October 4, 2017
7th International Forum on the “FutureCity” Initiative

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

Initiatives for SDGs to promote regional vitalization

Masashi Mori, Toyama City Mayor

Urban Vision – Developing a Compact Community

Realize compact community development with sites concentrated along public transportation through vitalization of railway and other public transportation and concentration of various urban functions, such as residential, retail, business, and cultural, alongside

＜Conceptual diagram＞
Toyama's "skewered" urban structure

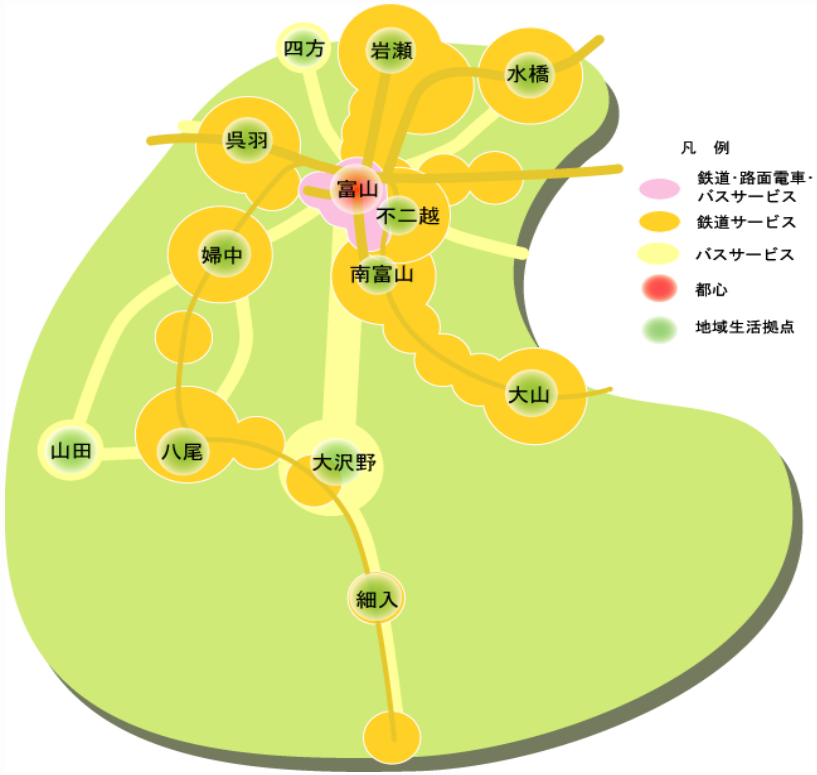
Stick: Public transportation with a certain level of service
Food: Walking zone connected by the stick

＜Three pillars for realization＞

① Vitalization of public transportation

② Promotion of residential living in areas along public transportation infrastructure

