

- Fukushima Today -

Steps for Reconstruction and Revitalization in Fukushima Prefecture



A～E Tamura City (Miyakoji District) “Specialty products of Miyakoji toward revitalization”

A～C “Hop Garden Brewery” Established in a renovated building in Green Park Miyakoji, which had been idle due to the effects of the Great East Japan Earthquake, the brewery conducts all activities related to hop production, beer processing, distribution and sales within the town. It has also developed a regional recycling model centred around beer, such as utilising hop and wheat by-products from the brewing process as fertiliser. The brewery received the National Federation of Depopulating Regions President's Award in October 2023 at the awards ceremony for Excellence for Sustainable Development in Depopulating Regions, organised by the Ministry of Internal Affairs and Communications and other organisations.

D “YUI pudding” The pudding, made with locally sourced eggs, is a product of Miyakoji Sweets Yui, a local confectionery organised by the Tamura City Miyakoji Sixth Industrialization Executive Committee, led by the Miyakoji Town Chamber of Commerce.

E “Miyakoji Kyuuri Man” A jam made from locally grown cucumbers, developed by sixth graders at Miyakoji Elementary School.

As mentioned above, after the evacuation orders were lifted, various specialty products were developed through the AFFinnovation, or Sixth Sector Industrialisation efforts, of local industries, contributing to the reconstruction of the region.

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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 Revitalization Base Areas, and approval has been granted for Specified Living Areas for Returnees in the towns of Okuma, Futaba, Namie, and Tomioka. Living environments have been improved, and export volumes of products from the prefecture have surpassed previous records.

On the other hand, **about 26,000 residents of the prefecture are still living as evacuees** (as of Feb. 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



⇒P.16

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

Revitalization efforts still in progress

- About 27,000 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

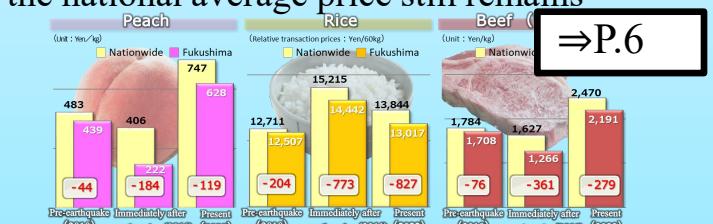


⇒P.1

- 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



⇒P.6

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"

Revitalization efforts that have shown great progress

- Atmospheric radiation levels have significantly dropped
- Promotion of tourism

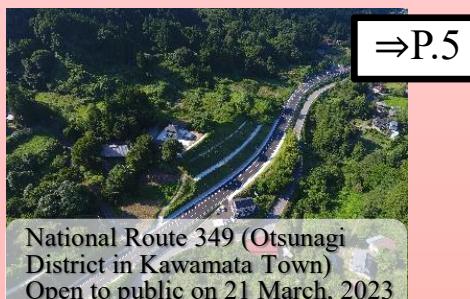


⇒P.1



⇒P.9

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



⇒P.5



⇒P.11

- Export promotion for produce grown in Fukushima



⇒P.7

- Passing down the records and lessons of the complex disasters to future generations



⇒P.12

The Great East Japan Earthquake and Nuclear disaster Memorial Museum

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 March 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 Specified Reconstruction and Revitalization Base Areas had been lifted by November 2023, and decontamination in Specified Living Areas for Returnees began in December 2023. **Atmospheric radiation levels in the prefecture significantly dropped, and are the same as other major cities throughout the world.**

Municipality led decontamination

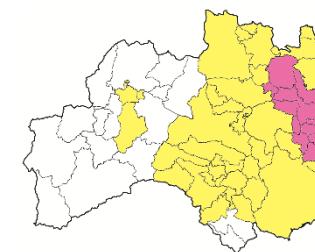


Decontamination of homes

Completed in Mar. 2018

Area the national government conducts decontamination
(Red) (Excludes difficult-to-return zones)

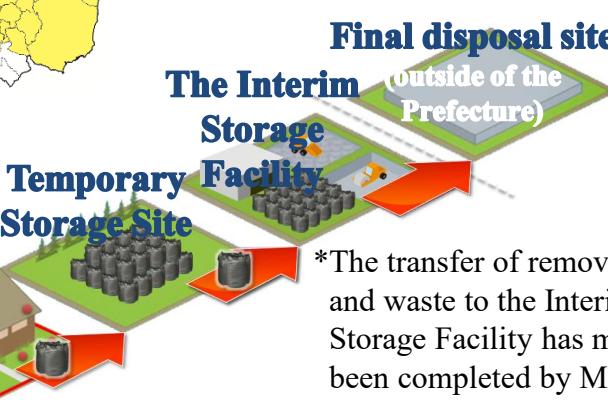
Area each municipality conducts decontamination
(Yellow)



Disposal process for soil and waste removed from decontamination

Decontamination

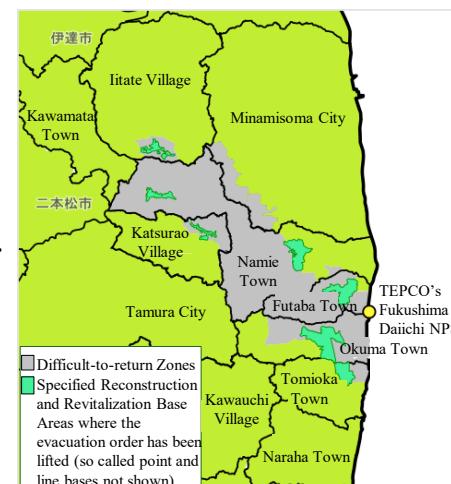
Decontamination of prefectural land has been completed



*The transfer of removed soil and waste to the Interim Storage Facility has mostly been completed by March 2022.

Decontamination of Difficult-to-return Zones

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



Difficult-to-return Zones
Specified Reconstruction and Revitalization Base Areas where the evacuation order has been lifted (so called point and line bases not shown)

Environmental radiation dose rate in the prefecture and major cities



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 March 2045).

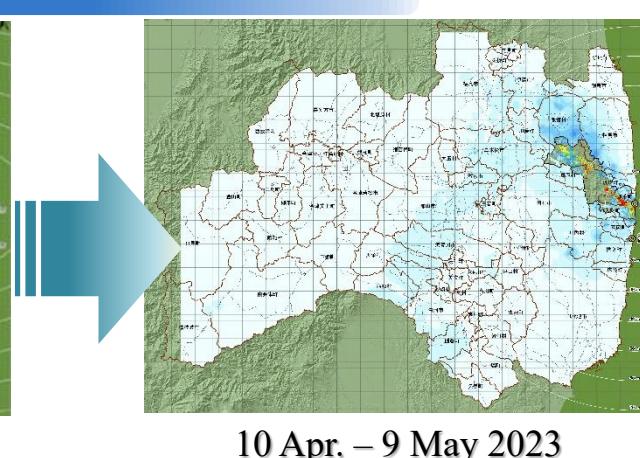
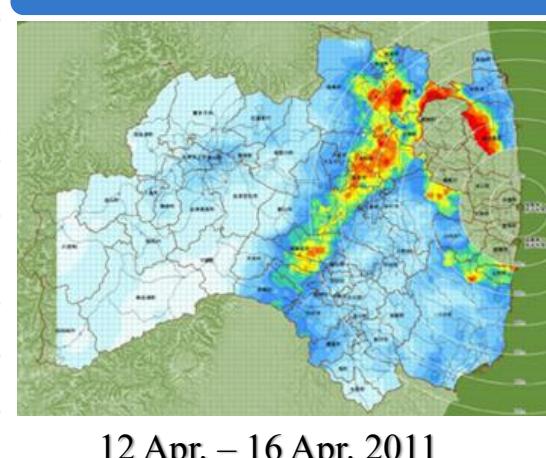


Location of the Interim Storage Facility
Okuma Town, Futaba Town

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

Air radiation dose in Fukushima Prefecture



Source: "Steps for Revitalization in Fukushima", "Fukushima Today: Steps for Reconstruction and Revitalization in Fukushima Prefecture" *Values within the prefecture are as of Sep. 2023.

