FutureCity Contemporary Significance and Challenges — From "FutureCities" to "SDGs" —

August 30, 2016 Dr. Hiroto Izumi, Ph.D. (Eng) Special Advisor to the Prime Minister

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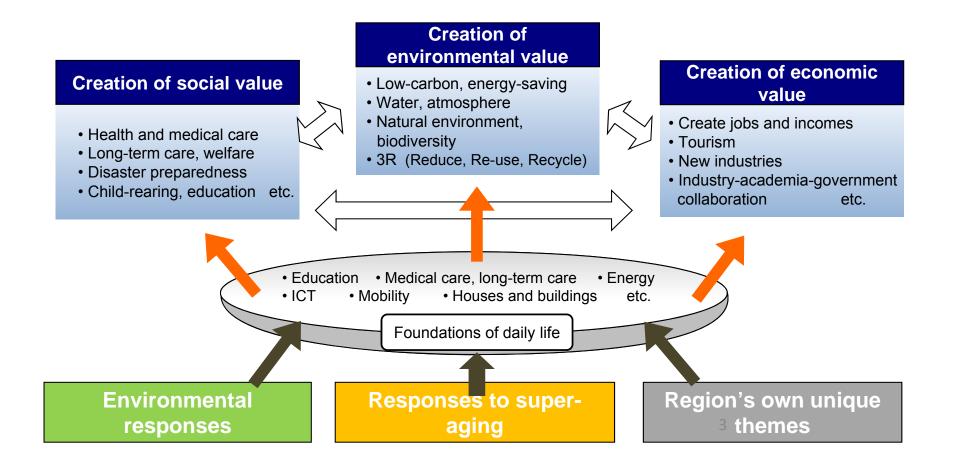
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I. Concept of "FutureCity"

A city that creates new, human-centric values to respond to environmental issues, super-aging, and other challenges

- Through the creation of environmental value, social value, and economic value, create universally appealing communities and universally vibrant communities
- Restore a sense of social connectedness Improve the quality of people's lives
- Action on environment and super-aging is essential Add other themes as appropriate given individual city's and region's circumstances
- Build a model for sustainable value creation that can be deployed autonomously



Selected "FutureCities"

Shimokawa, Hokkaido Prefecture (Population: 3,645)

Establishment of a self-sustaining general forest industry, using its rich forest resources. Creation of autonomous communities based on the collective living model

Kamaishi, Iwate Prefecture (Population: 38,000)

Use of locally generated power. Creation of a city unifying industry and welfare through, for example, the unification of health, medicine, welfare, and long-term care in the Living Support Center.

Ofunato, Rikuzentakata, and Sumita, Iwate Prefecture(Combined population: 67,000)

Creation of a linked, compact, disaster-prepared "FutureCity" that is seniorfriendly and uses high land.

Toyama, Toyama Prefecture (Population: 417,000)

Compact city initiatives focused on light rail and other public transportation. Toyama-style day service initiatives in which senior citizens, persons with disabilities, and children are not separated.

Kitakyushu, Fukuoka Prefecture (Population: 970,000)

Initiatives that use the city's experience in overcoming pollution problems, and international environmental cooperation; and manufacturing technologies, focusing on coordination between residents, companies, and administration, and on community bonds.





Higashi Matsushima, Miyagi Prefecture (Population: 40,000)

Creation of self-sustaining, distributed power through the use of renewable energy. Implementation of healthy residences by using the CASSBEE health checklist.

Iwanuma, Miyagi Prefecture (Population: 44,000)

Creation of the Millennium Hope Hills for disaster mitigation using earthquake rubble. International welfare city using its position as a key transportation site.

Shinchi, Fukushima Prefecture (Population: 8,110)

Creation of ICT-based telecommunications infrastructure. Measures that make use of the area's human infrastructure, its communities.

Minamisoma, Fukushima Prefecture (Population: 66,000)

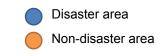
Overcoming the disaster and creating a regional closed-loop industry, focused on primary industry, with its own processing and distribution routes.

Kashiwa, Chiba Prefecture (Population: 405,000)

Initiatives for using leading-edge university knowledge at the Kashiwa No Ha campus to achieve autonomous city operation through collaboration between the public, private, and academic sectors.

Yokohama, Kanagawa Prefecture (Population: 3,692,000)

Diversified initiatives that use regional features and the dynamic power of companies and residents in citizens' groups, etc., to take on the challenges faced by a major metropolis, from environmental issues to issues related to the aging of the population.



Background and Significance of the "FutureCity" Initiative

The 21st Century is the age of the city By 2050, 70% of people will live in cities

Creating sustainable cities is an issue that all of mankind faces together

Issues that Japan will be the first to face

- ✓ Declining and aging population
 Declining population: 130 million people (2004) → 95 million people (2050)
 Decentage of elderby: 22% (2000) = 40% (2050)
 - Percentage of elderly: 23% (2009) \rightarrow 40% (2050)
- Environmental and energy constraints
 Severe energy supply constraints due to nuclear power plant accident