③ Vitalization of central urban area



Formation of an LRT Network –

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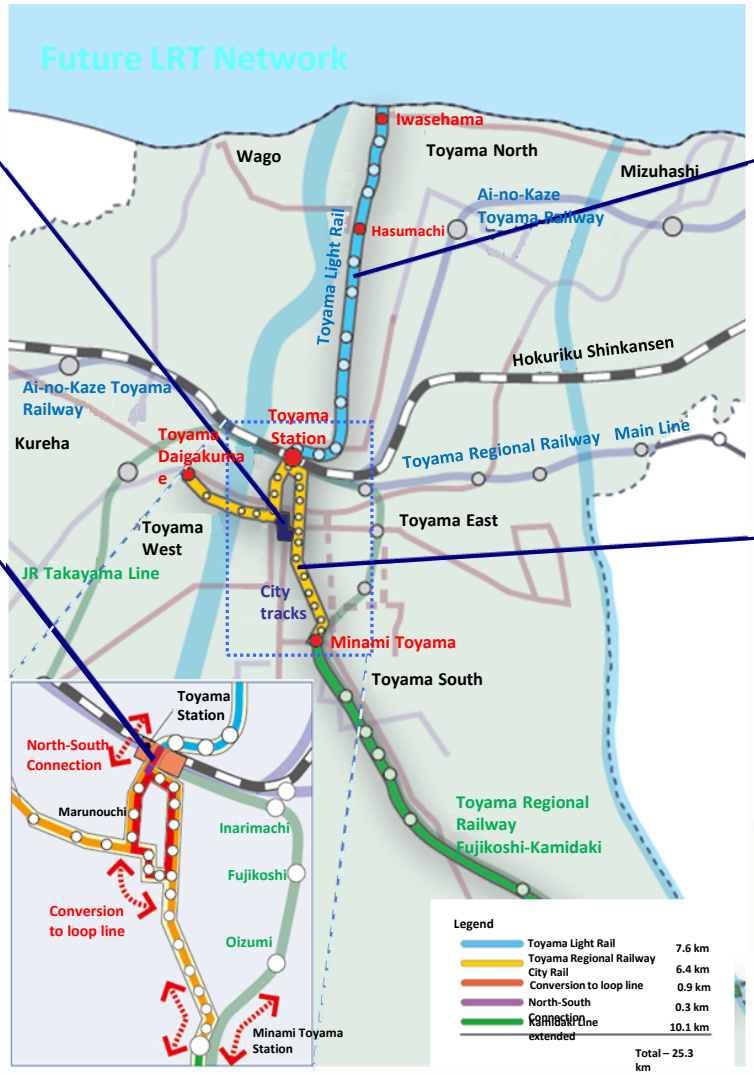
People-friendly and eco-friendly LRT network fosters "connections"


City Train loop Line (opened Dec 2009)


Services extended to below Shinkansen's elevated tracks (opened Mar 2015)




Toyama Light Rail (opened Apr 2006)


City train Line

Formation of an LRT Network – Build the Toyama Light Rail

Japan's first LRT system as revitalization of the JR Toyama Port Line that had been losing users with a public-installed, private-run model

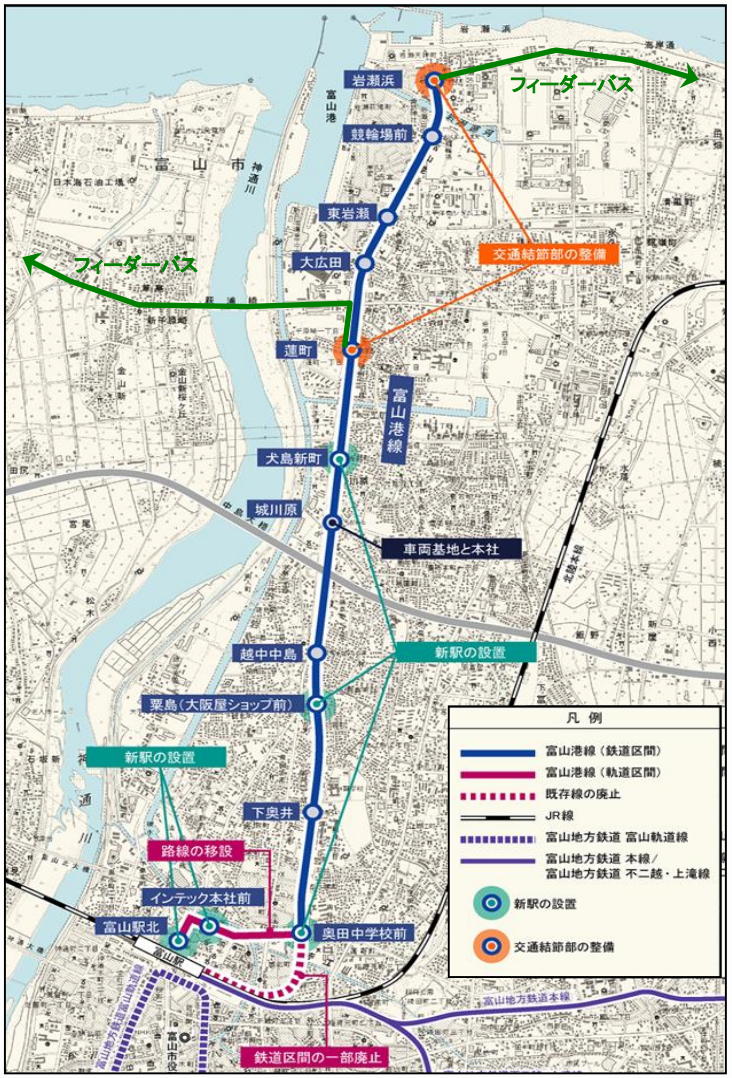
＜Line overview＞
- ○Service launch: April 29, 2006
- ○Length: 7.6km
  （Length: 6.5km, street portion 1.1km）
- ○Train stops: 13
- ○Trains: Seven trains (two carriages per train)
- ○Required time: About 25 minutes (Toyama Station North to Iwasehama)
- ○Operating interval: 15 minutes (10 minutes during rush hours)