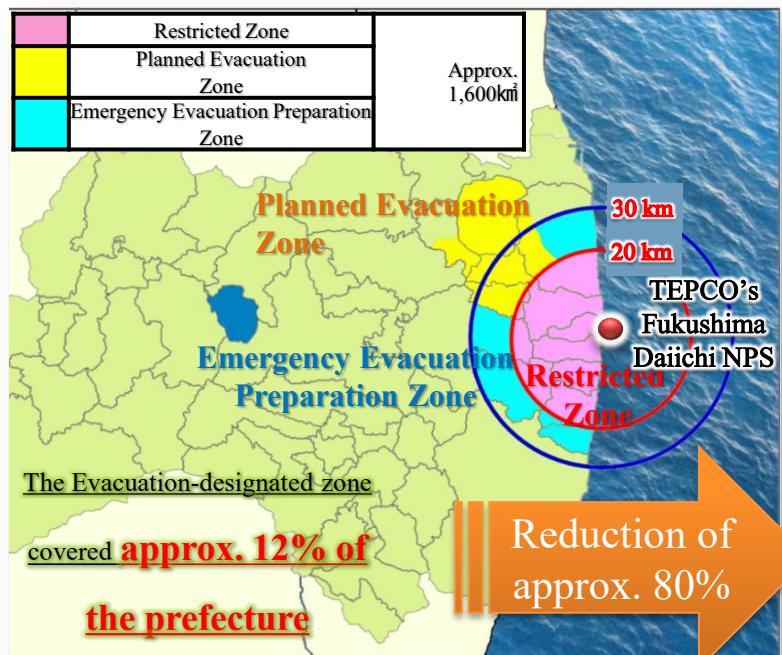
(2) State of Designated Evacuation Zones and Changes in Number of Evacuees

Current Status

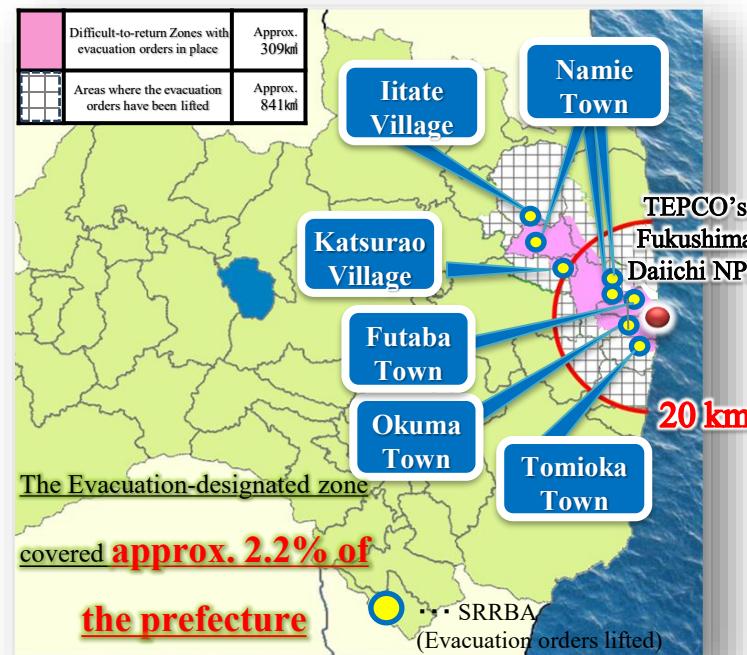
Improvement of living environment has led to the lifting of evacuation orders, **reducing the areas under evacuation orders from approximately 12% to 2.2% of the entire prefectoral landscape. Approximately 26,000 evacuees remain inside and outside of the prefecture.**

Transition of the Evacuation-Designated Zones

○ As of 23 Apr. 2011



○ As of 25 Mar. 2024



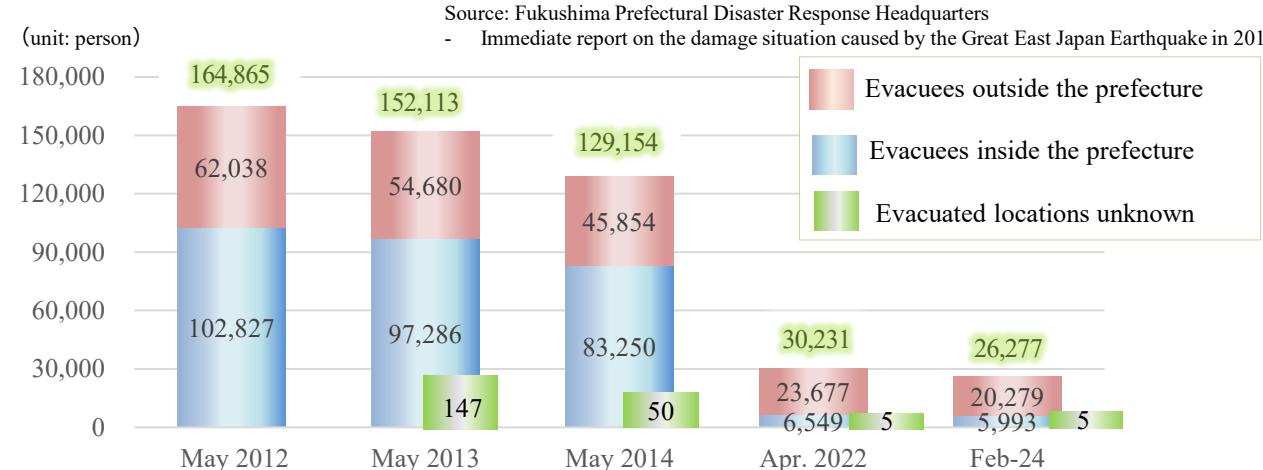
*The area of the Evacuation-Designated Zone includes the former Emergency Evacuation Preparation Zone.

Proportion of residents in the 12 municipalities of the evacuation areas

Municipalities	Rate of residents
Hirono Town	90.7%
Tamura City (Miyakoji District)	86.4%
Kawauchi Village	83.0%
Naraha Town	67.5%
Minamisoma City (Odaka District)	62.9%
Kawamata Town (Yamakiya District)	51.2%
Katsurao Village	36.9%
Iitate Village	33.0%
Tomioka Town	20.4%
Namie Town	14.5%
Okuma Town	6.5%
Futaba Town	1.9%

(As of 29 Feb. 2024)

Transition of evacuees: Earthquake, Tsunami, NPS accident



【Specified Reconstruction and Revitalization Bases Area(SRRBA)】

Areas within the Difficult-to-return Zone 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 June 2022 to November 2023.

【Specified Living Areas for Returnees (SLAR)】

A zone established outside of SRRBA in the Difficult-to-Return Zone 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 June 2023. For the towns of Okuma and Futaba, decontamination began in December 2023.

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 Zone**

(3) Health of Fukushima residents

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, the Prefecture will take measures to promote the health of residents focusing on the three pillars of food, exercise, and social participation. This is so that everyone can review their lifestyle and improve their physical fitness while getting to know and understand their health.
- Launch of "Kenkou Fukushima (Health Fukushima) Portal Site", an informational platform concerning health promotion.
- Release of "Fukushima Kenmin (Healthy Citizen) App" to promote better lifestyle for better health.



Health & Longevity Fukushima Conference Panel Discussion

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.

【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.



Fukushima Healthy App



Thyroid examination (Ultrasound imaging diagnostics)

- 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

Challenges

(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 July 1, 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.