Global warming measures

Activities Japan needs to implement

Creation of new social and economic systems focused on cities

 \Rightarrow Invigoration of regional communities

Addressing challenges shared by the entire mankind before the rest of the world

 \Rightarrow Global contributions

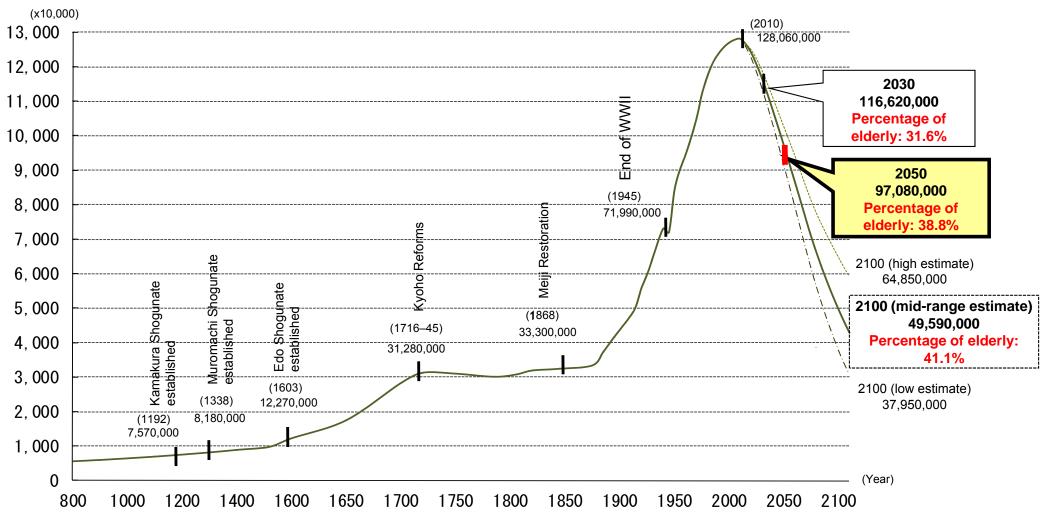
II. How to Overcome the Declining Birthrate and Aging Population

- Extending healthy life expectancy is key -
 - 1. Current state of and future predictions for Japan's aging society
 - 2. Basic prerequisites for sustainable growth of Japan's economy and society
 - 3. Initiatives for extending healthy life expectancy

II. How to Overcome the Declining Birthrate and Aging Population

1. Current state of and future predictions for Japan's aging society

○ In the next 100 years, Japan's total population could return to the level of 100 years ago (late Meiji period).
 This is an exceptionally sharp decline not seen anywhere in the past 1,000 years.



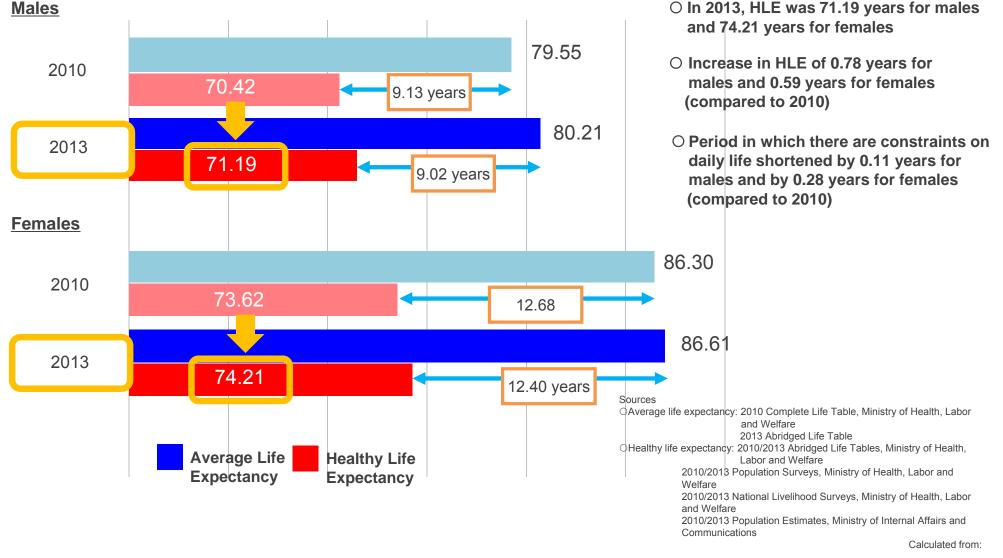
Source: Population figures for 2010 and earlier: Prepared by National Spatial Planning and Regional Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism based on National Census, Ministry of Internal Affairs and Communications, and Long-term Time-Series Analysis of Population Distribution in the Japanese Archipelago, National Land Agency (1974)

Population figures for after 2010: Prepared by National Spatial Planning and Regional Policy Bureau, Ministry of Land, Infrastructure, Transport and Tourism based on Future Estimates of Japan's Population (Estimated in Jan 2012), National Institute of Population and Social Security Research

Average Life Expectancy and Healthy Life Expectancy (HLE): Period in Which There Are No Constraints on Daily Life

II. How to Overcome the Declining Birthrate and Aging Population

1. Current state of and future predictions for Japan's aging society

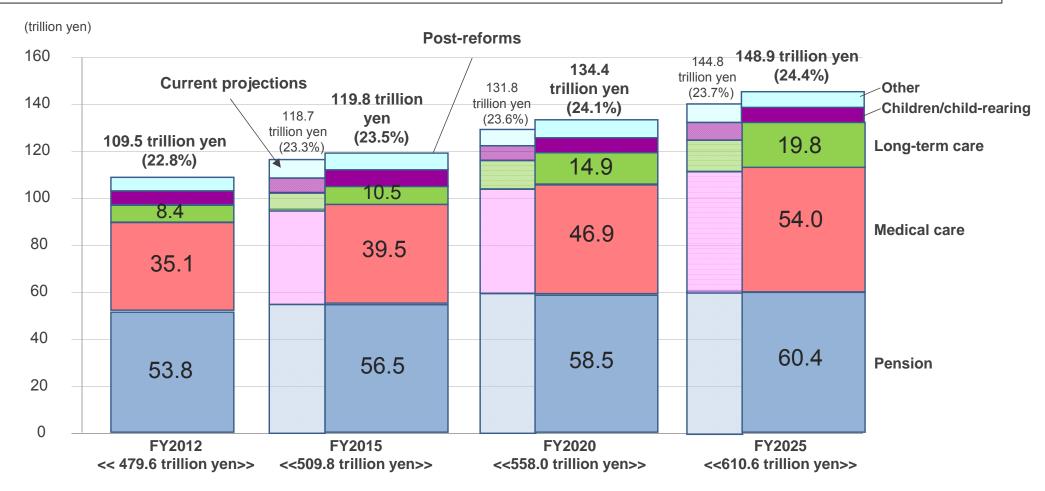


* Healthy Japan 21 (2nd Stage) Target: Increase healthy life expectancy by more than increase in average life expectancy (FY2022) Japan Revitalization Strategy and Healthcare and Medical Care Strategy Target: Increase healthy life expectancy of citizens by at least one year by 2020

