

- Fukushima Today - Steps for Reconstruction and Revitalization in Fukushima Prefecture



A-E Kawauchi Village: "Initiatives for Revitalization of Kawauchi Village"

A-B "Kawauchi Winery" : Kawauchi Village has been undertaking wine production using locally grown and harvested grapes as part of its efforts towards revitalization following the disaster, taking on new agricultural initiatives, and regional regeneration. Completed in 2021, Kawauchi Winery aims not only to produce wines as the new specialty of the village, but also to serve as an anchor facility that will revitalize the village's industries, increase the related population, and even encourage relocation and settlement.

C "Expanding Sales Channels for Kawauchi Wine": Kawauchi wine had only been sold online, at shops in the village and product promotion centres, but sales channels for Kawauchi wine expanded when FamilyMart, a major convenience store chain, began selling it at their stores within the prefecture on 4 December 2024, following FamilyMart representatives participating in the winery's "Grape Harvest Volunteer" event. On the first day of sales, representatives held a PR campaign at shops in the village, encouraging many residents to try the wine.

D "Greenhouse Grape Cultivation": In November 2024, a craft gin distillery "naturadistill Kawauchi Village Distillery" was completed in the village and launched the products. The distillery was founded by Sota Oshima, who moved to Fukushima Prefecture when he entered university. Using indigenous Japanese botanicals—such as Japanese nutmeg-yew, tachibana orange, kuromoji (lindera umbellata) and willow-leaved magnolia, etc.—primarily sourced from Fukushima, Oshima infuses his products with the essence of Fukushima. Through his products, he conveys his hope to "overturn the negative perceptions of Fukushima that I encountered while studying abroad", and "share the charm of Kawauchi Village with many people".

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■ Towards achieving revitalization

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Towards achieving revitalization

Thanks to the hard work of Fukushima residents and kind support from Japan and abroad, **reconstruction has progressed steadily** in the 13 years since the earthquake and nuclear disaster. Evacuation orders have been lifted for all of the Specified Reconstruction and the Revitalization Base Areas, and approval has been granted for the Specified Living Areas for Returnees in the towns of Okuma, Futaba, Namie, and Tomioka. Living environments have been improved, and the number of participants in Hope Tourism has surpassed previous records.

On the other hand, **about 26,000 residents of the prefecture are still living as evacuees (as of Nov. 2024)**. In addition, the Prefecture is faced with numerous challenges, such as **rebuilding the livelihoods of disaster affected residents, population recovery through the return and relocation of residents, revitalization of local industries, fighting deeply rooted harmful rumours and fading memories of the disaster, measures for the contaminated/treated water and decommissioning of the reactors.**

Prerequisite measures for revitalization

- Promoting safe and steady initiatives for decommissioning
- Responsibly dealing with work related to the disposal of ALPS-treated water



⇒P.15

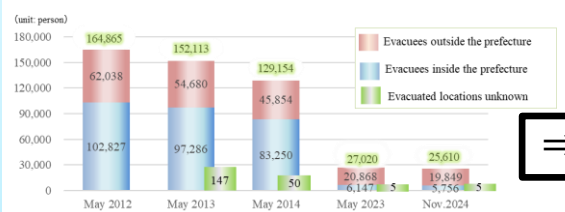
TEPCO's Fukushima Daiichi NPS Unit 1
Photo by Fukushima Prefecture



⇒P.16

Revitalization efforts still in progress

- About 26,000 people remain in a state of evacuation
- Final disposal of contaminated soil outside the Prefecture within 30 years after launching the Interim Storage Facility



⇒P.2



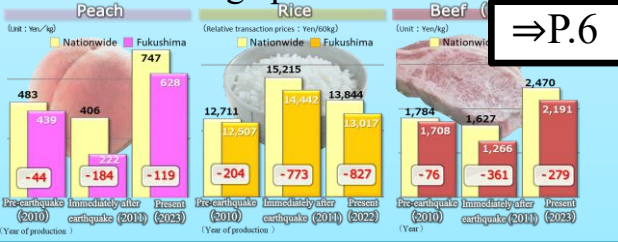
⇒P.1

- Measures against deeply rooted harmful rumours and fading memories of the disaster
- The disparity between the price of Fukushima's agricultural, forestry and fisheries products and the national average price still remains



⇒P.17

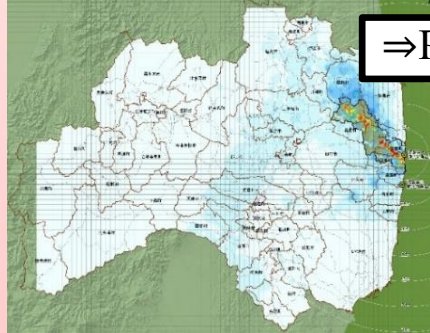
The Hama Festival in Tokyo



⇒P.6

Revitalization efforts that have shown great progress

- Atmospheric radiation levels have significantly dropped
- Promotion of tourism
- Development of transportation networks such as roads
- Promotion of the Fukushima Innovation Coast Framework initiatives



⇒P.1



⇒P.9

- Development of transportation networks such as roads
- Promotion of the Fukushima Innovation Coast Framework initiatives



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The Yoshimada-Takine Route on the Prefectural Road (Hirose District) opened April 13, 2024



Fukushima Robot Test Field



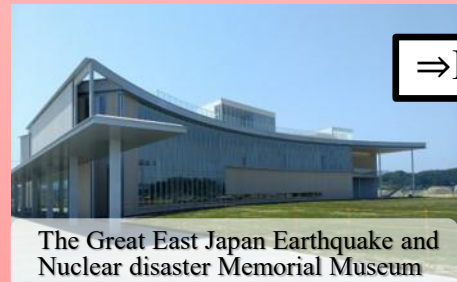
Fukushima Hydrogen Energy Research Field

⇒P.11

- Expansion of consumption and development of sales channels for prefectural products
- Passing down the records and lessons of the complex disasters to future generations



⇒P.7



⇒P.12

The Great East Japan Earthquake and Nuclear disaster Memorial Museum

It is necessary to flexibly and carefully respond to new challenges which arise as revitalization progresses as well as the different issues faced in different areas according to their revitalization progress, and to realize them one at a time.

Promoting the reconstruction and revitalization of Fukushima to transform it from a "disaster affected area" to a "revitalization area"

1. Revitalization efforts and challenges

(1) Decontamination

Current Status The transfer of removed soil and waste to the Interim Storage Facility has mostly been completed by Mar. 2022, except in the Difficult-to-return Zones, and the restoration of land at Temporary Storage Sites is in progress. In the Difficult-to-return Zones, evacuation orders for all the Specified Reconstruction and Revitalization Base Areas had been lifted by Nov. 2023, and decontamination in Specified Living Areas for Returnees began in Dec. 2023. **Atmospheric radiation levels in the prefecture significantly dropped, and are the same as other major cities throughout the world.**

Municipality led decontamination



"Special Decontamination Areas" areas where the national government conducts decontamination

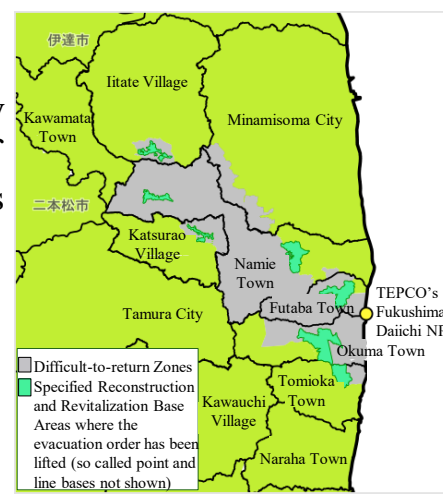
- ...10 municipalities
- ...Designation lifted for 1 city

"Intensive Contamination Survey Areas" areas where decontamination is conducted based on decontamination implementation plans formulated by municipalities

- ...10 municipalities
- ...Designation lifted for 31 municipalities

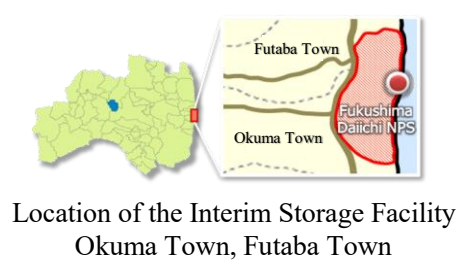
Decontamination of Difficult-to-return Zones

Decontamination of the Specified Reconstruction and the Revitalization Base Areas has mostly been completed. Decontamination of Specified Living Areas for Returnees began in Dec. 2023.



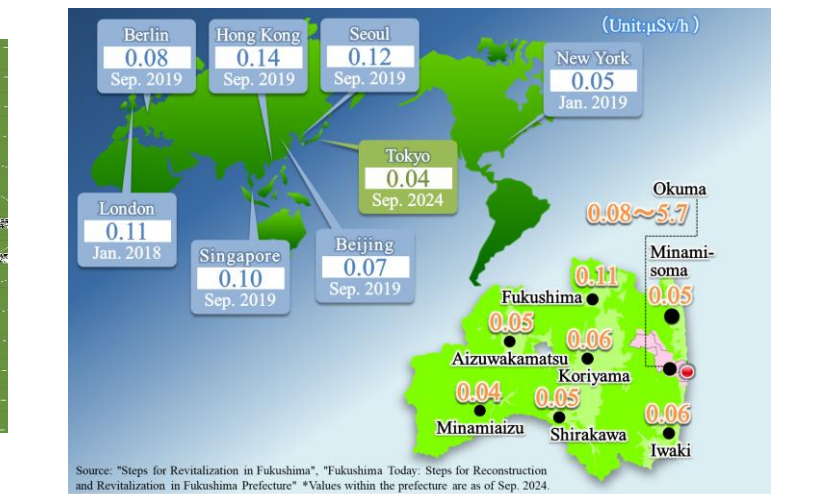
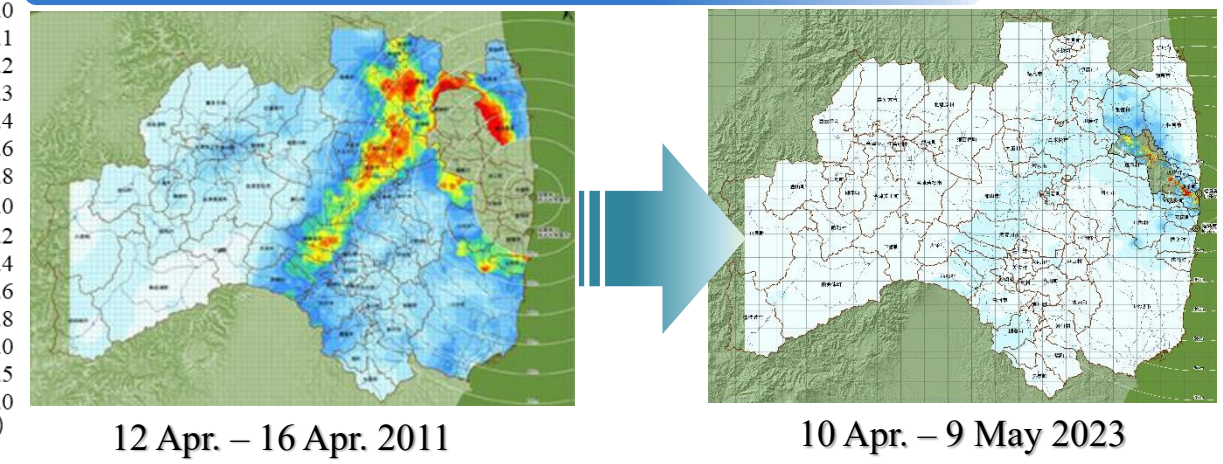
The Interim Storage Facility

