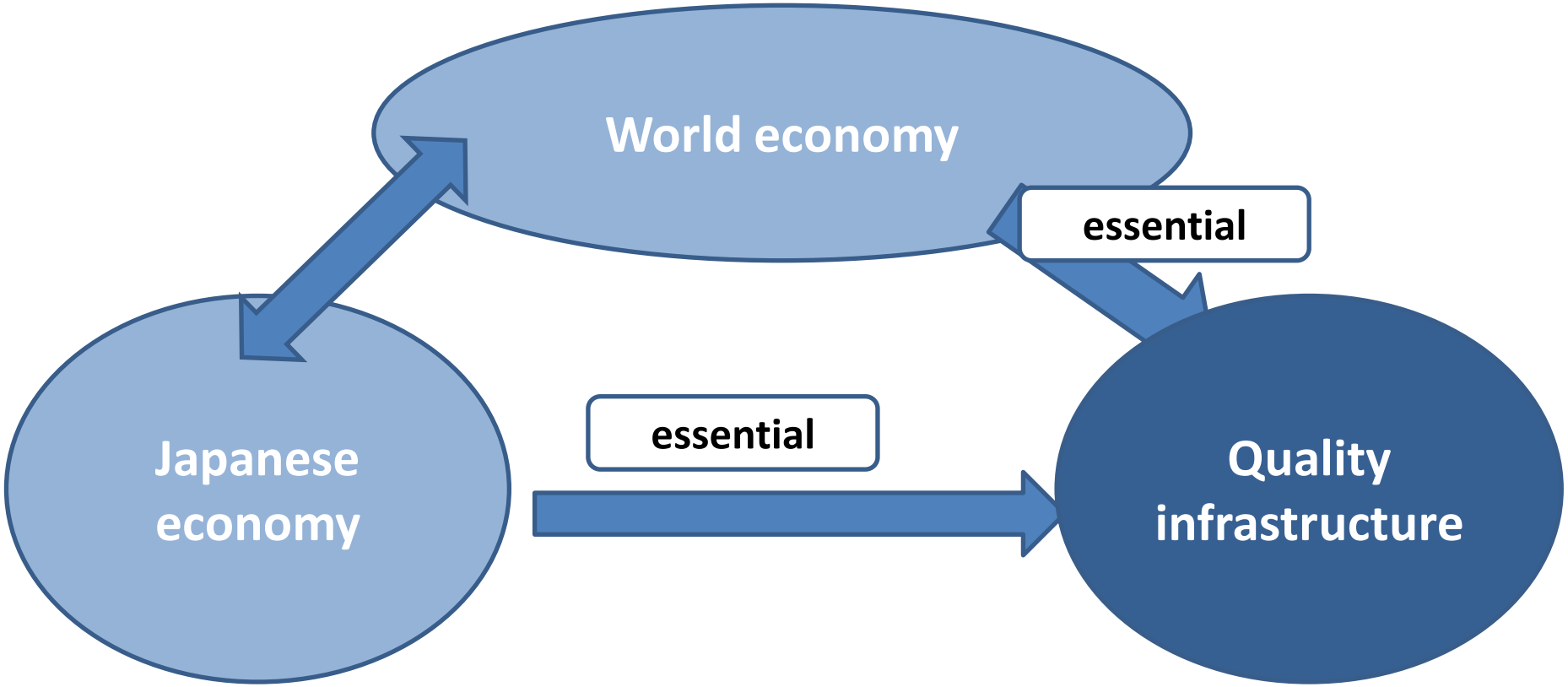
27 October 2017

The need for Quality Infrastructure

Quality infrastructure is essential for world economic growth

- ✓ Quality infrastructure form the foundations of a nation's economic growth.
- ✓ Strengthening the connectivity between nations and regions, as fountains of world economic growth.

⇒Smart City is an important part of Quality Infrastructure Investment.



Characteristics of quality infrastructure

✧ *Infrastructure should be high-quality*

～The supply side of infrastructure is being diversified with some of the emerging economies becoming donors. The international community should share standards of quality infrastructure.

Standards that Japan considers important for quality infrastructure

Safety, Reliability, Resilience, Economic efficiency in view of life-cycle cost

- Quality infrastructure ensures safety, reliable operation and resilience against natural disasters. These factors make quality infrastructure economically efficient in the long term.

Social and Environmental consideration

- Infrastructure development without social and environmental consideration would cause negative impact on economic growth of recipients rather than promote it.

Local job creation and transfer of expertise and know-how to recipients

- In order to contribute to sustainable growth of recipients' economies, infrastructure investment should seek local job creation and transfer of expertise and know-how to recipients.

Alignment with economic and development strategies of recipients

Consideration for financial situations of recipients

- Appropriate terms and conditions of loans should be set in accordance with OECD rules taking into account repayment abilities of recipients.

"G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment" (May 2016)

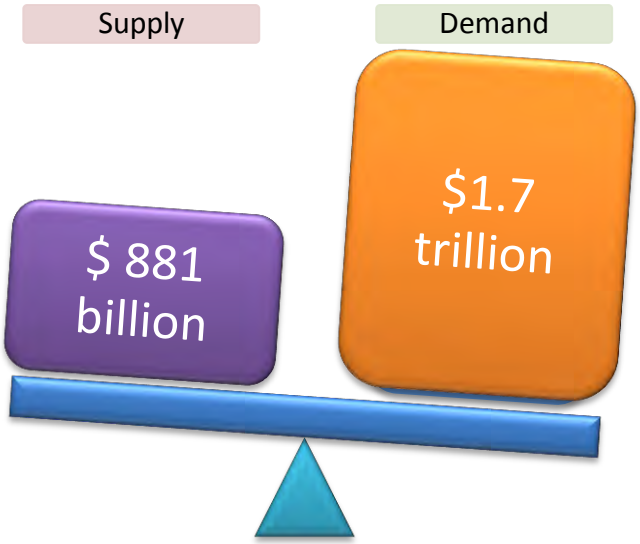
Challenges facing Infrastructure Investment