"Relocation Seminar at Future Work Fukushima"

"Future Work Fukushima", an information website for relocation

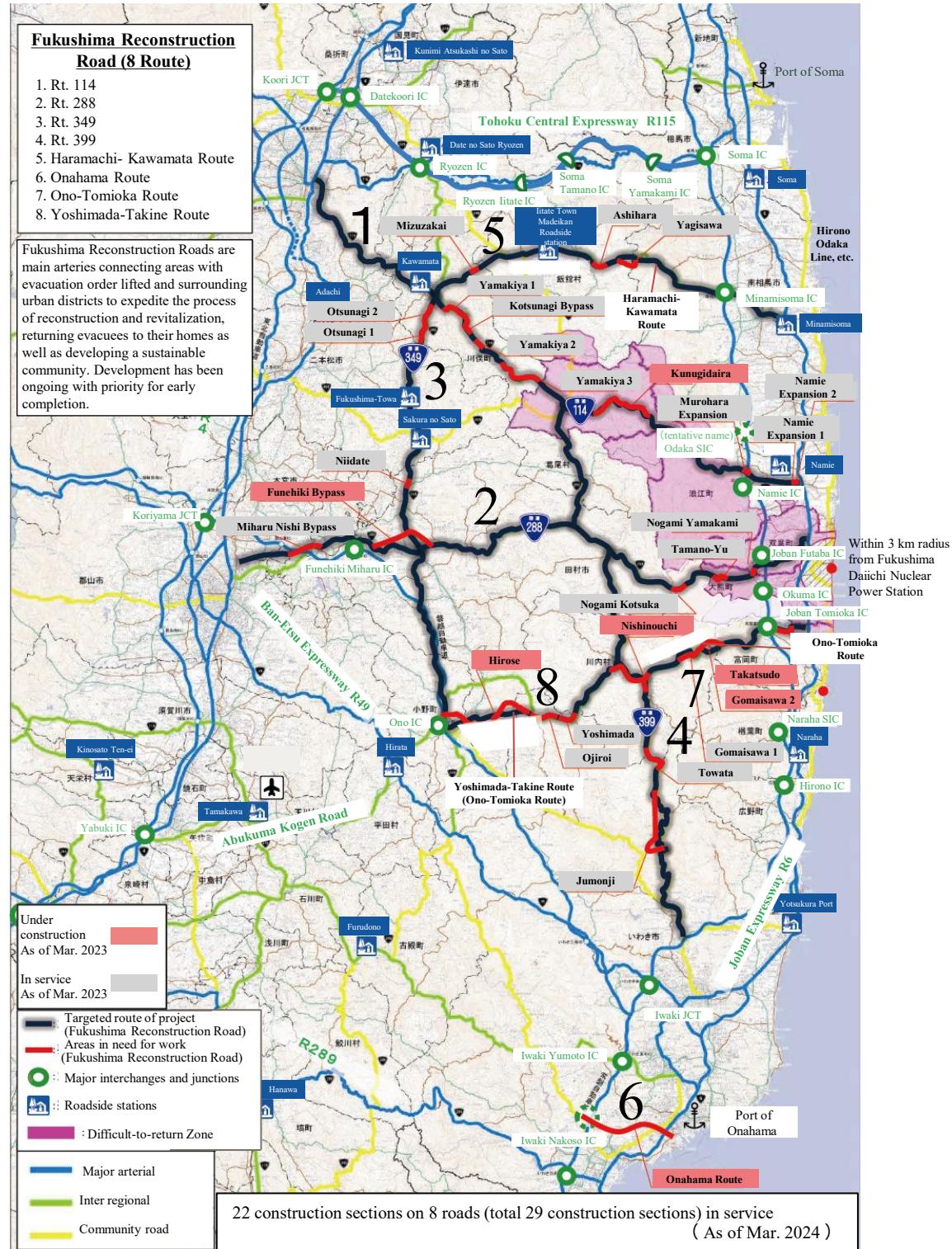
Website serving as an information hub on relocation to the 12 municipalities in the prefecture, presenting job opportunities, living conditions and unique characteristics of each region.

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.

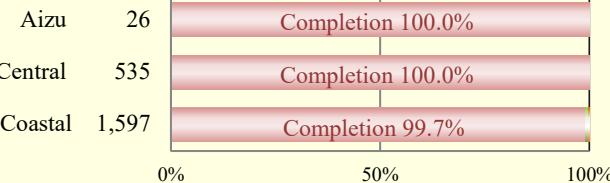
Transportation networks such as roads



Reconstruction work (*1)

Starting construction work 100% Completion 99% **【 As of 29 Feb. 2024 】**

【The regions】



【 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 367 sites (98%) have been completed. Construction plans in Difficult-to-return Zone 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 Restricted Residence Zones, and former Preparation Areas for Lift of Evacuation Orders.



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



National Route 399 (Iwaki City Jumonji construction section)
In service as of September 17, 2022

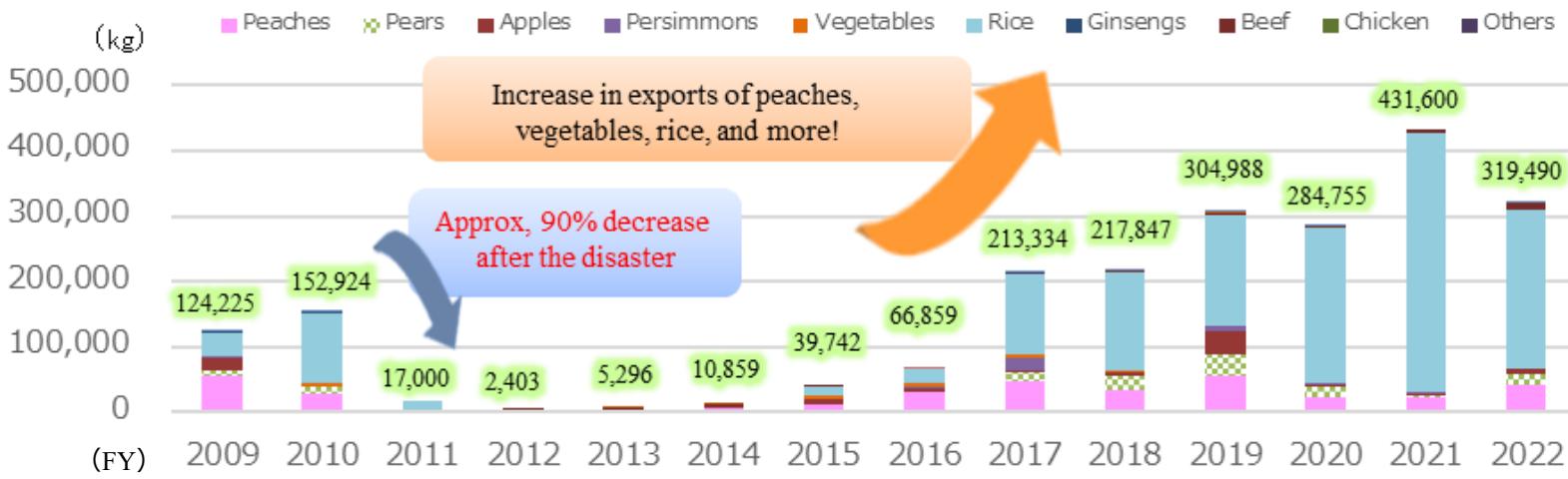
Challenges

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

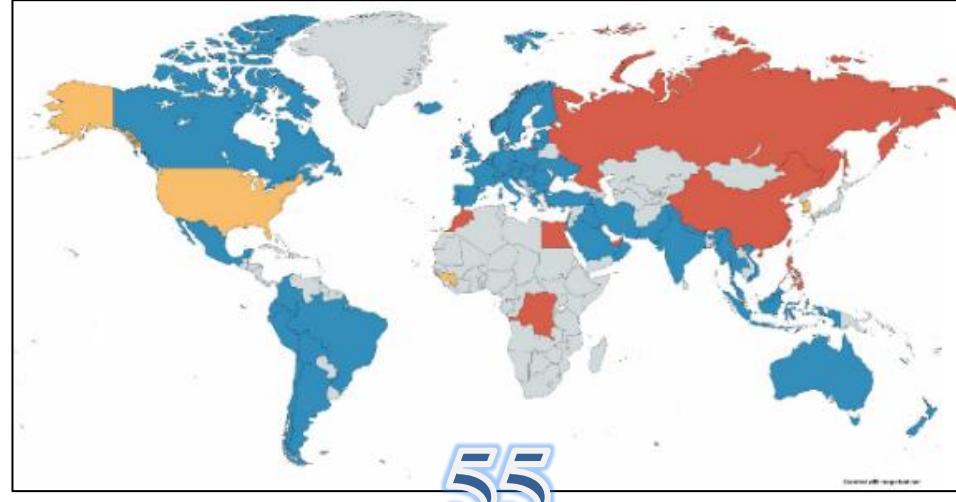
Current Status

The number of countries and regions restricting import of Fukushima products **down to 7 from 55 in the aftermath of the nuclear accident**. Exports exceeded pre-disaster levels, reaching the second highest export volume ever in FY2022. 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