The law stipulates that the removed soil and waste in the prefecture generated by decontamination must be transferred to the Interim Storage Facility, and **finally disposed of outside the prefecture within 30 years since the commencement of the Facility (by Mar. 2045).**



Environmental radiation dose rate in the prefecture and major cities

Air radiation dose in Fukushima Prefecture



- Challenges**
- Acceleration of initiatives by the national government towards the final disposal of removed soil and waste outside the prefecture
 - Safe and secure operation of the Interim Storage Facility until final disposal outside the prefecture
 - Ensuring restoration of land used for Temporary Storage Sites
 - Sufficient decontamination of Difficult-to-return Zones (Specified Living Areas for Returnees)
 - Disposal of designated waste newly identified in the prefecture

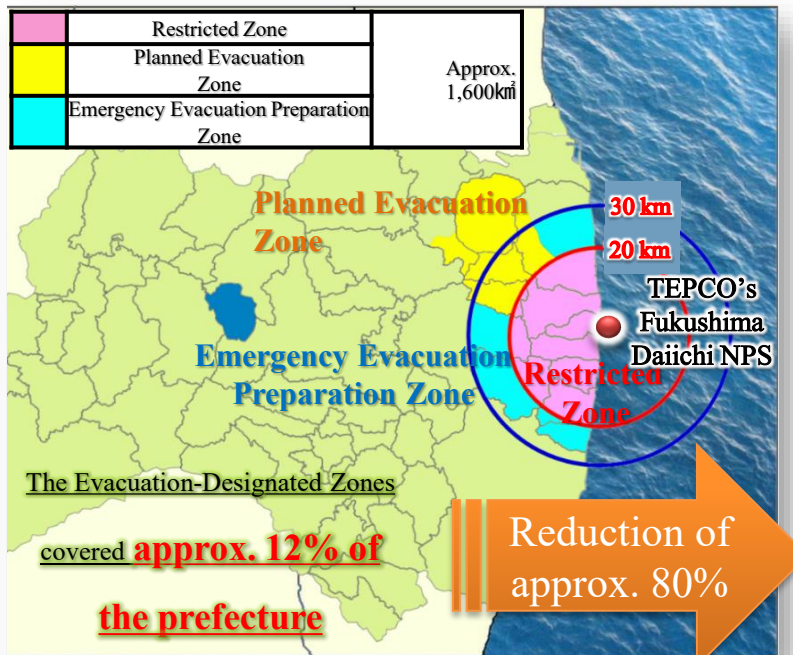
(2) State of Designated Evacuation Zones and Changes in Number of Evacuees

Current Status

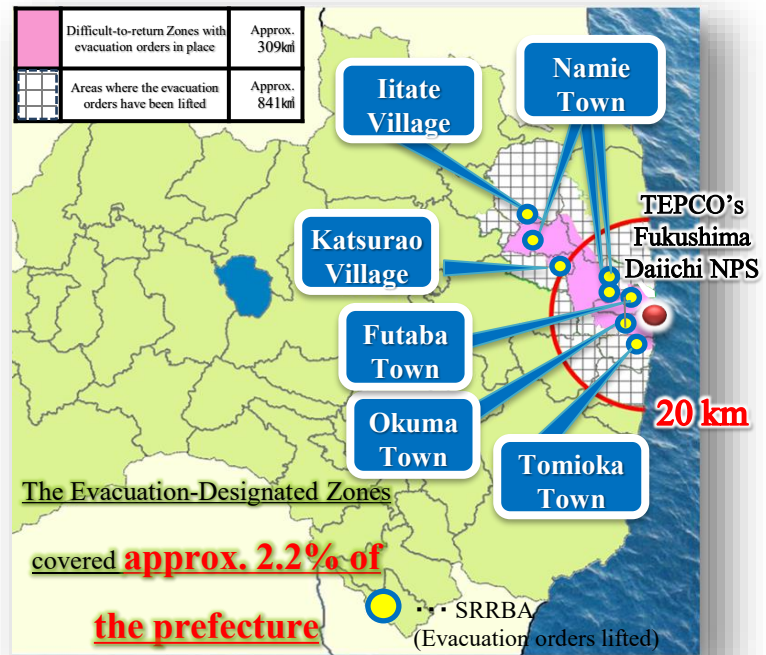
Improvement of living environment has led to the lifting of evacuation orders, **reducing the areas under evacuation orders from approximately 12% to 2.2% of the entire prefectural landscape. Approximately 26,000 evacuees remain inside and outside of the prefecture.**

Transition of the Evacuation-Designated Zones

○ As of 22 Apr. 2011



○ As of 27 Dec. 2024



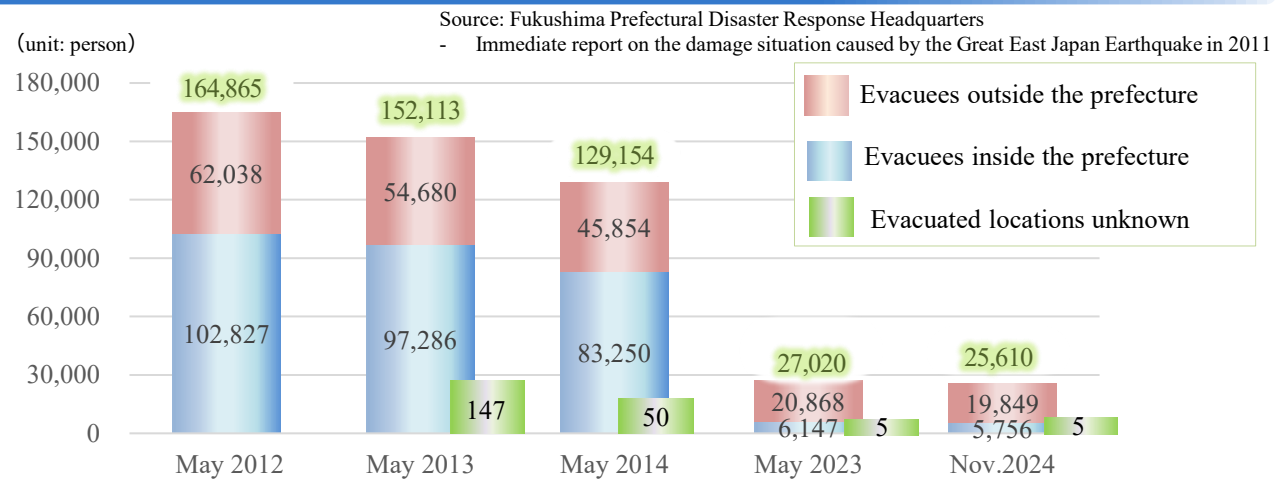
Proportion of residents in the 12 municipalities of the evacuation areas

Municipalities	Rate of residents
Hirono Town	91.3%
Tamura City (Miyakoji District)	86.9%
Kawauchi Village	83.3%
Naraha Town	69.4%
Minamisoma City (Odaka District)	64.2%
Kawamata Town (Yamakiya District)	52.5%
Katsurao Village	37.8%
Iitate Village	33.6%
Tomioka Town	22.5%
Namie Town	15.3%
Okuma Town	8.7%
Futaba Town	3.3%

(As of 31 Oct. 2024)

*The area of the Evacuation-Designated Zones includes the former Emergency Evacuation Preparation Zone.

Transition of evacuees: Earthquake, Tsunami, NPS accident



【Specified Reconstruction and Revitalization Bases Area (SRRBA)】

Areas within the Difficult-to-return Zones where residence would have been restricted into the future but was made possible when evacuation orders were lifted. Established in 6 towns and villages in the prefecture, where evacuation orders were lifted from Jun. 2022 to Nov. 2023.

【Specified Living Areas for Returnees (SLAR)】

A zone established outside of SRRBA in the Difficult-to-Return Zones to help residents return to their homes and rebuild their lives, stipulated by the revision of the Act on Special Measures for the Reconstruction and Revitalization of Fukushima of Jun. 2023. Decontamination and house demolition work began in December 2023 for the towns of Okuma and Futaba, in June. 2024 for Namie Town, and in September 2024 for Tomioka Town.

Challenges

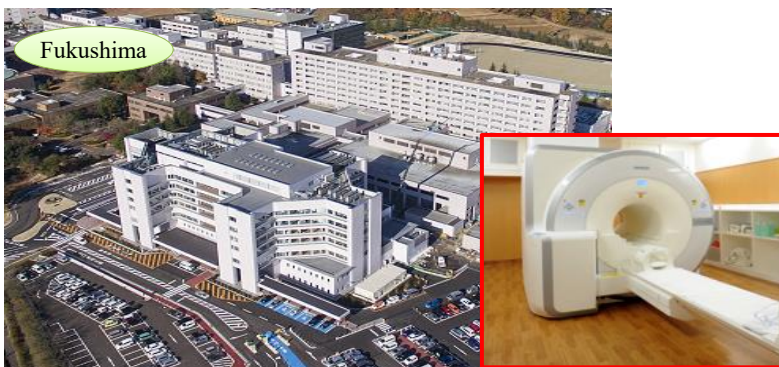
- **Improvements of infrastructure and living environment in SRRBA** tailored to the actual circumstances of each region
- **Thorough decontamination and other efforts** aimed for early lifting of evacuation orders in **SLAR**
- **Maintaining a support system and consultation services** for evacuees, providing **psychological care** for those affected by the disaster
- **Improvement of the living environment** for returnees, including shopping, medical and welfare services, education, transport, housing and wildlife damage control
- **Lifting of evacuation orders to the whole area of the Difficult-to-return Zones**

Current Status

To alleviate health concerns resulting from the Great East Japan Earthquake and the nuclear disaster, **cutting-edge research and medical institutes such as the Fukushima Global Medical Science Center at Fukushima Medical University have been established**, and initiatives aimed at healthy longevity and the Fukushima Health Management Survey have been promoted.

Development of a hub for cutting-edge radiological research and medical care & fostering of human resources in medical fields

Fukushima Global Medical Science Center



Base for supporting the revitalization of Fukushima on the medical front

School of Health Sciences Fukushima Medical University



Training medical professionals responsible for local medical care.

Fukushima Medical Device Development Support Centre



Promotion of the domestic medical equipment industry and improving medical skills through training.

The Projects for a Long and Healthy Life

- Health indices in Fukushima have been lower than the national average since the disaster; as such, under the Health Fukushima 21 (the third term) launched in 2024, the Prefecture has positioned obesity, salt intake, and smoking as three priority issues, promoting initiatives for improvement across Fukushima under the slogan, "Let's reduce salt, quit smoking, and overcome obesity together!"
- Promoting health management as a health initiative for the working-age population, who are at higher risk of developing lifestyle-related diseases.
- Release of "Fukushima Kenmin (Healthy Citizen) App" to promote better lifestyle for better health.



