Iitate-mura: Ten years after the March 2011 nuclear power accident

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This report is a draft prepared for members of the Canadian Rural Revitalization Foundation (CRRF) (https://crrf.ca). It provides a summary and update regarding the nuclear power accident of March 2011 in Fukushima, Japan. The focus is on the implications of the disaster for the people of Iitate-mura. Many CRRF members were concerned about the friends they made in that village during the years of the CJ Project research collaboration (https://crrf-japan.blogspot.com/).

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Preface

This report is for the Canadian Rural Revitalization Foundation (CRRF). We, about ten Japanese researchers including Nobuhiro Tsuboi, and CRRF researchers, had a joint research project from 1989 to 2004 to compare the rural vitalization in Japan and Canada. A village municipality of Iitate-mura, the subject of this report, is one of the field sites in rural Japan. It is in Fukushima Prefecture and is about 28 to 48km north-west of the nuclear accident site of the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station. Due to the nuclear accident in March 2011, the whole area of Iitate-mura was exposed to radiation, and all the village people of 6,628 were forced to evacuate the Village under a systematic evacuation order proclaimed in April 2011. The order was lifted in March 2017 and the return to the village began. However, as of March 1, 2021 there were still 3,722 evacuees who had not returned.

This report describes the ten-year history of the village since the Great earthquake and the TEPCO nuclear accident, including village countermeasures, the evacuation, decontamination, the start of the return to the village, and its progress until March 2021. As of March 1, 2021, just 10 years after the nuclear accident, the population is 5,206 persons. 1,481 persons live in Iitate-mura, and the others have remained evacuated.

Acknowledgements:

In February 2021, I prepared to collect materials for writing this report, but it was just after the warning of the Covid-19 epidemic and the voluntary suspension of long-distance travel to Iitate village, I asked Masami Sanpei, a resident of Iitate-mura village, to collect materials that I could not do myself. He delivered 23 of the village records edited by Iitate-mura administrators to me. He also read through a draft of the finished manuscript in Japanese and gave me valuable feedback. First of all, I would like to thank him for his cooperation. For reference, he was the head of the Iitate-mura Industry Section, who willingly accepted the CJ-Project's research in Iitate-mura and provided tremendous support to the research team during the research period 1989-2004. He then moved to the Iitate Senior Care House as a General Manager, where he was faced with the nuclear accident. He was a key person concerned about the risks associated with the evacuation of elderly residents and he worked hard to ensure that the House continued to operate within the evacuation area.

This report was originally born out of an enquiry from Leonardo P. Apedaile of the CRRF in January 2021, who asked me what was happening in Iitate-mura and where the village had been evacuated due to the nuclear accident. It was reinforced when I learned that many CRRF members, were quick to learn of the nuclear accident, offered to accept evacuees from Iitate-mura and were interested in the fate of village residents. William Reimer of CRRF suggested that we consider publishing it in some form, and he began proofreading in March 2023 and continued his careful and proficient work until November. I am very thankful to these two colleagues for their co-operation.

Acronyms

TEPCO	Tokyo Electric Power Company Holdings, Inc. TEPCO operated the Fukushima Daiichi Nuclear Power Station that caused the accident in March 2011, and the power station is now in the process of being abandoned.
TEPCO F1 & TEPCO F2	TEPCO F1 is TEPCO Fukushima Daiichi Nuclear Power Station with 6 plants of a reactor, reactor building and others, and tree reactors had a meltdown. TEPCO F2 is TEPCO Fukushima Daini Nuclear Power Station with 4 plants which is located on the Pacific coast and about 15km south of TEPCO F1, and didn't cause a meltdown or any radiation leak accident. If it is clear that the power station has caused a nuclear accident, it may be possible to simply negotiate with TEPCO Nuclear Power Station or TEPCO for TEPCO F1.
TEPCO P1~P4	TEPCO P1~P4 are the 1st ~4th plant in the TEPCO F1. Three reactors of TEPCO P1, P2

	and P3 had a meltdown, and three reactor buildings of TEPCO P1, P3 and P4 had a hydrogen explosion.

The profile of Iitate-mura and stance on writing

1) Village Profile

Iitate-mura[1] has been a typical depopulated area in Japan, and had tackled revitalization through industrialization for many years. It changed its policies to alternative forms of industrialization in the 1990s because the Iitate people understood that traditional industrialization was not the only way to revitalization. They introduced an alternative policy in 1995 and enhanced it in 2005. After the villagers operated under the new policy for six years, they experienced the radiation exposure.

Table 1. Some geological aspects of Iitate-mura

Location of Municipal office	In Fukushima Prefecture. 30 km inland from the Pacific Ocean. About 35 km east of the Capital Fukushima City, and about 300 km north of the center of Tokyo. About 40 km north-west of the TEPCO Fukushima Nuclear Power Station.			
Altitude at Municipal Office	489 m. Many areas are on a plateau.			
Area (km^2)	Total 230	Forest 173	Arable land 22.1	Pasture
Population in 2010 (persons)	6,209			
Working population in 2010 (%)	Primary ind.: 28.0	Second ind.: 38.5	Tertiary ind.: 33.5	
Number of Districts within Village	20. Each district functions as a community of households.			

The "Iitate-mura 4th Comprehensive Promotion Plan" formulated in 1994 proposed "Quality life" as an important objective. This was the first step of the villagers to seek an alternative way of life in Iitate-mura. The "Iitate-mura 5th Comprehensive Promotion Plan" formulated in 2004 and enforced in 2005 introduced "Slow life" as the main planning principle.

In March 2011, the Fukushima Nuclear Accident[2] occurred about halfway through the 5th Promotion Plan with the slow life philosophy. In April 2011, almost all of the 6,628 villagers were forced to evacuate. The return to the village began in April 2017 and was still underway on March 2021. As of March 1, 2021, 1,481 persons are residents of the Village. 1,251 are returnees, some are newly-born in Iitate-mura after the return, and some are immigrants from other municipalities after the beginning of the return to the village.

The records of the nuclear-power disaster history edited by Iitate-mura include information about the villagers' lives during evacuation, the village reconstruction planning, their lives during the return, and community reconstruction. The influence of the philosophy and experiences of the "5th Comprehensive Promotion Plan", which Iitate-mura had been working on before the nuclear accident, can be read throughout the records. Therefore, this report begins with an explanation of the philosophy and basic concept of the "Iitate-mura 5th Comprehensive Promotion Plan (2005-14)" in Ch. 1. The impacts of the nuclear accident have extended not only to Fukushima Prefecture but also to the municipalities

[1] Japanese "Mura" is a unit of municipality as well as Machi and Shi. Usually Japanese call Mura "Village" in English, Machi "Town" and Shi "City". In some cases, "The Village"" is used for Iitate-mura. Iitate-mura refers to the village municipal office functions or the whole territory of the village.

[2] The nuclear accident in 2011 is commonly known as the Fukushima Nuclear Accident or Fukushima Nuclear Explosion, but I will refer to it as the TEPKO Nuclear Accident. TEPCO is the Tokyo Electric Power Company Holdings, Inc. The accident is the responsibility of TEPCO, not of Fukushima Prefecture or the Fukushima people, and consequently, I use the name assuming that TEPCO is responsible for the TEPCO Nuclear Accident.

outside Fukushima Prefecture, 200 km north and south from the TEPCO accident site. Some aspects of the spread of these impacts will be described in the Appendix: "Some aspects of the spread of the disaster by the TEPCO Nuclear Power Accident."

2) Sources and perspectives

Chapter1, entitled "Iitate-mura's future vision established before the radiation exposure" relies on information from the Canada-Japan Joint Project rather than village records. Understandings of the "5th Comprehensive Promotion Plan" enforced in 2005 are my opinions.

Chapters 2 to 7 rely on various Iitate-mura disaster records edited by the Village except 2) of Chapter 2 and TEPCO matters in Tables 2 and 3. It is important to note that, Iitate-mura kept records within the following perspectives: "Iitate-mura is not going to be a flagship of anti-nuclear power" and "Iitate-mura aims to be a great benefit for Japan and to be a model of the world through completing a recovery from radioactive contamination area"[3].

In spite of my anti-nuclear position, I respect the Village policy and try to introduce their records and intent faithfully. The records and quotes are included in a manner consistent with the policy. As a result, Chapters 2 to 7 do not include my opinions. Wherever my opinion is appropriate for clarification or understanding, I will clearly identify the material as my opinion—either in the text or footnote.

Chapter 8 introduces all of the Village's two messages from a village record. Since these two are written with a prose and free poetry tone, some explanation on how to read them may be necessary for better understanding. However, the messages do not provide sufficient explanation so I provide interpretations from my understanding. I wrote the Appendix using materials from the Fukushima Prefecture, Ministry of Environment, and TEPCO. I am particularly interested in the medical aspects of the radiation exposure, but nothing is mentioned in the text or Appendix. Not only is this a difficult field to understand, but because there are few descriptions about medical aspects other than radiation exposure examinations in the Village's records, I didn't express my opinions in this Appendix.

Ch.1 Iitate-mura's future vision established before the radiation exposure

1) Features of the 5th Comprehensive Promotion Plan enforced in 2005

The reconstruction of Iitate-mura from the nuclear power accident is based on the experiences of the "5th Comprehensive Promotion Plan" enforced in 2005 with a planning period from 2005 to 2014 (hereinafter "the 5th Promotion Plan"). Without knowing the nature of this plan, we cannot talk about progress from the reconstruction of the whole village evacuation to the present.

Therefore, I will begin with an introduction to the philosophy and basic concepts of the "5th Promotion Plan" which was formulated in 2004 before the nuclear power accident in 2011.

In the latter half of the 1990s, Iitate-mura was a member of a "Merger council of municipalities" consisting of four neighbouring municipalities. They discussed the possibility of a merger which would improve the efficiency of finance and administrative functions of the municipalities according to the government. The population of Iitate-mura peaked in 1955 with more 10,000 persons, and has decreased to 8,331 in 1980 and 8,206 in 1985 (Population Census). After that, its population was 7,093 in 2000, 6,722 in 2005, and 6,209 in 2010. Through a Village Council election and a Village

[3] Iitate-mura edit., *Madei no Mura ni Hi wa mata Noboru* (The sun rises again in Iitate-mura), 2015, p.41.

Mayor election on the theme of the merger, Iitate-mura finally refused to merge and withdrew from the council in 2004[4]. Iitate-mura put the highest priority on improving the well-being of the residents, and chose a different path of independence.