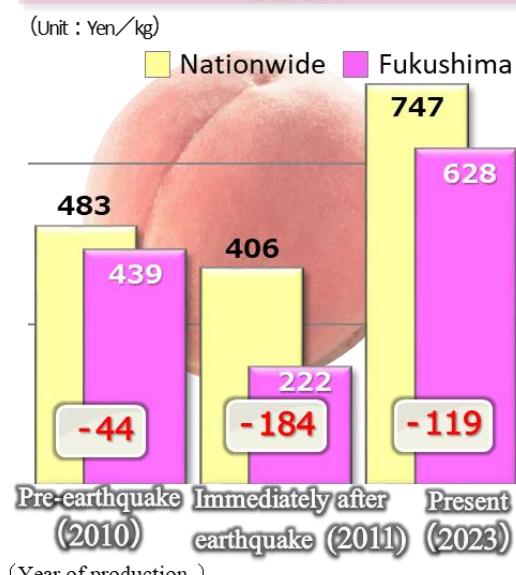


Number of countries or regions with import restrictions

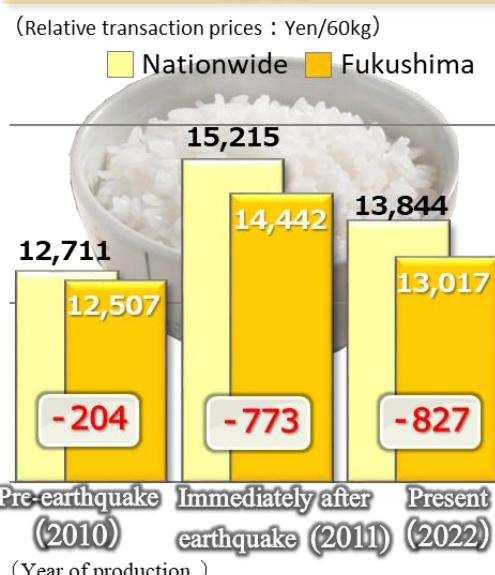


Transition of prices of major agricultural products and price differences from the national average

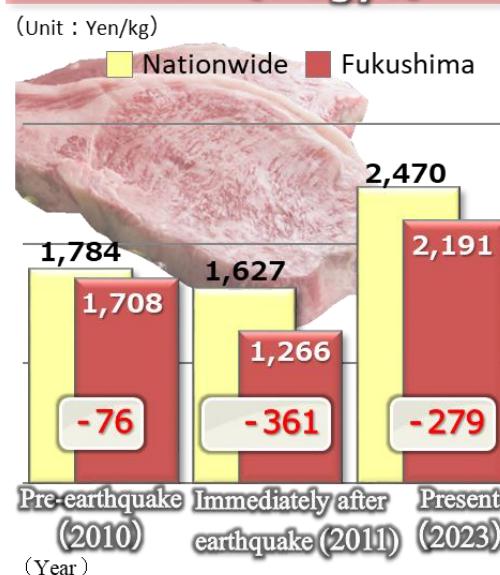
Peach



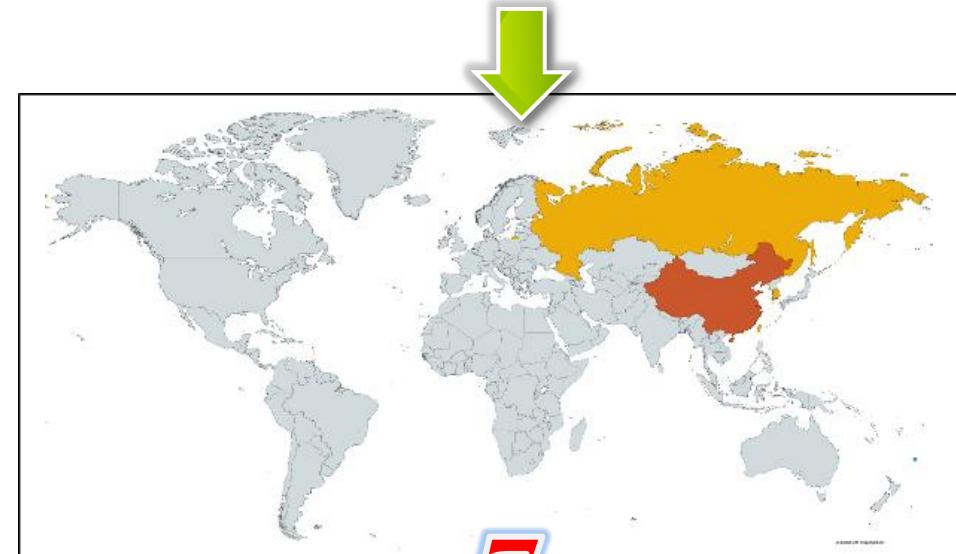
Rice



Beef (Wagyu)



(As of 16 Oct. 2023)



- 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→3) Korea, Taiwan, Russia
- Countries and regions **allowing import of foods only when inspection certificates are attached** (39→1) French Polynesia

(6) Industry 1. Agriculture II

Strengthening distribution and sales capabilities

◆ Strategic branding

Original Fukushima variety
"Yuyake Berry"



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 Jan. 2024)

FY 2023	Item	Number of Inspections	Number of cases exceeding the standard	Period of not exceeding the standard												
				9 years straight												
	Brown Rice (*1)	424	0	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Vegetables & Fruit	1,817	0	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Livestock products	1,480	0	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Cultivated mushrooms & mountain plants	540	0	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Fisheries products (Marine & cultivated products)	2,702	0	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Wild mushrooms & mountain plants	389	0	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
	Fisheries products (River, lake, pond)	88	0	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023

*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. Currently, the blanket inspections are implemented only in 9 municipalities, with no samples exceeding the standard limit.

The standard amount of radioactive cesium allowed in food (Becquerels/kg) (*2)

