



The SDGs Future Forest City "Maniwa" Project

—Maniwa City's Strategy to Make the Most of Local Resources—

CENTRAL 真
GARDEN 庭
MANIWA 市

The main building of Maniwa City Hall is

Wood (electricity from biomass power generation and heat from biomass boilers)

Solar (on-site solar power generation)

Human powered.

Noboru Ohta, Mayor of Maniwa City

The main building of Maniwa City Hall uses 100% renewable energy derived from the local community.

- CO2 emissions reduction: 420 tons
- Reduction of electricity and other costs: 6 million yen
(Compared to using heavy oil (86 yen/L))



1. The Current State of Maniwa City



◆ Profile of Maniwa City

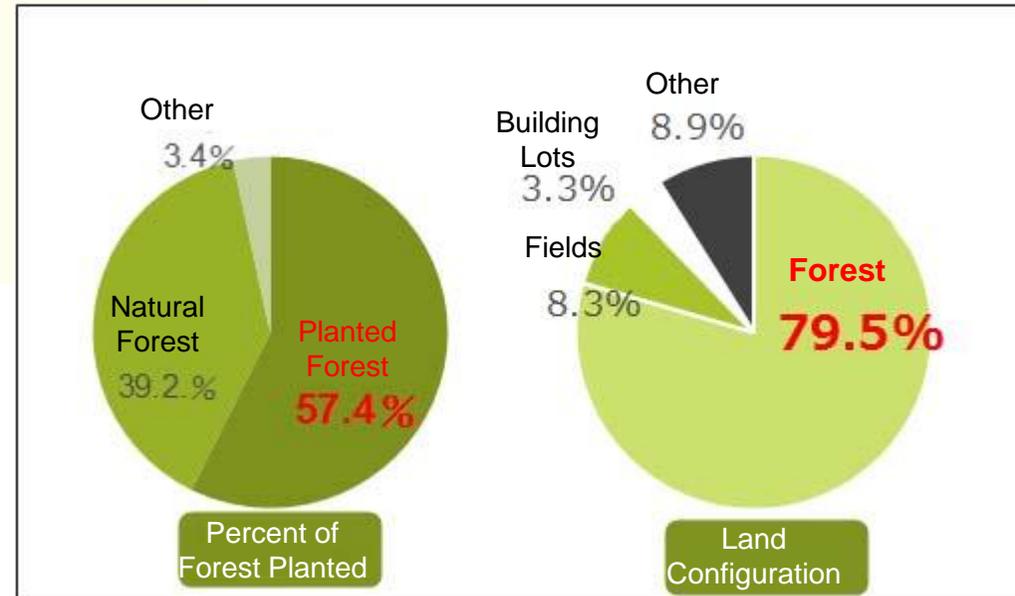
Location: Northern part of Okayama Prefecture

Area : About 828 km² (130% of Tokyo's 23 wards)

Population: Approximately 43,000 (0.4% of Tokyo's 23 wards)