At that time, small depopulated municipalities with a weak financial base, such as Iitate-mura, needed considerable preparation to refuse the merger. However, Iitate-mura's choice was by no means abrupt or eccentric. This was because of the decision-making of the villagers who had already been familiar with the village policy to realize a "Quality life" proposed in the "4th Promotion Plan": a 10-year plan formulated in 1994 before the establishment of the merger council. Their resolution can be seen in the "5th Promotion Plan", formulated in 2004 after they refused the merger, which set "Slow life" as its main philosophy.

The "5th Promotion Plan" planned for a population of 5,800 persons and 1,700 households in 2014. Since the population of Iitate-mura decreased to 7,093 in 2000, the "5th Promotion Plan" was formulated with "Slow life" as its planning philosophy on a premise of further population decrease.

2) The "Slow Life" of the "5th Promotion Plan"

In 1994, Iitate-mura, using terms like "quality life" and not seeking to catch up with urban lifestyles, formulated a village promotion plan to realize villagers' happiness even with depopulation. Even in urban areas, the number of people who doubt the value of working hard had begun to increase since the economic boom. In Iitate-mura many villagers also began to wonder about working for more income as a way to happiness.

In the "4th Promotion Plan" Iitate-mura enacted in 1995, they utilized "Quality life" as foreign words, without resistance. Ten years later, when the idea of "Slow life" was set in the "5th Promotion Plan", in order to improve people's understanding and sympathy, Iitate-mura used "Madei life"[5] from the Japanese local language in the Village instead of using foreign words for "Slow life." "Madei life" is explained in the quote from the Village Mayor's greeting in the "5th Promotion Plan" below.

> The "5th Promotion Plan" set "Madei life", instead of "Slow life" as the basic objective of village promotion. In Iitate-mura, villagers usually say "Live in the Madei way". They have been taught from parents and aged persons that "You should take food in the Madei way", "Raise children in the Madei way", "Work in the Madei way", etc. In these ways, "Madei" is used to mean "take the time or effort to do things", "carefully", "take enough time", "wholeheartedly", and "modestly". These meanings quite often overlap with "Slow life". The "5th Promotion Plan" plans and implementations are all measured from the perspective of this "Madei life". (Summary of "Greetings" of the "5th Promotion Plan" by Norio Kanno, Mayor of Iitate-mura)

3) Some basic concepts of "Madei life"

The "5th Promotion Plan" describes the following six future visions of Iitate-mura where the 'Madei life' will be realised.

a) A village where people respect "mutual education" to raise sensibility and independence. The aim is for people to grow up in cooperation with schools, homes, and communities.
b) A village that is rich in gentle smiles with care and support for each other. The aim is for people to be kind to everyone and to live long lives.

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[4] The dynamics of Iitate village regarding the merger are analysed in "Rural Governance and Municipal Amalgamation" (Revitalization: Fate and Choice, Chapter 8, E-book, Rural Development Institute, Brandon University, 2008, https://revitalization.brandonu.ca/).

[5] "Madei" can be used as a noun, adjective, or adverb.

c) A village with recycling systems for healthy lives and environment. The aim is to improve and create a living environment for supporting "Madei life".
d) A village with circumstances and systems to realise "Madei life". The aim is to arrange the circumstances and systems in the village to let people enjoy a way of life according to the laws of nature as much as possible.
e) A village with vital farming and Iitate-style industrial activities. The aim is to improve and promote the cycle of people's economic activities within the village.
f) A village where people are proud of the way of life and living in Iitate-mura. The aim is to create systems that support people's diverse ways of life.

In this way, Iitate-mura, set "Quality life" as one of its goals of the "4th Promotion Plan" of 1995 and had been working on village promotion based on the idea of "Slow life" since the "5th Promotion Plan" of 2005. In the middle of the "5th Plan" Iitate-mura was hit by radiation exposure from the TEPCO Nuclear Power Accident in 2011. The earthquake just one or two days before the accident caused unprecedented damage to the Village (Iitate-mura) as far as the villagers remember. In an earthquake-prone country such as Japan, earthquakes are unavoidable, and people are forced to experience hardship when dealing with them, but they have accepted it as their destiny and overcome it ever since people settled in the Japanese archipelago.

I believe that most Japanese people did not become angry at the earthquake disaster. However, some people, especially the villagers of Iitate-mura who were forced to evacuate, are understandably chagrined about the nuclear accident. They think that humankind should not have constructed a nuclear power plant in the first place, or that the TEPCO Nuclear Power Accident seemed to be a "man-made disaster" and to be avoided. For them, it is natural to feel resentment against the accident. Contrary to my assumption above, in the records of Iitate-mura and in the message of Iitate-mura introduced in Chapter 8 ("Looking toward the past and the future of Iitate-mura exposed to radiation"), there seem to be no angry words against the accident except the following two Village Mayor's messages. One is,

> "We were swayed by the Nuclear Power Accident for the last year and three months. I feel fury as if my stomach is boiling. However, our complaining and fury do help nothing in our future. Therefore, I have been thinking positively. We have gotten warm supports and cheers from many people, and …"[sic][6]

This message is expressed conservatively in the margin of a chronological table of the last year and three months in Iitate-mura after the earthquake and the nuclear accident. Another is,

> "Since the whole village evacuation due to the Nuclear Power Accident, in an instant, four and half years have passed. I never thought it would be such a long time before we would return to the village… But unfortunately, no matter how hard we try, it will be difficult to get back to the original village life."[7]

This message was made two years before the evacuation order was lifted and seems not to be violent. I was unable to find other angry or similar words in the main records on the disaster history of Iitate-mura.[8]

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[6] (by Village Mayor Norio Kanno). Iitate-mura edit., *Handbook of Iitate-mura 2012*, 2012, pp.5~6.

[7] "Madei no Mura ni mata Hiwa Noboru" (edited. Iitate-mura), 2015, p.26.

[8] Even if there are no other sentences or words than the above in the records of Iitate-mura, I believe that in the village records there are surely many hidden expressions of anger by villagers against the nuclear accident.

Ch.2 What happened in Iitate-mura as a result of the Great Earthquake and the TEPCO Nuclear Accident

1) Disaster from the earthquake

The Tohoku Earthquake of M9.0 occurred at 14:46 on March 11, 2011 off the Pacific coast. Its maximum seismic intensity was 7 in the coastal area.[9] It was a trench-type earthquake that occurred in the sea area called the Japan Trench. This trench is the boundary between the North American Plate and the Pacific Plate that sinks below the Northern American Plate. Its epicenter was on the seafloor of north latitude 38 ° 6" 12.6" and east longitude 142 ° 51" 39.6", about 130 km east-southeast of the Ojika Peninsula (about 50 km east of Sendai City), at about 24km under the seafloor.
In Iitate-mura, the maximum seismic intensity was 6-weak, since the Village was located inland. The earthquake was "on a scale not mentioned in the villagers' lore". Iitate-mura was not damaged by the tsunami because it was about 30km inland from the Pacific coast. However, electricity, water services, telephones, and mobile phones in the whole village were cut off. There was some damage such as roofs, although the houses did not collapse. The road network was broken at 70 places by rockfalls, shoulder depressions, and landslides. Village officials prepared meals in front of the village office for evacuees from the coastal areas. Iitate-mura accepted 4,166 evacuees[10] at elementary schools and other village facilities from March 12th to 16th.

At 15:32 on March 11, the TEPCO Nuclear Power Station lost all external and internal electric power sources due to the collapse of electric steel towers by the earthquake and inundations from the tsunami. Subsequentially, it lost its cooling function. As a result, the 1st, 2nd, and 3rd atomic reactor melted down.

At this moment, villagers in Iitate-mura were involved in confirming the earthquake damage, responding to lifeline disruptions and restoration, obtaining and distributing gasoline, and accepting evacuees from coastal regions. However, they didn't consider that the accident of the TEPCO Nuclear Power Station would affect Iitate-mura because it is more than 30 km away. In Iitate-mura the evacuation halls opened for evacuees from coastal regions and were operated until March 19th, when some villagers began to evacuate to Tochigi prefecture due to high radiation exposure in Iitate-mura.

Table 2. The impact of the earthquake and the TEPCO Nuclear Accident on Iitate-mura within 9 days after the earthquake and the accident

March	Impacts of the Earthquake	Impacts of the TEPCO Nuclear Accidents
11	14:46 The earthquake occurred. All life lines were cut off.	15:32 The TEPCO Nuclear Power Station lost all electric power (SBO)* due to the collapse of electric steel towers by the earthquake outside of the TEPCO site and the site flooding from the tsunami.
	Iitate-mura organized an earthquake counter-measures headquarter	
	Iitate-mura opened soup kitchens for evacuees from the areas around the TEPCO nuclear power station and coastal regions outside Iitate-mura**.	
12	Iitate-mura opened an evacuation hall.	
		15:36 TEPCO P1 reactor building, hydrogen explosion.

[9]Seismic intensity is the earthquake intensity according to the Japan Meteorological Agency. They use a seven-level seismic scale where 7 is the maximum intensity. Seismic intensities of 6 and 5 are divided to two classes -strong and -weak, respectively.

[10]As of this writing, some of the evacuations from the coastal regions might be not due to the earthquake or tsunami but seemed to be mainly due to the TEPCO Nuclear Power Accident. However, there is no data to distinguish people by these two categories. People from the southern part of the neighbouring municipality of Minami-Soma City on the coast were transferred to one of the evacuation areas at 18:25 on March 12. At this time, none of the villagers in Iitate-mura thought they would be among those being evacuated in the near future.

13		Iitate-mura opened another evacuation hall.
	Lifeline gradually recovered.	
14	Lifelines except telephone recovered completely.	11:01 TEPCO P3 reactor building, hydrogen explosion.
		Prefecture Gov. set radiation monitoring post in Iitate-mura. Measured every hour, and the 1st measured value was 0.09 μSv/h.
		Iitate-mura started vehicle patrol for calling attention to radiation exposure.
		Iitate-mura opened another evacuation hall
15	Telephone and mobile services recovered.	06:14 TEPCO P4 reactor building, hydrogen explosion.
		At noon, radiation increased. Max was 44.7 μSv/h.
16	Iitate-mura organized a team for fuel purchasing and distribution.	
19	Iitate-mura closed all evacuation halls in the Village because of radiation.	
		Mass voluntary evacuations of Iitate-villagers to Tochigi Prefectures were organised on March 19 and 20.