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

*2 International food standards

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

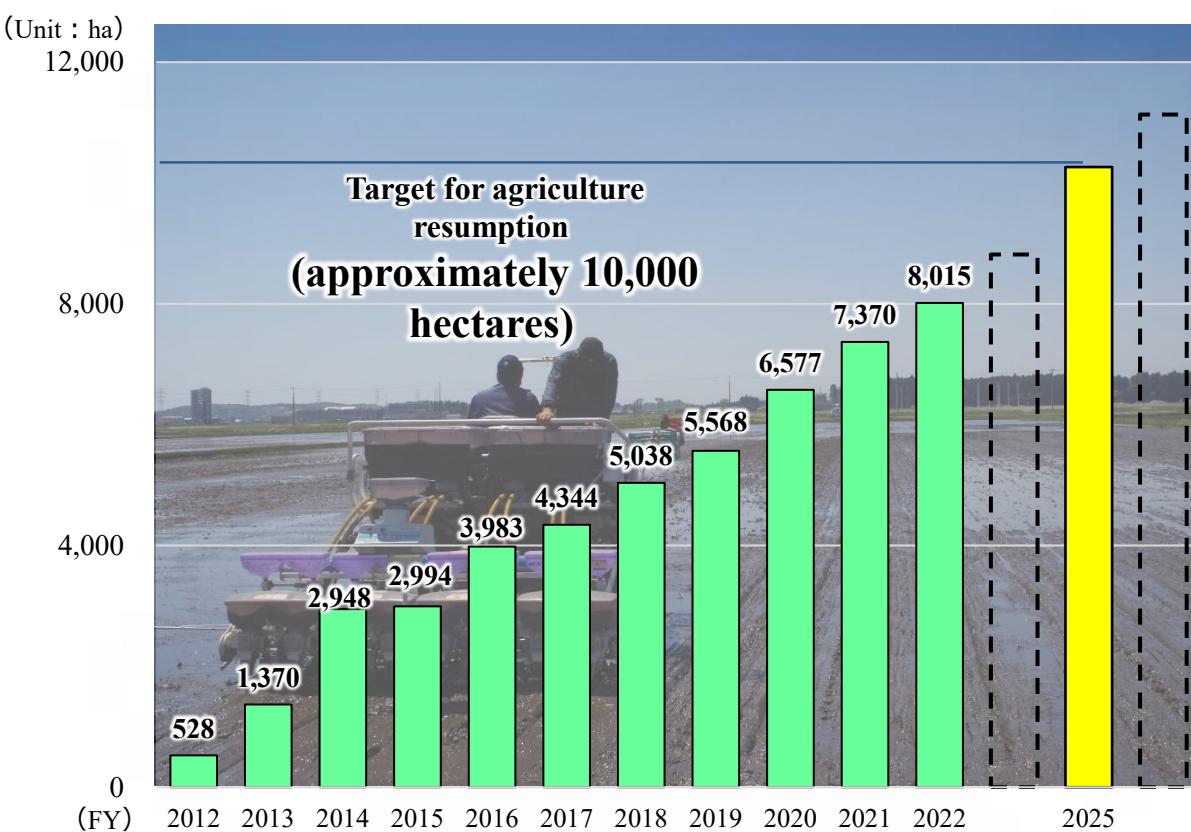
Challenges

- 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

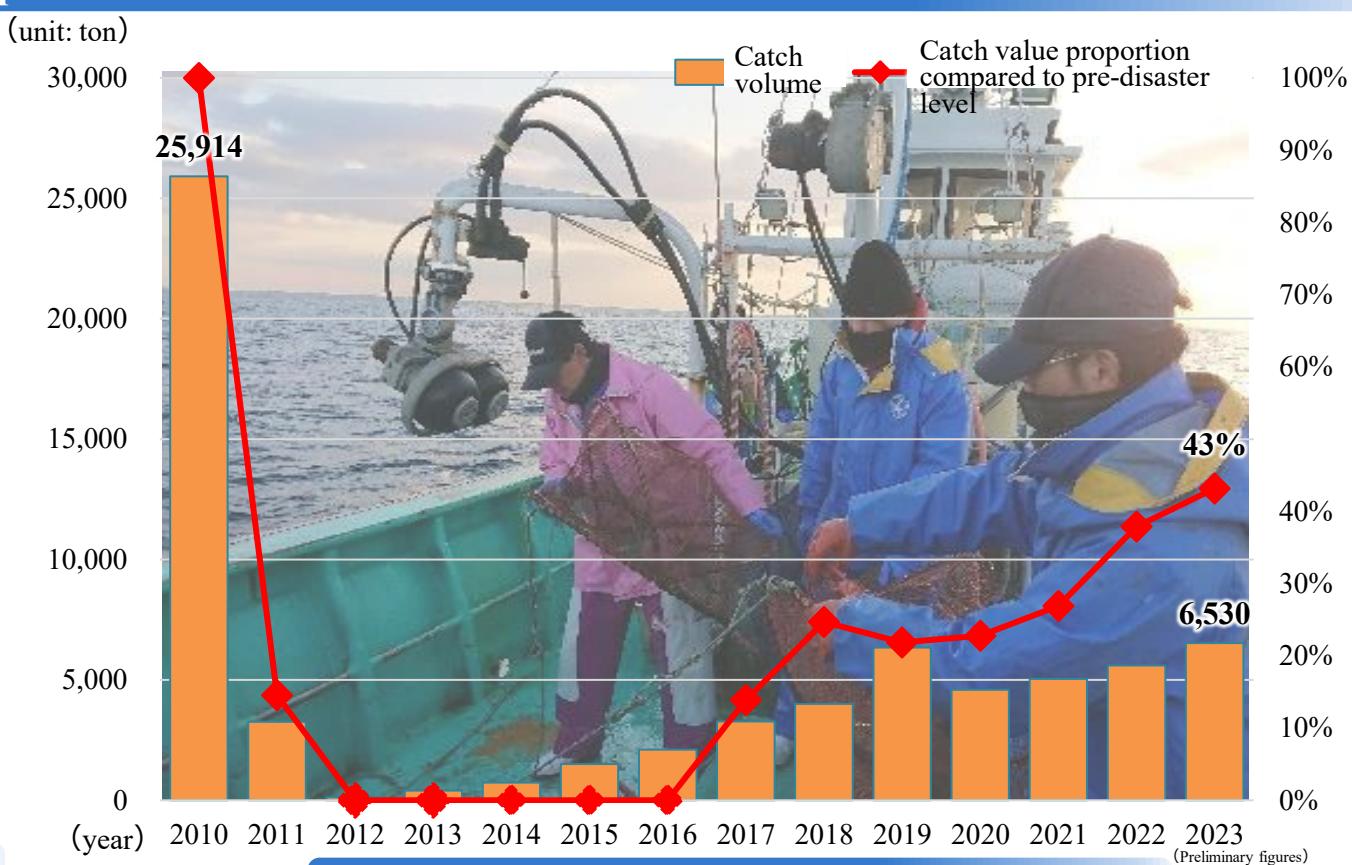
Current Status

Agriculture has gradually resumed in areas where evacuation orders have been lifted, reaching a **resumption rate of 46.3% (8,015ha) as of the end of March 2023**. In addition, for **the coastal fishing industry, which is working towards the recovery of full-scale operations, the catch volume** in 2023 **reached 6,530 tons**, with **the catch value amounting to 43% of the pre-disaster level**.

Transition of agriculture resumption areas in evacuation areas



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



Securing and developing new agricultural practitioners



Strengthening production infrastructure



Challenges

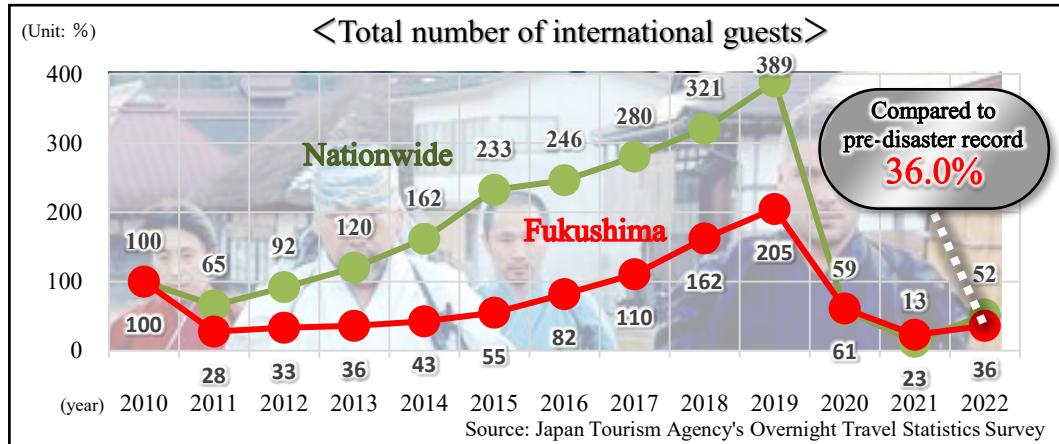
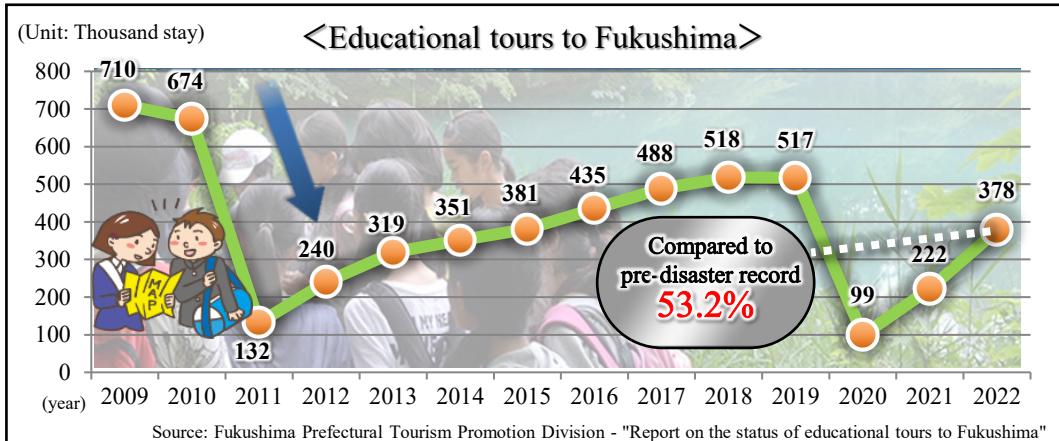
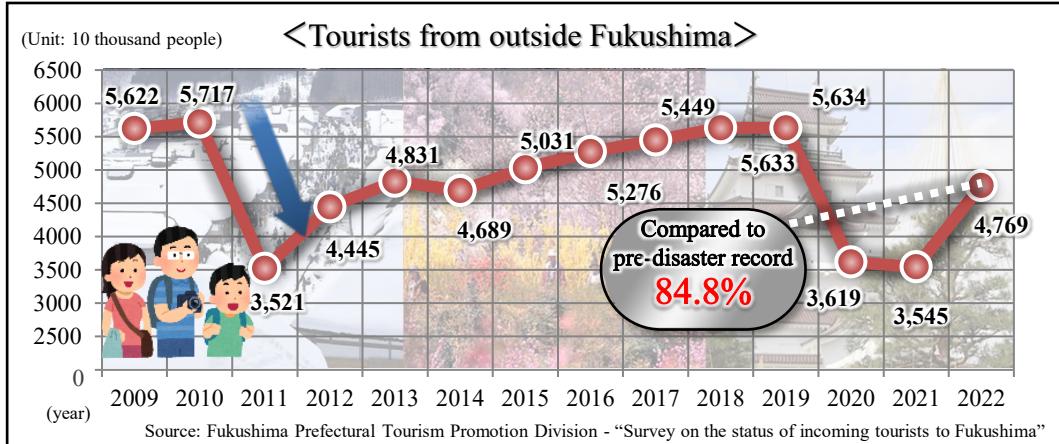
- **Further acceleration of agricultural resumption**
- **Securing and developing new practitioners** in agriculture, forestry and fisheries industries
- Developing farmland for practice of Smart Agriculture throughout the field expansion, versatile use/conversion to dry field of rice paddy
- Promoting 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**