1. Current state of and future predictions for Japan's aging society

OForecast Expenditures

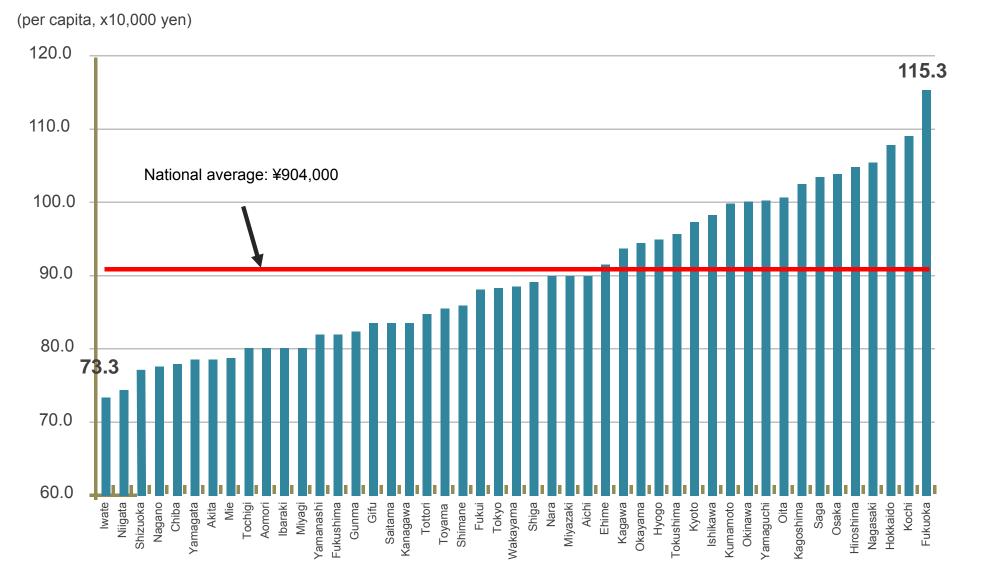
Social security set to increase from 109.5 trillion yen (22.8% of GDP) in FY2012 to 148.9 trillion yen in FY2020 (24.4% of GDP).



NB1: Reflects the effects of enhancement, prioritization and efficiency improvements based on Detailed Measures, Schedules and Cost Estimates for Social Security Reform. (Does not, however, reflect the effects of "II. Medical and Long-term Care, etc. (2) Strengthening of medical and long-term care insurance scheme safety net functions /expenditure prioritization and regressivity countermeasures through strengthening of insurer functions" and "III. Pension."

NB2: "Children/child-rearing" in the above graph represents total expenditures on the premise of the implementation of new systems. It includes childcare centers, kindergartens, extended-hours childcare, local child-rearing support centers, casual childcare, cash benefits for children, parental leave benefits, childbirth allowances, social protection, and pregnancy check-ups, etc. NB3: Figures in () are % of GDP. Figures in $\ll \gg$ are GDP.

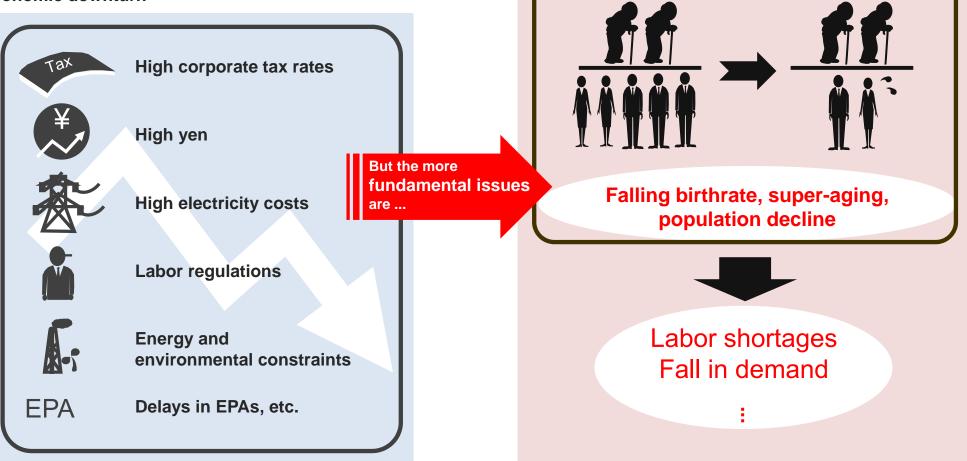
1. Current state of and future predictions for Japan's aging society