Health & Longevity Fukushima Conference Panel Discussion



Fukushima Healthy App

An overview of Fukushima Health Management Survey

- 【Basic Survey】
- External exposure doses were estimated for a 4-month period immediately after the nuclear accident to 11 Jul. 2011, based on a self-administered questionnaire.
 - Results of estimate on external exposure dose (All citizens surveyed) Ratio of dose from 0 to 2mSv accounts for 93.8% of all. (As of 31 Mar. 2024)
- 【Detailed Survey (Thyroid Ultrasound Examination)】
- It covers residents of Fukushima Prefecture aged 18 years and younger at the time of the disaster.
 - *Preliminary Baseline Screening: FY2011-FY2013 Full-scale Thyroid Screening: FY2014-
 - (Primary Examination) Ultrasonography
 - (Confirmatory Examination) Advanced ultrasonography, blood test, etc.



Thyroid examination (Ultrasound imaging diagnostics)

Challenges

- **Reducing the residents' concerns about the health effects of radiation**
- **Educating the next generation** through child health promotion programs
- **Support for securing medical and caregiving professionals**, as well as facility operations, etc
- **Increasing cancer screening rates**
- The number (or rate) of people with **metabolic syndrome, child obesity is high**, compared with the national average
- **Extending people's healthy life expectancy** by encouraging a healthy lifestyle

(4) Re-establishing the living environment for people to return and relocate

Current Status

While the return and relocation to the evacuated areas are increasing with more evacuation orders being lifted, **the development of living environments for people to return and relocate has progressed**, such as public housing, commercial, medical and caregiving facilities in evacuation areas.

Examples of facilities having been built

◆ Revitalization Public Housing



Iwaki City: Iwasaki housing complex

◆ Shopping facilities



Namie Town:
Roadside-Station "Namie"

◆ Medical and caregiving services



Tomioka Town: Futaba Medical
Center-affiliated Hospital

◆ Educational facilities



Minamisoma City: Odaka Industrial
Technology and Commerce High School



Futaba Town:
Disaster public housing



Okuma Town: Okumart, Hot Okuma,
and Linkru Okuma complex facilities



Futaba Town:
Futaba Town Clinic



Okuma Town:
Manabiya Yumenomori

Efforts in evacuation areas to promote relocation

Fukushima Prefecture's Relocation Support Centre for 12 Municipalities

Established on 1 Jul. 2021 in order to facilitate relocation and permanent settlement in the 12 municipalities affected by evacuation orders resulting from the Fukushima Daiichi Nuclear Power Station Accident, this organisation engages in public projects better suited for wider-area collaboration and supports policies to promote relocation implemented by the aforementioned municipalities.



"The Relocation Monitoring Tour"

"Future Work Fukushima", an information website for relocation

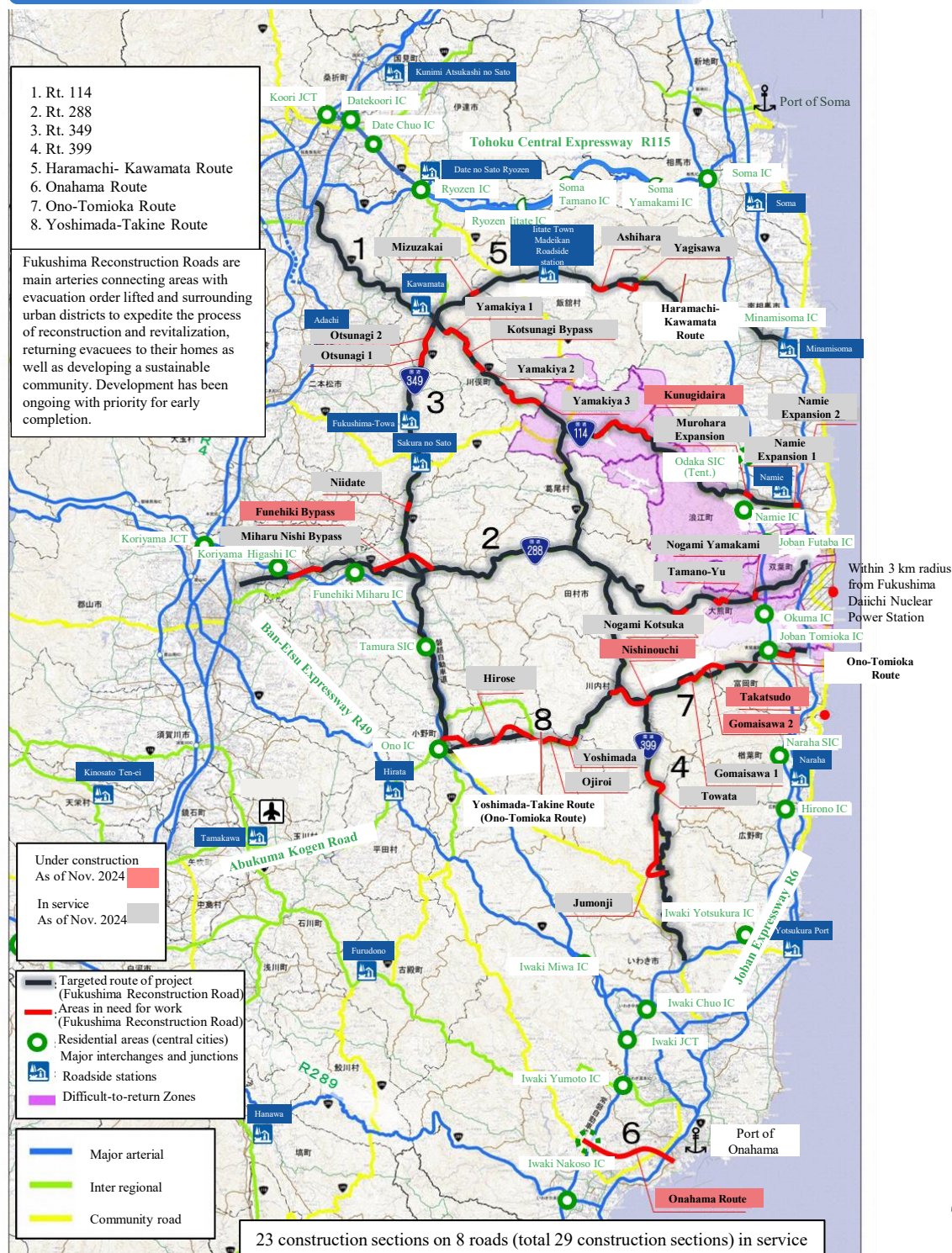
Website serving as an information hub on relocation to the 12 municipalities in the prefecture, presenting job opportunities, living conditions and unique characteristics of each region.

Challenges

- **Creating an environment where the disaster-affected and evacuees can rebuild their lives securely**
- **Continuing to provide consultation** regarding housing and rebuilding of livelihoods, as well as **looking after residents, providing support for everyday life and community building**
- **Providing a comprehensive medical and caregiving system based** on the needs of residents
- Further promotion of **distinctive and engaging education**
- **Encouraging people from outside the Prefecture to relocate and settle down as well as increasing the number of people visiting the Prefecture**

Current Status 99% of the initiated reconstruction projects related to the damages caused by the Great East Japan Earthquake has been completed, while the Fukushima Reconstruction Roads and other integral projects to the revitalization are underway.

Transportation networks such as roads



Reconstruction work (*1)

Starting construction work 100% Completion 99% 【 As of 30 Nov. 2024 】

【 The regions 】

Aizu	26	Completion 100.0%
Central	535	Completion 100.0%
Coastal	1,597	Completion 99.8%

Under construction (3 sites, 0.2%)

【 The Areas 】

Percentage of completion
100% ... Port and harbors, Fishing port, Sewage, Park, Public housing, Bridge, Sand erosion control, Road
About 99% ... River
About 98% ... Coast

【Evacuation-Designated Zones】 (*2)

There are 372 disaster recovery projects that were determined through assessment. All of them (100%) have started construction, and 369 sites (99%) have been completed. Construction plans in Difficult-to-return Zones will be adjusted with the progress of the decontamination work conducted by the national government.



- *1 Reconstruction work for public infrastructure facilities of the prefecture damaged by the Great East Japan Earthquake.
- *2 The Evacuation-Designated Zones include Difficult-to-return Zones, former Habitation Restricted Areas, and former Preparation Areas for Lift of Evacuation Orders.



The Yoshimada-Takine Route on the Prefectural Road (Hirose construction section) opened 13 Apr. 2024



National Route 349 (Otsunagi District in Kawamata Town) In service as of 21 Mar. 2023

Challenges

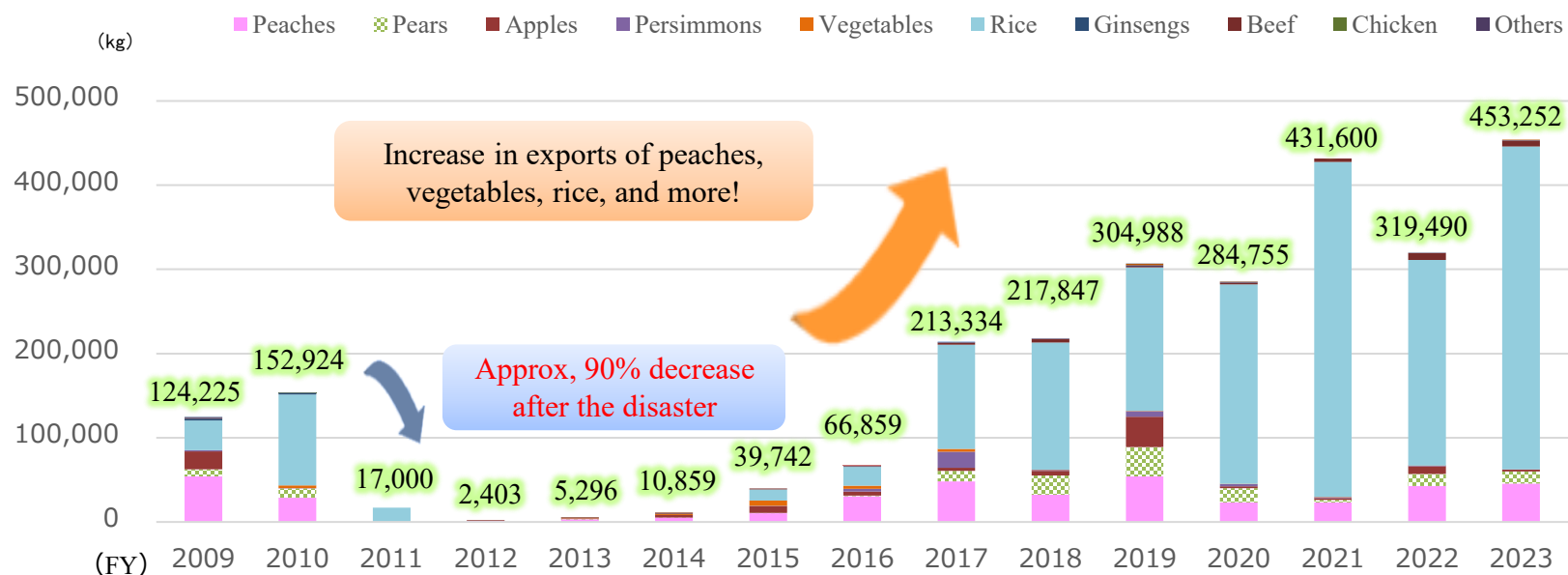
- Reconstruction of public works facilities and coasts in the Difficult-to-return Zones
- Development of the Fukushima Reconstruction and Revitalization road, development of roads in the 12 municipalities where evacuation orders had been issued