✧ *Demand for infrastructure investment is overwhelming supply…*

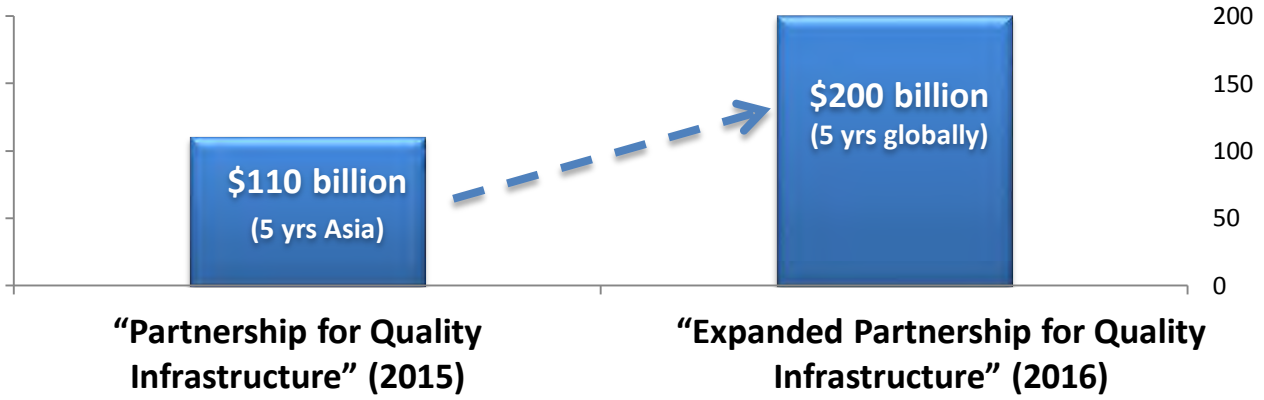
$819 billion gap per year

Example in Asia

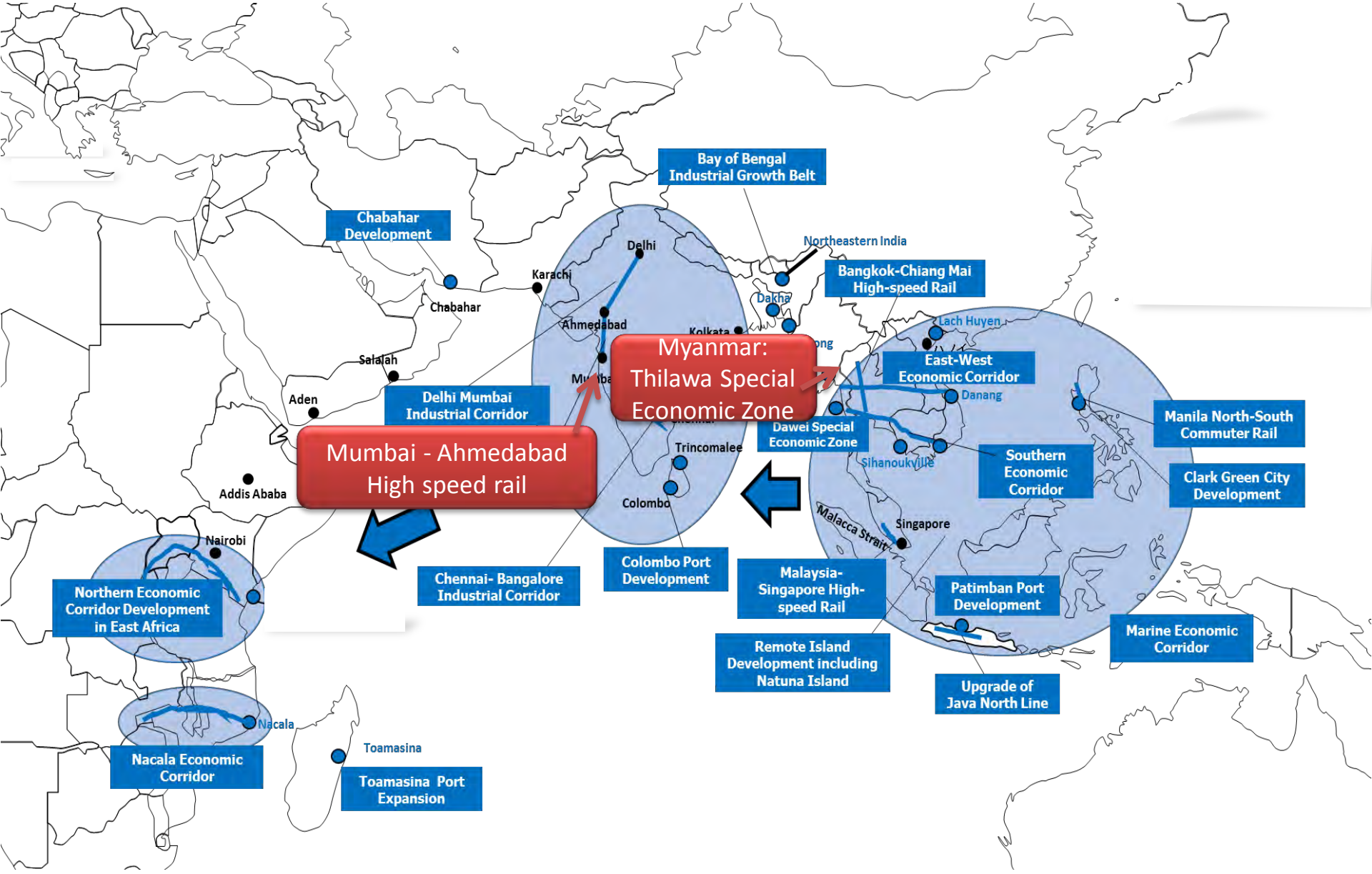
(per year 2014-20 (excluding China), source: ADB)



✧ *Hence, Japan is implementing robust initiatives to increase investment.*



Free and Open Indo-Pacific Strategy
Connectivity for stability and prosperity



India: Mumbai - Ahmedabad High Speed Railway Project

Background

○**Increased demand for mass and frequent intercity transport in India**

✓ Enhancing connectivity between the largest Metropolis Mumbai and the growing city of Ahmedabad.

Project Outline

○**The establishment of India's first high-speed intercity rail system,** by introducing Japan's Shinkansen (bullet train) through, concessionary ODA loans and technological cooperation.

Characteristics that make for a **"Quality Infrastructure"** investment

① **Alignment with local development strategies**: JPN/India Joint Feasibility Study in 2015

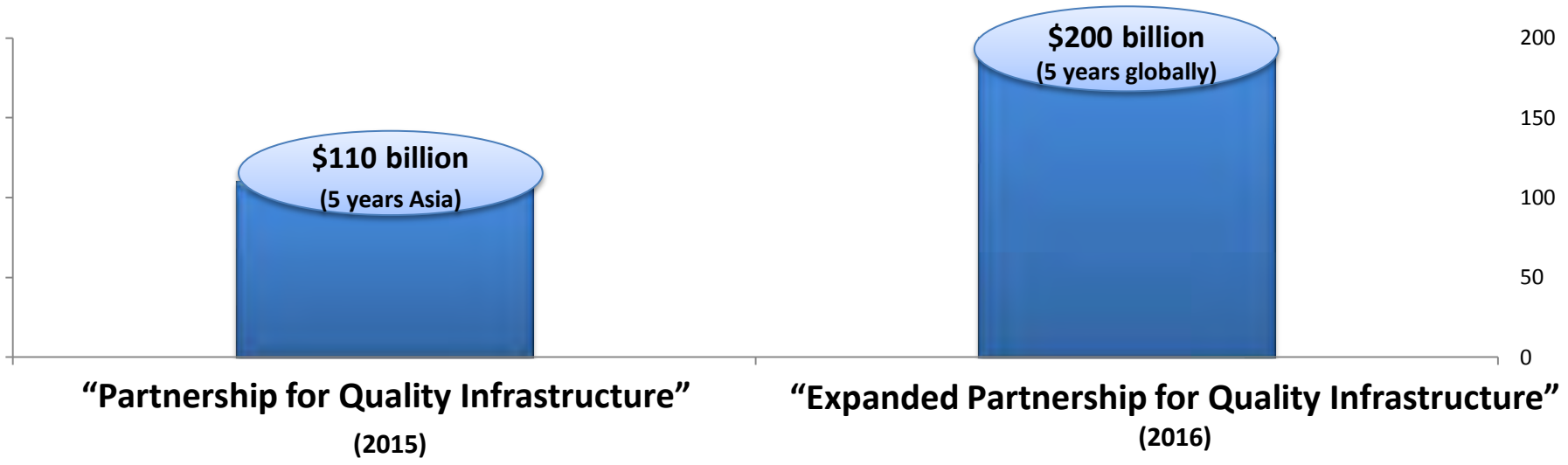
② **Safety:** Japan's Shinkansen system has recorded no fatalities since its introduction in 1964.