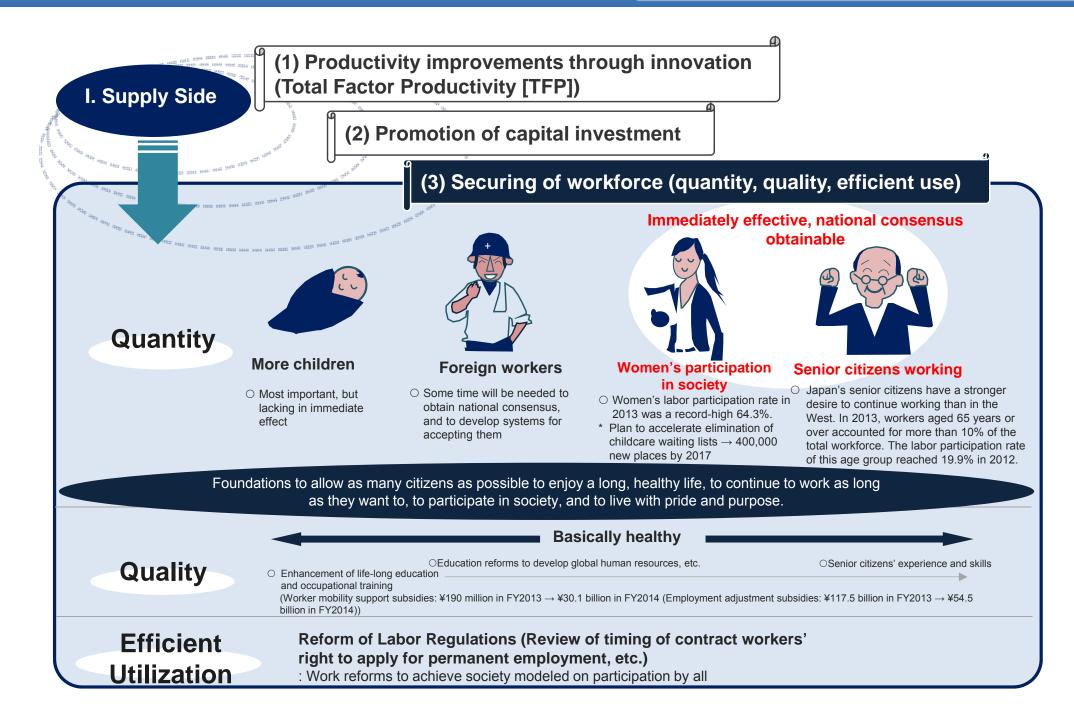


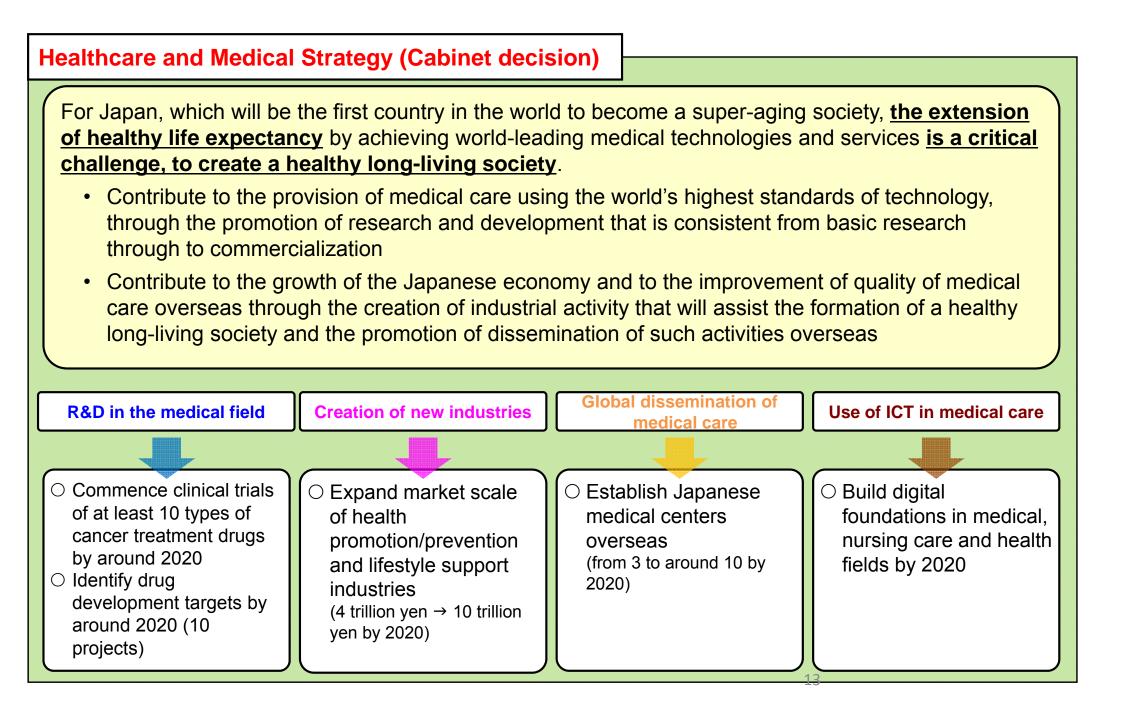
(From Council on Economic and Fiscal Policy data)