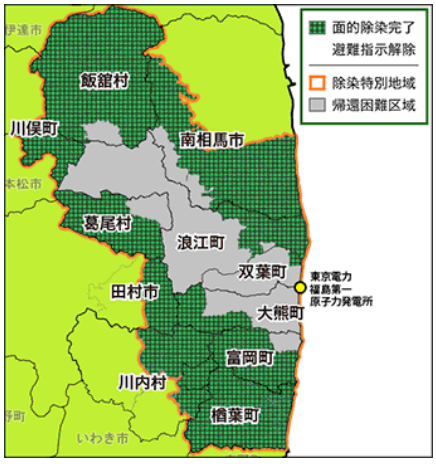
*SBO refers to a Station Blackout where a unit loses all electrical power. The meltdown of the TEPCO Fukushima Daiichi 1st Plant (P1) occurred at around 20:00 on 11 March, the 2nd Plant (P2) at 22:50 on 14 March and the 3rd Plant (P3) at 22:10 on 14 March (Nuclear and Industrial Safety Agency, METI, 6 June 2011).

** The soup kitchens and the evacuation halls were used for evacuees not only from the nuclear accident but the earthquake and the tsunami because there were no evacuees from the both disaster in Iitate-mura at the initial stage of the disaster. As I already mentioned in footnote 10 in the text, although the majority of the evacuees were from the nuclear power accident, the existence of evacuees from earthquake and tsunami cannot be denied.

2) The Tsunami impact on the TEPCO Nuclear Power Accident

The TEPCO Fukushima Daiichi Nuclear Power Station includes a site area of approximately 3.5 km^2 along the Pacific Ocean, with six nuclear power plants (boiling water reactors BWR): the 1st to 4th plant in Okuma Town and the 5th and 6th in Futaba Town, Fukushima Prefecture. The height of the assumed tsunami protection was designed to be 6.1m (it was 5.7 m until 2006).

Figure 1. Location of Iitate-mura and TEPCO Nuclear Power Station



Source: HP of Ministry of Environment. "Josen Joho Site" (The site for decontamination) as of September 2021.

a) The TEPCO Nuclear Power Station site is shown in the grey area by a small black circle along the Pacific coast.

b) Iitate-mura is located at the northernmost part of the green mesh area.

c) Areas with mesh are areas of systematic evacuation where the decontamination work is finished, the evacuation order has been lifted, and the return home begun. Areas with gray colour are warning areas where the decontamination work hasn't started (i.e., "areas difficult to return") as of March 2021.

d) Kanji characters in bold are names of municipalities forced to evacuate.

On the day of the earthquake, the 1st to 3rd plants were generating electricity, and others were stopped due to regular inspections. A tsunami with a run-up height of 14 to 15m hit about 50 minutes after the earthquake, and one after another the emergency diesel generator and emergency batteries were damaged, resulting in an all-power loss (SBO) because the external power supply was cut off by the power line pylons collapse as a result of the earthquake. This meant that the plants lost their water injection.

Iitate-mura's counter measures against the TEPCO Nuclear accident were as follows.[11]

Table 3. The impact of the TEPCO Nuclear Power Accident and Iitate-mura's counter measures

March	Events of the TEPCO Nuclear Accident	Counter measures of Iitate-mura
11	14:46 Earthquake. The 1st to 3rd plants automatically stopped. External power grid failed because of the earthquake.	
	15:27 The first tsunami hit with a height of 13m, and caused the loss of the internal power supply of emergency diesel generator and battery. Gradually cooling functions failed, and the 1st to 3rd plants melted down. (The highest tsunami was 14~15m.)	
12	15:36 TEPCO P1 reactor building, hydrogen explosion.	
14	11:01 TEPCO P3 reactor building, hydrogen explosion.	Set radiation monitoring post. Measured every hour. The 1st measured value was 0.09 μSv/h.
		Iitate-mura started patrols by vehicle to call attention to radiation exposure.
15	06:14 TEPCO P4 reactor building, hydrogen explosion.	At noon the radiation increased to a max 44.7 μSv/h.
16		Opened a shelter for the Warabidaira district of Iitate-mura.
19		A mass voluntary evacuation to Kanuma City, Tochigi Prefecture started on March 19 & 20.
20		Mass evacuation to Kanuma, total evacuees: 511 persons.
21		Requested not to drink water from wells and tap water.
29		Thyroid exposure test for children
30		Thyroid exposure test for children
April 1		The radiation dose of tap water fell below the standard value, and the restriction was lifted except for infants.

The nuclear power plant is located on the Pacific coast in the southeastern part of Fukushima Prefecture, Iitate-mura is located northwest of the TEPCO Nuclear Power Station, and the Village is within 28 km to 47 km from the TEPCO site. However, at the site of the nuclear power plant, a wind from the southeast to the northwest often blows, carrying radioactive materials into the Village. As a result, the whole village was transferred to evacuation areas in the region (see below) even though Iitate-mura was 28 km to 47 km from the accident site. Referring to the international standard value (20 to 100 mSv/year) for protecting ourselves from radiation, the Government finally announced on April 22, 2011 the three evacuation areas due to the TEPCO Nuclear Accident. The three evacuation areas are defined with instructions as below (from the Fukushima Prefecture website).

a) Systematic evacuation area: An area more than 20km from the accident site where the total exposure dose for

[11] TEPCO had operated the Fukushima Daini Nuclear Power Station with four reactors about 15km south of the TEPCO Fukushima Daiichi Nuclear Power Station where the accident occurred (Daiichi means "First" and Daini means "Second".) I will refer to these as TEPCO F1 and F2. The Daini station avoided the severe accident because its site was 12m above sea level and because the external power supply wasn't blocked and kept functioning to cool the reactors.

one year after the accident is likely to be 20 mSv. The Government required the residents within the area to evacuate. Iitate-mura is located in this area.

b) Emergency evacuation preparation area: Within 20 to 30 km from the accident site. The Government required the residents to evacuate indoors or evacuate to other areas in an emergency.

c) Warning area: Within 20 km from the accident site, the Government prohibited people to live in or trespass into the area.

Ch.3 The evacuation process for the whole village

1) From the nuclear accident to temporary evacuation housing

Table 4 outlines the evacuation orders by the Government in response to the nuclear accident. The areas covered by the order expanded from 2-3 km areas around the nuclear power plant to Iitate-mura 28 km to 47 km from the plant. It included six weeks from the accident to when the last evacuation order was announced and the whole of Iitate-mura was incorporated into the evacuation area (March 11 to April 22).

Table 4. Evacuation orders of the Government

Month		Events and Gov. Orders
3	11	14:46 Earthquake occurred.
		15:27 The first wave of the tsunami hit the TEPCO Fukushima Daiichi Nuclear Power Station*.
		15:32 TEPCO F1, all electric power cut off (SBO).
		19:03 Nuclear emergency declaration by the Government.
		20:50 Fukushima Prefecture ordered evacuation from areas within 2km from TEPCO F1.
		21:23 Government ordered evacuation from areas within 3km from TEPCO F1, and indoor-evacuation to areas between 3km and 10km from TEPCO F1.
	12	05:44 Gov. ordered evacuation from the areas within 10km from TEPCO F1.
		15:36 TEPCO P1 reactor building, hydrogen explosion.
		18:25 Gov. ordered evacuation to areas within 20km from TEPCO F1.
	15	11:01 Gov. ordered indoor-evacuation to areas within 20~30km from TEPCO F1. **(the Warabidaira district of Iitate-mura is within this 20~30km area.)****
	25	Gov. asked for voluntary evacuation to areas within 20~30km from TEPCO F1. **(theWarabidaira district of Iitate-mura is within this area.)**
4	11	Gov. announcement of the order entitled "Systematic Evacuation Area" on April 22.
	22	Gov. ordered "Systematic evacuation area". (*cf.* Figure 1) **(All Iitate-mura was transferred to this area.)**

*TEPCO operated two nuclear power stations named TEPCO F1 and TEPCO F2 Stations. The F2 Station was located about 15km south of the F1 Station. The F2 Station had no serious accident, but at the initial stage the Government ordered some instructions relating to the TEPCO F2 Station which are not displayed here.

**Bold text identifies issues relating to Iitate-mura.

The voluntary evacuation requested for the Warabidaira district of Iitate-mura was issued on March 25, 14 days after the nuclear accident on March 11. The whole village evacuation order was issued 42 days after the nuclear accident or 38 days after the accumulative dose in the village was found to be high on March 15. This was late compared to other evacuation areas. There was only the following sentence related to the late order in the Village's record: "Iitate-mura had a hard time to find and set shelters for evacuees because of the very late evacuation order" (Iitate-mura edit., *Iitate Madei na Fukko-Keikaku* ("Reconstruction Plan in Madei way") (2nd edition), 2012, p.3.). There were no similar sentences in

other records.

Table 5 summarizes Iitate-mura's initial responses to the nuclear accident during the first six weeks.

Table 5. Responses of Iitate-mura until the whole village evacuation order on April 22

Month		Responses of Iitate-mura to radiation exposure and evacuation orders
3	11	TEPCO nuclear accident occurred.
	14	Radiation monitoring post begun, and evaluated every 60 minutes. The first value was 0.09 μSv/h.
		Started patrol by vehicle for calling attention to radiation exposure.
	15	Government ordered indoor-evacuation to areas within 20~30 km from TEPCO F1 and the Warabidaira district of Iitate-mura which is within this 20~30 km area.
	16	Opened an evacuation hall for residents of the Warabidaira district.
	17	Distributed survey forms regarding evacuation to all family-heads in the Village.
	18	Decided mass evacuation of villagers who wanted to evacuate voluntarily.
	19	Organized the first mass voluntary evacuation team to Kanuma City in Tochigi Prefecture.
	20	Last mass voluntary evacuation team to Kanuma City: Total evacuees were 511 persons.
		965 Bq/kg of radioactive iodine was detected in tap water. Closed all evacuation halls for evacuees from other municipalities because of tap water problem.
	21	Requested not to drink water from wells and tap water.
	22	Carried out radio exposure inspection.
	23	Carried out radio exposure inspection by the Ministry of Education, Culture, Science and Sports.
	29	Carried out thyroid exposure test, no abnormalities.
	30	Carried out thyroid exposure test, no abnormalities.
4	1	Radiation dose of tap water fell below the standard value, and the restriction was lifted except for infants.
	7	Iitate-mura recruited infants and pregnant women to evacuate. Started evacuation recruitment for residents in 3 high-dose districts in the southern part of the village.
	11	The Government announced the "Systematic Evacuation Area" policy in advance. Iitate-mura was incorporated into this policy on April 22. The "Systematic Evacuation Area" means an area where the cumulative dose/year after the accident may exceed 20 mSv.
	13	Infants and pregnant women were evacuated to Anahara hot spa in Fukushima City.
	15	The Warabidaira district was transferred to an indoor-evacuation area.
	16	The evacuation hall was set up for evacuees from the Warabidaira district.
	21	The new school year started with kindergarten, elementary, and junior high school at rented facilities in Kawamata Town to the west of Iitate-mura. Iitate-mura operated the school bus.*
	22	The Government ordered a systematic evacuation to the "Systematic Evacuation Area". All of Iitate-mura was transferred to this area.