③ **Contribution to local sustainability**:

- ✓ **Promotion of local procurement and employment** through the **"Make in India"** concept.
- ✓ **Transfer of technology and know-how** through the **establishment of training center.**

Increasing the flow of funds for infrastructure

✧ *Through Japan's recent initiatives…*



Japan's concessionary loans doubled to 2 trillion yen since 2015.

Concessionary Yen Loans:

- ✓ **access to large sums of financing** for economic and social infrastructure projects
- ✓ **on terms more favorable than market** (lower rates and longer repayment periods).

Mobilizing of private funds

✧ *However, public funds alone are not sufficient to meet needs.*

→ ***Need to increase both public funds and private funds***

✧ *How?*

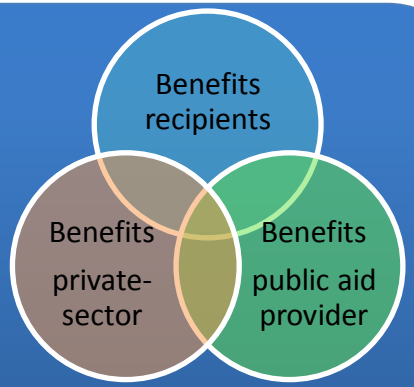
→ **Utilize public participation & capital to mobilize private sector**

～Alleviate risk for private investment in developing countries.

✓ *Japan is **utilizing a wide range of public finance tools***
(ex. ODA (JICA), JBIC, NEXI, JOIN, JICT) to mobilize the private sector.

Public finance tools to mobilize the private sector
(ODA (JICA), JBIC, NEXI, JOIN, JICT)

✓ Example: Public Private Partnerships (PPP)



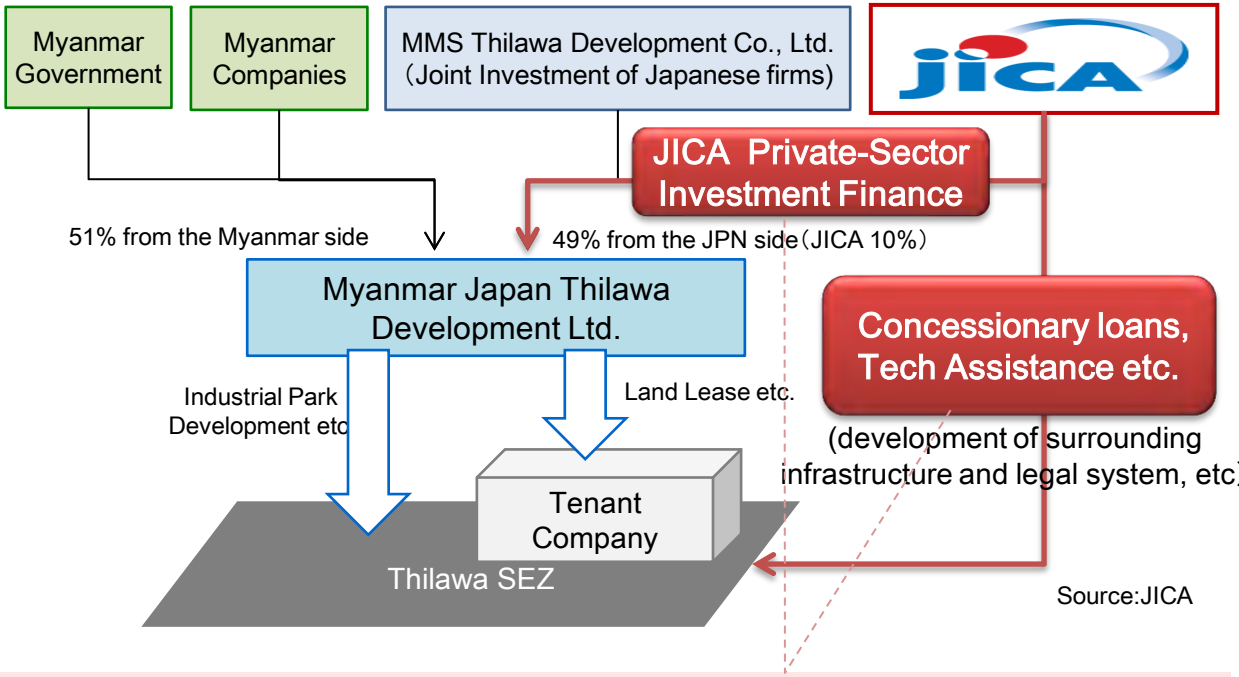
Myanmar: Thilawa Special Economic Zone

Background

○**Rapid development towards a market economy** and the importance of attracting foreign direct investment that produces local employment and raises local income.

Project Outline

○Private & public sectors from **Japan and Myanmar jointly invest in "Mynmar Japan Thilawa Development Ltd."** to develop industrial park in Thilawa Special Economic Zone(SEZ).
○Development **of surrounding infrastructure** (electricity, water communication, roads, ports, etc.) and **related legal system to spur private sector investment**.



Private investment spurred by public participation
(joint investment, business environment improvement through ODAs)

Challenges facing Development: Promoting Quality

Promoting the International Standardization of the Quality Concept

✓ **“1st International Economic Forum on Asia” : co-hosted with the OECD and ERIA**

～Exchange of best practices of “quality infrastructure”, fomented a common understanding on need to increase its supply in line with international standards. (April 2017)

✓ **“UN General Assembly High-Level Side Event: Promoting Quality Infrastructure Investment**

✓ **: co-hosted with EU and UN**

～ A wide range of participants in the field shared their experiences and came to an understanding on the importance of promoting “quality infrastructure” internationally.

Japan looks to continue working in international fora to promote the international standardization of the quality assistance concept.

ODA collaborated with Japanese Local Governments

✧*Japanese metropolises also experienced urban problems…*

…But now they have overcome it.

(http://www.kitakyushu-museum.jp/ext/twu/?page=story&EntryID=292)

Both cited from HP of Kitakyushu Toki to Kaze Museum

(http://www.kitakyushu-museum.jp/resources/2061)

Developing countries

Emerging needs for water supply, energy etc. caused by rapid urbanization

Match!