*Evacuation-Designated Zones as of 30 Nov. 2023

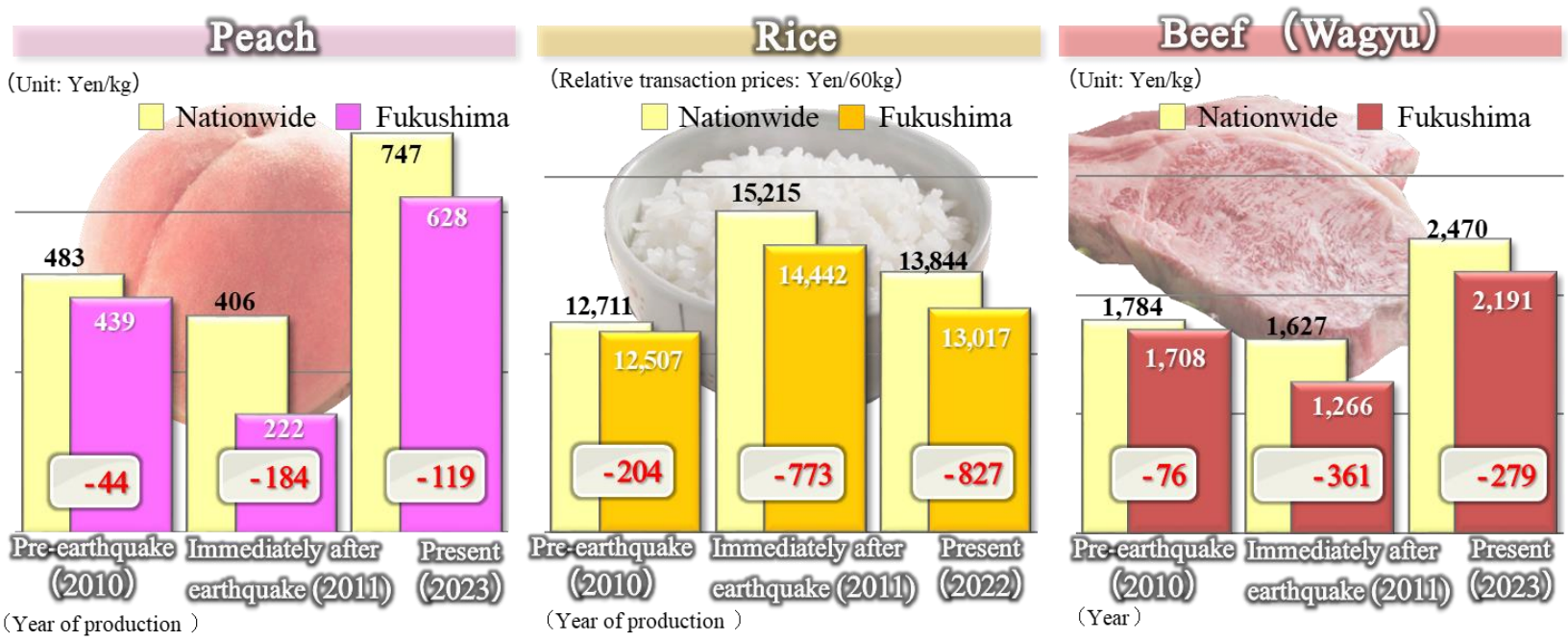
Current Status

The number of countries and regions restricting imports of **Fukushima products has fallen to 6, which was originally 55 in the aftermath of the nuclear accident**. Exports exceeded pre-disaster levels, reaching the highest export volume ever in FY2023. On the other hand, while the price of locally produced agricultural products of Fukushima generally shows signs of recovery, the price difference from the national average has not yet been restored for some items.

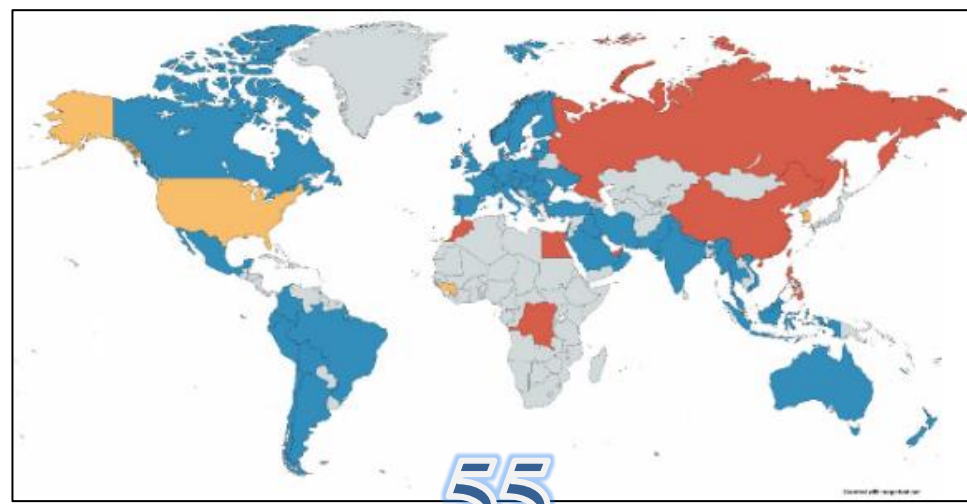
Agricultural product exports



Transition of prices of major agricultural products and price differences from the national average



Number of countries or regions with import restrictions



(As of 25 Sep. 2024)

- Countries and regions imposing an import ban on a wide range of products produced in Fukushima (12→3) China, Hong Kong, Macao
- Countries and regions imposing an import ban on some of the products produced in Fukushima (4→2) Korea, Russia
- Countries and regions allowing import of foods only when inspection certificates are attached (39→1) Taiwan

Source: Tokyo Metropolitan Central Wholesale Market "Market Statistics Information"

Source: Prefectural estimate based on "Relative Trading Price of Rice" by the Ministry of Agriculture, Forestry and Fisheries

Source: Tokyo Metropolitan Central Wholesale Market "Market Statistics Information"

Strengthening distribution and sales capabilities

◆ Strategic branding



Improving the image and pricing of the prefecture's original varieties

◆ Expanding consumption and sales channels



Top sales for Fukushima-produced fruits and vegetables

◆ Ensuring food safety and security

Monitoring inspections on Fukushima's agricultural, forestry and fisheries products for radioactive materials (1 Apr. 2023 ~ 31 Mar. 2024)

FY 2023	Item	Number of Inspections	Number of cases exceeding the standard limit
	Brown Rice (*1)	424	0
	Vegetables & Fruit	1,875	0
	Livestock products (Raw milk, meat, chicken eggs)	1,716	0
	Cultivated mushrooms & mountain plants	552	0
	Fisheries products (Marine & cultivated products)	3,366	0
	Wild mushrooms & mountain plants	401	0
	Fisheries products (River, lake, pond)	153	0



The standard amount of radioactive cesium allowed in food (Becquerels/kg) (*3)

Japan	EU	USA	CODEX
100	1,250	1,200	1,000

*3: International food standards

*1: While inspections of all grains of all bags had been implemented for brown rice throughout the prefecture by the 2019 rice harvest, this practice transitioned to monitoring starting from the 2020 rice harvest, except for the municipalities that were subject to evacuation orders. Therefore, the number of brown rice samples aligns with those undergoing monitoring. For the 2023 harvest, the all grains of all bags inspections are implemented only in 9 municipalities, with no samples exceeding the standard limit.
 *2: Does not include wild fruits

Strengthening productivity and competitiveness

◆ Establishing high-value-added production areas



Supporting the establishment of areas broadly developing high-value-added production

◆ Fukushima Model fisheries



Production of high-value-added products and branding through premium fresh shipping

◆ Obtaining GAP and other certifications



Efforts to dispel harmful rumours and build trust in producers

◆ Research and development supporting production



Development of robot tractors to overcome labour shortages in evacuation areas

Challenges

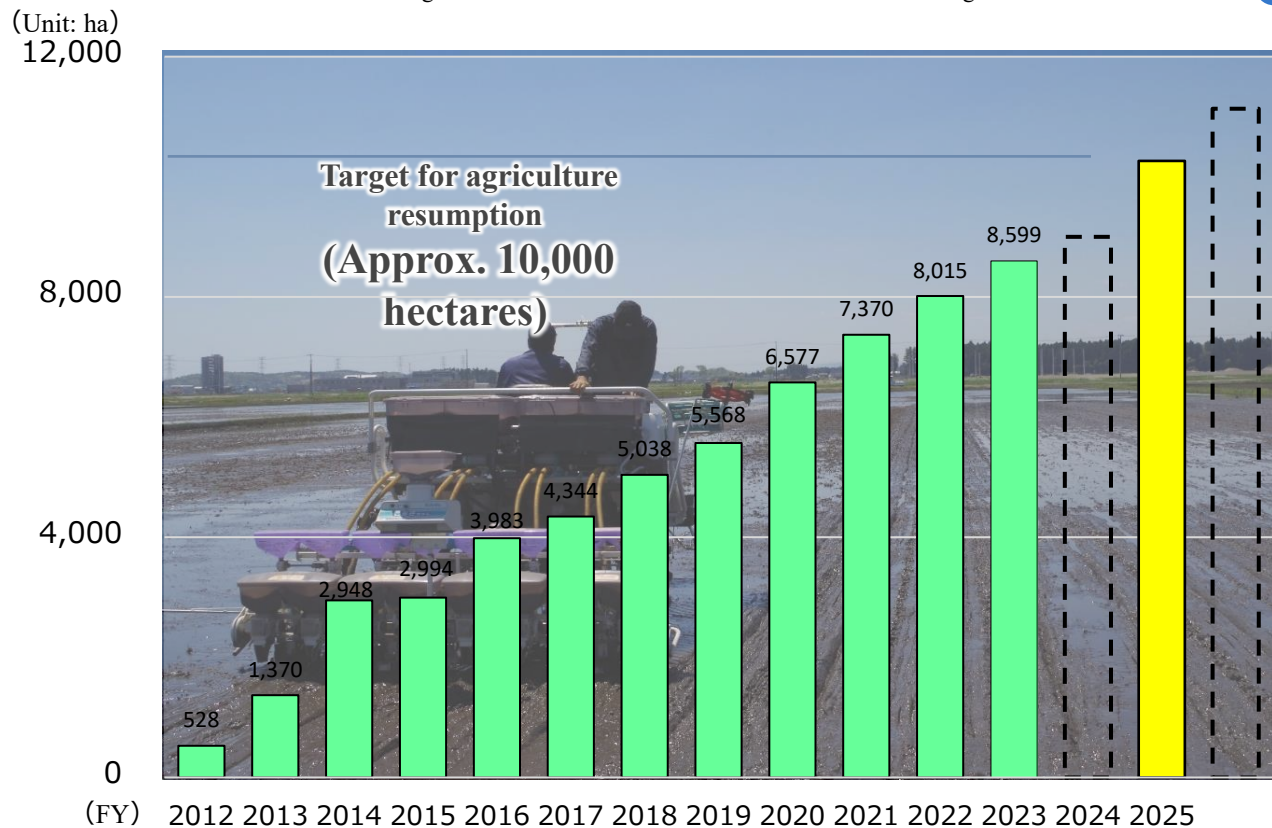
- **Regaining the price of agricultural products** to the national average (**Promoting branding of Fukushima products**)
- **Disseminating information about safety** based on scientific evidence **nationally and internationally**
- **Promoting "Fukushima Model of Fisheries"** aimed at **higher profits with less effort than before the disaster**
- **Strengthening productivity and competitiveness** by establishing high-value-added production areas, obtaining GAP and other certifications and development/demonstration of advanced technologies

Current Status

Agriculture has gradually resumed in areas where evacuation orders have been lifted, reaching a **resumption rate of 49.7% (8,599ha) as of the end of Mar. 2024**. In addition, for **the coastal fishing industry, which is working towards the recovery of full-scale operations, the catch volume in 2023 reached 6,644 tons**, with **the catch value amounting to 43% of the pre-disaster level**.