Japan's Lost Two Decades

Causes of loss of international competitiveness and economic downturn

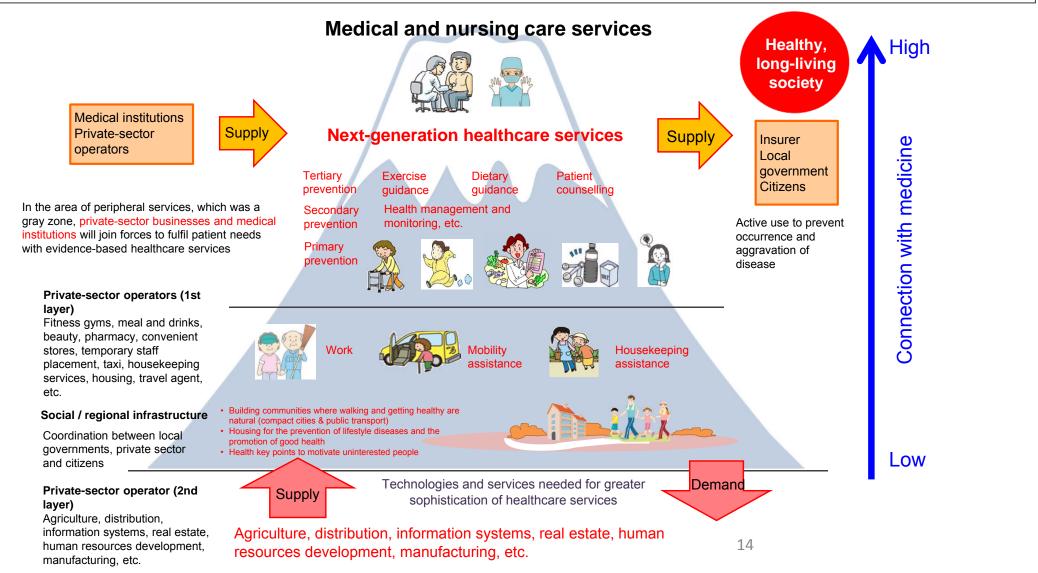






Services Being Created by Next-Generation Healthcare Council to Achieve Healthy, Long-living Society

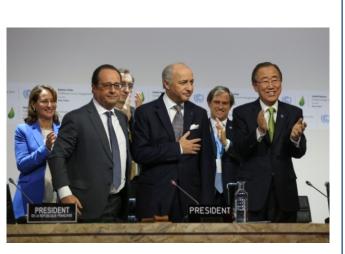
The objective of the Healthcare Council is to promote the creation of a wide range of evidence-based healthcare services (outside public insurance), such as effective disease prevention, health management, and illness-related lifestyle support services, to contribute to the realization of a society whose citizens can lead healthier lives (healthy, long-living society)



III. How to Overcome Environmental and Energy Constraints

- In addition to action at national level, action at municipal level is key -

- Paris Agreement was adopted at COP21 (November 30 December 13 in Paris, France)
- ✓ New international framework for greenhouse gas reductions and other measures for 2020 and beyond, taking the place of the Kyoto Protocol.
- Fair agreement, achieving participation by all countries for the first time in history.
- Prime Minister Abe attended summit meeting.
- Announced financial support of approx. 1.3 trillion yen in 2020, 1.3 times more than now.
- Contributed to achieving funding target of \$100 billion in 2020, encouraged negotiations for an agreement.



- The Paris Agreement contained the following elements.
- It set a common long-term goal of 2 °C for the whole world. Mentions pursuing effort to keep it down to 1.5 °C.
- ✓ Including biggest emitters, all countries to submit and renew their reduction targets every five years.
- ✓ All countries to report on their progress using common, flexible methods and undergo review.
- Establishment of long-term adaptation targets, implementation of adaptation planning processes and actions by each country, submission and periodic renewal of adaptation reports.
- ✓ Positioning of importance of innovation.
- ✓ Mechanism to check whole world's state of implementation every five years (global stock-take).
- ✓ Not only industrial nations continuing to provide funding, but developing nations also to do so voluntarily.
- Positioning of use of market mechanisms, including the Joint Crediting Mechanism (JCM) proposed by Japan.
- Certain number of ratifying nations and emissions volumes used as conditions for Agreement coming into force.

Japan's Approaches to Climate Change Intended Nationally Determined Contribution: Greenhouse gas reduction target for FY2030

Japan's INDC

O Japan's Intended Nationally Determined Contribution towards post-2020 GHG emission reductions is at the level of a reduction of 26.0% compared to FY2013 (25.4% reduction compared to FY2005) by FY2030 (approx. 1,042 million t-CO₂), ensuring consistency with its energy mix, set as a feasible reduction target by bottom-up calculation with concrete policies, measures and individual technologies taking into adequate consideration, inter alia, technological and cost constraints, and set based on the amount of domestic emission reductions and removals assumed to be obtained.

Fairness and ambition; contribution towards achieving Article 2 objective; information to facilitate clarity, transparency and understanding

- By improving per GDP emissions by more than 40% and per-capita emissions by around 20%, Japan will maintain one of the highest levels of improvement in the world, <u>making this an ambitious target comparable to that of other nations</u>.
- Japan's per GDP energy consumption is already of a world standard, at approximately 30% less than the G7 average.
 Japan will now aim to improve energy efficiency by 35% by 2030.
- The aforementioned energy mix aim is for renewables to account for around 22-24% of total power generated, and nuclear energy around 20-22% (<u>a seven-fold increase in solar power, and a four-fold increase in wind power and geothermal power</u> anticipated in short term).
- O Japan's INDC is consistent with the long-term emission pathways up to 2050 to achieve the 2°C goal as presented in the Fifth Assessment Report of the IPCC, and with the goal the country upholds, namely, "the goal of achieving at least a 50% reduction of global GHG emissions by 2050, and the goal of developed countries reducing GHG emissions in aggregate by 80% or more by 2050."
- O Regarding the JCM, although it is not the basis for the aggregation of GHG reduction targets, the emissions reductions and removals achieved by Japan will be counted as appropriate for Japan's reductions.

○ Energy-originated CO₂ emissions will be reduced by 21.9% compared to total 2013 GHG emissions by 2030.

○ Japan's INDC for GHG emission reductions adds emission reduction and removal measures for methane and other GHGs to the above, and is of the level of a 26.0% reduction compared to 2013 (25.4% reduction compared to 2005) by 2030.

	Compared to 2013	Compared to 1990	Compared to 2005
Japan	<u>-26.0%</u>	-18.0%	-25.4%
	(2030)	(2030)	(2030)
United States	-18 to -21%	-14 to -16%	<u>-26 to -28%</u>
	(2025)	(2025)	(2025)
EU	-24%	<u>-40%</u>	-35%
	(2030)	(2030)	(2030)

INDCs of other major countries

◆ The United States submitted its INDC as figures compared to 2005, and the EU to 1990.