Japanese local governments

Accumulated know-how and experiences of related areas

Japan positively utilizes know-how of Japanese local governments through ODA

Ex. Grant Aid for PPP Type project

Grant Assistance for Grass-Roots Human Security Projects(GGP)

JICA Partnership (A sort of Technical Cooperation)

Cambodia: Project for Expansion of Water Supply System in Kampong Cham and Battambang

Background

○**Quality of water supply service is still low** in Cambodia; therefore, the Government of Cambodia promotes investment to water supply system in local cities in order **to raise access to drinking water up to 100%.**

Project Outline

○**Providing necessary machinery for water supplying** (Pump, pipe, water quality analyzer etc.)
○**Introducing energy-saving type water supply system** based on **quality technology of the City of Kitakyushu and local enterprises in Kitakyushu city**.

Philippines: MEGA CEBU VISION 2050

Background

○**Rapid growth and urbanization** will be constrained by the resource and infrastructure limitations in Metro Cebu, which consists of **13 cities and municipalities around Cebu**.
○**Transboundary vision for Metro Cebu is needed** to collaborate and cooperate among 13 local governments.

Project Outline

○**Workshop** to share knowledge and experiences of international cities such as **the City of Yokohama.**
○**Identifying Development targets and suggesting development strategies and directions for Metro Cebu.**

(Cited from JICA HP
https://www.jica.go.jp/topics/news/2013/20130430_01.html)

Examples of collaboration with local companies in Yokohama

✧ *There are many local companies which have excellent technology especially in Yokohama City , and they also participate in Japanese ODA projects.*

Ex.1 Improvement of waste management system

Amcon, Inc.

(Providers of dewatering equipment of waste management)

Ex.2 Enhancement of resource recycling system

Guun, Inc.

(former Mansei Recycling System, Inc.
a waste service company in Yokohama city)

Thank you!

JICA's Approach for Sustainable Urban Development

26th of October, 2017

The 6th Asia Smart City Conference in Yokohama
Thematic Meeting 4: Japanese Experience

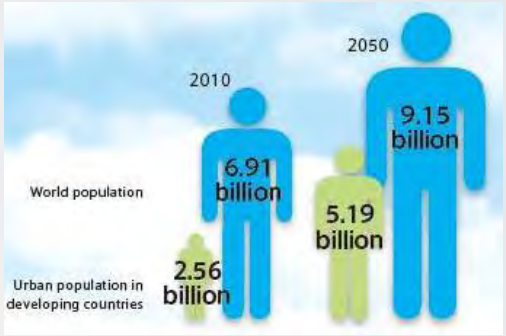
Urban and Regional Development Group,
Infrastructure and Peace-Building Department, JICA Headquarters

1. Background

Rapid Urban Population Growth & Emerging Problems

Rapid Urban Population Growth

- The UN predicts that in 2050 more than a half of the world's population (5.19 billion which is 56.7% of estimated 9.15 billion) will be living in the urban area of developing countries.



In many countries of the world, urban areas serve as economic centers for the whole country.

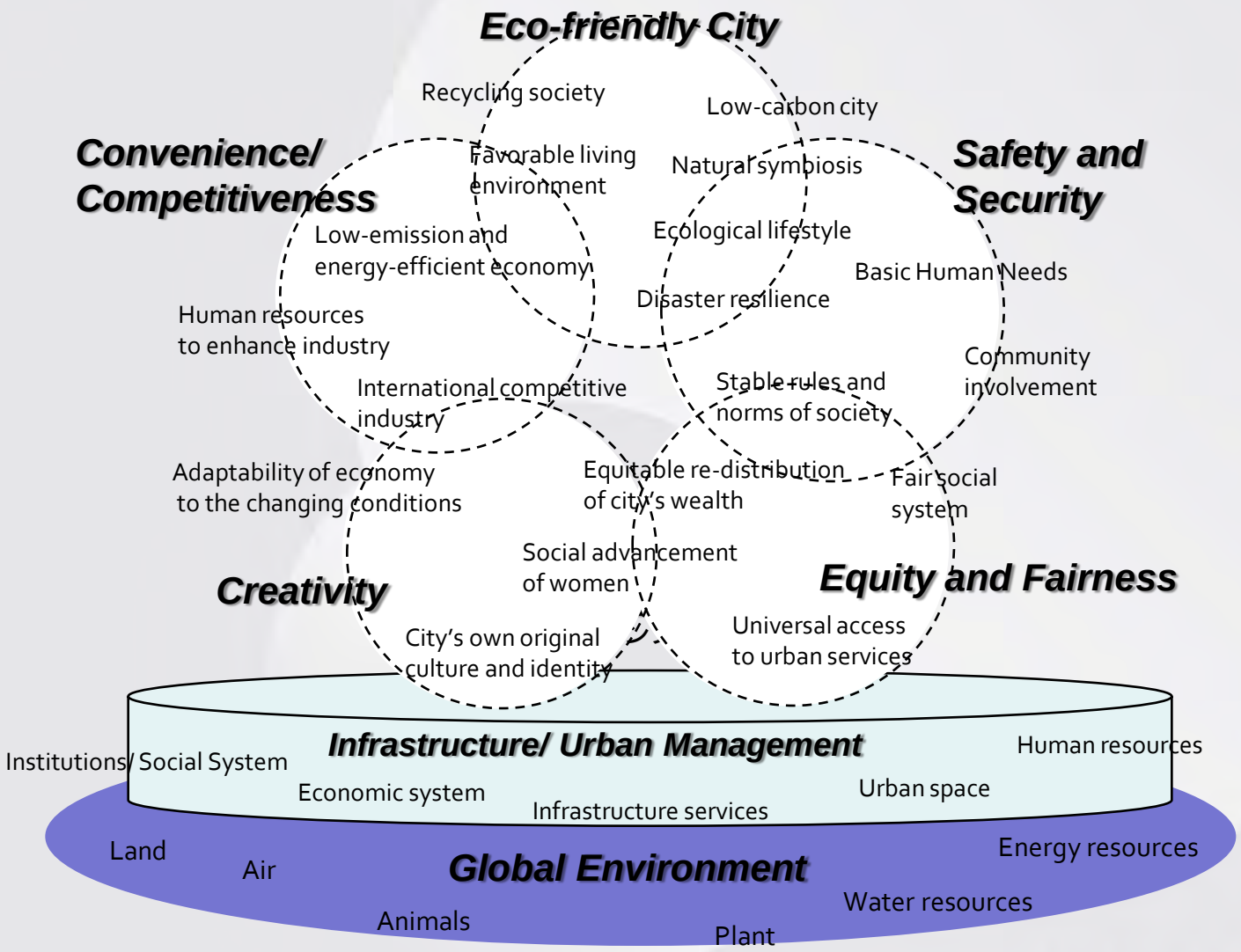
This trend should be welcomed from the view of economic development strategy.