(6) Industry 2. Tourism and Products

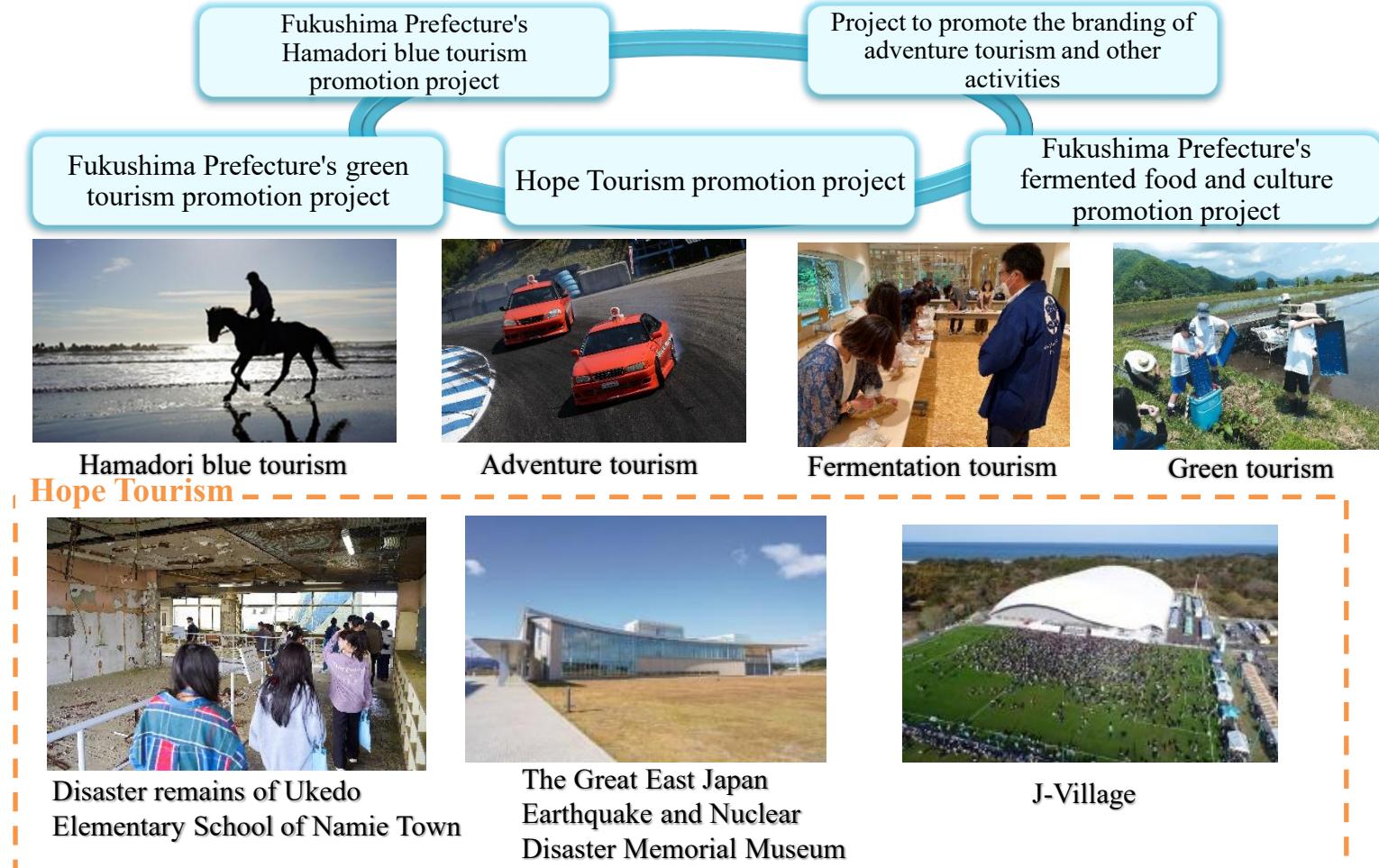
Current Status

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.**

Changes in the number of tourists visiting

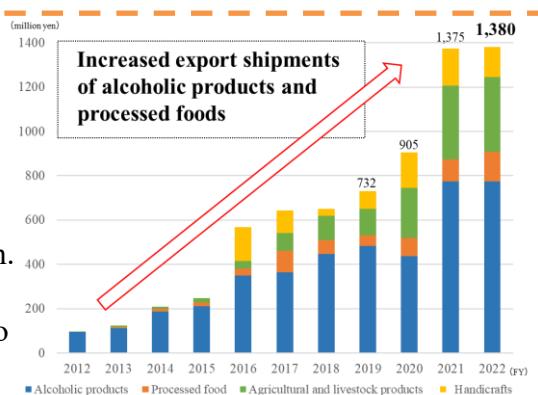


Implementation of various projects focusing on Hope Tourism to stimulate tourist attraction



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
- Spreading information to attract more foreign tourists in a post-pandemic world