• Through the aggregation of energy conservation measures in each sector, energy savings of the level of 50.3 million kL are planned.

Energy conservation measures in each sector

Industry sector: Saving of approx. 10.42 million kL

- Four main segments (iron & steel, chemicals, cement, paper) & pulp) \Rightarrow Promotion of Low-Carbon Society Action Plan
- > Thorough factory energy management
 - \Rightarrow Improvement of energy efficiency by visualization of energy use on the manufacturing line
- Development and introduction of innovative technologies
 - \Rightarrow Implementation of Environmentally Harmonized Steelmaking Process (COURSE 50)

(Approx. 30% reduction in CO2 emissions through iron ore hydrogen reduction, capture of blast furnace gas CO2, etc.)

Introduction of technology to use CO₂ as raw material etc.

(Using carbon dioxide and water as raw material, use solar energy to manufacture basic chemicals)

Introduction of cross-segment high-efficiency equipment \Rightarrow Low-carbon industrial furnaces, high-performance boilers, etc.

Transport sector: Saving of approx. 16.07 million kL

- Popularization of next-generation vehicles, fuel efficiency improvements
 - \Rightarrow Make every second vehicle a next-generation vehicle
 - \Rightarrow Fuel cell vehicles: Annual sales of 100,000 units or more
- > Traffic flow measures

Commercial and other sector: Saving of approx. 12.26 million kL

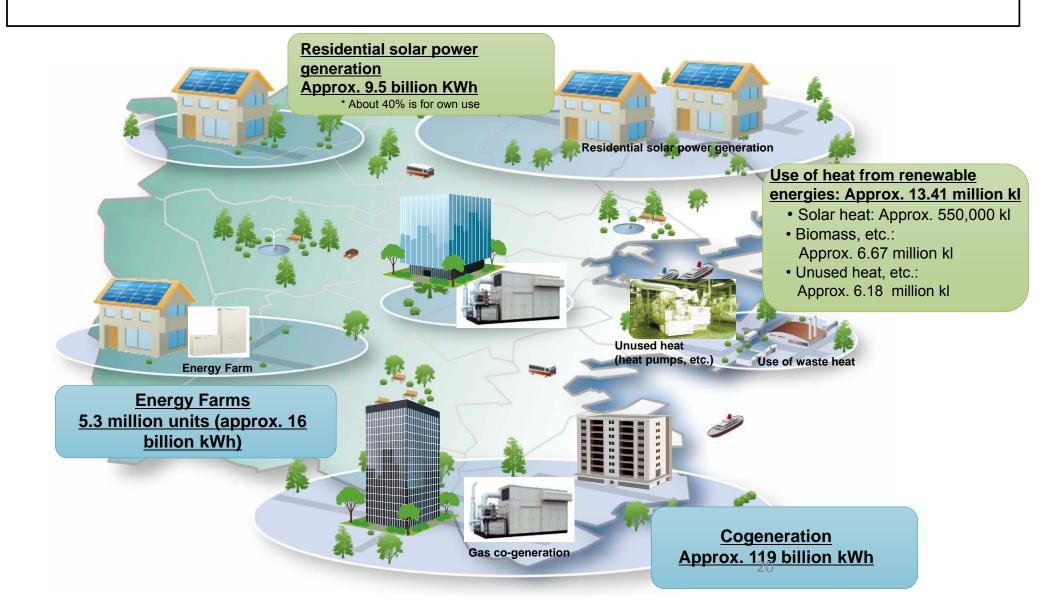
- Energy conservation by buildings
 - \Rightarrow Make it compulsory for new buildings to comply with energy conservation standards
- Introduction of LED lighting, organic EL \Rightarrow Popularization of LED and other high-efficiency lighting
- Energy use visualization and energy management using BEMS
 - \Rightarrow Installed in about half of buildings
- Promotion of citizens' movements

Residential: Saving of approx. 11.6 million kL

- Energy conservation in the home
 - \Rightarrow Make it compulsory for newly built houses to comply with energy conservation standards
- Introduction of LED lighting, organic EL
 - \Rightarrow Popularization of LED and other high-efficiency lighting
- Energy use visualization and energy management using HEMS
 - \Rightarrow Installation in all households
- Promotion of citizens' movements

○ Promote local use of locally-generated power, including residential solar power generation and expansion of heat usage, including waste heat recovery and heat from renewable energies.

O Promote introduction of co-generation, including energy farms, which are expected to make use of dispersed energy systems



IV. Sustainable Development Goals (SDGs)

International Consensus on Universally Appealing and Vibrant Communities

Establishment of Sustainable Development Goals (SDGs) Promotion Headquarters

1. What are SDGs?

Predecessor: Millennium Development Goals (MDGs)

- Developed by UN in 2001 Merged the UN Millennium Declaration adopted in 2000 and the international development goals adopted at major international meetings in the 1990s.
- Eight development goals set for developing countries to be reached by 2015.
 ((1) Poverty and hunger; (2) primary education; (3) women; (4) infants; (5) maternal health; (6) disease; (7) environment; (8) global partnership)
- \checkmark The MDGs achieved a certain degree of results. However, unmet challenges remained.
 - \odot Extreme poverty halved (MDG (1)), HIV and malaria measures (MDG (6)) successful
 - × Reduction of infant and expectant and nursing mother mortality (MDGs (4) and (5)) not achieved. Delays in reaching targets in sub- Saharan Africa, etc.
- Also, with major changes in the international environment in the past 15 years, new challenges have emerged.
 - Increasing gravity of environmental problems and climate change, expansion of gap between domestic and overseas situations, growing role of private-sector companies and NGOs, etc.