1. Background

SDGs

Goal 11:
Make cities inclusive, safe, resilient and sustainable

2. What is Sustainable Cities and Societies?



3. JICA's Approach

to Sustainable Urban Development

(1) Formulation of Long-term and Mid-term Urban Development Strategy and Plan [by Technical Assistance]

(2) Financial Support for Infrastructure Development Based on Development Strategy and Plan [by Grant and Loan]

(3) Capacity Enhancement of Government body and its human resources [by Technical Assistance]

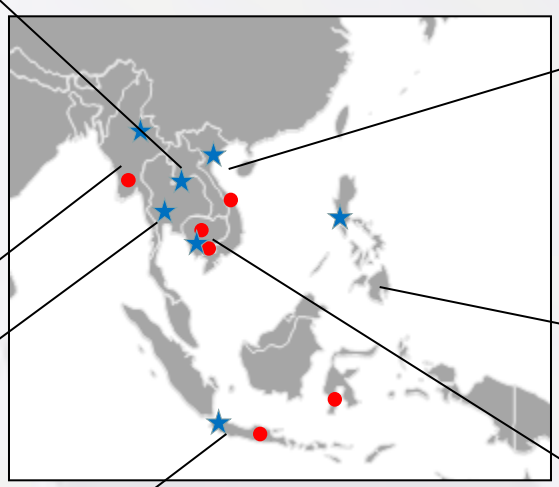
3. JICA's Approach

Projects of Major Urban Development / Planning (ASEAN), 2010 to 2017

Lao P.D.R	
Vientiane	Project for Urban Development Master Plan Study in Vientiane Capital (2010/1-2011/3)
	The Project for Improvement of Transportation Capacity of Public Bus in Vientiane Capital (2011/3-2011/3)
	Project to Enhance the Capacity of Vientiane Capital State Bus Enterprise (2012/1-2015/3)
	The Project for Urban Development Management (2013/9-2016/9)

Myanmar	
Yangon	The Project for the Strategic Urban Development Plan of the Greater Yangon (SUDP) (2012/7-2014/1)
	The Project for Comprehensive Urban Transport Plan of the Greater Yangon (YUTRA) (2012/9-2014/12)
	Urban Development Advisor of Greater Yangon (2013/12-2016/12)

Thailand	
Bangkok	The Project for Self-Sustainability and Dissemination of Land Readjustment System (2010/7-2014/3)
	The Project for Promoting Sustainability in Future Cities of Thailand (2015/7-2018/7)



Indonesia	
Jakarta	Project for the Study on JABODETABEK Public Transportation Policy Implementation Strategy (2011/2-2012/5)
	JABODETABEK Urban Transportation Policy Integration Project Phase 2 (2014/5-2017/7)
Mammina sata	Enhancement of Urban Development Management in the Mamminasata Metropolitan Area (2009/3-2012/4)
GKS	Formulation of Spatial Planning for GKS Zone in East Java Province (2009/5-2010/12)

GKS:Kabupaten,Sidoarjo, Kabupaten Mojokerto, Kabupaten Lamongan, Kabupaten Gresik, Kabupaten Bangkalan, Kota Mojokerto, and Kota Surabaya.

Vietnam	
Hanoi	Project on Integrated UMRT and Urban Development for Hanoi (2009/2-2010/7)
	Urban Planning Formulation and Management Capacity Development Project (2009/3-2012/6)
	Project for Improving Public Transportation in Hanoi (2011/7-2015/6)
	The Project for Studying the Implementation of Integrated UMRT and Urban Development for Hanoi (2014/3-2015/11)
Danang	The Study on Integrated Development Strategy for Danang City and Its Neighbouring Area (2008/6-2011/1)
	Project on Improvement of Urban Transportation of Danang City (2013/4-2015/12)

Philippine	
Davao	Davao City Infrastructure Development Plan and Capacity Building Project (Tentative 2017/1-2018/3)

Cambodia	
Phonon Penh	The Project for Traffic Improvement in Phnom Penh City (2007/3-2010/3)
	Long-term advisory expert on Improvement of Civil Services for the Municipality of Phnom Penh (2010/10-2012/3)
	Project for Comprehensive Urban Transport Planning in Phnom Penh Capital City (2012/3-2014/6)
Siem Reap	To enhance the capacity of planning, implementation and coordination for urban projects by Municipality of Siem Reap (2008/5-2010/7)
Sihanouk-ville	The Project on formulation of National Integrated Strategy of Coastal Area and Master Plan of Sihanouk-ville for Sustainable Development (2009/2-2010/9)

3. JICA's Approach

Key Challenges for Master Plan Integrated Urban Development

(1) Evidence-based Planning

Effective master plan starts with analysis based on a set of scientific data to capture a variety of aspects of urbanization

(2) Integrated Planning

How to ensure "integrity", balancing economic, social and environmental aspects of urbanization?

(3) Participatory Planning

How to ensure stakeholder participation to capture their needs? How to prioritize and put them into the right sequencing?

Utilization of Japanese Experiences

JICA is promoting technical assistance to developing countries collaborating with Japanese Government and municipalities such as Ministry of Land, Infrastructure and Transport, Yokohama city, Kita-kyushu city, and so on.

3. JICA's Approach

Key Challenges for Master Plan Integrated Urban Development

(1) Evidence-based Planning

Higashi Matsushima City:
The Project on Rehabilitation and Recovery from Typhoon Yolanda (Philippines)

(2) Integrated Planning

Yokohama City:
Mega Cebu Vision 2050 (Philippines) Formulation of Sustainable Urban Development Vision for Metro Cebu

(3) Participatory Planning

Iida City:
Citizen Participation-Citizen Participation Promotion of Participatory Local Autonomy through the "Kominkan" activities in Legazpi City (Philippines)

JICA Knowledge Co-Creation Program on transforming cities for sustainability

What's the future city?

From 2017 to 2019 (3 years program)

To learn together about latest development experiences for sustainable cities responding global environmental issues and SDGs

To discuss required policies and actions on urban development to promote sustainable cities.

To promote Sustainable Urban Development

To enhance the network on sustainable cities

Thank you for your attention

Urban and Regional Development Group,
Infrastructure and Peace-Building Department, JICA Headquarters

Naomichi MUROOKA (Mr.)
E-mail: Murooka.Naomichi@jica.go.jp / Tel: +81-3-5226-8137

- **ICLEI** works with **1500** cities and towns in **86** countries across all continents – local governments of all sizes, as well as regional governments
- ICLEI supports its Members with **300+ staff** through **17** offices and **10** thematic **Agendas**

Political Processes

Technical Systems

Role of cities is increasingly recognised

High Level Political Forum on Sustainable Development

- Follow-up and review of SDGs at the global level
- 2018: Transformation towards sustainable and resilient societies

HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT

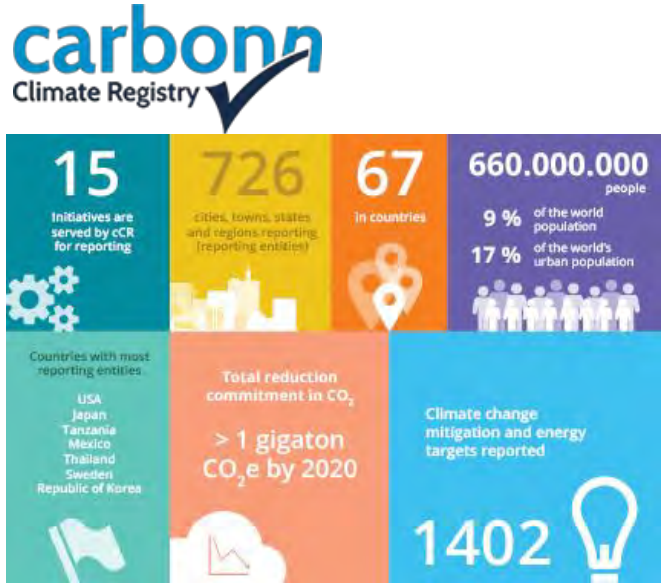
Marrakesh Partnership for Global Climate Action

- Initiative to catalyze action among nations and climate stakeholders including businesses, local and regional governments, civil society and national governments

PARIS2015 COP21·CMP11

MARRAKECH 2016 COP22|CMP12|CMA1

Get connected, informed, resources, involved, and featured!