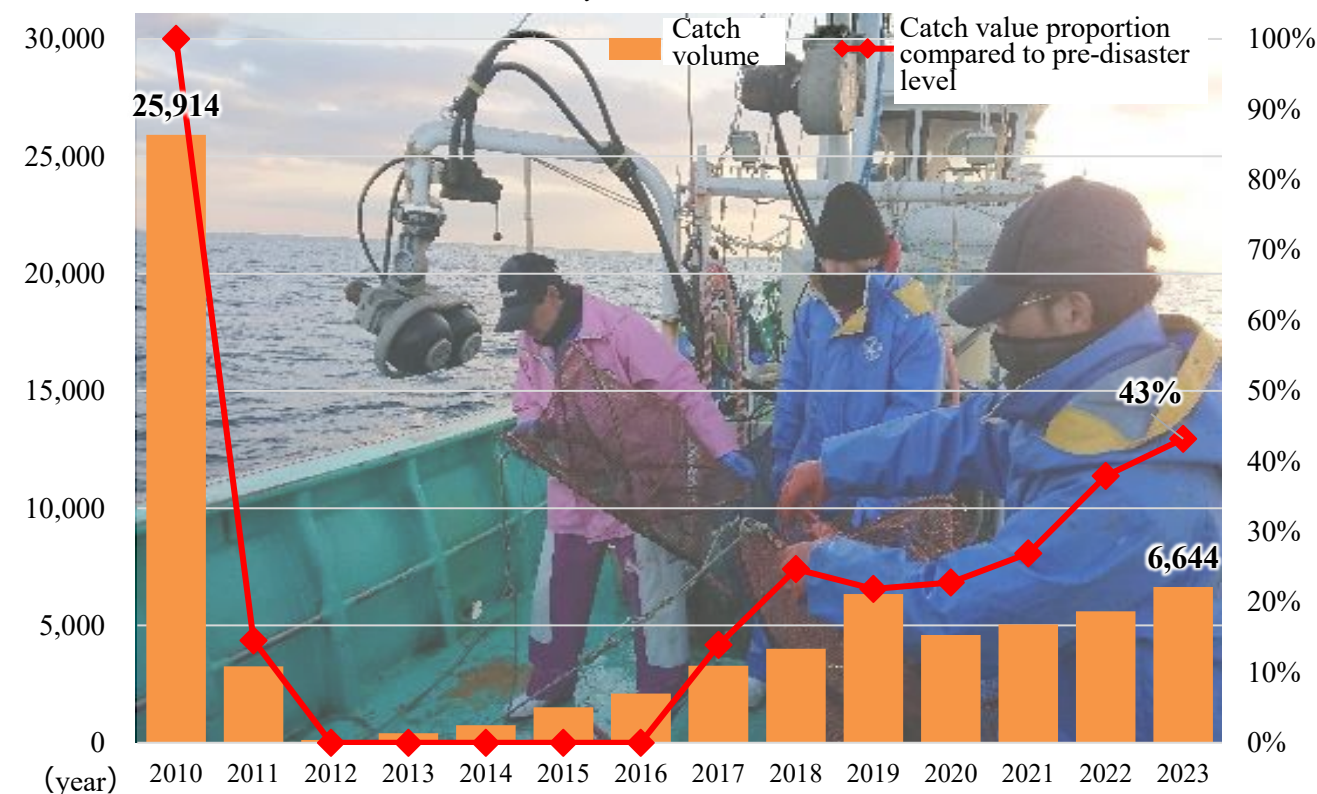
Transition of agriculture resumption areas in evacuation areas

Source: Fukushima Prefecture Agricultural Promotion Division "Area of resumed farming as of the end of FY2022"



Coastal fisheries catch volume / Transition of catch value proportion to pre-disaster level

(unit: ton) Source: Fukushima Prefecture Marine Fishery Catch Statistics



Securing and developing new agricultural practitioners



Strengthening production infrastructure



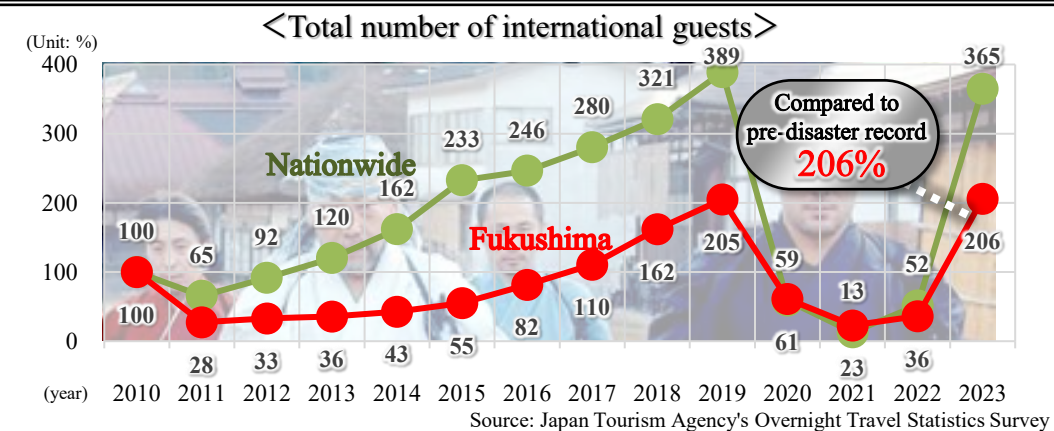
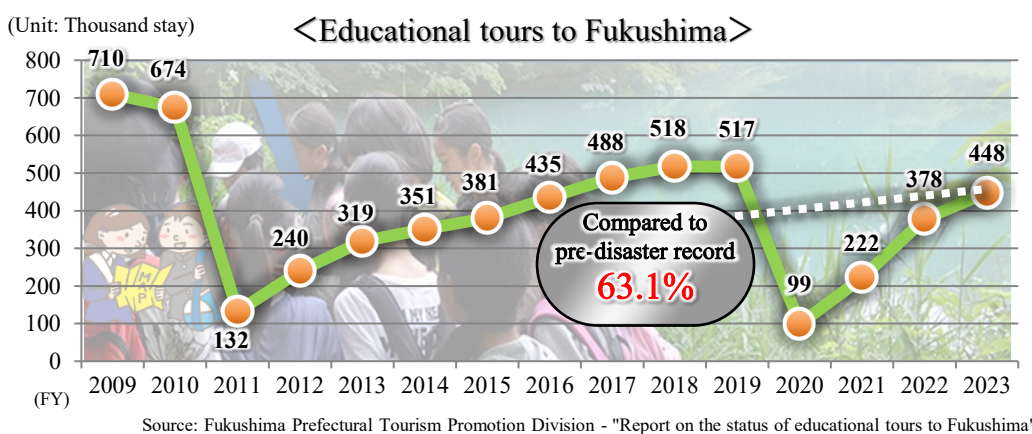
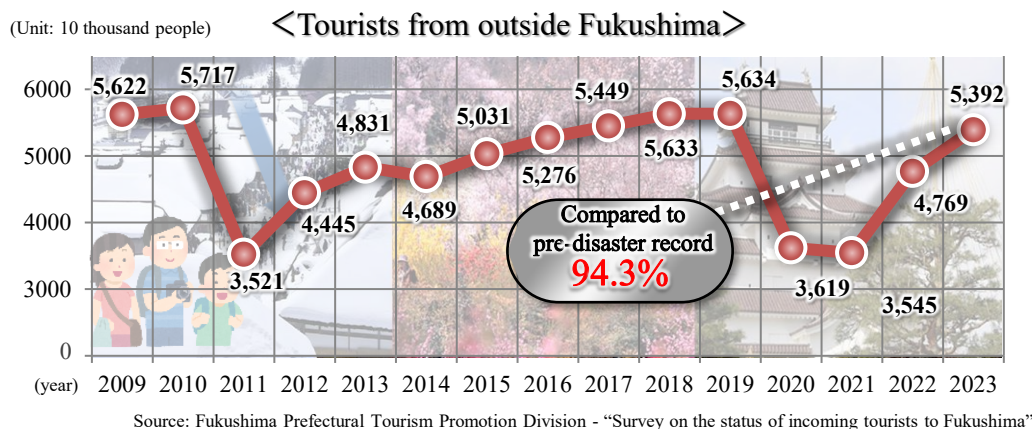
Challenges

- **Further acceleration of agricultural resumption**
- **Securing and developing new practitioners** in agriculture, forestry and fisheries industries
- Developing farmland for practice of Smart Agriculture throughout the field expansion, versatile use/conversion to dry field of rice paddy
- Promoting measures **against radioactive materials necessary for the maintenance of forests** as well as **revitalizing the forest areas** for logs and minor forest products
- **Resumption of coastal fishery**

Current Status

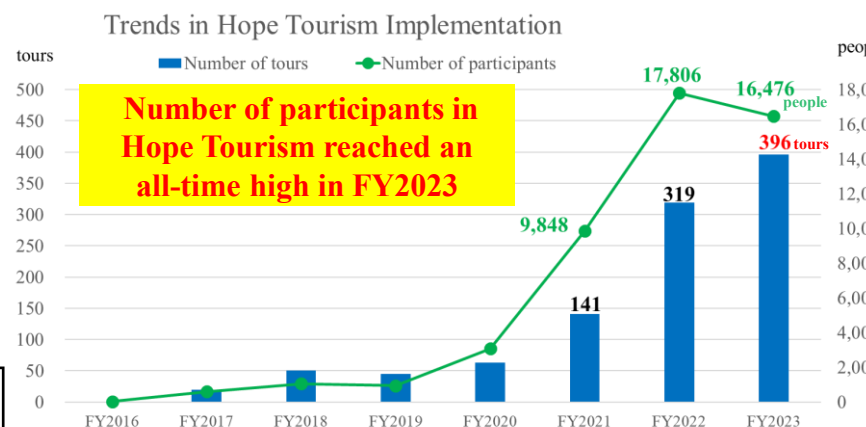
Decline in incoming tourist population due to the impact of COVID-19 pandemic and repeated Fukushima-Oki (offshore) earthquakes in 2021 and 2022. **After the pandemic, the number of tourists and educational tours have been on a recovery trend. Export shipments of Fukushima products reached an all-time high in FY2022. Export value of prefectural products reached an all-time high in FY2022, and the number of participants in Hope Tourism reached an all-time high in FY2023.**

Changes in the number of tourists visiting



Implementation of various projects focusing on Hope Tourism to stimulate tourist attraction

- Hamadori blue tourism: Fukushima Prefecture's Hamadori blue tourism promotion project
- Adventure tourism: Project to promote the branding of adventure tourism and other activities
- Fermentation tourism: Fukushima Prefecture's fermented food and culture promotion project
- Green tourism: Fukushima Prefecture's green tourism promotion project

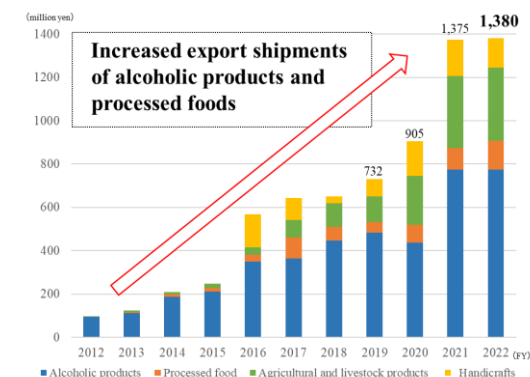


Hope Tourism

- Disaster remains of Ukedo Elementary School of Namie Town
- The Great East Japan Earthquake and Nuclear Disaster Memorial Museum
- J-Village

Transition of export shipments of Fukushima products

- The value of export shipments of Fukushima products (alcoholic products, processed foods, agricultural and livestock products, handicrafts) in FY2022 was 1.38 billion yen, reaching an all-time high.
- The prefecture will work to further expand exports by developing effective promotions that firmly convey the appeal of local products to people overseas.