＜Improve operating service, etc.＞

Improve operating interval, add new stations, introduce low-floor carriages, use IC cards, eliminate barriers, deploy attendants, operate feeder buses, etc.

▲Former JR Toyama Port Line

▲Toyama Light Rail (Portram)



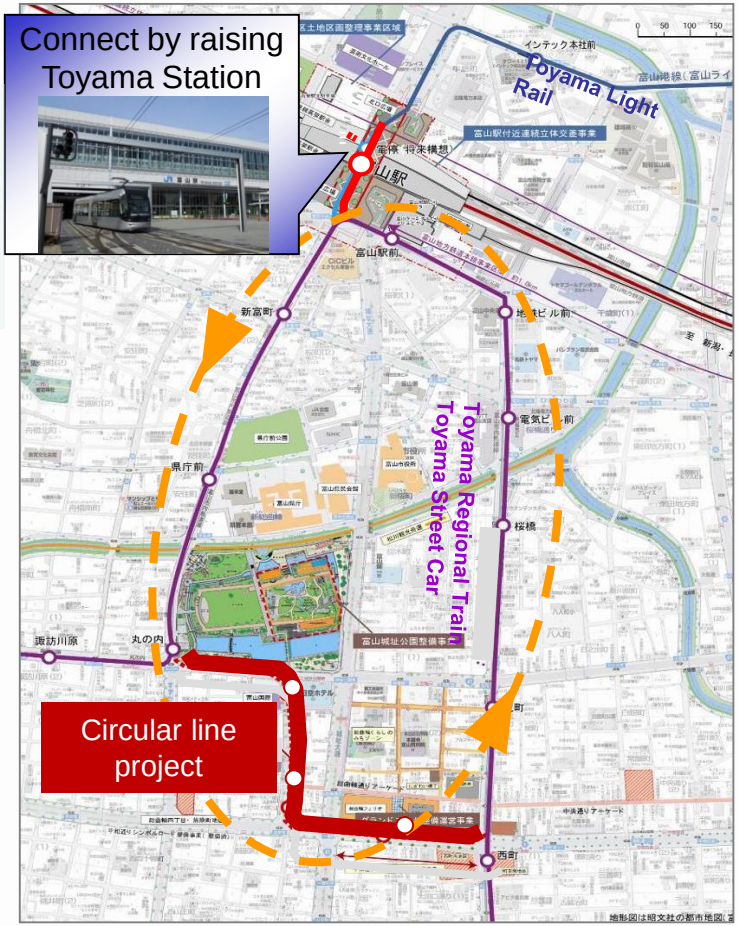
LRT Network Formation – City Train Circular Line

Developed a circular line through partial extension of the city train aimed at boosting the vitality of the central urban area and improving mobility in the city center area; construction of street car line by the city using a two-tiered format for the first time in Japan

＜Line overview＞

- Service launch: December 23, 2009
- Length ：About 0.9km (circular line at about 3.4km)
- Train stops ：Three new stops on the extended portion
- Trains ：Three trains with new low-floor carriages

▲City train circular line (Centram)



Creation of Vitality Using Road Space – Transit Mall Space

Conduct a social experiment of a transit mall in which just pedestrians and street-car trains are allowed so that many visitors can safely walk around