Sustainable Development Goals (SDG)

- Adopted unanimously at UN Summit in September 2015.
- Set 17 comprehensive goals for 2030, as development goals for the entire international community, including the developed nations. (Details on next slide) 17 goals further divided into 169 detailed targets.)
- With the aim of achieving a society in which "no one will be left behind" (= reflection of principle of human security), the SDGs are an integrated approach to a wide range of economic, social and environmental issues.
- Roles of all stakeholders (developed nations, developing countries, private-sector businesses, NGOs, experts, etc.) are emphasized.

Establishment of Sustainable Development Goals (SDGs) Promotion Headquarters



Examples of goals that are closely connected to Japan's own challenges

- Declining birthrate and aging population Growth and employment (equal pay for equal work, etc.) Clean energy Innovation
- Closed-loop society (3R: reduce, reuse, recycle, etc.)
 Action on global warming
 Preservation of biodiversity
 Women's engagement in society
 Eradication of child abuse
 International cooperation etc.

3. Japan's Approaches

(1) Active contribution to SDG debate and negotiations

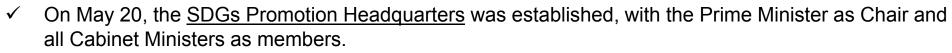
- Actively contributed through dialogue opportunities, even before debate began in earnest in the international community.
- Hosted policy dialogue (2011-2013), held side events at UN General Assembly (attended by Prime Minister Abe and Foreign Minister Kishida in 2013), etc.
- In process of SDG negotiations as well, made active contributions under <u>the principle of human security</u>. <u>Included development issues considered important by Japan.</u> (quality infrastructure, health, women, education, disaster prevention, etc.)

(2) Towards implementation: Established SDGs Promotion Headquarters

- At the UN Summit where the SDGs were adopted, Prime Minister Abe declared that Japan would do everything in its power to implement the SDGs.
- To take the lead in both domestic implementation and international cooperation, the relevant ministries and agencies must join forces and work together as a united government.
- SDGs were also discussed at the G7 Ise-Shima Summit. As host country, it was
 important that Japan show that it would take the lead in embarking on the SDGs.



Prime Minister Abe giving a speech at the UN Summit where the SDGs were adopted (September 2015).



✓ At the first meeting on the same day, it was decided to develop <u>SDGs Implementation Guidelines</u>.

V Prime Minister Abe's Initiatives for the Achievement of SDGs

- 1. Basic Policy for Peace and Health (Sept 2015)
- 2. Quality Infrastructure Partnership Expansion Initiative (May 2016) – \$200 billion –
- \$1.1 billion contribution to international organizations for promotion of international health policies
 - Global Fund, Gavi, GHIT, WHO, World Bank –

- 1. G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment
- 2. G7 Ise-Shima Vision for Global Health UHC-
- 3. G7 Guiding Principles for Capacity Building of Women and Girls

VI. International Dissemination of FutureCity Initiative and Japan's Contributions

VI. International Dissemination of FutureCity Initiative and Japan's Contributions

The 5th International Forum on the "FutureCity" Initiative

Community Building for Regional Revitalization



 ODate: Tues, Oct 27 2015
 O Place: Toyama International Conference Center (Toyama, Toyama Prefecture)
 O Participants: Approx. 450

OConclusion

(General)

- To solve the problems of the declining birthrate and aging population, as well as structural issues such as population decline to achieve regional revitalization, it is important to build communities that will take advantage of local resources to achieve autonomous development.
- Responding to these problems of declining birthrate and aging population and environmental and energy issues is precisely the goal of the "FutureCity" Initiative and is a common theme for the whole world today.

(Confirmation)

(1) Collaboration between local governments and a wide diversity of sectors

Local governments needs to collaborate with privatesector companies, residents, and a wide range of sectors to work on solutions to the region's diverse challenges.

(2) International collaboration

It is important that local governments around Japan and in other countries share their success stories and knowledge gained, etc., with each other, build an international knowledge platform and deepen their international collaboration.

International Forum for Promotion of "FutureCity" Initiative in Malaysia



Date:Sun, 8 Feb – Mon, 9 Feb 2015Place:Thistle Hotel, Johor Bahru, MalaysiaParticipants:Approx. 300 from 10 countries (Japanese and
Malaysian government officials, relevant
organizations, local governments, companies,
etc.; about 70 participants from Japan)

○Content

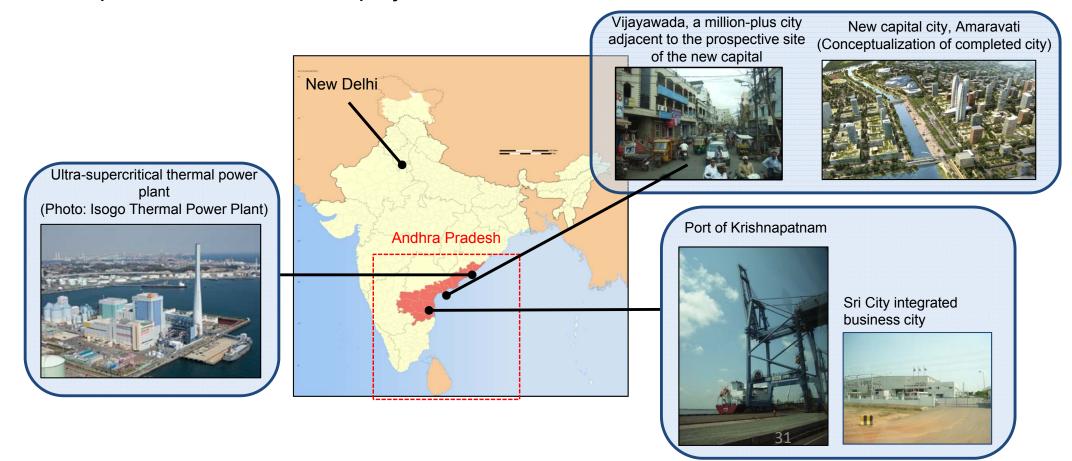
- Keynote Lectures
- Presentation of FutureCity and Eco Model City examples (Yokohama, Kitakyushu, Higashimatsushima, Toyama, Kyoto, Niseko)
- Presentations on global dissemination of FutureCity Initiative, and on the outlook for and challenges facing the Iskandar Development Plan
- Discussion
- Field Tour