Challenges

- **Attracting more visitors to Fukushima through various projects** in order to accelerate the revitalization of Fukushima, the 18th goal of the SDGs
- **Recovering educational tours by inquiry-based learning programmes focusing on Hope Tourism** as well as by continuously spreading information and marketing
- **Disseminating accurate information to attract foreign tourists** from countries where harmful rumors about Fukushima persist.

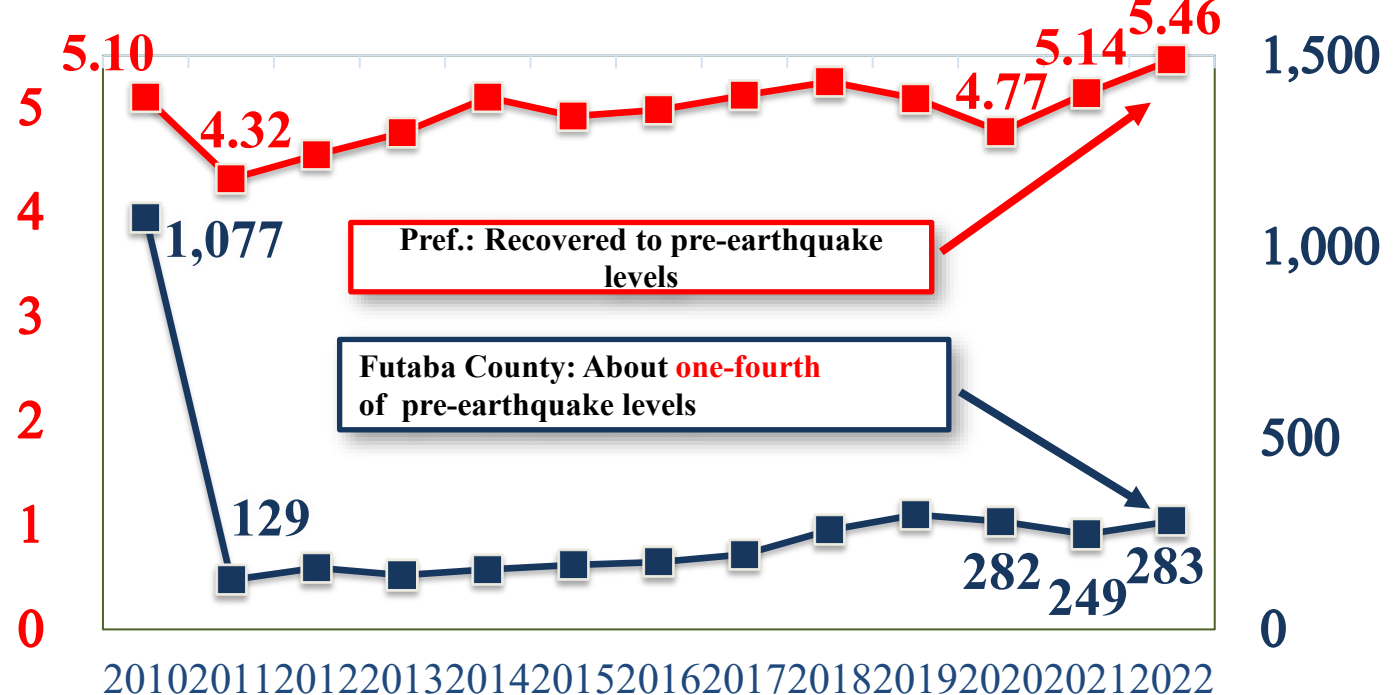
(6) Industry 3. Business investment and employment creation

Current Status Promoting business investment. Manufactured product shipment has recovered to pre-earthquake level for the prefecture in general. However, **in Futaba County, product shipment remains at only about one fourth of the pre-earthquake levels.**

The shipment value of products

◆ **The shipment value of products (Fukushima Pref.)**
(Unit: Trillion JPY)

◆ **The shipment value of products (Futaba County)**
(Unit: 100 million JPY)



Source: Industry in Fukushima Prefecture ※ Businesses with four or more employees

Business investment support utilising the Fukushima business investment subsidy

*As of 31 Mar. 2024

① Fukushima business investment subsidy for revitalization of industries (FY2012-FY2020)

601 entities 7,405 jobs created (projection)

② Subsidy to business investment for employment creation in the tsunami and nuclear disaster-affected areas (FY2013-)

212 entities 2,715 jobs created (projection)

③ Subsidy for investment promotion for the support of self-help and return and the employment creation (FY2016-)

140 entities 1,444 Jobs created (projection)

④ Fukushima business investment subsidy for industrial vitalization (FY2020-)

35 entities 363 jobs created (projection)

Employment within the prefecture
988 companies 11,927 employees
Employment in Hamadori(Coastal) Region
398 companies 4,466 employees



“Signing ceremony for the basic agreement on factory investment”

Business investment support utilising special provisions for taxation (preferential tax system)

In Fukushima Prefecture, when businesses designated by law establish or expand production equipment or facilities, or employ disaster-affected citizens, preferential tax treatment for corporate taxes (income tax) and local taxes (for business, real estate acquisition and fixed property) may be applied subject to meeting certain conditions.

Challenges

- **Introducing new vitality** through business investment
- Recovery of the industrial bases in Futaba County and the Coastal Region. **Accelerating the Fukushima Innovation Coast Framework** to develop self-sustaining and continuous industry growth (**Creation of new industries with the involvement of local companies in Hamadori (Coastal) Region** through support for technological development)
- **Supporting** disaster affected companies in Futaba County and other businesses **to resume operations** and **promoting expansion of business from outside of the Prefecture**

(6) Industry 4. The Fukushima Innovation Coast Framework I

Current Status

In order to recover the industries in the Hamadori and other areas lost due to the Great East Japan Earthquake and nuclear disaster, strategic installations in the priority fields of **the Innovation Coast Initiative** are progressing, and **efforts are being made to implement the initiative**, such as industrial integration through inviting business investment and promoting business start-ups within and outside of the prefecture, education/human resource development and increasing the number of people visiting the prefecture.

The Fukushima Innovation Coast Framework

The Hamadori (Coastal) Region, among other regions, faced the loss of workplaces due to the earthquake and nuclear disaster. **To achieve the region's revitalization**, it is essential to **create a new industrial infrastructure** while advancing the resolution of the Fukushima Daiichi Nuclear Power Station Accident as a prerequisite for that.

A national project that aims to build a new industrial infrastructure to regain the lost industries in the region. Six priority fields have been identified, and initiatives are being pursued, such as **industrial integration, education/human resource development and increasing number of visitors**, in addition to **the implementation of major projects** including completion of installations such as Fukushima Robot Test Field, among others.

6 priority fields

I Decommissioning

Developing technology by gathering wisdom from Japan and around the world



Demonstration tests necessary for decommissioning, etc. are carried out at JAEA Naraha Center for Remote Control Technology Development

II Robots and Drones

Integrating robotics industry with the Fukushima Robot Test Field positioned as its core



The Fukushima Robot Test Field replicating the operating environment of land, sea and air field robots

III Energy, the Environment and Recycling

Establishment of advanced renewable energy and recycling technologies



Promotion of renewable energy introduction and accelerating implementation by developing shared transmission lines

IV Agriculture, Forestry and Fisheries Industries

Revitalization of agriculture, forestry and fisheries industries utilising ICT and robotic technologies



Establishing an agricultural model utilising ICT "Demonstration of unmanned tractor operation"

V Healthcare-related industries

Promoting an integration of pharmaceutical industry through technology development support



"Medical-Industrial Translational Research Center"

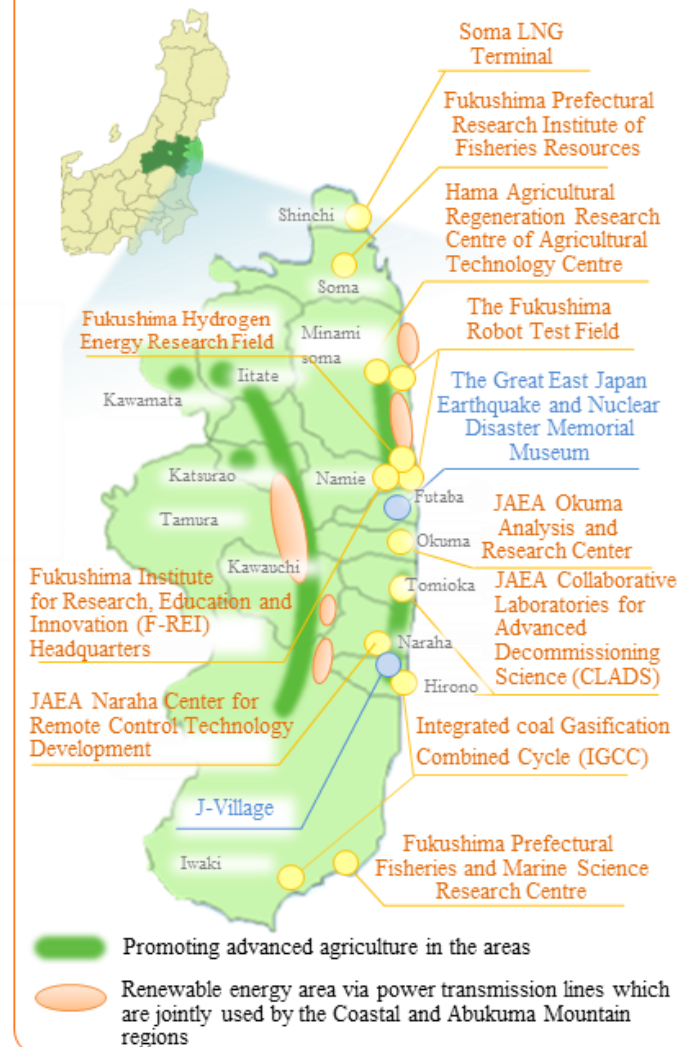
VI Aerospace industries

Demonstration of 'Flying Cars' and attraction of related companies



"Aerospace Festa Fukushima"

Map of the main facilities for the major projects



(6) Industry 4. The Fukushima Innovation Coast Framework II

Initiatives towards the realization of the framework

Clustering of industries

Helping to promote business investment and supporting companies inside and outside the region to start business

- ◆ Innovation Area Business Investment Seminar



- ◆ A pitch event for start-ups in the Hamadori area aiming to start a business or develop technology to demonstrate the results of their research and work (Fukushima Tech Create program)



Spreading information

Passing down the records and lessons learnt from the compound disaster to future generations

- ◆ In Jul. 2024, the number of visitors reached 300,000 at the Great East Japan Earthquake and Nuclear Disaster Memorial Museum, which opened in Sep. 2020.