【Project overview】

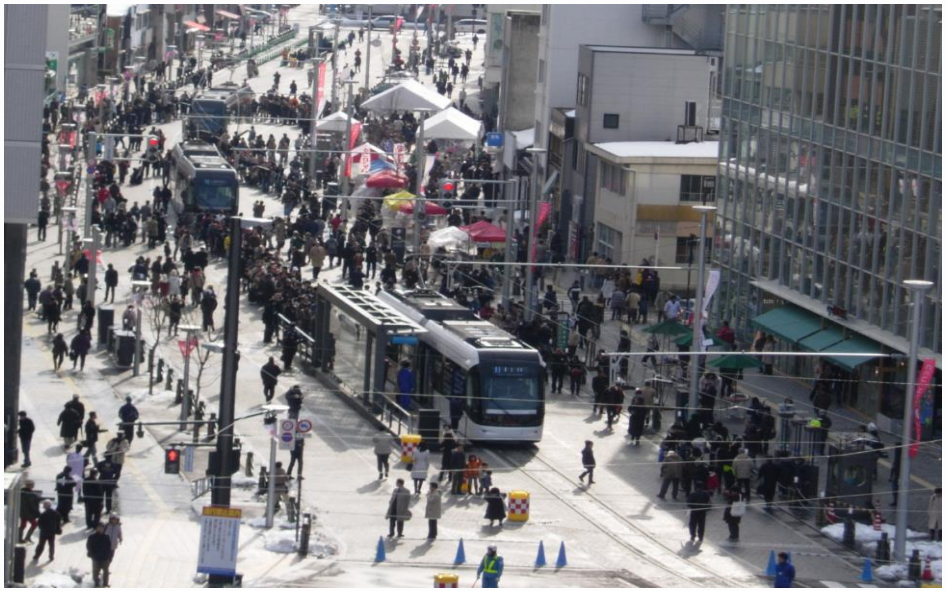
① Timing: October 14 (Saturday) and 15 (Sunday), 2017

② Venue: Major mall (city center)

③ Transportation regulations

- Street-car train operating as normal
- Ordinary vehicles prohibited

④ Simultaneous events　Open café, music event, sports event



Effect of LRT Provision in a Compact City

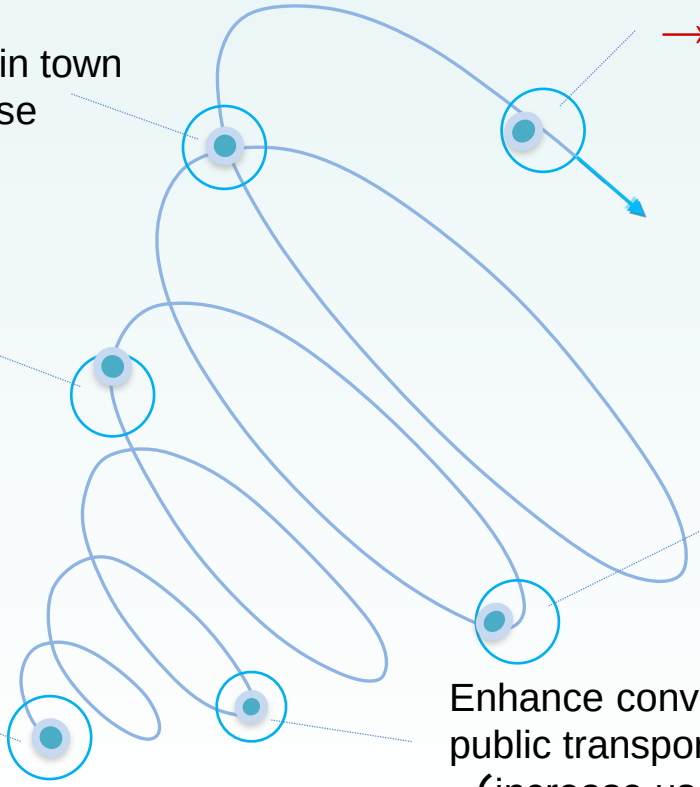
Foster a “beneficial spiral” with positive impacts and changes for the city and people