Characteristics: About 80% of the city area is forest

One of Japan's leading lumber distribution centers

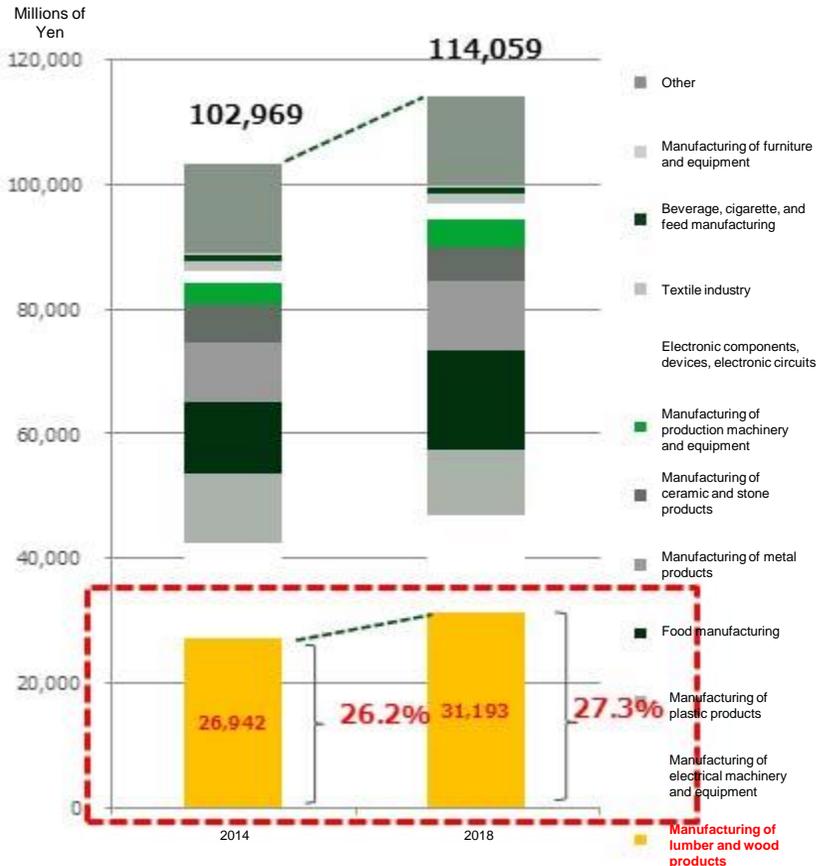


2. The City of Wood: Maniwa -An Economy Centered on Wood-

About 30% (31.2 billion yen) of the value for Maniwa City's manufactured goods shipments comes from the **lumber and wood products manufacturing industry**.

The value chain is complete within the city, which includes **several markets for timber**. **Maniwa is well-known in Japan as a lumber distribution center**.

Value of Manufactured Goods Shipments in Maniwa City



Source: Industrial Statistics Survey



Material Producers: About 20 companies
Number of Employees: Approximately 240 (Average age in the 40s)



Timber Markets: 2 companies, 3 markets
Volume Handled: Approximately 138,000 m³/year
(About 1/3 of the volume handled in Okayama Prefecture (410,000 m³/year))



Lumber Mills: About 30 companies
(Timber Procurement Volume: Approximately 200,000 m³/year)
(Shipment Volume for Lumber Products: Approximately 120,000 m³/year)

Product Markets 1 market



Woody Biomass Power Plants (In Operation): 2
Maniwa Biomass Power Plant (10,000 kw)
Power plant owned by Meiken Lamwood (5,000 kw)

3. Current Situation from the Perspective of Safety and Security

- **Japan's Food Self-Sufficiency Rate: 38%** (calorie basis)
- **Japan's Energy Self-Sufficiency Rate: 11.8%** →34th out of 35 OECD countries in 2017
The power supply system is particularly centralized.
Regional decentralization and decentralization of energy self-sufficiency areas are necessary for efficient energy production and consumption, and for eliminating excess generation and transmission losses.

We must change the current situation in Japan.



Maniwa City is determined to lead the way!!

• The energy self-sufficiency rate of Maniwa City is 62%.

*33% from the Maniwa Biomass Power Plant

Biomass energy + solar energy + hydropower
All energy consumed in the city

The energy self-sufficiency rate of Maniwa City is already over 60%, but we do not directly distribute electricity generated in Maniwa City to factories and households.

Our ultimate goal is to create an SDGs Future Forest City "Maniwa" with a "renewable energy self-sufficiency rate of 100%" by meeting all of our electricity needs with locally produced natural renewable energy!

In the future, we will work on (1) the construction of a second biomass power plant and (2) the local production and local consumption of electricity by realizing the regional microgrid concept.