Inside the Great East Japan Earthquake and Nuclear Disaster Memorial Museum

- ◆ On 7 December 2024, a symposium was held at the Naraha Town Community Center with the theme of "Building a Destination of Wisdom and Human Resources to Realize the Innovation Coast Framework." The event featured a keynote speech delivered by Norito Sato, Executive Vice President, Okayama University, a national university corporation (Innovation Coast Framework, Innovation Advisor), introductions to the initiatives of companies and organisations in the Innovation Area, presentations of research projects by Naraha Junior High School students, talk sessions, and panel displays.



Expanding the non-resident population

Expanding the non-resident population in the Coastal Region and other areas where the number of residents has decreased due to evacuation

- ◆ Conducting social interaction project inviting businesses and youths to create bonds with communities of Hamadori (Coastal) Region.



- ◆ Robotics and programming classes The Fukushima Robot Test Field hosts programs for elementary and junior high school students of Fukushima



Fostering human resources in education

Fostering the youth force who will carry the future of the Coastal Region

- ◆ The Revitalization Knowledge Project



- ◆ Seminars have been held for residents for them be familiar with the efforts of the Fukushima Innovation Coast Framework



◆ Odaka Industrial Technology and Commerce High School

The school is working to develop human resources with advanced knowledge and skills that can handle new industries through the human resource development system linked to these industries as well as the collaboration between commercial and industrial academic courses.

◆ Futaba Future School Junior and Senior High school

Fostering future global leaders as core schools of the Ministry of Education, Culture, Sports, Science and Technology's "Project to Support Development of the World Wide Learning (WWL)", establishing curriculums of Community Development, Search for Future Creation and fostering top-class athletes.



Re-establishment of the living environment

Creating an environment necessary for people to safely live

- ◆ Development is progressing for public infrastructure
 - Tohoku Chuo Expressway
 - Joban Expressway
 - JR Joban Line

- ◆ Scheduled bus service available
 - From Futaba Station to Fukushima Station West Exit via Fukushima Robot Test Field



The preferential tax system to promote the Fukushima Innovation Coast Framework

Special provision for taxation will be applied to businesses that invest in equipment, employ people affected by the disaster and carry out R&D in relation to the development of new products in the priority fields of the initiative.

Challenges

➤ **Creating an economic ripple effect in the Prefecture by connecting businesses to the innovation projects** and enhancing industrial clustering

Current Status On 1 Apr. 2023, **the Fukushima Institute for Research, Education and Innovation (F-REI) was established** in Namie Town as a world-class core centre for "creative reconstruction". It is necessary for its effects to be widely and quickly realised.
※ F-REI stands for Fukushima Institute for Research, Education and Innovation

Overview of F-REI

- F-REI is a legal entity established by the Government of Japan as a world-class core centre for creative reconstruction with the goal of realising the revitalization of Fukushima and other parts of the Tohoku region, as well as contributing to Japan's scientific and technological capabilities and industrial competitiveness. F-REI is expected to drive the Fukushima Innovation Coast Framework further ahead.
- F-REI headquarters were opened at "Fureai Center Namie" in Namie Town on 1 Apr. 2023. Facilities and research equipment will be in place hereafter.

Innovation Coast Framework and F-REI

- Accelerating research and development, industrialization and human resource development by further developing Fukushima Innovation Coast Framework and establishing a command post that coordinates initiatives at existing research facilities.
- The initiatives in industrial integration under the Innovation Coast Framework contribute to research, development and industrialisation at F-REI.

Four Functions of F-REI

1. Research & Development
Promotion of five research and development areas

2. Industrialization
Establishing industry-academia collaboration system

3. Fostering human resources
Development of research personnel and collaboration with technical colleges

4. Control Tower
Organising council to coordinate initiatives at existing facilities



Five Areas in R&D

1. Robots





Search and rescue of disaster victims using robots and drones

2. Agriculture, Forestry and Fisheries Industries



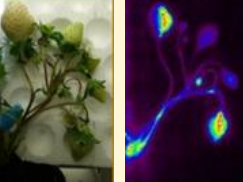

Smartification of agriculture, forestry, and fisheries (agricultural control systems)

3. Energy





Achieving carbon neutrality (manufacturing chemical products using biochemical processes)

4. Radiation Science, Medicine and Drug Development & Industrial Applications for Radiation



Research and development in radiation imaging technology

5. Collection and Dissemination of Data and Knowledge on Nuclear Disasters



Practice and impact assessment of revitalization/community reconstruction

F-REI Activities



8 Jul. 2024 Fukushima Prefecture, JAEA, NIES, and F-REI concluded a basic agreement and an implementation agreement for collaborative cooperation at the Centre for Environmental Creation.



2 Aug. 2024 F-REI visiting lecture (Iwaki High School)



4-5 Oct. 2024 WRS Harsh Environment F-REI Challenge Pre-Tournament Event (Fukushima Robot Test Field)



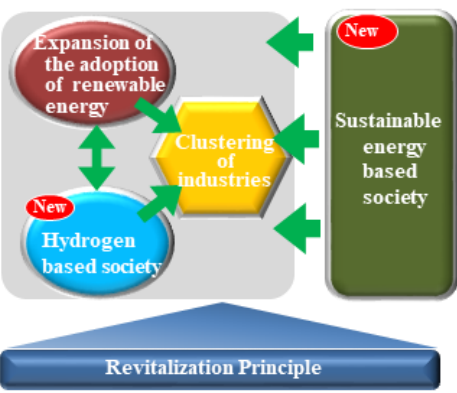
18 Nov. 2024 Seminar to Promote Participation in the Innovation Coast Framework, F-REI Municipal Roundtable Meeting (Aizu and Minamiaizu regions)

Challenges ➤ Collaboration with the national government and relevant organisations for **the best practice of F-REI's R&D, industrialisation and HR development functionality**

(6) Industry 6. Renewable energy

Current Status

Under the revitalization principle (building a safe, secure and sustainably developing society free from nuclear power) and renewable energy promotion vision, efforts are being made to expand **the renewable energy adoption, promote the integration of related industries and realise a hydrogen based society, with the aim of becoming a pioneering region in renewable energy.**



Revitalization principle and renewable energy promotion vision

- ◆ Revitalization Principle: Building a safe, secure sustainably developing society free from nuclear power
- 1. Switch to low carbon/circular society with less environmental impact
- 2. Revitalization (Promotion of local community)
- ◆ Initiatives will be conducted focusing on the four pillars under the "renewable energy promotion vision"

Targets of adoption

Index	Targets	Present state
Amount of the adoption of renewable energy in relation to the Prefecture's energy demand	100% (2040)	54.9% (FY2023)
Amount of the adoption of renewable energy for the amount of power consumed in the Prefecture	100% (FY2025)	102.9% (FY2023)
Number of stationary hydrogen station installed	20 Units (FY2030)	6 Units (FY2024)

Hubs for renewable energy in the Prefecture

Hub for research

Fukushima Renewable Energy Institute, AIST (FREIA)

Koriyama City

Small-scale hydropower

Shinobuyama Endogataki Otama Daiichi small-scale hydropower station

Otama Village

Biomass

Green Power Aizu Woody biomass power station

Aizuwakamatsu City

Geothermal

Tsuchiyu Onsen Source No. 16 Binary Power Plant

Fukushima City

Wind Power

Koriyama-Nunobiki Kogen wind farm

Koriyama City

Solar power

Fukushima Airport Mega Solar

Sukagawa City
Tamakawa Village

Clustering of industries

- ◆ Promotion for development of technologies related to renewable energy/hydrogen, commercialization, expansion of market channels and overseas expansion
- ◆ Promotion of recycling of solar power, etc.



Sustainable energy based society

- ◆ Local production and local consumption of energy in communities, promotion of Smart Community
- ◆ Consideration of environment and landscape, etc.
- ◆ Implementation conservation



Realising hydrogen based society

- ◆ Hydrogen can be generated from renewable energy and other resources, stored for a long period of time and does not emit CO₂ while being utilized.
- ◆ Hydrogen stations, fuel cell bus, and fuel cell vehicles were adopted in various places.



Fukushima Hydrogen Energy Research Field (FH2R)



fuel cell bus



Green hydrogen-driven Bus



Utilisation of prefecture-produced hydrogen in Tokyo

Challenges

- **Switch to low-carbon society** through efforts to save natural resources and conserve energy
- **Create systems that gives back profit to the local community**
- **Local production for local consumption of energy**
- **Attract companies related to the industries. Foster new industries and create jobs**

(7) Efforts towards decommissioning I

Current Status

Efforts toward decommissioning of TEPCO Fukushima Daiichi and Daini Nuclear Power Stations are ongoing. The Association for Monitoring of Safety in Decommissioning and other entities are continuing to monitor the process **to ensure safe and steady decommissioning work.**

Fukushima Daiichi NPS

Contaminated Water Measures

In order to reduce the volume of contaminated water, steps have been implemented to prevent the influx of groundwater and to deter rainwater from seeping in.

Facing (covering work using asphalt, etc.) of the ground surface within the premises is currently in progress.



Before facing (near Unit 3)



After facing

Fuel Removal from Spent Fuel Pools

Work is proceeding to remove spent fuel and other materials.



Installing a large cover for Unit 1

Unit 1: Operation of installing a large cover has been in progress to remove rubble from the upper part of the pool from Apr. 2022.

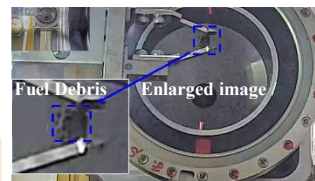
Unit 2: In June 2024, the steel frame assembly of the access gantry for fuel removal was completed, and the installation of cranes and other fuel-handling equipment is underway.

Unit 3: Fuel removal was completed in Feb. 2021.
Unit 4: Fuel removal was completed in Dec. 2014.

Examples of the initiatives towards decommissioning

Fuel Debris Retrieval

Examinations and preparations are underway for the test retrieval of melted fuel (fuel debris).



Unit 2 Retrieving the fuel debris in a transportation box (©IRID)

Unit 1: From September to October 2024, an environmental survey inside the primary containment vessel (PCV) was conducted.

Unit 2: Test retrieval of fuel debris using a telescopic device was completed on 7 November 2024. The retrieved fuel debris was sent to an analysis facility in Ibaraki Prefecture on 12 November 2024.