Change citizen awareness
（foster civic pride）
Increase people living in town
（maintain and increase resident population）

Selected town
→ highly sustainable city

Change senior lifestyles
Increase visits by young people to the central area
（expand opportunities to be outdoors）

Vitalization of the city center
（generate activity and promote private-sector investments）
Vitalization of the regional economy
（increase tourism, etc.）

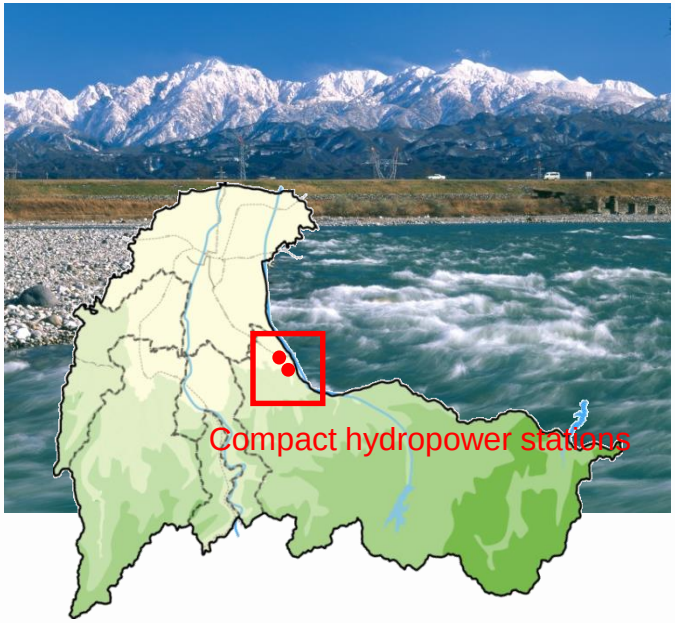


Improve city mobility (such as LRT construction)

Enhance convenience and promote use of public transportation
（increase users = boost business incomes）
Improve the city look and appeal

Promotion of Renewable Energy: Compact Hydropower Stations Utilizing Water Resources

Aiming to deploy compact hydropower stations that utilize abundant water resources from the Tateyama mountain range



Built by Toyama city

Josai Park compact hydropower station

■Power output: 9.9kW ■Annual: 84,300kWh

Higashimachi and Higashi Shinmachi Citizen's Center compact hydropower station

■Power output: 88kW ■Annual: 689,200kWh

Promoting development by companies and citizens

Promotion of Renewable Energy – Private-Sector Operator Initiatives

Private-sector operators and others pursuing initiatives after Toyama City's initial construction and promotion actions

No.4 Compact Hydropower Station (completed on May 11, 2015)

Operator: Josai Water and Land Improvement Zone

Power output: 30.2kW

Annual: 186,000kWh
(equivalent to roughly 45 ordinary households)