Establishing self-sufficiency zones will lead to the sustainable development of Japan and the region

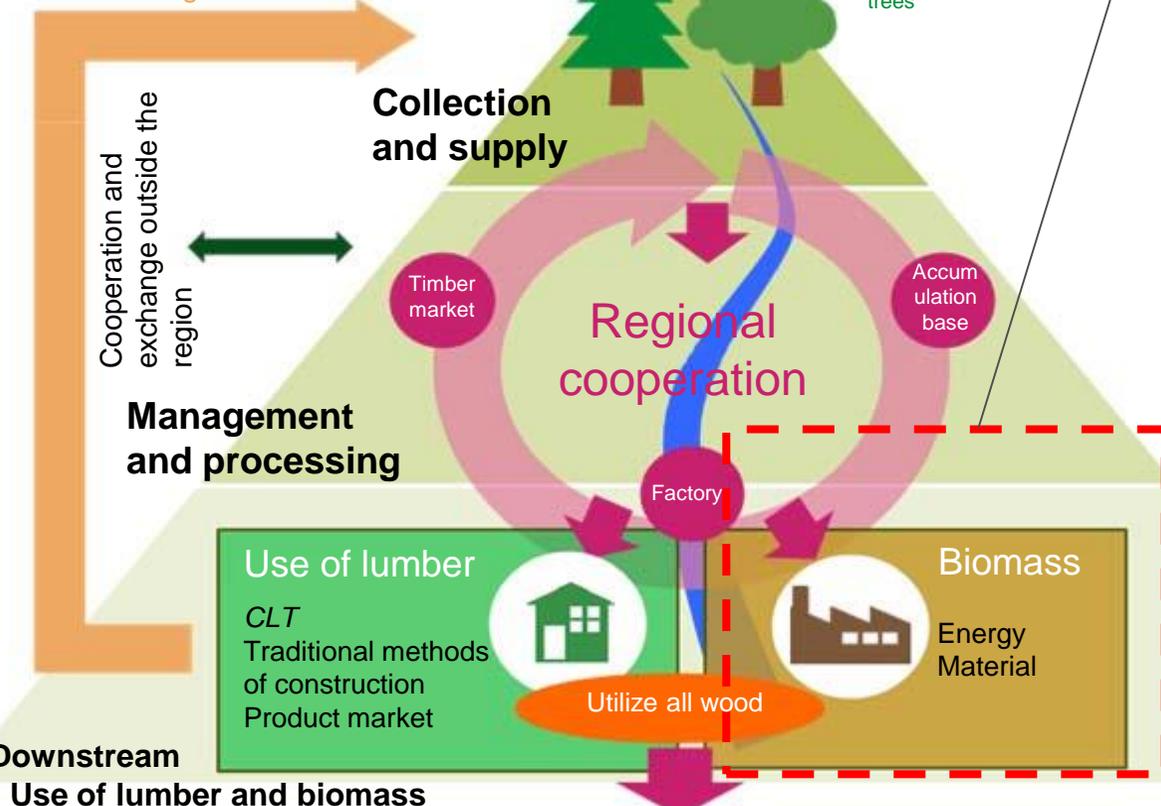
4. A Maniwa Utilizing All Its Trees

(A circular economic zone centered on woody biomass power plants)

Realization of the construction of a circular economic zone that utilizes all the wood from the region, centered on the Maniwa Biomass Power Plant

Utilization as fuel of unused wood, which used to be disposed of as industrial waste (disposal cost equivalent to more than 100 million yen)

Upstream
Profit sharing and distribution



Development of local industries, creation of employment, and improvement of local power

Woody Biomass Power Plant



Power Generation Capacity: 10,000 kW (Annual Power Generation: Approx. 80,000 MWh)
About 110,000 tons of fuel is used per year. In principle, only locally-sourced wood is used.