*The school year in Japan is ordinarily April 1 to March 31, but because of the nuclear accident, the school year ended early in Iitate-mura, and the start of the year was delayed.

2) The process of evacuation of the whole village

The evacuation activity in Iitate-mura began on March 15 when the Government ordered the indoor evacuation in the Warabidaira district. On the 16th, an evacuation hall for evacuees from Warabidaira was set up in the Village. After that, as villagers who wanted to evacuate voluntarily increased, Iitate-mura organized mass voluntary evacuation teams to Kanuma City in Tochigi Prefecture, about 180km south-west of the Village, on the 19th and 20th. The number of evacuees became 511.

On March 20, villagers were surprised to learn of the high radiation level in tap water and to hear the Government's

advance announcement for the "Systematic evacuation area" designation to include Iitate-mura on April 11. Meanwhile Iitate-mura planned the evacuation of infants and pregnant women, and reopened school education in Kawamata Town next to the west of Iitate-mura. The new school year started at the beginning of April but all schools had been closed since the earthquake. Pupils went to the schools by school buses.

On April 11, the Government announced the policy for managing the "Systematic evacuation area" including Iitate-mura. It is an area where the cumulative dose for one year after the accident may exceed 20 mSv (millisieverts). In response to this policy, the Village held briefing assemblies on its policy in every district of the Village from April 13 to 16. On April 22, the Government ordered the "Systematic evacuation area" for Iitate-mura as a whole including the Warabidaira district. On April 30, the Kanuma City evacuation hall for emergency and voluntary evacuation from Iitate-mura was closed, and the evacuees returned to the Village to prepare for their systematic evacuation. Then, on May 1, Iitate-mura started accepting move-in applications from villagers to housing rented by the Fukushima Prefecture for evacuees, and on May 14 the first systematic evacuation team of 64 people in 10 families was evacuated to Fukushima City. In this way, the systematic evacuation began.

Despite the "whole village evacuation" order, Iitate-mura asked and got permission for 9 business establishments to continue indoor operations in the Village, and "the employment of about 550 people was protected".[12] Employees commuted to the establishments from the evacuation destination. One of the establishments, the Iitate Senior Care Home of "Iitate home" chose to continue its services in the Village in order to avoid senior residents' evacuation which would carry the risk of serious illness and death of residents. In Iitate-mura, since radiation exposure was within the permissible range as long as people are indoors, these measures were taken at the request of the business establishments and the Village.[13]

On May 14 the first evacuation team with 64 persons of ten families including infants and family members left Iitate-mura for Fukushima City. The main events after the first evacuation were as follows. On May 17, Iitate-mura got permission for continuing business in the Village. Until about May 20 the number of households evacuated reached 2,914, and Iitate-mura conducted a household survey of villager's intentions through post mail, and got 1,788 answers up to June 1. According the survey, 57.7% wanted to return to the Village.

On June 1, Iitate-mura opened a branch office in Iino-machi, Fukushima City where many village evacuees lived. On June 2, Iitate-mura organized a Patrol Corps with 400 village evacuees to watch vacant houses of evacuees in the Village. For evacuees, Iitate-mura built nine temporary housings complexes of 579 households in total in neighbouring municipalities, and the first moving-in was on June 5 and the start of the last was on July 31.[14] On June 22, all functions

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[12] Iitate-mura edit., "Madei no Mura ni mata Hi wa Noboru", 2018, p.35.

[13] I understood this from "Evacuation Weak People: What happened that day at the nursing home near the Fukushima Nuclear Power Plant" (Yurina Aikawa, Toyo Keizai Shinposha, 2013) that a great deal of energy was consumed to achieve business continuity in the village under the evacuation order. Ms. Aikawa reported on what happened during the evacuation of the nursing homes in Fukushima Prefecture, including the Iitate Home. Business operators needed to get consensus for business continuity in the Village through at least five stages, such as within the household of each worker, at a business establishment, between business partners or customers and business establishments, and at the Village office and the Government. Due to the invisible nature of radiation, there may be differences in safety and danger evaluations among experts, and curious eyes and irresponsible advice on continuing business in the Village under evacuation orders. Therefore, every person concerned with the business continuity in the Village seemed to have had to make a difficult choice.

[14] The housing installations for evacuees were as follows: Temporary housing built by the Iitate-mura, housings rented by the Fukushima Prefecture, housing owned by the prefecture and the Government, and housing arranged by evacuees. Housing rented by the prefecture was the largest in number of houses.

of the Iitate-mura Village office moved to the Iino branch office in Fukushima City, and operations began.[15] On July 2, child exposure inspections were conducted at Tokai Village in Ibaraki Prefecture, and thereafter it was conducted frequently at the same place. On August 16 and 18 internal exposure inspections were conducted. On October 9, thyroid examinations for children were conducted at Fukushima Medical University, and thereafter it was done every Saturday and Sunday until November 13. Additional examinations also were conducted at the same University from January to March in 2012. Meanwhile, Iitate-mura opened several temporary buildings for evacuated business activities, including workshops in three neighbouring municipalities.

At the end of July, the evacuation of villagers was almost complete. It was the date when the last moving-in to the temporary evacuation housing of the Village was finished. The evacuation situation after the above will be explained in Ch 5: Evacuation situation of the whole village.

Ch.4 Activities and efforts regarding radioactivity decontamination

1) The purpose and method of decontamination

The Government decided to carry out a decontamination project mainly by removing the topsoil for the early reconstruction of the areas contaminated with radioactivity by the TEPCO Nuclear Power Accident. It was carried out not only in Fukushima Prefecture but in other prefectures as shown in the Appendix and was conducted in 93 municipalities in 8 prefectures including Fukushima Prefecture.

Iitate-mura was designated as one of the special decontamination areas where a 5,600ha target area was carried out under the direct control of the Ministry of Environment. The explanation of the decontamination project for all villagers began in May 2012, and the phase I decontamination work in Iitate-mura was completed in December 2016. With the completion, the Government lifted the evacuation order and residence restrictions to Iitate-mura on March 31, 2017. The Nagadoro district in the southern part of Iitate-mura was excluded from the phase I decontamination work because of the high radiation dose. All residents of the Nagadoro district[16] have remained in evacuation as of March 31, 2021 under the evacuation order. The decontamination in Nagadoro will be carried out as the phase II decontamination work.

The Decontamination Target for Iitate-mura

The Ministry of Environment set the standard that the annual cumulative dose should be below 20 mSv (milli-sievert). However, Iitate-mura proposed its own standard of 5 mSv through discussions at the "Iitate Reconstruction Assembly". Therefore, as to the decontamination verification carried out after the completion of decontamination, the Iitate-mura Decontamination Verification Committee decided to undertake the verification by its own standard of being below 5 mSv. In addition, the Village has been independently measuring the air dose rate at 90 fixed points in the residential sites and farmland in all districts since April 2011 as a Village project. The Verification Committee also verified this fixed-point measurement.

The basis for decontamination

Radioactive materials were released due to the TEPCO Nuclear Power Accident, diffused over wide areas in the form of aerosols, etc., and settled on the ground with rainfall and snowfall. At present, radioactive cesium, which accounts for most of the environmental radioactivity, is thought to have merged with the rainfall and poured on the ground in the form of ions. The radioactive cesium deposited on the surface of the ground is currently largely adsorbed on soil particles.

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[15] The temporary Village office returned to Iitate-mura April 1, in 2014 before the beginning of the Villagers return to the village in April 2017.

[16] The number of residents as of the date of the TEPCO Accident was 282 of 74 households. ("Madei no Kokoro wo Tsuzuru", Iitate-mura, 2018, p.23)

Only a little radioactive cesium is present as dissolved substances in water such as rivers and lakes, and most of it is adsorbed on suspended solids such as soil particles. In the monitoring of water in rivers and lakes, it was found that it contained almost no radioactive cesium. It is also known that the wastewater for cleaning radioactive materials contains almost no radioactive cesium.[17]

2) Decontamination targets and results, and Verification of effectiveness and results

The Decontamination of Iitate-mura started in September 2012 as a project under the direct control of the Government (Ministry of Environment). The phase I decontamination work was completed by December 2016. In Iitate-mura, it was carried out in areas where the air dose rate was 5 μSv/h or less. Decontamination was not carried out in areas with measured values above that. Nagadoro district is the only area not included in phase I because its air dose was above 5 μSv/h. Most of the farmland was decontaminated by removing topsoil. The targets and achievements of decontamination are in Table 6.

Table 6. Achievements of the phase I decontamination work

Business period	October 2012 to December 2016
Population and Area within the target area	6,000 persons and 5,600 ha
Number of Residential sites (incl. schools, parks, graveyards)	2,100 sites
Farmland	2,400 ha
Forest*	2,100 ha
Roads	330 ha

* It is basically carried out only for 20 m from the forest edge to the forest side. However, in Iitate-mura, forests used for harvesting wood for fuel and producing charcoal, campsites, walking paths, roads for timber production, rest areas, open spaces and parking lots were decontaminated.

Source: Decontamination progress information in Iitate-mura, Fukushima Prefecture, Decontamination site, Ministry of Environment (env.go.jp)

In February 2017, Iitate-mura organized a Decontamination Verification Committee. It consisted of one representative of Iitate-mura, four experts from the National Institute for Environmental Sciences, Fukushima Prefectural Medical University and similar institutions, and eight observers consisting of three from the Government and five from science fields. The Committee utilized the measured values submitted by the Ministry of Environment, the measured values of AIST (National Institute of Advanced Industrial Science and Technology), and the measured values at 90 fixed-points by the Village. It submitted a comprehensive evaluation report as follows (Source: "Iitate-mura Decontamination Verification Committee Report" [hereinafter "Decontamination verification"] 2017. June 23, 2014).

Comprehensive evaluation of the Verification Committee

a) The radiation environment in Iitate-mura is generally below 5 mSv (milli-sievert) per year.
b) From the view of the transfer of radioactive cesium to crops, it is considered that, the soil of the farmland in Iitate-mura is in a state which doesn't interfere with farming.
c) There is no possibility that radioactive cesium will flow out or scatter from the forest, and will make the air dose rate at the foot of the forest area increase. (From "Decontamination verification" pp.11-12)

The main verification contents are as follows.