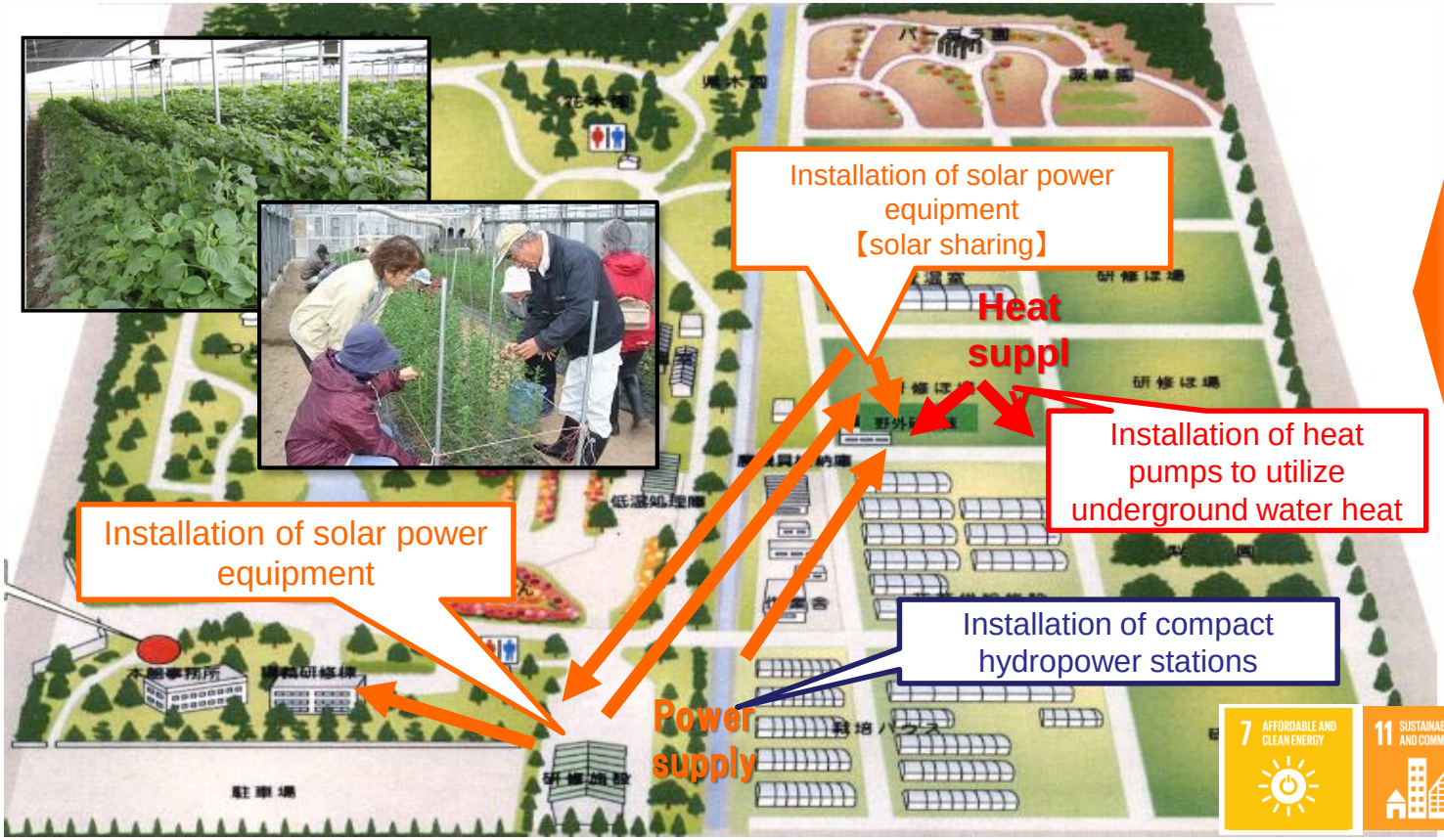
Annual CO2 emission reduction effect: 104 tons

※Plans to install additional sites

Farming Vitalization Using Renewable Energy

Pursuit of “farming visibility” and a self-supply model that revitalizes mountain farming villages and local communities by installing compact hydropower facilities that utilize farming water, greenhouses that harness underground water heat, and solar power equipment

＜Toyama City Farming Support Center＞




Heat pumps


Solar power


Compact hydropower

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

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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 "water shortages" and "diminished farming