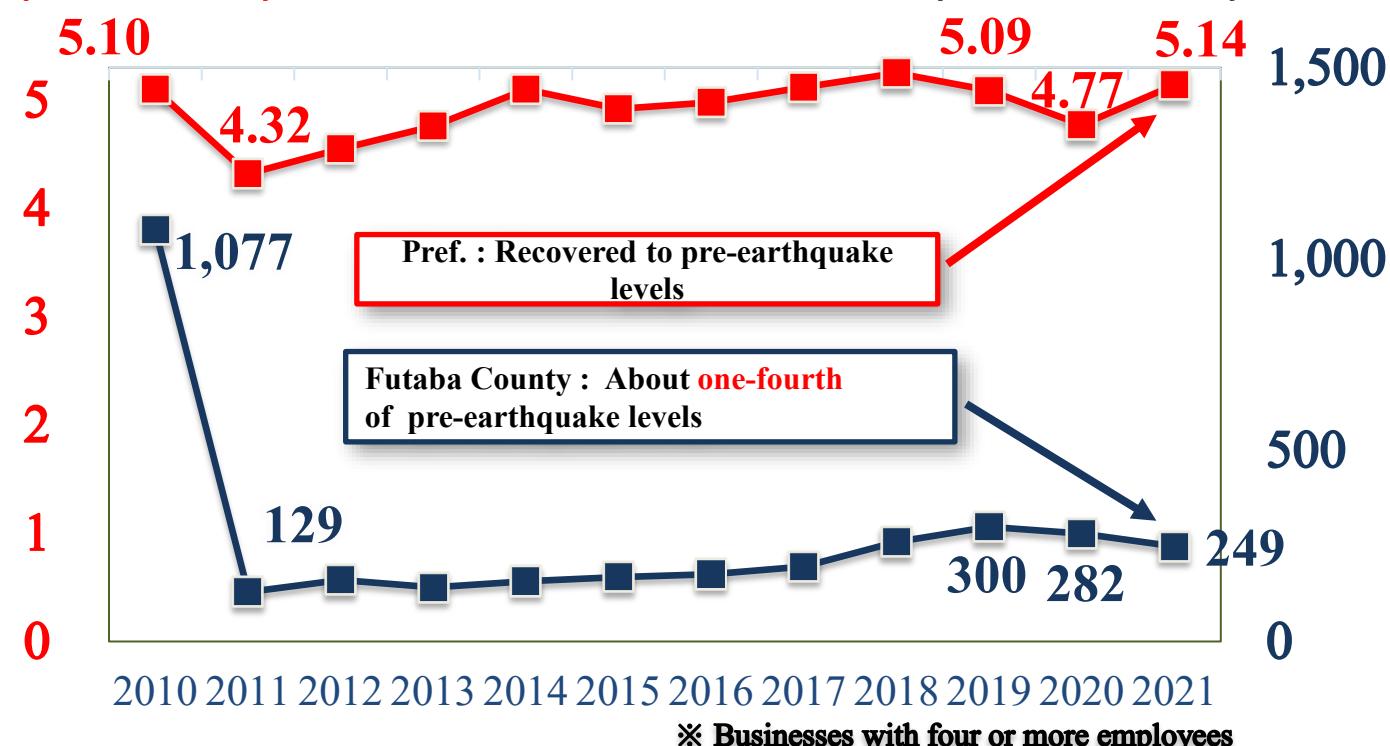
Current Status

Promoting business investment. Manufactured product shipment has recovered to pre-earthquake level for the prefecture in general. However, **in Futaba County**, factors such as the slow progress of factory investment have resulted in the product shipment remaining 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)

Business investment support utilising the Fukushima business investment subsidy

① Fukushima business investment subsidy for revitalization of industries (FY2012-FY2021)

Allotted to
601 entities
(As of 31 May 2021)7,405 jobs created
(projection)

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

212 entities
(As of 22 Dec. 2023)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
(As of 29 Sep. 2023)1,444 Jobs created
(projection)

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

Allotted to
35 entities
(As of 20 Dec. 2023)373 jobs created
(projection)

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.



“Signing ceremony for the basic agreement on factory investment”

Employment within the prefecture
988 companies 11,937 employees
Employment in Hamadori (Coastal) Region
398 companies 4,466 employees

- **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**

Challenges

(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 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

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"

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

V Healthcare-related industries

Promoting an integration of pharmaceutical industry through technology development support



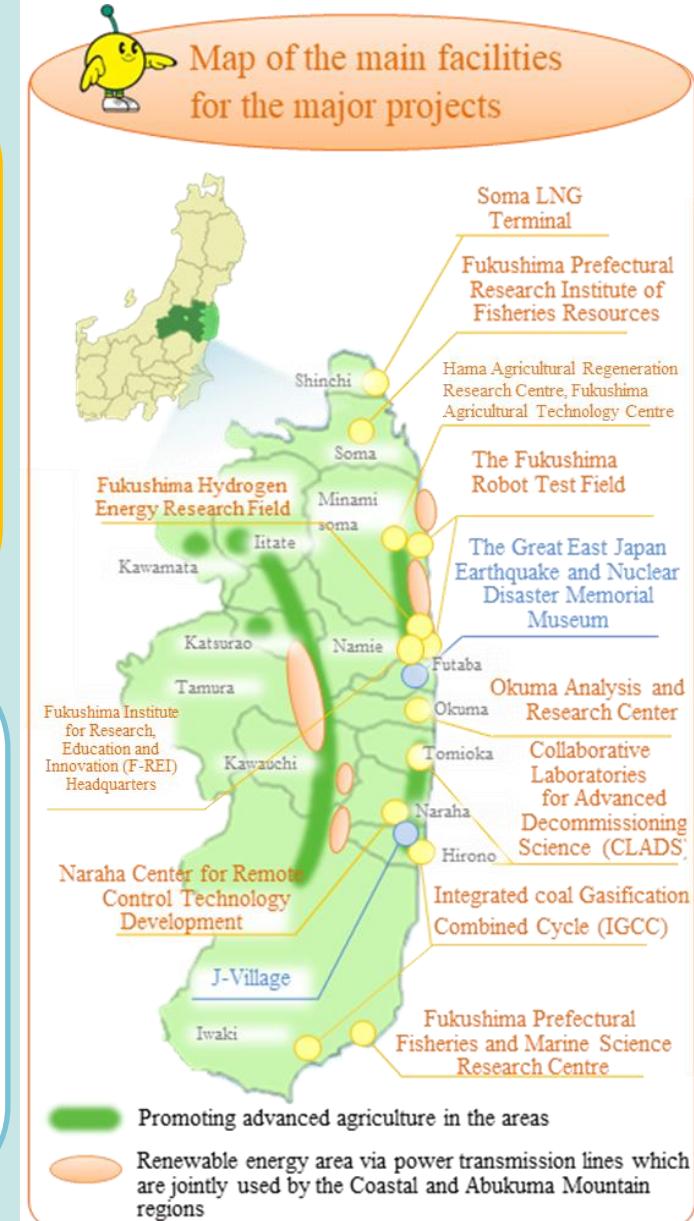
"Medical-Industrial Translational Research Center"

VI Aerospace industries

Demonstration of 'Flying Cars' and attraction of related companies



"Aerospace Festa Fukushima"



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

Initiatives towards the realization of the framework

Clustering of industries

- ◆ Fukushima Prefecture Business Investment Seminar



Expanding the non-resident population

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



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

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



Re-establishment of the living environment

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

Creating an environment necessary for people to safely live

- ◆ 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**

Spreading information

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

- ◆ In January 2024, the number of visitors reached 260,000 at the Great East Japan Earthquake and Nuclear Disaster Memorial Museum, which opened in September 2020.



Inside the Great East Japan Earthquake and Nuclear Disaster Memorial Museum

- ◆ A symposium was held on 9 December, 2023, with the theme of "For a Future Paved by the Innovation Coast Framework and an Attractive Region".



Fostering human resources in education

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

- ◆ The Revitalization Knowledge Project



Odaka Industrial Technology and Commerce High School

The school has been designated as one of the Meister high schools, which is a project of the Ministry of Education, Culture, Sports, Science and Technology. It 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.



(6) Industry 5. Fukushima Institute for Research, Education and Innovation (F-REI)

Current Status

On 1 April 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 April 2023. Facilities and research equipment will be in place hereafter.

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

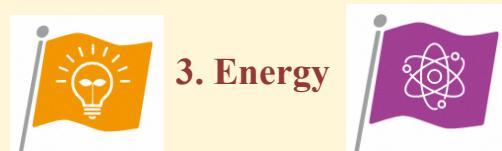


Drones and robots for harsh environments

2. Agriculture, Forestry and Fisheries Industries



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

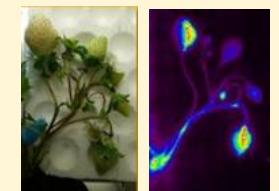


3. Energy



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

Project progress



1 Apr. 2023 F-REI opening ceremony



10 May 2023 1st New Industry Creation Research & Development Council Meeting



12 Jan. 2024 F-REI logo finalised



25 Jan. 2024 Comprehensive Partnership Agreement signed with the Toho Bank, Ltd.

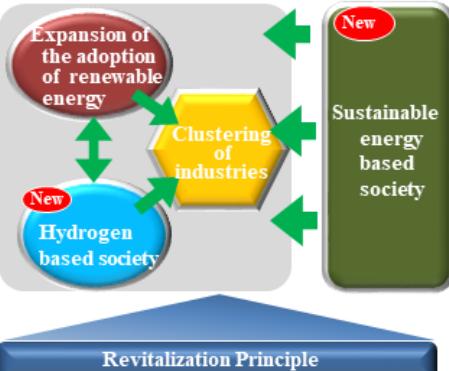
Challenges

- 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)	52.1%(FY2022)
Amount of the adoption of renewable energy for the amount of power consumed in the Prefecture	100%(FY2025)	96.2%(FY2022)
Number of stationary hydrogen station installed	20 Units (FY2030)	4 Units (FY2022)

Hubs for renewable energy in the Prefecture

Hub for research

Fukushima Renewable Energy Institute, AIST (FREA)



Small-scale hydropower

Shinobuyama Endogataki Otama Daiichi small-scale hydropower station



Biomass

Green Power Aizu Woody biomass power station



Geothermal

Tsuchiyu Onsen Source No. 16 Binary Power Plant



Wind Power

Koriyama-Nunobiki Kogen wind farm



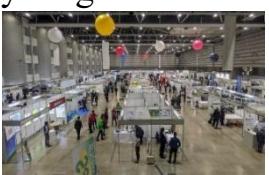
Solar power

Fukushima Airport Mega Solar



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.