The SDGs - A Call to Action

1. How are cities currently engaging with the SDGs?
2. What are the barriers to increased/intensified participation?
3. What can ICLEI do?

What does ICLEI do?

- Acts as a multiplier/amplifier by promoting good practice
- Collaborates with and leverages the great work done by partners
- Provides materials to help with local government “awareness raising”
- Promotes campaigns to increase commitment to the SDGs
- Advocates for local governments in national and international processes

Musashino Approach to Urban Governance in the Era of the SDGs 2016-30

Ryokichi HIRONO
Professor Emeritus, Seikei University, Tokyo
and former President, Japan Society for International Development and Adviser to Y-Port Center

At 6th ASC Conference , Grand Intercontinental Hotel, Yokohama
Yokohama, Japan
27 October, 2017

1 Growing Pressures of Globalization Impacting on Musashino City

1) Rapid economic growth of the country during the 1950s-80s, the Lost Decade of the 1990s, including the Asian financial crisis in 1997-98 and the Lehmann Brothers Shock in 2007-08, resulting in the rapid expansion and restructuring of the City's industries and employment and in the movement of the city population in and out.

2) Rising concern among citizens with the city's social and environmental sustainability in the face of:

a) increasing income disparities,

b) environmental degradation. such as air and water pollution, traffic congestion, rise of noise and solid wastes, and decrease of urban farms and green space, and various adverse impact of climate change, to name a few.

3) Ageing of the population and the inevitable consequences of rising social security payments, medical and healthcare and human insecurity.

2. Major Steps taken by the Citizens of Musashino City

1) Industrial policies aimed at economic and employment restructuring in favour of decoupling growth and pollution, through a steady shift to retail and service sectors, energy conservation/efficiency, renewable energy, environmentally friendly technologies and urban redevelopment in favour of compact city, etc.;
2) Social policies in favour of the people's wellbeing, especially the young couples and the aged as well as the physically and socially disadvantaged, through expansion of nurseries, kindergartens, medical and healthcare facilities/programmes, public housing, skill training and retraining programmes, continuing education, sports and old-age centers and parks and green space.
3) Many of the initiatives taken by Musashino citizens for urban governance have been replicated by other cities and the GoJ; e.g., external evaluation system, timelines for municipal response to citizen's claims, child allowance, voluntary services to the needy elderly, community schools, community centers, community buses, continuing education/learning, opportunities of gainful employment and community services by senior citizens, center of global citizenship programmes, financial assistance to self-financing foreign students, nature study camping, prenatal healthcare, environmental counselling, and

3. Musashino Approach to Urban Governance (TAPES) that sustained the City's Progress

dementia awareness campaigns and classes, etc.;
4) Financial and technical assistance to CSOs active in civic engagements, such as children's and youth education, provision of welfare services to the needy, etc.
5) Musashino Approach to Urban Governance endorsed by the City Council in 1976 as the Musashino Governance Ordinance declares that with the City of Musashino owned by its citizens, all the municipal policies and programmes are governed by the people and for the people. Today it promotes: a) Transparency, accountability and rule of law as the basis of Good Governance, b) Shared vision and long-term development planning aimed at economic, social, environmental and cultural sustainability, c) Active people's participation in decision-making and implementation process, including the installation of residents' representative council and neighborhood meetings at community centers, d) Empowerment of all citizens through improved education, health and sanitation, e) Equitable distribution of development benefits among all citizens, f) Efficient and effective delivery of public services to the citizens and speedy response on the part of the Municipality to all citizen's claims and expectations, g) Mutual sharing of the cost and benefits of all programmes and projects under municipal administration, h) Achieving balanced budgets, i) Priority to the use of local people's ideas, materials, products/services, j) Assistance to all the needy people, k) Preservation of community culture and l) Promotion of international cooperation vis-à-vis developing countries, and m) Building of a non-nuclear, peaceful and sustainable world.

4 Challenges to Musashino Approach

1) There is much room for further improvement In respect of gender equality, disaster preparedness, administrative efficiency and long-term municipal fiscal stability as well as lifestyle changes of citizens in favour of sustainable Consumption and production;
2) There is a great need for improving civic and political education of citizens, Especially those young couples who have recently moved into the city for disseminating the Information on the MAUG with a view to assisting them to participate in the decision-making processes regarding municipal affairs, including the election of municipal mayor, City Council members; and other representatives at the local and national levels.
3) CSOs in the city who are engaged in promoting Sustainable Community Development (SCD) and SDGs are too often preoccupied with implementing their projects without paying sufficient attention to the outcome of their project Activities. This may be partly due to the fact thatr they often operate under financial and time constraints. Such neglect in communications could leave their Supporters and even supposed-to-be-beneficiaries little aware and at times even doubtful of the long-term benefits of SCD activities and SDGs programmes,
5) There is also an insufficient efforts on the part of those civil society actors in the city for communications, collaborations and partnerships with their counterparts at national and international levels.
6) More Action and Less Talks is urgently needed, especially in intensifying closer consultation, collaboration and partnerships among all stakeholders within and outside the city;

5 Toward Enhanced TAPES

1) Given the diversity of SDGs to be fulfilled and initially evaluated in 2019, there is an urgent need for to strengthen the participatory approach to decision-making processes in the formulation of the 10-year development plan and annualized plan, by way of diversifying the members sitting in the people's representative council (people's assembly) .2) By the same token, further diversification of the membership of the external evaluation committee is urgentlycalled for..

3) Those policy and programme recommendations made by the external evaluation committee, including budgetary allocations, should be monitored rigorousy by diverse groups of citizens' representatives to see to their effectivc implementation, and if found inadequate, the municipal administration should be requested to explain why and take remedial actions.

4) The functions of an oversight committee in the City Council should be strengthened to examine in detail the output, outcomes and impact of the implemented policies and programmes and report to the plenary session of the City Council and directly to the citizens on air, through monthly newsletter and at 17 community centers.

5) It is essential for all stakeholders of Musashin City to recall a passage of the State of Planet Declaration made on 29 March 2012 that says "The defining challenge of our age is to safeguard Earth's natural processes to ensure the well-being of civilization while eradicating poverty, reducing conflict over resources, and supporting human and

We all love to continue to enjoy the beauty and bounty of Nature Forever !