[17] From the Ministry of Environment website of "Guidelines for decontamination, decontamination methods, effects".

Air dose before and after decontamination

The average value of the air dose rate measured before decontamination was 2.3 μSv/h (microsievert per hour) for both residential sites and farmland. The average value measured immediately after decontamination (assuming at the same location) was 1.0 μSv/h for residential sites and 1.1 μSv/h for farmland, which are lower than the predicted value (2.0 μSv/h) under the natural reduction effect. In the first monitoring initiative conducted after the above measurement, both average values at residential sites and farmland were 0.8 μSv/h. In the second monitoring event, at the residential site the average value was 0.5 μSv/h and at the farmland site it was 0.6 μSv/h. The air dose rate decreased as time passed. This tendency did not differ significantly among districts. ("Decontamination verification" p.5)

Results of fixed-point measurement

Iitate-mura has continued fixed-point observation at 90 points covering all districts since April 2011, and the air dose is measured regularly by the Village until the present. The Verification Committee evaluated the results of the fixed-point observations as follows.

> "Comparing the initial measurement (April 2011) with the measurement in December 2016 after 5 years and 8 months (when decontamination was completed), the rate of decrease at all points was more than 86%, and it exceeds 90% in most places. Even the rate of decrease at the fixed-points in Nagadoro district which is undercontaminated at the present, was 83% in farmland and 94% in the residential site". ("Decontamination verification" p.5)

Estimation of individual dose after decontamination

AIST (The National Institute of Advanced Industrial Science and Technology) measured the annual additional individual dose when living in Iitate-mura with the cooperation of individuals. Based on the measured values, the annual additional individual dose was calculated assuming that an individual stayed indoors for 16 hours and outdoors for 8 hours. According to the annual additional personal dose calculated based on the average value of actual measurements, the personal dose is less than 2 mSv (milli-sievert) in many districts, even for a relatively long outdoor stay of 8 hours. It was evaluated that the decontamination target of Iitate-mura was met, because the personal dose calculated based on the average value of actual measurements was below 5 mSv in most districts. However, AIST pointed out the following. The individual actual measurements in each district were one or two cases, and there was a large variation in the additional individual dose among people living in the same district due to differences in individual situations. They state, therefore,

> "It is difficult to estimate the individual annual additional dose only from the air dose rate measured at a certain fixed-point. When living in your district with your own style, we recommend villagers have and use a personal dosimeter (can be rented to an individual), and to know 'your own personal dose' based on the actual measurement". ("Decontamination verification" p.6)

Results of radioactivity tests of the farmland soil

Most of the decontamination of farmland in Iitate-mura was carried out by the topsoil removal method. It resulted in effectively removing radioactive cesium. Although the value differs among the districts, the average value of all observed farmland was below 5,000 Bq/kg (Bq: becquerel) through the 5-point actual measurement method after decontamination. (Summary. "Decontamination verification" p.7)

Results of radioactivity tests of test-cultivated farm crops

Various crop cultivation in the village was carried out on decontaminated farmland to demonstrate the transition of radioactive materials from soil to crops. As a result of tests on paddies by the Ministry of Agriculture, Forestry, and Fisheries, it is known that the ratio of radioactive cesium transferred to paddies is extremely small. In addition, Fukushima Prefecture decided to inspect all bags of brown rice prepared for the market. This testing is ongoing. As a

result of nine kinds of vegetable cultivation tests[18] in 2013 and broccoli cultivation tests in 2014, the number of radioactive substances of all test crops were below the food shipping standard value (100 Bq/kg). From the results of the above testing, it was known that the rate of transfer of radioactive cesium to farm products is extremely small. ("Decontamination verification" pp.7-8)

Forests etc.

The Government implemented decontamination to reduce the air dose rate in the following ways. Since it is considered that the air dose rate doesn't decrease even if only the areas around the houses are decontaminated, the Government decontaminated forest areas near the living environment by removing the fallen leaves in the range from the forest edge to the back side of about 20m. If the removal of fallen leaves did not reduce the air dose, additional decontamination by removing the topsoil was carried out. The decontamination was carried out not only for forests but areas for charcoal burning, camping and walking, forestry roads, resting, enjoying open spaces, and parking where villagers and visitors enter and stay daily. Using these results, the Verification Committee evaluated that there was a reduction of the air dose rate in the living environment. (Summary. "Decontamination Verification" p.9)

The Village Decontamination Verification Committee attached a proposal to the verification result report. It proposed conducting six remaining tasks related to the decontamination project. Among them, it pointed out that decontamination waste which was stored in the Village needed to be promptly removed to an intermediate storage facility, and that having and using a personal dosimeter was necessary to know personal doses based on the actual measurement.

Ch. 5 Aspects of the evacuation of the whole village

1) Two forms of evacuation and various evacuation facilities

The evacuation of Iitate-mura had two forms: "Emergency evacuation" and "systematic evacuation". The emergency evacuation was carried out by the Village after the nuclear accident happened. It was a voluntary evacuation of those who wished to evacuate from radiation exposure and was organized by the Village.[19] On March 19 and 20, 2011, 314 and 197 people evacuated to Kanuma City, Tochigi Prefecture with the mediation of the Fukushima Prefecture. Tochigi is southwest of Fukushima Prefecture, and Kanuma City is about 180 km from Iitate-mura. All of them returned to the Village on April 30 before the start of another evacuation scheme: the Systematic evacuation. However, there is no description in the village records as to whether or not there was any personal evacuation without the mediation of the Village before and after the start of the systematic evacuation.

The systematic evacuation was ordered by the Government and in principle all residents were forced to evacuate. The first team began to evacuate on May 14. This was twenty-two days after the systematical evacuation order on April 22, thirty-three days after the Government announcement to adapt the systematical evacuation to Iitate-mura on April 11, and fifty-four days after the TEPCO nuclear accident. By the end of July almost all left the Village. My opinion is that the main difference between the emergency and systematic evacuation seems to be whether residents had time to prepare for evacuation to avoid the risk of radioactive exposure.

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[18] Mini tomatoes, cucumbers and green beans in greenhouses, outdoor green beans, cabbages, Komatsuna (leaf vegetable), Chinese cabbages, turnips, Japanese radishes.

[19] In Iitate-mura the emergency evacuation was voluntary. However, the Government ordered emergency evacuations of residents in areas very close to the TEPCO accident site. The latter one is not a voluntary evacuation but a forced one.

Even in the case of the systematic evacuation, some villagers evacuated at first to inns or public facilities for a few days or weeks, and then followed the secondary evacuation route to move into a prefectural rental housing or temporary evacuation housing[20] built by the Village which took time to prepare. The temporary evacuation housing complexes of the Village with 10 to 165 houses were set up in nine locations in four municipalities of Fukushima City, Soma City, Date City, and Kunimi Town. These are all within an hour's drive from the Village. There are various evacuation facilities such as housing prepared by the Village, by mediation of the Prefecture, by the Government, relatives' and parents' houses[21], and private rental houses. Many facilities were inside Fukushima Prefecture, while others were outside Fukushima Pref.

In these ways, some evacuees had two or three evacuation options such as a primary destination and after that a secondary destination. Because they didn't have enough time to judge the suitability of a facility, the Village temporary evacuation housing took time for building and preparation. By the time evacuees settled at a destination, some evacuees experienced voluntary emergency evacuation, systematic evacuation just once, or systematic evacuation multiple times. As stated in Ch. 2, the first mass voluntary evacuation was organized on March 19 and 20, the evacuation order was designated on April 22, the first systematic evacuation started on May 14, the first moving-in to the Village temporary evacuation housing was on June 5 and the last moving-in was July 31. In addition, except for the mediation of the Village or Prefecture there were many options managed by evacuees themselves without the knowledge of officials. In these ways evacuation forms seem more diverse than shown in the official documents.

2) Evacuation status as of September 1, 2011

Iitate-mura provided the following information on the evacuation situation as of September 1, 2011, that is one month after the temporary evacuation housing and other public facilities were completed and evacuees moved in. The number of villagers who lived in the village on the day of the great earthquake was 6,628[22], and the number of persons not yet evacuated was 19 (cf. Table 7).

Evacuees who evacuated to municipalities within Fukushima Prefecture were 2,509 households and 5,960 persons. Of these, there were 579 households and 1,209 persons in the Village temporary evacuation housing, 1,434 and 3,684 in prefectural rental housing, and 209 and 638 in public housing of the Government or the Prefecture.[23] That is, evacuees who lived in the above public facilities were 2,222 households and 5,531 persons. The other 287 households and 429 persons lived in private rental housing, parental houses, and other locations. 295 households and 536 persons evacuated to other Municipalities outside Fukushima, and 2 households and 4 persons evacuated overseas.

Table 7. Villager's evacuation status by habitation on September 1, 2011

Category	Destinations or residence	Persons	Households	Remarks
Evacuees	Within Fukushima Prefecture	5,960	2,509	Excluding Iitate-mura
	Prefectures outside Fukushima	536	295	
	Overseas	4	2	
	In the Village: Iitate home	107	107	Senior care house
	Sub-total	6,607*	2,913	
Persons not yet evacuated		19	14	Living in the Village
Total		6,628*		

[20] Evacuation housing is the shelter house for evacuees constructed under a law by the Village.

[21] Parents' house is a house of parents of evacuee's household head or its wife outside Iitate-mura.

[22] The total number of evacuees by "Destination of residence" and not-yet evacuees is 6,626 persons. Since the number of evacuees of 6,628 in above text who lived in the village on the day of the earthquake, 2 persons are missing, but both numbers are from the same record.

[23] These figures, excluding the sub-total in Table 7 which I calculated and added, are quoted from "Madei no Mura ni Mata Hi wa Noboru" (p.42).

Source: Iitate-mura edit., "Madei no Mura ni Mata Hi wa Noboru", 2015, p.43.

*In the quoted material of "Madei no Mura ni Mata Hi wa Noboru", the total number of evacuees is 6,628, but the total of evacuees and persons not-yet evacuated in the table is 6,626. In other words, two less than the total of 6,628, that is the totals and breakdowns from the source material do not match. The total number of households is not shown in the material.