Sales: Approx. 2.31 billion yen

*Fuel Purchases: 1.42 billion yen

Of this, a portion of the fuel costs is returned to forest owners (550 yen/t)

Total estimated return ⇒ Approx. 200 million yen (October 2014 - March 2021)

Oil Substitution: Equivalent to 2.35 billion yen

*Calculated using kerosene price of 84 yen/L

5. GREENable HIRUZEN

(A new landmark for SDGs Future Forest City "Maniwa")

Hiruzen ↔ Harumi Project

■ 2019

Building a CLT pavilion in Harumi using CLT manufactured in Maniwa with a design by Kengo Kuma & Associates

→ Convey the appeal of CLT and culture and information related to wood



Return to Maniwa of CLT produced in Maniwa



Relocation and reuse in Maniwa

■ 2021

The pavilion, having served its purpose in Harumi, was **moved to Hiruzen National Park in Maniwa City, reusing the same materials.**

The pavilion opened on July 15 this year as "**GREENable HIRUZEN**," a center for tourism and culture that links cities and rural areas.

(132,000 visitors in 6 months since opening)

Maniwa City

Disassembly and transportation

Harumi

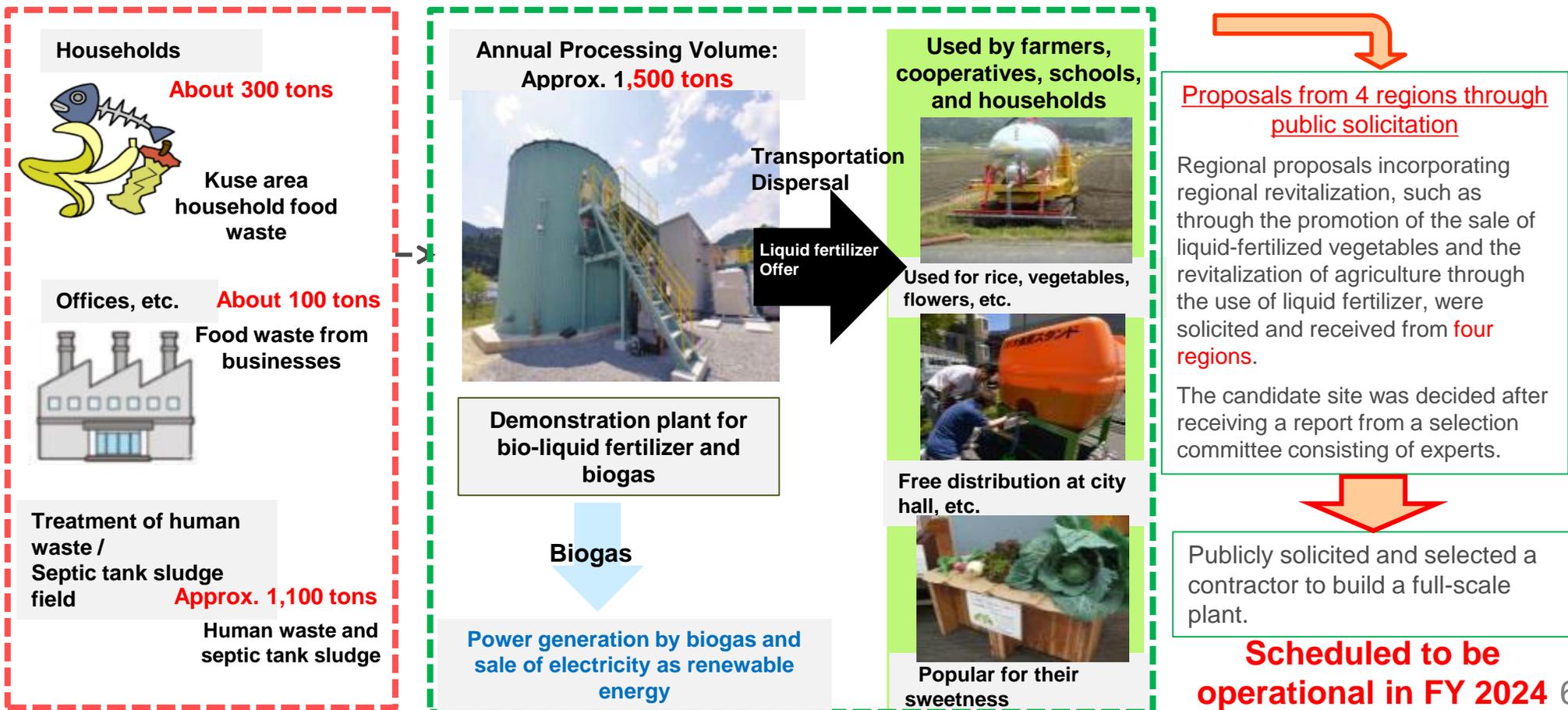
Construction and operation in Harumi
(Fall 2019 - Fall 2020)