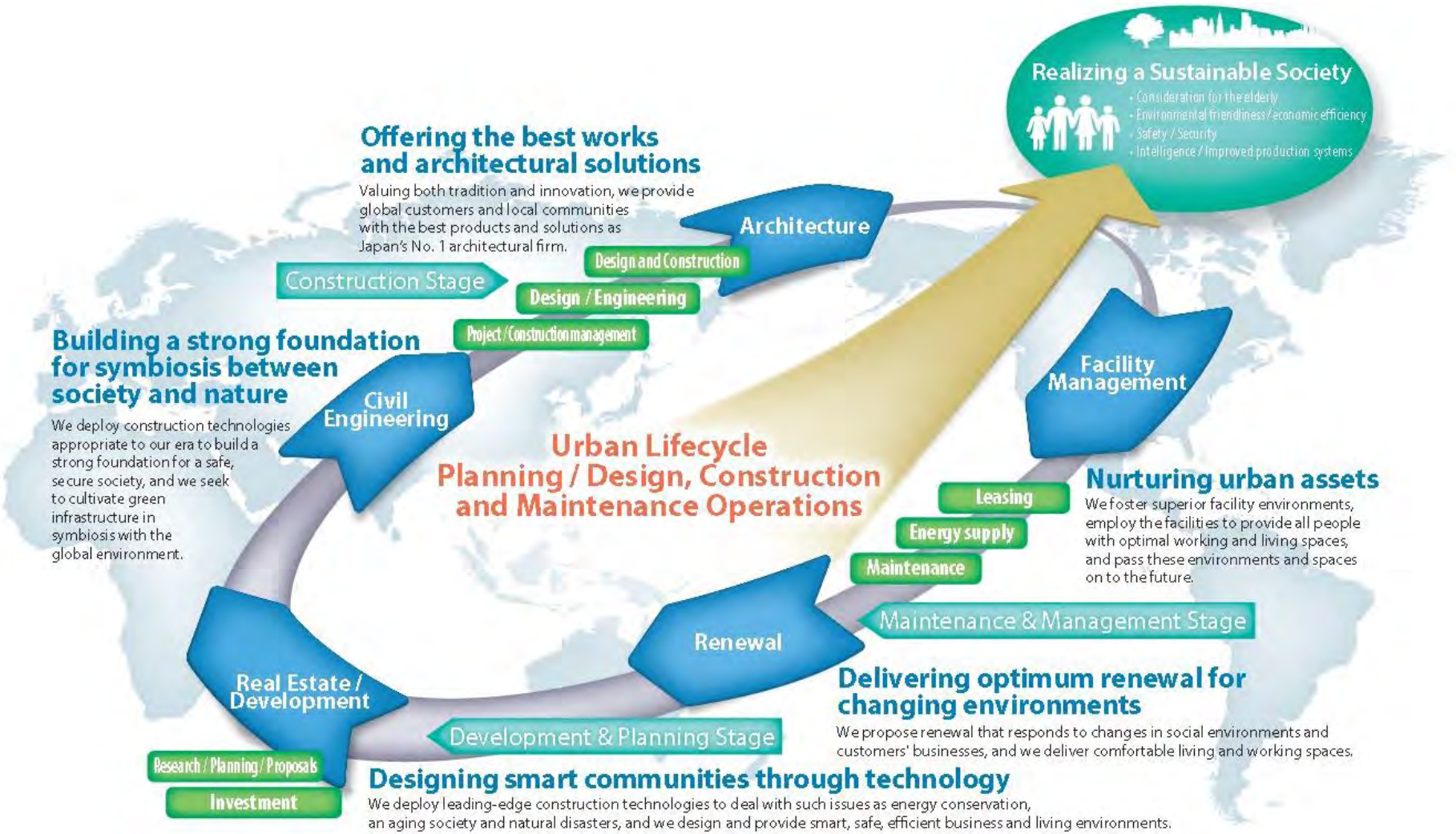
Annapurna Mountain Range in Nepal on 06/12/2012