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

Issues

- Power shortages
- Diminished farming

Issue resolution

Project

Toyama-type farming village revitalization

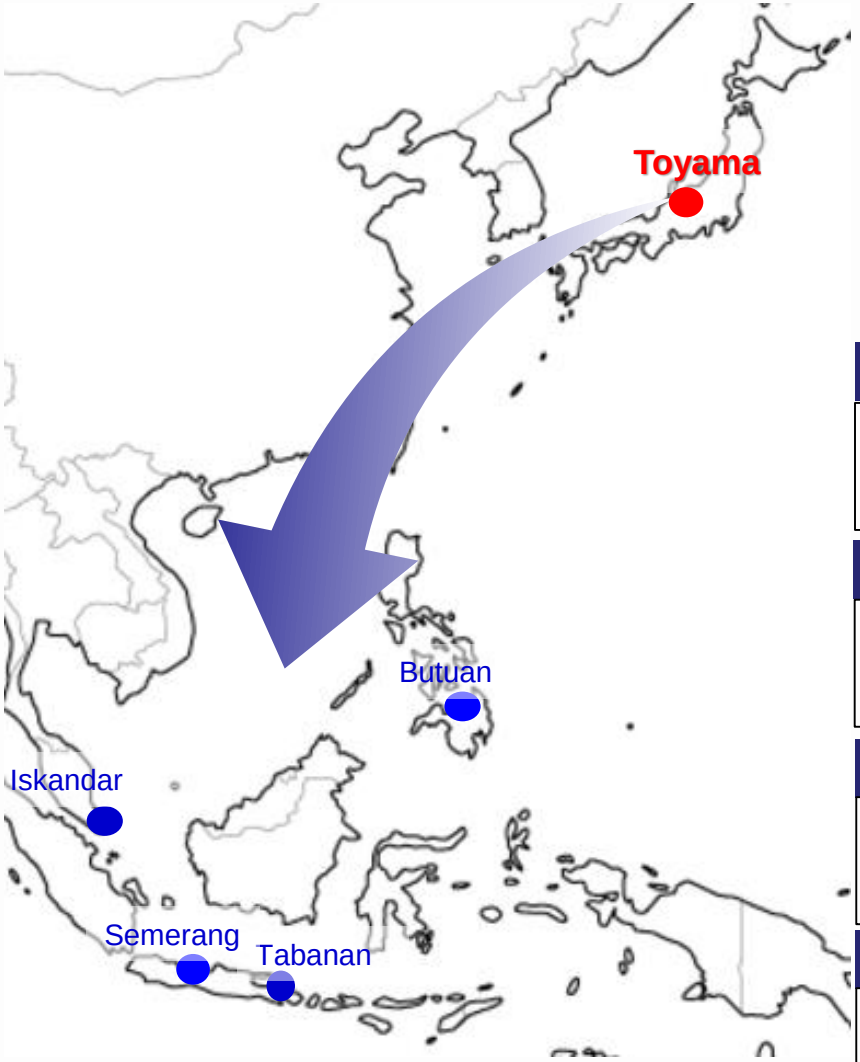
Technology harnessing regional features

- Compact hydropower stations using farming water
- Farming-related technology (rice polishers)

Toyama regional features

- Abundant water resources
- Extensive farming waterways
- Mainly rice farming

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



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

Butuan (Philippines)

2016.10 – Concluded a memorandum
Provision of knowhow for low-carbon urban development

Semerang (Indonesia)

2016.12 – Cooperation request Promotion of compact hydropower station technology

PIONEERED BY THE ROCKEFELLER FOUNDATION 100 RESILIENT CITIES

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

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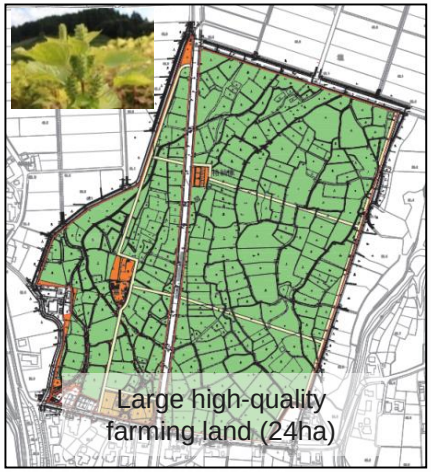
This is an environmental Future City project to build a plant cultivation factory in the Yamada region that faces aging and isolation and promote “wild sesame” as a local product; it utilizes a sixth-sector industrialization model that covers production, processing, and retail/sales with goals of creating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

Ushidake Hot Spring Plant Factory



Large high-quality farming land (24ha)

Wild sesame

Perennial plant in the mint family with medicinal qualities; also called the “10-year” plant because of the belief that eating it can add 10 years to a person’s 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

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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

University of Gastronomic Sciences

INNOVHUB
(Milan Chamber of Commerce, Oils Research Institute)

Japan-Italy Joint Research

UNIVERSITY OF TOYAMA

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Wild sesame 3 : Olive oil 7

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New health oil

Provide knowhow to companies, etc.