6. Establishing a "Revolving Economy" That Makes the Most of Local Resources

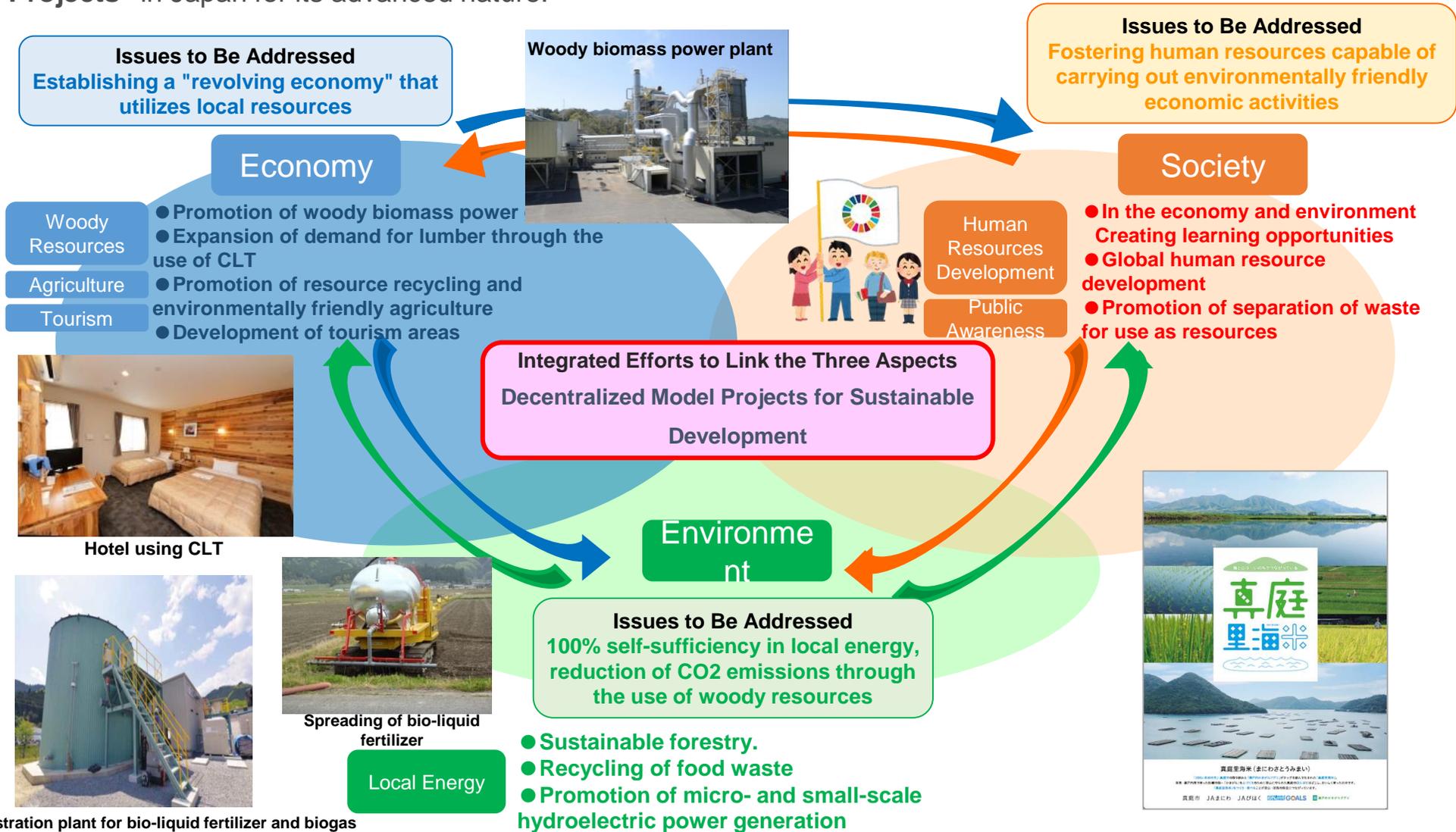
(Project to convert food waste and human waste into liquid fertilizer)