\bigcirc Conclusion

- In the keynote lectures, Dr. Shuzo Murakami, President of the Institute for Building Environment and Energy Conservation explained the concept, etc. of the "FutureCity" Initiative, and Dr. Dahlia binti Rosly, Director-General of the Federal Department of Town and Country Planning Malaysia (JPBD), gave a presentation on smart city initiatives in Malaysia.
- Examples of initiatives in cities in Japan and Malaysia were presented and discussions held about future problems. Opinions were also exchanged about the directions each other was taking towards solving those problems and about arrangements for mutual cooperation.
 Delegates confirmed that, while cities around the world strive together to become FutureCities, sharing internationally the knowledge gained from their own experience would serve to deepen the initiative even further.

India. Construction of new state capital city in Andhra Pradesh (urban and regional development)

The state of Andhra Pradesh on the Indian Ocean has been bifurcated to form a new state. With close to 1,000 km of coastline, the state has enormous potential as a gateway to India from East Asia. Specifically, there are a number of projects, including the development of the new capital, development of industrial clusters (industrial complexes), harbor development, and construction of an ultra-supercritical (USC) coal-fired power plant. Consideration is being given to joint participation by Japanese and Malaysian public and private sectors in these projects.

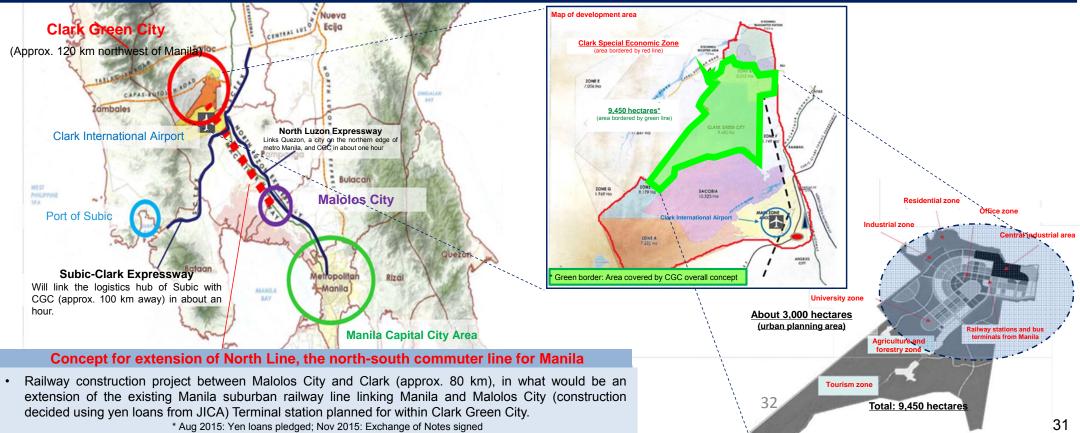


Background and Overview

Philippines. Rehabilitation of old Clark Air Force Base (JOIN)

- To convert the former Clark US Air Force Base, located north of Manila, to civilian use, the Philippines (BCDA*) is pursuing a new regional development project on a 9,450 hectare portion of the base site including an urban development area of about 3,000 hectares.
- The concept is for the integrated development of a large new city and a railway to connect the new city to Manila.
- The BCDA aims to build a city without traffic congestion or public safety concerns, making use of public transport, and hopes to incorporate Japan's knowledge, skills, and experience in this regard. JOIN will be involved from the upstream processes, and is preparing the environment for the future involvement of Japanese companies in infrastructure projects, etc.
- In August 2015, a memorandum on cooperation in the preparation of a master plan was signed between BCDA and JOIN. In July 2016, BCDA and JOIN established a joint survey company. They will now spend a year developing a master plan.

* BCDA: Bases Conversion and Development Authority Wholly government-owned company under the direct control of the President, established with the main objective of developing US air bases as investment incentive zones. Holds the land use rights and leaseholds to former sites of US air bases and camps near Manila, and plans and implements conversion to private-sector use.



VII. Conclusion

- 1. Declining birthrate and aging population, and environmental and energy constraints are the most fundamental issues facing Japan, which Japan will face before other countries.
- 2. However, these are global issues that all countries, including in Asia, will eventually face, albeit at varying timings and degrees.
- The Sustainable Development Goals (SDGs) adopted by the UN last year represent an international consensus for universally appealing and vibrant communities, which is the basic concept of the "FutureCity" Initiative.
- 4. Based on the situation and characteristics of each country and region, it is important that we embark on the meaningful realization of the 17 goals of the SDGs.
- 5. The 21st Century is the era of the city. The "FutureCity" Initiative, as well as overcoming the declining birthrate and aging population, and environmental and energy constraints, will be a model for achieving the SDGs in the arena of cities. Universally appealing and vibrant communities will lead to the realization of regional regeneration and the active engagement in society of all Japan's citizens.
- 6. In the lead-up to the G7 Ise-Shima Summit, Prime Minister Abe put forth many initiatives, including the adoption of the SDGs by the UN, and this bore fruit in the G7 Ise-Shima Leaders' Declaration and related documents.
- 7. As a country that will face various challenges before other countries, Japan must boldly take on the challenge of solving these problems. It has a mission to contribute to the world towards the realization of universally appealing and vibrant communities based on the outcomes of those solutions.