Unit 3: An additional investigation and analysis inside the primary containment vessel are being planned.

Measures against radioactive waste

The incineration and installation of storage facilities for the waste generated during decommissioning work have been conducted.



Exterior view of solid waste storage 10 (left: Building B; right: Building A)

• Completed construction of three buildings of solid waste storage 10 (A, B, and C) for temporary storage of debris and other materials, with Building A put in service in August 2024 and Building B in October 2024 respectively. (Building C with expected service commencement in March 2025.)

• The expanded miscellaneous solid waste incineration facility is currently out of service due to steam and gas emissions. (Restoration will be completed by the end of Fiscal 2025.)

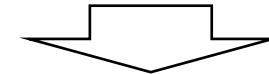
Fukushima Daini NPS

Pathway to decommissioning

11 Mar. 2023 The Great East Japan Earthquake and Fukushima Daiichi Nuclear Power Station Accident



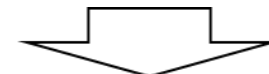
Unit 3 immediately after the hydrogen explosion



Apr. 2012 Decision to decommission Fukushima Daiichi Nuclear Power Station Unit 1 to 4

Jan. 2014 Decision to decommission Fukushima Daiichi Nuclear Reactors 5 and 6

Sep. 2019 Decision to decommission Fukushima Daini Nuclear Reactors 1 to 4 (Decision to decommission all nuclear reactors within the prefecture)



Current unit 3

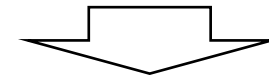
Key milestones for the future

From November 2024 Fuel Debris Analysis

Within 2025 Suppression of daily generation of contaminated water to less than 100m³ per day (achieved 90m³ in FY2022)

Within FY2028 Eliminating outside temporary storage areas for rubble and other waste

Within 2031 Fuel removal from spent fuel pools in Units 1-6 completed



Daiichi NPS: Completion of decommissioning expected in 30 to 40 years (around 2041 to 2051)

Daini NPS: Completion of decommissioning expected in 44 years (around 2065)

- ◆ For the decommissioning of all four units, TEPCO has formulated a 44-year "Decommissioning Plan", implementing the decommissioning process in four stages.
- ◆ At this point, activities such as the investigation of contamination levels and the decontamination works are underway in the first stage, known as the "Dismantling Preparation Period".

ALPS treated water

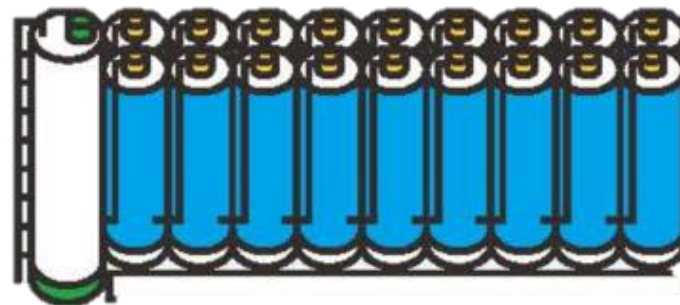
- ◆ The cooling water for the melted fuel (fuel debris) due to the nuclear accident, as well as rainwater and groundwater that flowed into the reactor buildings and subsequently came into contact with debris, results in the generation of contaminated water containing radioactive materials.
- ◆ Water in which radionuclides, except tritium, are removed from the contaminated water below the national regulatory standards by using the multi nuclide removal equipment (ALPS) is referred to as **ALPS treated water**.
- ◆ The inter-ministerial council reached a decision to start the discharge of the water into the sea on 24 Aug. 2023, and the discharge started on that day.

Contaminated water



Source: Created based on the Ministry of Economy, Trade and Industry website https://www.meti.go.jp/earthquake/nuclear/hairo_osensui/pdf/alps_02.pdf

Multi-nuclide removal equipment (ALPS) *and other equipment



*Equipment to purify radioactive materials except for tritium to below national standards

Source: TEPCO's Fukushima Daiichi Nuclear Power Station "Hairo Michi" vol40

ALPS treated water



Source: An edited version of the METI website https://www.meti.go.jp/earthquake/nuclear/hairo_osensui/pdf/alps_02.pdf

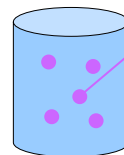
Water Storage Tank



Photo by Fukushima Prefecture

Analysis of 69 radioactive materials including tritium

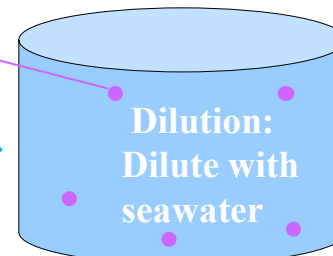
ALPS treated water before dilution



Verify radioactive materials other than tritium being below national regulatory standard

dilution

ALPS treated water after dilution (1,500Bq/L)



Dilute tritium to below the national regulatory standard (60,000 Bq/L)

Discharge into the sea

Challenges

- It is necessary **to have continuous surveillance carried out by the Association for Monitoring the Safety in Decommissioning** to ensure the decommissioning progresses safely and steadily
- For the discharge of the treated water into the sea, **the national government should take the lead role and full responsibility up** to the completion of the mission ensuring safety of the work, dissemination of accurate information both in and out of the country, comprehensive measures against harmful rumours as well as prompt and solid compensation by the coordinated efforts of whole government

(8) Strengthening the countermeasures against harmful rumours and the fading awareness of the disaster


Current Status As 13 years have passed since the earthquake, **persistent rumours still remain, while public awareness fades** as interest in the prefecture declines.

Fukushima Prefecture's strategies to strengthen measures to fight harmful rumours and fading public interest


- ◆ Policies to strengthen countermeasures
 1. Continuing persistent initiatives and taking on new challenges
 2. Spreading the latest and accurate information to have further updated information
 3. Build trusting relations through collaboration and co-creation

◆ Policies in each sector (Direction and Main Initiatives for Strengthening Measures)

Agricultural, forestry, and fisheries products and Fukushima products <ul style="list-style-type: none"> ◆ Strengthen measures for distribution and sales ◆ Improve the brand power and expand exports ◆ Increase consumer confidence 	Tourism <ul style="list-style-type: none"> ◆ Attracting visitors from domestically and internationally ◆ Promoting international charter flights 	Priority measures <ul style="list-style-type: none"> Promoting understanding at home and abroad <ul style="list-style-type: none"> ◆ Spread accurate information ◆ Spread the charms ◆ Spread information using bonds Strong support for businesses <ul style="list-style-type: none"> ◆ Strengthen measures for fisheries industry ◆ Promote production and consumption of local food ◆ Enhancing the local charms, brand power and expanding exports
Spreading information (cooperation, co-creation, etc.) <ul style="list-style-type: none"> ◆ Spread information in cooperation with each department ◆ Spread information about the current situation and the charms of Fukushima ◆ Expand the collaboration and co-creation 	Underlying measures <ul style="list-style-type: none"> ◆ Thoroughly inspect the food ◆ Have risk communication concerning radiation ◆ Spread information about the progress in restoring the environment 	



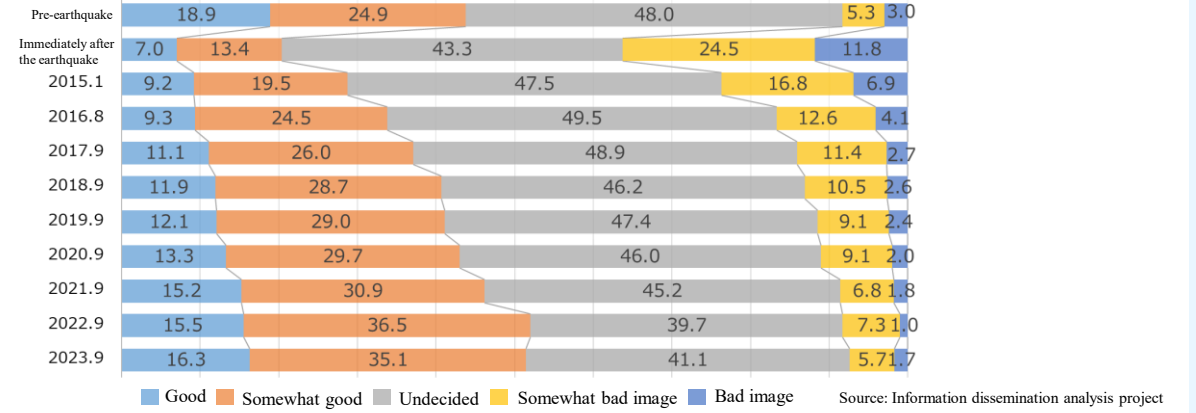
The Hama Festival in Tokyo



Promoting agricultural, forestry, and fishery products overseas

Achievements and Current Status of Countermeasures against Harmful Rumours and Fading Awareness

■ Analysis of Social Recognition related to Rumours and Fading Awareness (Sep. 2023)
 “Percentage of people with a good image of Fukushima”
 ■ As of Sep. 2023, "Good image" group ("Good" and "Somewhat good" combined) is **51.4%**. (compared to 20.4% immediately after the disaster)




◆ Field Survey on Consumer Awareness Related to Harmful Rumors (Consumer Affairs Agency 7 Mar. 2024)

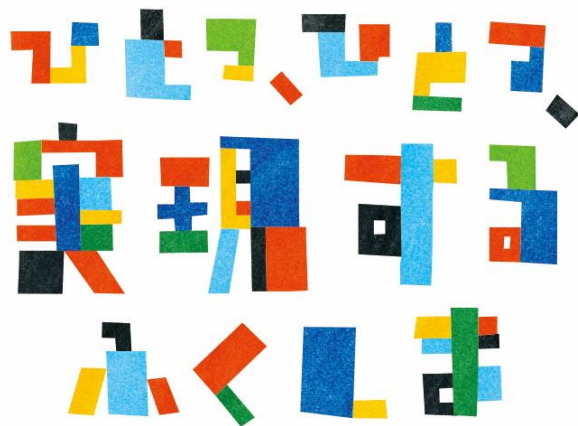
“Place of food production consumers are reluctant to purchase because of radioactive materials”
“Reluctant to purchase products from Fukushima”
 (Of those concerned about radioactive materials in food products) **4.9%** (2013.2...19.4%)
 “Inspection of radioactive materials in food products”
“Do not know that inspection is conducted” 61.5% (2013.2...22.4%)

The preferential tax system for measures against harmful rumours

A preferential tax system is in place for businesses that combat harmful rumours about industries such as agriculture, forestry, fishery and tourism.



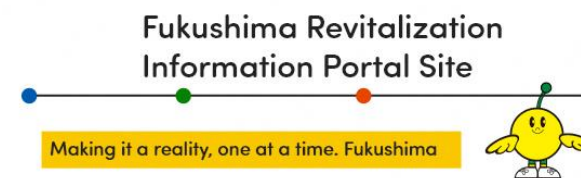
Challenges ➤ **Dispelling harmful rumours, preventing fading awareness** through publicity, expanding sales channels and establishing brands



Published by the Fukushima Prefectural Government
Address: 2-16 Sugitsuma-cho, Fukushima City, Japan
Telephone: (+81) 24- 521-7109
E-mail fukkoukeikaku@pref.fukushima.lg.jp

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