In 2014, a cooperative was established by private businesses in the city with the aim of reducing waste disposal costs and utilizing organic waste by turning food waste into resources. In a model plant with a planned annual capacity of 1,500 tons, food waste, human waste, and septic tank sludge are converted into bio-liquid fertilizer for use in rice fields, and the biogas by-product is used to generate electricity. The system was demonstrated in a government-commissioned project from 2014 to 2016. In preparation for the construction of a full-scale plant, we publicly solicited candidate sites and received regional proposals from four regions, and decided on a candidate site after receiving a report from a selection committee made up of experts.



7. Promotion of Regional Development SDGs (SDGs Future Forest City "Maniwa")

Maniwa City was selected as one of the 124 "SDGs FutureCities" in Japan (the first selection was made in 2018) for its outstanding initiative, and the city's initiative was itself selected **in its first year** to be one of the 40 "Model Municipal SDG Projects" in Japan for its advanced nature.



8. Promotion of Regional Development SDGs (Turning SDG initiatives into civic activities)

Maniwa SDGs Roundtables

Place development

A place to share the macro-orientation of Maniwa City as a whole over the next year



- Progress management
- Information sharing
- Strengthen cooperation

Maniwa SDGs Meetings

Human resources development

A place for each person to think of specific actions and polish their initiatives



Making Friends
Information Exchanges



Information Gathering



Understanding the SDGs
Ties to Businesses



Making Action Plans



Announcement and Dissemination
Polishing

Promotion of the SDGs through collaboration among members

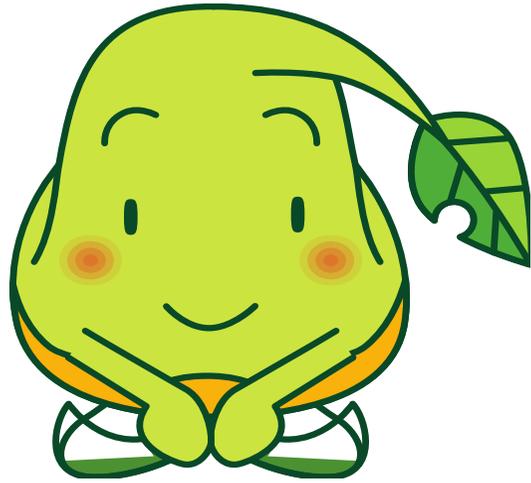
- SDGs curriculum
- SDGs action
- Human resource development for SDGs

Expanding to civil movements, achieving SDGs

Maniwa SDG partners (roundtable members and meeting participants)
 (1) Companies, organizations, and individuals that support Maniwa City's SDG initiatives and that have made a partner declaration
 (2) All kinds of stakeholders, including those connected to the environment, education, welfare, medical care, and industry, are registered as partners

*As of December 14, 2021: **210 organizations and 15 individuals** registered

Thank you for listening.



(Hiruzen Highlands)



(Katsuyama Noren Town)



(OCHIAI, DAIGO
CHERRY BLOSSOMS)



(Hokubo Fireflies)

**Maniwa City
Mascot
"Manizo"**

Maniwa City Hall
2927-2 Kuse, Maniwa City, Okayama
Prefecture 719-3292

TEL: 0867-42-1111

URL: <https://www.city.maniwa.lg.jp/>