Source; By courtesy of RKH Associates

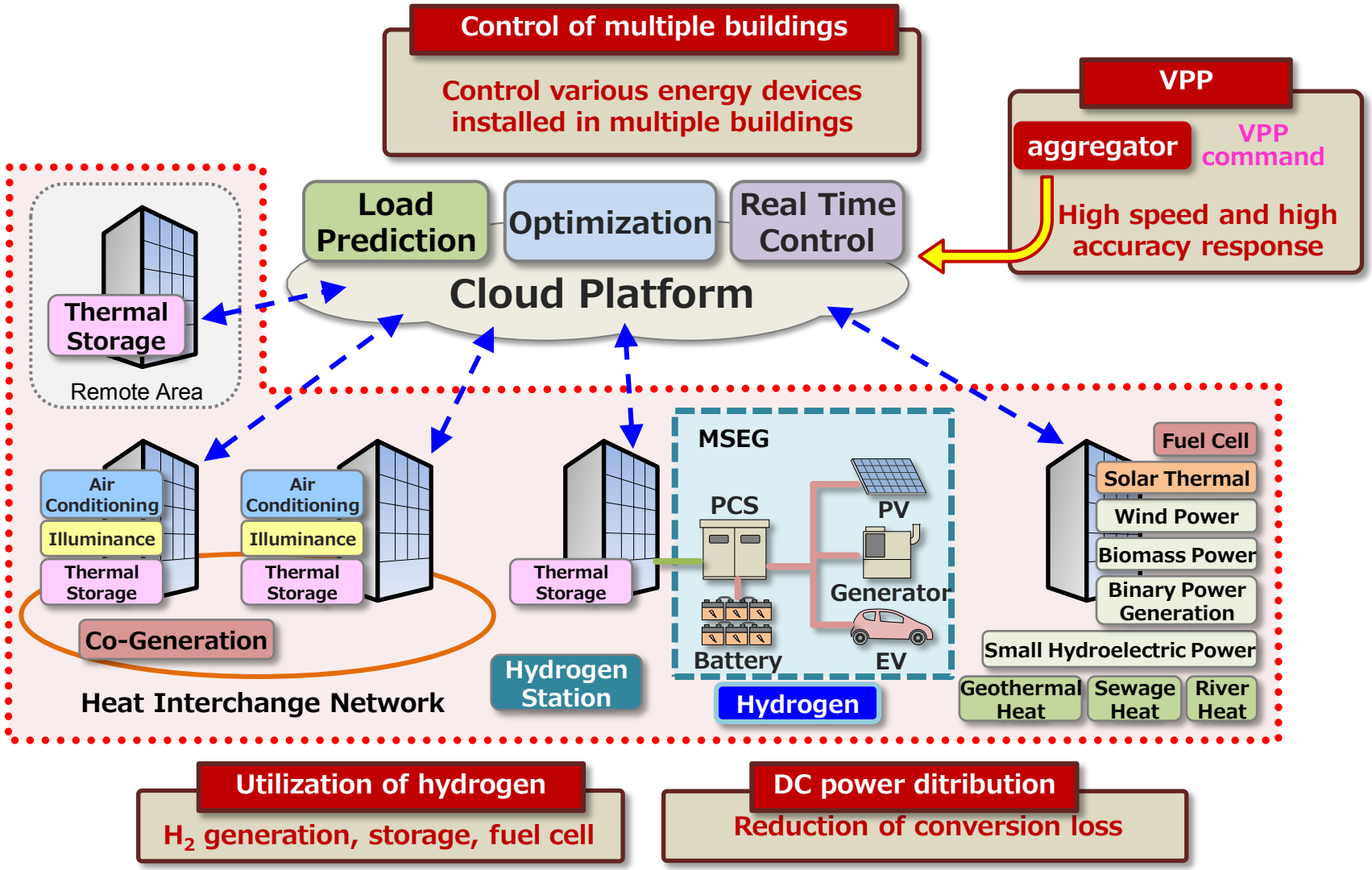
Sunset over Izu Peninsula, 02/01/2014

Source: By courtesy of K. Miyoshi

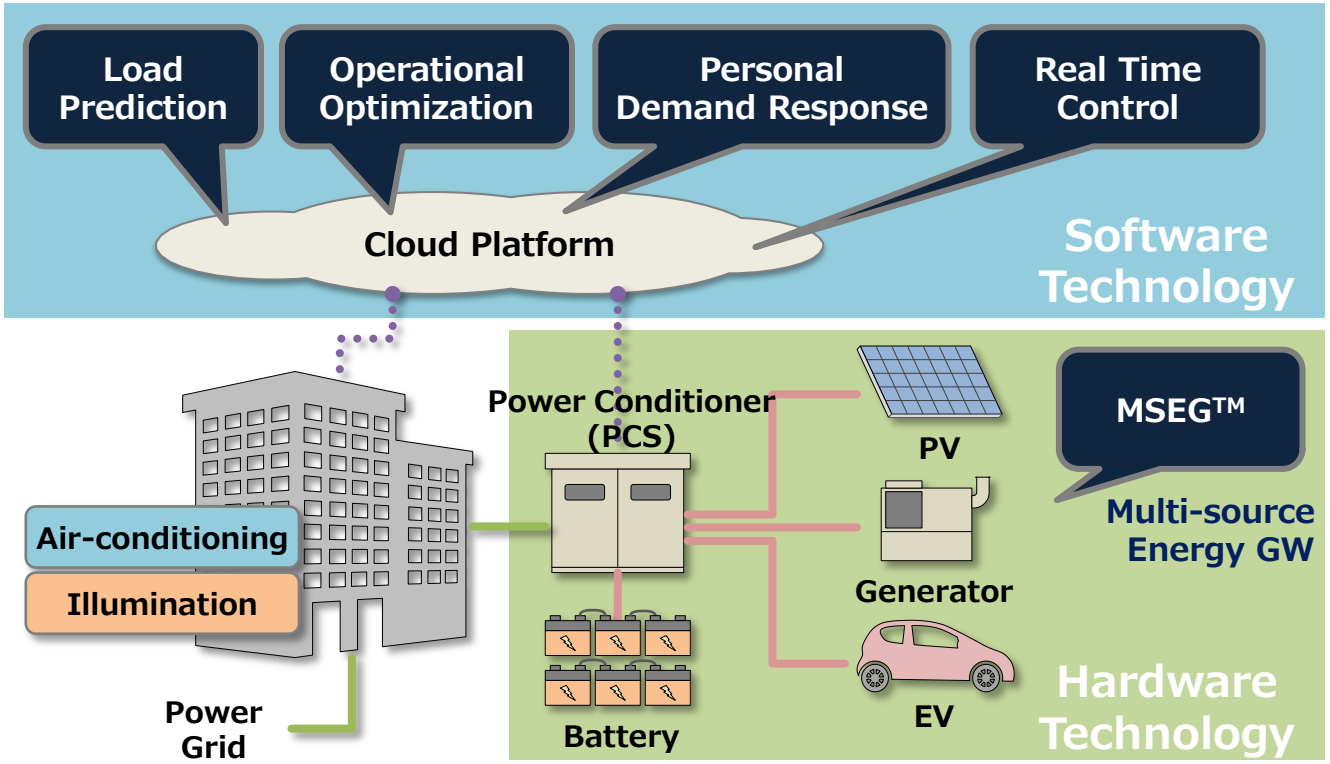
Group strategy for Realizing a Sustainable Society



Takenaka decarbonized model town



I.SEM™ – Core technology of Energy Management



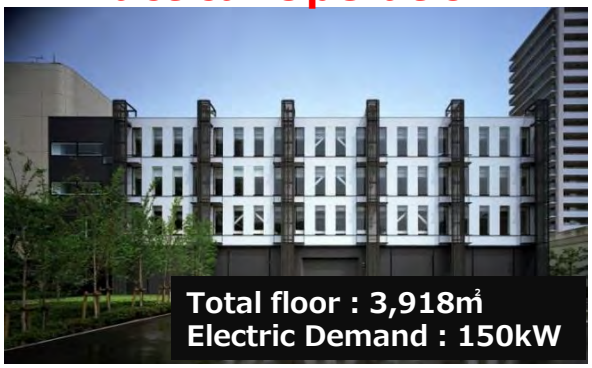
I.SEM®

I.Smart Energy Management

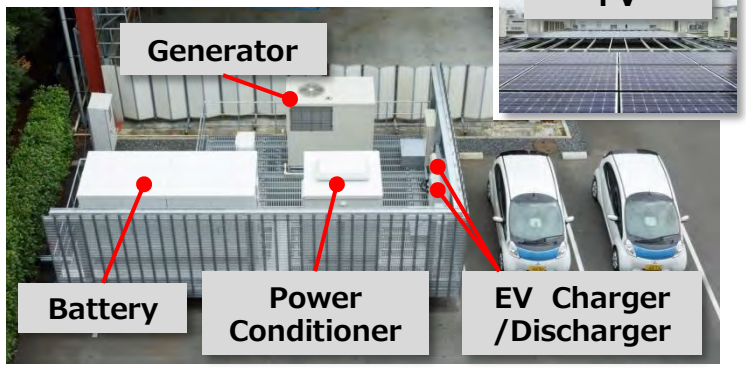
Systems in the cloud
◎Easy to Update
◎Easy to Enhance

Electric Equipment Connected in DC and controlled Integrally
◎ Control electric demand Rapidly and Accurately

In Practical Operation



TAK Shinsuna Bldg.



MSEG Equipment

- Power Conditioner : DC/AC 50kW
- LiB Battery : 144kWh
  ★Reuse Battery from EV
- PV : 20kW
- Generator : 35kW
- EV Charger/Discharger : 10kW× 2
- EV : 10.5kWh× 2

Takenaka signed a VPP contract with TEPCO

Power Grid

DR Request

Large-scale Negawatt power

TEPCO – Tokyo Electric Power Company

DR Request

I.SEM®

Automatic Control

◎I.SEM™ integrate Small-scale consumers that cannot contract by itself

◎I.SEM™ gather negawatt power without excess or deficiency

Consumer

Consumer

Toyocho-Intes (11,311㎡)

- Battery

Main Office Tokyo (29,747㎡)

- Generator
- Thermal Storage
  -Heat Source
- PV

TAK Shinsuna bldg. (3,918㎡)

- MSEG
  ・PV
  ・Battery
  ・EV
- Generator

Takenaka signed a VPP Contract with TEPCO

Takenaka's goal to use hydrogen