After receiving the evacuation order, Iitate-mura requested the Government to build "disaster temporary housing" based on the "Disaster Relief Law", and the Village installed 9 temporary evacuation housing complexes in surrounding municipalities. Evacuation to the temporary housing began at first on June 5 and ended on July 31. The total number of housing units in the nine complexes is 579. The large complexes include 165 housing units at the Onodai in Soma City, 101 at the Matsukawa 1st and 98 at the Matsukawa 2nd in Fukushima City, and 75 at the Datehigashi in Date City. The small complexes include 23 units at the Uenodai and 10 at the Okido in Kunimi Town. These temporary housing units are built based on the "Disaster Relief Law", and the Law has some standards such as housing scale (29.7m2) and a regulation that construction starts within 20 days from the date of the disaster. Therefore, the records introduced the following issues regarding the evacuation to temporary housing: "There were many cases where families moved in separately, depending on the location of the complex and size of the house" ("Madei no Mura ni Hi wa Mata Noboru", p.42).

In the case of Iitate-mura the evacuation had different impacts from the point of view of family as follows (see Table 8). There were many cases in Iitate-mura where families evacuated separately. The evacuation forms from the view of the family are shown in the results of the "Fact-finding survey on evacuation life and intention to return to the Village" conducted by the Village in May 2012. Its survey covered all evacuation families. 2,914 sheets were distributed, but 1,788 were collected with a collection rate of 61.4%. The evacuation seems to be often thought of as carried out on a family basis, however the "evacuation based on a family" is not the typical one in Iitate-mura. Here, "family basis" means the evacuation of a family with the same family members before evacuation. Note that where evacuation status is indicated and explained in terms of the number of households in this report, even if a family member of a household is evacuated separately as shown in Table 8, the evacuation destination of the household head is aggregated and indicated as representative of the household's evacuation status.

Table 8. Evacuation from the view of family as of May 2012

Evacuation from family view	Families responding	Share in %
A family*, 1 place	602	33.7 %
2 places	719	40.2
3 places	314	17.6
4 and more places	90	5.0
Others	15	0.8
No response on the question	48	2.7
Total	1,788	100.0
Number of survey sheets distributed	2,914	---

Source: "Report on Fact-finding survey on evacuation life" by Iitate-mura, May 2012.

*Note: 1. The number of families evacuated on May 2012 is 2,914, and the survey sheets were distributed to the family head.

2. Family means a family as it existed just before the evacuation.

The above survey shows the reasons why they evacuated separately (Multiple answers were possible): 53.9% due to small housing, 50.9% for family work, 21.4% for children's school attendance, 15.8% for family health, 24.5% for being worried

about radiation exposure, 4.7% for others, and 2.0% for no response on the question.

3) Evacuation status as of March 1, 2014

The evacuation status in 2014 is shown in Table 9. It is an evacuation status of three years after the TEPCO Nuclear Power Accident on March 2011. It shows the evacuation status at the midyear of 2011 (accident happened) to 2017 (start of the return to the Village). Table 9, "Destination of evacuation – In Iitate-mura" includes residents in the Iitate Senior Care House which was allowed to continue business in the Village, and they are also treated as evacuees.

Table 9. Evacuation status as of March 1, 2014

Evacuation status	Destination of evacuation	Persons	Households
Evacuee	In Fukushima Prefecture	6,126	2,836
	Other Prefectures	490	283
	In Iitate-mura	74	70
	Sub-total	6,690	3,189
Unknown	In Iitate-mura	2	2
Number of residents*	Total	6,692	3,191

Source: Iitate-mura home page.

*"Residents" means persons who registered themselves as an Iitate-mura villager even though they have lived in the evacuation destinations.

4) Evacuation status as of July 1, 2017

On March 31, 2017, the evacuation orders and residence restrictions were lifted from 19 districts except Nagadoro district[24], and the return to the village was begun on April 1, 2017. Table 10 shows the status of Villagers[25] by category of evacuation experience and habitation as of July 1, 2017.

In Japan, a municipality has a resident registration system. It has to serve registered persons and families as supplier of compulsory health insurance, livelihood protection and education before high school, for example. On the other hand, a municipality imposes a tax on them. Registered persons have to pay municipal and prefectural taxes to the municipality, and have the right to all levels of elections, health insurance, and other benefits from the municipality. Actually, until the present, many evacuees of Iitate-mura have kept their registration at Iitate-mura even though they lived in another municipality. Of course, evacuees can re-register from Iitate-mura to another municipality such as a destination municipality at will.

Table 10. Status of residents registered by evacuation experience and habitation as of July 1, 2017

Category of evacuation experience	Destination or residence	Persons	Households
Evacuee even now	In Fukushima Prefecture	5,241	2,174
	Other Prefectures	311	163
	Iitate senior care house*	33	33
Returnee from evacuation	In Iitate-mura	369	169
New birth after return	In Iitate-mura	0	---
Sub total		5,954	2,539
Newcomer after April 2017	In Iitate-mura	25	14
Non-evacuee	In Iitate-mura	10	8

[24] 281 persons and 74 households lived in Nagadoro district just before the TEPCO Nuclear Power Accident.

[25] "Villagers" means persons who registered as a villager of Iitate-mura.

Not clear	---	1	1
Total residents registered		5,990	2,562

Source: "2017-07-01 Status of evacuation", Iitate-mura homepage.

*The Iitate senior house is located in Iitate-mura in Fukushima Prefecture, but residents in this house are not included in "In Fukushima Prefecture" of the above Table10.

Table 11 shows the status of the 5,241 evacuees in Table 10 who lived in Fukushima Prefecture excluding Iitate-mura as of July 1, 2017. 56.1% of them have lived at private houses including those of relatives. The second largest number is 33.2% referring to other public facilities of the prefectural rental house and Prefectural or the Government housing. Only 10.6% of them have lived in the disaster temporary housing. We do not know the entire evacuation impacts due to the TEPCO Nuclear Power Accident in other municipalities outside of Iitate-mura, but as far as Iitate-mura is concerned, the temporary evacuation housing is not a typical destination facility as it is often represented on TV disaster evacuee reports. Many of the public seem not to have had correct information as to the disaster evacuation housing when the disaster happened. It is most likely because journalists can most easily visit evacuation housing complexes for collecting information.

Table 11. Status of evacuees in Fukushima Prefecture by evacuation facilities as of July 1, 2017

Category of Evacuation facility	Persons	Remarks
Disaster temporary housing	553	10.6%. Total number of temporary houses is 579.
Other public housing	1,738	33.2%. Houses rented by Prefecture or houses of Pref. or Government.
Private or relative's house	2,938	56.1%. 981 households.
Seniors house or hospital	12	Except Iitate senior care home.
Total	5,241	100%.

Source: "2017-07-01 Status of evacuation", Iitate-mura homepage.

As of September 1, 2011, evacuees living at private facilities were only 7.2% of 5,960 evacuees who lived in the Fukushima Prefecture except Iitate-mura (see the commentary to Table 7). As of July 1, 2017 three months after the start of the return-to-village, evacuees who lived out of the Iitate-mura but in Fukushima Prefecture were 5,241 persons (Table 11)—with 56.1% living in private facilities. This means many evacuees who lived in public evacuation housing moved to private ones since September 2011.

Even in March 2021, 10 years after the TEPCO Nuclear Power Accident and 4 years after the start of the return-to-village, the return was not completed in Iitate-mura. It is not only because evacuees from the Nagadoro district could not return since the evacuation order there had not been lifted, but also because evacuees from other districts where the order has already been lifted still hadn't decided when to return or whether they should return or not. The details will be explained in Ch. 6 ("Start of return-to-village in April 2017 and its progress until March 2021"). As of March 1, 2021 there were still 3,722 residents in evacuation destinations, 1,481 residents in the village (including 1,251 returnees) and 28 in the Iitate Senior Care House. Four years passed since the evacuation order was lifted on March 31, 2017, however, as of March 2021, the evacuees are still 2.5 times more than the residents who returned to the Village.

5) Some aspects of evacuation life

The "Household Survey"[26] conducted for all evacuated households in May 2012 shows some aspects of evacuation life (1,788 out of 2,914 household heads responded. *cf.* Table 8). It revealed the employment status of households as follows: 34.2% of the respondents held the "same work as before the evacuation", 25.4% were "unemployed but had no plan to

[26] "Report of Questionnaire Survey on Evacuation Life and Intention to return to Village" by Iitate-mura on June 2012.

seek employment", 10.9% were "currently unemployed and seeking employment", 7.0% were "temporary or part-time workers" (different from those before evacuation), and 3.6% held a "job that was different from one before evacuation but were regular employees". However, there is a big difference depending on the type of work that was engaged in before the evacuation. For example, among those who had the "same work as before evacuation", only 8% of them engaged in farming before, and more than 70% of households had regular employment before.

The above survey asked about the total household income. As to household income excluding compensation for the TEPCO Nuclear Power Accident, 34% of respondent households answered as "same level as before evacuation", 3% answered "increased from before evacuation", 26% answered "almost lost", and 30% answered the "monthly amount is less than 2/3 of the amount before". Income for more than half of the households decreased sharply and they seem to have to rely on compensation. This also varies greatly depending on the type of work that was engaged in before the evacuation. For example, 45% of farming households before, answered "almost lost", while only 12% of "salaried income households before" answered this way. In addition, as to "the same level as before evacuation", the difference is still big—amounting to 15% and 50%, respectively.

Regarding household expenses, the following comments are attached to the survey report. "52% of respondents answered 'Household expenses increased', and 29% responded 'slightly increased'. Thus, more than 80% of the respondents said that their expenses increased".

At the beginning stage of the evacuation, Iitate-mura rented educational facilities in the neighbouring town of Kawamata for school education. However, Iitate-mura built temporary facilities in Kawamata and moved classes of kindergarten children and elementary school students to the new temporary buildings on April 2012. For junior high school students, it built a temporary school building in Kawamata and moved classes on August 2012. Iitate-mura operated school buses between the temporary schools and the evacuation sites. There was no news about students who transferred school from schools operated by Iitate-mura to schools operated by municipalities in the evacuation destination.

Iitate-mura edited a chronology from March 11, 2011 to January 2018 in "Madei no Kokoro wo Tsuzuru" with 128 pages of A4 size. The sub-title of its chronology is "Memory of whole village evacuation", and in 22 pages it listed 535 events that happened in these 7 years and 11 months. In this long chronology, there are only two events related to compensation. One was attendance at the Nuclear Damage Compensation Dispute Review Board on June 22, 2013, and another was for the start of an information session on compensations on July 24, 2014. Similarly, there are few descriptions about compensation for the nuclear disaster, therefore, I am unable to introduce anything about compensation here. However, in the Appendix, the compensation paid by TEPCO to all victims will be explained using the figures announced by the Nuclear Damage Compensation Dispute Review Board of Ministry of Education, Culture, Sports, Science and Technology and TEPCO.