REIF Fukushima

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



Katsurao Village Smart Community

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.

Namie Town



Iwaki City



Tohoku's first FC bus

fuel cell bus

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

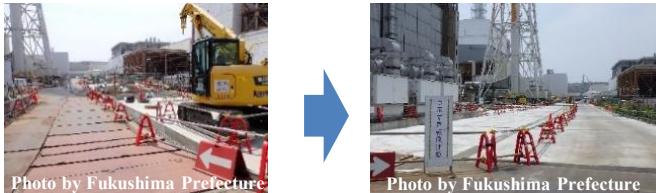
Efforts toward decommissioning of TEPCO Fukushima Daiichi and Daini Nuclear Power Stations are ongoing. The Association for Monitoring of Safety in Decommissioning and other entities are continuing to monitor the process **to ensure safe and steady decommissioning work**.

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

Examples of the initiatives towards decommissioning

Fuel Debris Retrieval

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

Unit 1: From February 2024, investigation of non-submerged area inside the primary reactor containment vessel began using small drones.

Unit 2: Preparations are underway for fuel debris retrieval testing. In January 2024, work began to remove deposits from the PCV penetration.



Status of deposits in the Unit 2 primary containment vessel
(© Tokyo Electric Power Company Holdings, Inc.)

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

Fuel Removal from Spent Fuel Pools

Work is proceeding to remove fuel that was used to generate electricity.

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: Foundation construction of stand for removal has been completed, and the steel framework has been under construction since Jan. 2023.



Installing a large cover for Unit 1

Unit 3: Fuel removal was completed in Feb. 2021.

Unit 4: Fuel removal was completed in Dec. 2014.

Measures against radioactive waste

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



External view of the volume reduction facility

From Feb. 2024, a volume reduction facility began operation to reduce the volume of metals and concrete.

Pathway to decommissioning

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



© Tokyo Electric Power Company Holdings, Inc.
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



© Tokyo Electric Power Company Holdings, Inc.
Current unit 3

Key milestones for the future

Around Oct. 2024 Commencement of test retrieval of fuel debris

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)

Fukushima Daini NPS

- ◆ 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".

(7) Efforts towards decommissioning II

ALPS treated water

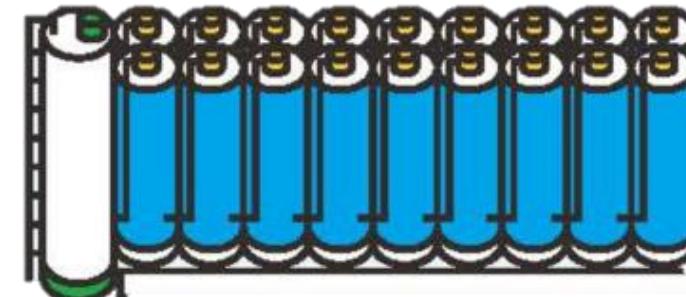
- ◆ The cooling water for the melted fuel (fuel debris) due to the nuclear accident, as well as rainwater and groundwater that flowed into the reactor buildings and subsequently came into contact with debris, results in the generation of contaminated water containing radioactive materials.
- ◆ Water 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_osesui/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



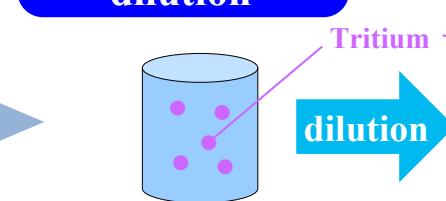
Source: An edited version of the METI website
https://www.meti.go.jp/earthquake/nuclear/hairo_osesui/pdf/alps_02.pdf

Water Storage Tank



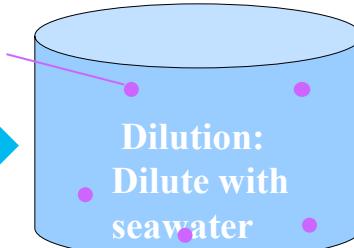
Challenges

ALPS treated water before dilution



Verify radioactive materials other than tritium being below national regulatory standard

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



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

Discharge into the sea

- 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 a wareness 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 thorough collaboration and co-creation

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

Agricultural, forestry, and fisheries products and Fukushima products

- ◆ Strengthen measures for distribution and sales
- ◆ Improve the brand power and expand exports
- ◆ Increase consumer confidence

Spreading information (cooperation, co- creation, etc.)

- ◆ Spread information in cooperation with each department
- ◆ Spread information about the current situation and the charms of Fukushima
- ◆ Expand the collaboration and co-creation

Tourism

- ◆ Attracting visitors from domestically and internationally
- ◆ Promoting international charter flights

Underlying measures

- ◆ Thoroughly inspect the food
- ◆ Have risk communication concerning radiation
- ◆ Spread information about the progress in restoring the environment

Priority measures

Promoting understanding at home and abroad

- ◆ Spread accurate information
- ◆ Spread the charms
- ◆ Spread information using bonds

Strong support for businesses

- ◆ Strengthen measures for fisheries industry
- ◆ Promote production and consumption of local food
- ◆ Enhancing the local charms, brand power and expanding exports



The Hama Festival in Tokyo



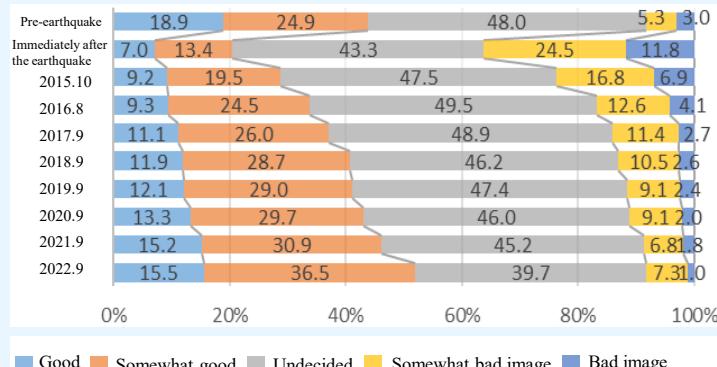
Promoting agricultural, forestry, and fishery products overseas

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

■ Analysis of Social Recognition related to Rumours and Fading Awareness (Sep.2022)

“Percentage of people with a good image of Fukushima”

■ As of Sep. 2022, "Good image" group ("Good"and "Somewhat good" combined) is 52.0%. (compared to 20.4% immediately after the disaster)



Source: Information dissemination analysis project

◆ Field Survey on Consumer Awareness Related to Harmful Rumors (Consumer Affairs Agency 3 Mar. 2023)

“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)
5.8% (2013.2000-19.4%)

“Inspection of radioactive materials in food products”

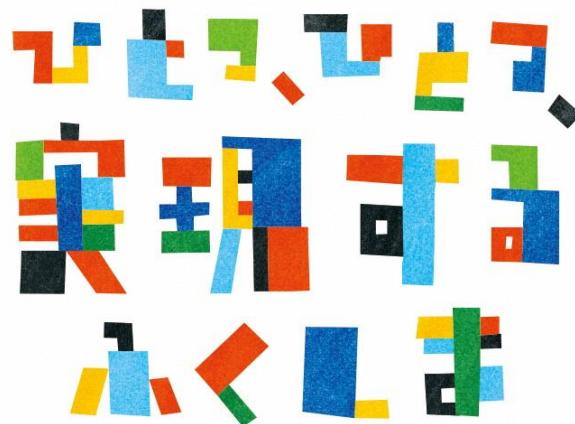
“Do not know that inspection is conducted” **63.0% (2013.2000-22.4%)**

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



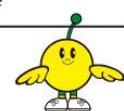
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about this publication.

Fukushima Prefecture website

Fukushima Revitalization
Information Portal Site

Making it a reality, one at a time. Fukushima



Please visit this website for other updates
and recovery-related information.