Sixth-sector industrialization and overseas initiative for wild sesame branding

Future-Oriented Tree Planting Experience for Elementary School Students

Launching the tree-planting project for city elementary students as an environmental education project to learn about the global warming reduction effect of forests in light of the One Tree Per Child initiative in Bristol (UK) reported at the parallel session of the G7 Environment Ministers' Meeting

Project for elementary students to plant in support of the future

Project period: Five years from fiscal 2017 to fiscal 2021

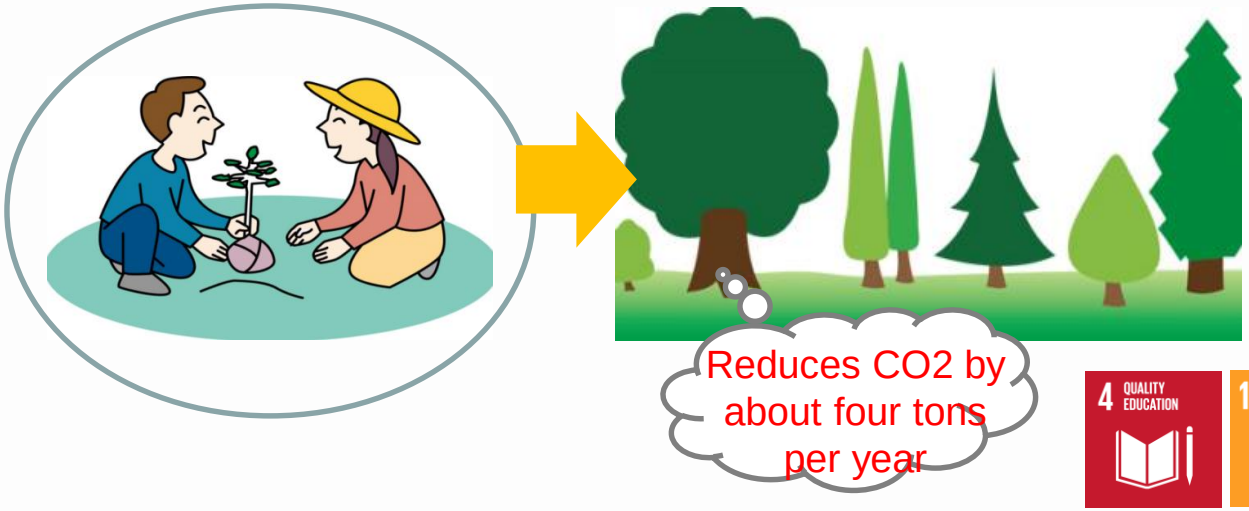
Coverage: City elementary students (around 4,000 people)

Method: Conducted as part of school excursion learning at the Kodomo-no-Mura lodging facility

4-5 children to plant one seedling (all elementary schools will participate over five years)

Number of trees: About 1,000 trees (1.09ha)

First tree-planting event being held on October 11, 2017 (Wednesday)



What is "One Tree Per Child"?

Tree-planting initiative that began in Australia and spread to Bristol (UK); aims to foster eco-friendly people and environments by having each child plant a tree and grow throughout life along with the tree

Targeting a Sustainable Added-Value Creation City

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Development of Toyama-type urban management based on a compact city strategy

Environmental value creation

Reduce CO2 emissions

Revitalize the city center

Cyclical

etc.

Economic value creation

Curtail government costs

Create new industries

Revive mountain farming village society

Revitalize the city center

Advance local industries

Create jobs

etc.

Social value creation

Revitalize local communities

Foster social capital

Regional medicine

Care

Health

Safeness, reassurance

etc.

Development of a future open society through environmental, social, and economic innovations

Realize a sustainable society by creating a “highly satisfying life” that harmonizes quality of life and the environment