Ch. 6 Start of the return-to-village in April 2017 and its progress until March 2021

1) Evacuation order cancellation and preparation for return-to-village

On June 22, 2011 a month before the completion of the evacuation, Iitate-mura moved all of the main office functions to the temporary Iinomachi branch office opened on June 1 in Fukushima City, and closed the main office in the Village. After the completion of decontamination of the main office, Iitate-mura returned the main office functions to the original office building in the Village in April 1, 2014.

Initially, it was said that the decontamination would be completed in two years i.e., 2012 and 2013, but it was delayed. Around the spring of 2013 the Village announced, "Iitate-mura will declare that, in the earliest case, the evacuation

cancellation and return-to-village of 16 districts by autumn 2014 will be moved to spring 2015", and "The return to the remaining 4 districts will be further delayed". Therefore, Iitate-mura decided to return the main office functions to the original building and opened it in April 2014. However, it also announced that the "school education resumption in the Village should be carefully considered" ("Iitate Madei na Fukko-Keikaku", 3rd edition, 2015, p.7.). Generally speaking, the school education resumption and the return-to-village should be at the same time, but Iitate-mura announced the schedule of return-to-village without an outlook for school resumption.

Although the decontamination was delayed, Iitate-mura returned its main office functions to the original office building in April 1, 2014 with an expectation that evacuees' return-to-village would begin in the fall of 2014 if things went well. It is probable that the early reopening of the original Village office had the intent of preventing the evacuees' will to return-to-village from being altered by the delay in decontamination and of keeping hope alive for returning even if the decontamination was delayed by one or two years. Its reopening sent a signal to evacuees that the Village would watch over the steady promotion of decontamination and that the Village would develop infrastructure to support the villager's new life after return-to-village. This was because, "infrastructure restoration is an important requirement for deciding when to return to the village" ("Iitate Madei na Fukko-Keikaku ", 3rd edi., p.8).

After the resumption of the original Village office, various reconstruction projects were carried out at once (Summary. "Madei no Mura ni Hi wa Mata Noboru", p.90). Iitate-mura had several preparatory meetings for reconstruction as early as August 2011 just after the evacuation had settled down. It announced the "Reconstruction Plan 1st edition" in December 2011, and organized a "Reconstruction Plan Promotion Committee" in February 2012. After that, the Committee energetically proceeded with deliberation, and announced the "Reconstruction Plan 4th edition" in June 2014 and "5th edition" in March 2015. Since 2014, when Iitate-mura resumed its main office in the original place in the Village, various projects designed in the "Reconstruction Plan" started. One of the projects to improve the villagers" daily living was a "temporary incinerator" to incinerate household wastes generated by the earthquake and the evacuation. This waste disposal was a very important project to support the smooth return-to-village, and it started in August 2014. Other initiatives were pavement work for access paths to the private living houses from the public road and the demolition work of radioactivity contaminated buildings. These were expected to increase the efficiency of the decontamination work.

Establishing a solar power generation business with three power stations with solar panels is one of the symbolic projects for reconstruction of the Village hit by the TEPCO Nuclear Power Accident. The construction of an incinerator for reducing the volume of contaminated materials which can be incinerated was another initiative. This volume reduction facility was for the promotion of decontamination work and it is open to bring in and input household wastes from other municipalities. Construction of a public hall, village housing complexes for rent not for evacuees but for common residents, an event-and-shopping center[27] are the main reconstruction projects started after the return of the Iitate-mura main office to the Village. The early return of the Village Office function likely contributed to accelerate the infrastructure reconstruction.

Committees to consider how to restart farming and how to resume school education were organized and these activities accelerated from 2015. In July 2015, the first retail store opened in the village after the evacuation.

The School Resumption Committee discussed how to resume the kindergartens, elementary, and junior high school education. It reached the conclusion that the school education should not be just restoration but should include more

[27] An event-and-shopping center (So called "Michi no Eki" in Japanese) opened with events, exhibition and multipurpose halls, and a mini-supermarket in August 2017 after the return-to-village started in April. It is expected to promote exchanges among villagers, visitors, and direct sales of local products for visitors and villagers. It was opened on August 12, and on October 19 it had a ceremony to celebrate the fact that it got a hundred thousand visitors after 68 days from opening.

attractive ideas and facilities which would give new dreams to children and their parents. Iitate-mura believed the reorganization of school education was a key factor for the return-to-village. The Village began studying in 2015 and decided to adopt an integrated education system[28]. In the same year the Committee designed a complex of kindergartens and integrated elementary and junior high schools under the name of the "Iitate School of Hope". The integrated school was opened in April 2020. At the same time, in March 2020, all temporary education facilities set up outside the Village were closed. For students who could not return to the Village at that time, Iitate-mura provided school bus service between the "Iitate School of Hope" and evacuation destinations.

2) Evacuation status as of March 1, 2021

Iitate-mura is still on the return-to-village road. As of March 1, 2021, there were 1,481 residents in the village (of which 1,251 were returnees), but there were still 3,722 evacuees who were registered as residents of Iitate-mura. The total number of persons living in Iitate-mura and evacuees, i.e., the population, as of March 1, 2021 is 5,206 including 3 persons with a habitation status of "unknown". The population on March 11, 2011, when the TEPCO Nuclear Power Accident happened, was 6,509, and on March 1, 2014 it was 6,692. The current situation of evacuation and returnees to the Village is as follows (Iitate Village HP "Evacuation Status").

Table 12. Status of villagers registered to Iitate-mura as of March 1, 2021

Status of habitation	Person	Remarks
In evacuation	3,722	In Fukushima Pref. 3,527. Outside Fukushima 195
In the Village	1,481	Returnees 1,251, evacuees within the Village 4*, newcomers 186**, Births 6***, non-evacuees 6, Iitate senior care house members 28
Unknown	3	
Total	5,206	2,246 households

Source: "2017-07-01 Status of evacuation", Iitate-mura homepage.

*Elderly members of evacuated households who moved into the Iitate Home at the time of evacuation.

**Persons who migrated to Iitate-mura and registered after April 1, 2017.

***Persons born in former evacuee families after the return to the Village".

There are two types of evacuees among the 3,722 evacuees of March 1, 2021. One refers to those who evacuated from 19 districts where the evacuation order was lifted in March 2017 and the second refers to those who evacuated from the Nagadoro district where the order was still issued as of March 1, 2021. In the Nagadoro district there lived 281 persons and 74 households as of the date of the TEPCO Nuclear Power Accident. The former evacuees had the choice to return but the latter ones cannot return to Nagadoro even if they want to return as of March 1, 2021.

3) Villagers' intention to return

Initially, the Government announced that the phase I decontamination would be completed in two years: 2012 to 2013. However, the completion of decontamination (except the phase II in Nagadoro district), and the cancellation of the evacuation order were also delayed year by year to March 31, 2017. In Nagadoro district the decontamination work started late and has not yet finished as of the end of March 2021.

The outlook for returning to the village was also postponed year by year. However, Iitate-mura started preparations for the return early as originally planned as follows. In December 2011, in the same year when the evacuation began, the "Iitate Madei na Fukko-Keikaku" (1st edition) (hereinafter "Reconstruction Plan") was formulated, and the ideas of village

[28] In Japan, education at primary school of six years and junior high school of three years are compulsory, and are usually managed separately without any integration such as direct connections for education ideas and methods. The "Iitate School of Hope" started with the idea to integrate the above education systems previously separated by schools including kindergartens.

revitalization and five basic policies were set out. The "Reconstruction Plan", 2nd edition formulated in August 2013, set out a policy to support all evacuees, that is, "people who can return", "people who cannot return", "people who don't return", and a basic concept to promote infrastructure development.

There are two survey reports carried out by Iitate-mura. One surveyed 2,914 household heads in May 2012, and another one surveyed 5,529 evacuees aged 18 and over conducted in August 2013. The number of respondents is 1,788 and 2,359, respectively, and the response rates were low at 61% and 43% respectively. Both surveys are reported in Table 13 below. I don't comment on the survey results because of the low response rates and the lack of information regarding non-responders.

Table 13. Intention of evacuees for return to the village as of May 2012 and August 2013

Subjects	Choices of questionary	Respondents	%.
Heads of all 2,914 households In May 2012	Want to return promptly after cancellation of the order	215 persons	12.0 %
	Don't return promptly, but intend to return in future	814	45.5
	Don't intend to return	592	33.1
	Other reasons not-included in the above	76	4.3
	No response to the question	91	5.1
	Total	1,788	100.0
All evacuees aged 18 and more, 5,529 persons In Aug. 2013	Return promptly	326	13.8 %
	Return within a few years later	167	7.1
	Both in Village and evacuation destination*	382	16.2
	Cannot answer or don't know	789	33.4
	Don't intend to return	614	26.0
	No response to the question	81	3.4
	Total	2,359	100.0

Source: "Questionnaire Survey on Evacuees' Life and Intention to return to Village", Iitate-mura edit., 2012, p.63. "Iitate-mura Madei na Fukko-Keikaku (4th edit.)", Iitate-mura edit., 2014, p.5

*They intended to reside at both places for the time being.

Ch. 7 Road-map for the reconstruction of Iitate Village: 6th Comprehensive Promotion Plan, September 2020

1) Background of the "6th Comprehensive Promotion Plan"

The "Comprehensive Promotion Plan"[29] of a municipality has a ten-year planning period. Implementation of the "5th Iitate-mura Comprehensive Promotion Plan" started in 2005, but it was interrupted by the evacuation of the whole village in 2011. After that, Iitate-mura established the "Reconstruction Plan" as a guide for the return-to-village and made it more extensive. During 2011 to 2015, Iitate-mura formulated five "Reconstruction Plans" of 1st to 5th editions with both short and long-term views. The 1st and 2nd Plan mainly aimed to support the evacuees' daily life, especially in the evacuation destination. Health care, child care support, and school education were the most important subjects to address in the evacuation life. The 3rd to 5th Plan proposed somewhat long-term subjects including the development of village housing complexes for rent in the Village and the resumption of crop and livestock farming. In the 4th and 5th Plan, Iitate-mura seriously considered how to encourage and develop the return-to-village process because by the end of 2014

[29] Every municipality is obliged to make a "Comprehensive Promotion Plan" by law.

villagers could surely see the completion of the decontamination work in the near future, even if it had been delayed. Some projects mentioned in Ch. 6 were formulated from the long-term view.

The district of Nagadoro was under the evacuation order as of March 2021. In the other 19 districts the order was cancelled in March 2017. Since the return-to-village started in April 2017, the flow of the return has become larger even at a slow pace. Therefore, Iitate-mura needed new planning administration to make not a 6th "Reconstruction Plan" but an authentic plan based on the last five "Reconstruction Plans".

In these ways, Iitate-mura started the work to formulate the "6th Iitate-mura Comprehensive Promotion Plan" in 2019. It was announced in September 2020. However, Iitate-mura was still on the road for a return-to-village with a situation where the number of evacuees was much larger than the returnees to the Village as shown in Table 12 and there was no prospect of the completion of the return. Therefore, the planning period was set to 5 years from 2021 to 2025, only half of the period of the normal "Comprehensive Promotion Plan". The Plan was formulated on the basis of a village population as of March 1, 2020, that is, registered population of 5,438 (4,023 evacuees, 1,412 residents in the village, and unknown 3 persons), and it didn't set a target population in 2025 which was one of essential factors for these planning.

2) Reconstruction philosophy

This section introduces the philosophy of the plan from the Mayor's "Greetings" in the "6th Iitate-mura Comprehensive Promotion Plan" and the basic policy from its "Basic Approach".

Principles of the "6th Comprehensive Promotion Plan"

> "10 years have passed since the evacuation of the whole village due to the nuclear accident. What did we learn in this decade?[30] Firstly, if we seek an affluent life and society with plenty of goods in future, we will need a lot of energy, and again we will depend on nuclear power. Secondly, in order to promote to build a new Iitate-mura with new human and community life, we need to think of other persons, that is, to share heart and mind with others. Thirdly, we must willingly recognize the "expansion of the concept of a person's habitation", and acquire a way of considering how to live together with new residents from other municipalities including new-comers, short- or long-term visitors, and visitors who visit Iitate-mura quite often".

Mayor Kanno seemed to accept the long evacuation due to the tremendous disaster in a positive manner, and to use villagers' experiences during the evacuation for the promotion of the village. The "Plan" set out the following two principles.

> "We formed two principles for the '6th Comprehensive Promotion Plan' through what we experienced in our long evacuation. The first is 'Goods should be subtracted' ('Mono wa Hikizan' in Japanese) and 'Heart should be added' ('Kokoro wa Tashizan' in Japanese), and the second is, 'New-comer as a resident, living short, living sometimes, and living long; various habitations are welcomed in Iitate-mura'. Even if various ideas are born from these two principles, the point is that we proceed with the 'Promotion Plan' with an attitude of cherishing a way of life, a way of living, and people's hearts and minds".

Since the previous section seems difficult for people to understand except Iitate-mura villagers, let me explain what those mean below. "We" in the following refers to Iitate-mura villagers in the same way as the Mayor used it in his greeting.

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[30] Mayor Norio Kanno seemed to think that Iitate people learnt something important from a lengthy evacuation. For the Villagers of Iitate-mura, the radiation exposure and the evacuation of the whole village are the first such experiences in their history and should never be repeated in the future. Almost all the Villagers have learned how to live with or how to communicate with people who lived in evacuation destination municipalities not only in Fukushima Prefecture but in other Prefectures.

Until now, in Iitate-mura, the following concepts refer to a resident or one who is a villager. A person who registered their name and address at the Village is considered a resident of Iitate-mura by the Village office. Even if a person lives in Iitate-mura for some months or some years without the registration, we consider him or her a visitor. In addition, even though a person visits Iitate-mura quite often, he or she is never considered a resident of Iitate-mura. That is, only persons with the registration are designated as a villager.

Iitate-mura evacuees experienced various issues as a result of living in other municipalities as evacuees, i.e., without the registration to a destination municipality. The long evacuation provided an opportunity to learn about the above perspective. Therefore, the phrase in the Mayor's greeting of "living short, living sometimes, and living long" refers to the length of time under evacuation and "various residents are welcomed in Iitate-mura" means "an expansion of the concept of a person's habitation", as well as living together with various persons without any distinction.

In addition, during the evacuation, Iitate-mura evacuees learned that "to think of other persons, i.e., to share heart and mind with others" is important for living in other municipalities. "The expansion of the concept of 'villagers' is necessary not only for persons from other municipalities but also for Iitate-mura evacuees who are still living in other municipalities. As the Mayor proposed, the following persons will be considered Villagers of Iitate-mura forever without any prejudice and discrimination even if a person is an evacuee who cannot return for several years. A person may not return even though they keep their registration in Iitate-mura, or a person who was an evacuee of Iitate-mura and changed their registration to another municipality, however, may want to visit Iitate-mura.

What is "Goods should be subtracted" ?

The mayor explained this as follows.

> From the experience of the earthquake and the evacuation of the whole village, we realized the importance of daily life which is not fulfilled with goods and money. We aim to identify what we really need, not to seek only convenience, to live in sustainable ways, and to enjoy a spiritually rich life. "Goods should be subtracted" means to depart from a life with plenty of goods and money, and to seek a way of reducing dependence on "Goods". If we reduce our dependence on "Goods", we will be satisfied with things we haven't been interested in before. In the same way, we will be able to find new charms in our Village what we haven't had any interest in until now because of our eyes have been clouded with goods and money.

What is "heart should be added" ?

The mayor said.

> "Heart should be added" is to connect our hearts with the spirit of "Madei" life (See part 2 of Ch.1: "Madei" is used to mean "do not waste time or effort", but use it "carefully", "take time", "wholeheartedly", and "modestly"), and it will lead to a cherished family, community, and Village life. Moreover, it is to rebuild the relationship of mutual assistance that is still available at various occasions in Iitate-mura. Having these in heart and mind, many villagers will participate in various activities to revitalize the Village. These activities, to build connections among individuals, individuals and community or the Village, will nurture spiritual affluence.

What is "living short, sometimes and long; various habitations are welcomed in Iitate-mura"?

The mayor also explained the above as follows.

> There may be various residents such as those who want to live in the Village but cannot live here at the present time, those who occasionally visit the Village, and those who support Iitate-mura even though they live elsewhere in the country. Iitate-mura willingly accepts them all. We aim to be a Village which respects diversity of residents, and which lets every habitant feel some relationship with the Village. For that, we revitalize our Village through trying to increase newcomers, welcoming those who have an interest in Iitate-mura, and building a society with a safe environment for living through cooperating with all of them.

3) Projects based on the principles

Iitate-mura set up the following projects in the "6th Iitate-mura Comprehensive Promotion Plan" to give concrete form to the principles explained above.

Some projects formed from the principle: "Goods should be subtracted"]

- Health checkup rate improvement project: Persons have to wait some minutes at a clinic waiting room before health check. This project will serve to make good use of this waiting time,
- Garbage reduction promotion project: This project will contribute to promote garbage reduction and promote recycling of goods,
- Energy saving promotion and renewable energy production and home use project,
- Vacant houses and vacant land utilization promotion project,
- Inheriting food culture project: This project is to promote food education by using local foodstuffs,
- Organizing transportation-network project: This project is to promote car-sharing among the residents based on voluntary activities,
- Landscape development project: This project is to improve landscapes in the Village through taking advantage of them without damaging nature and the landscapes,
- Encouraging present village roads management system project: This project is to promote using residents' skills and machinery for village road maintenance to save village finances and promote exchanges among communities.

Some projects formed from the principle: "heart should be added"

- Internal students accepting project: This project is to accept children outside the Village who want to study in the Village even for a short period,
- Health promotion projects not only for individuals but also through interaction within a community and between communities,
- Promotion of Iitate-mura local farm products and cooking these products projects,
- Inter-community exchange using kitchen car project,
- Mutual aid promotion project: This project is to solve problems with neighbours' cooperation,
- Project to interview residents of character in various fields and to record it on video or booklet: This contributes to confirm "purpose of life" to live and inherit local culture,
- Short-term employment introduction project: This is a system to organize persons with plenty of time for helping farming which needs various part-time work,
- Project to support beginners in farming with no farming experience: This project contributes to establish relationships taught and taught by each other through farming between new entry persons from outside farming and farmers with experience,
- "Good books, sometimes, in your hand" movement: Promote to cultivate and relax people's heart, mind, and knowledge through reading books,
- Digging up Iitate folk stories and traditions project: This is especially for building up-close communication among the home Village and evacuees who couldn't return soon, selected multi-habitation of Iitate-mura, and those who didn't return.

Ch. 8 Looking toward the past and the future of Iitate-mura exposed to radiation

On March 11, 2011 Iitate-mura was hit by the Pacific coast of Tohoku Earthquake. Its maximum tremor in the Village

was "6-weak" seismic intensity.[31] There was no damage from the tsunami or collapse of housing due to the earthquake, however, the whole village was hit by power cuts, water outages, telephone interruptions including mobile phones, and road impassability. Nevertheless, from March 11 to 13, Iitate-mura and villagers were busy not only regarding the restoration of these lifelines but supporting many evacuees from the coastal regions. During this time, the villagers had known that the TEPCO Nuclear Power Station had a reactor meltdown, a hydrogen explosion of the reactor building, and radioactive materials were released. However, none of them thought the impact of the accident was likely to affect their Village because the Village is about 28~47 km from the TEPCO Nuclear Power Station and they had no information regarding winds from the TEPCO Station.

The situation changed after the installation of the environmental radiation monitoring post at the Village by Fukushima Prefecture on March 14. The first monitoring value at the point was 90 nanosievert (nSv) per hour. However, it increased to 44.7 microsievert (μSv) per hour at maximum around 6:29 pm on March 15. The process of the evacuation of the whole village began here on May 14.[32]

This report traces the evacuation process of the whole village mainly using records of the disaster history of the Village. Iitate-mura was designated as a systematic evacuation area in April 2011, and the evacuation of the whole village began in May. In March 2017, the area designation was canceled and the return-to-village began. As of March 2021, 10 years after the nuclear accident and 4 years after the de-designation of the evacuation order, however, the return-to-village of evacuees was still halfway completed.

The records edited by the Village refer to the date, place, scale, and other items regarding what happened. On the other hand, as the wounds on the villagers' hearts might be indescribable in the first place, these are rarely described in the records. Therefore, if people are not able to read between the lines of the records of the history, they cannot know the villagers' wounds. If they read the records intentionally, they may know these scars. However, people, including me, forget to do so quite often.

As I was rereading the literature referenced, thinking about how I could include in this report the wounds on the heart of the evacuees that I could not easily read, I came across pages that evoked understandings that are often forgotten. They are the pages 4-7 of "Madei no Kokoro wo Tsuzuru: The 2011 off the Pacific coast of Tohoku Earthquake and TEPCO Fukushima Daiichi Nuclear Accident", 3rd edition. This material documented the period from March 2011 to January 2018 which was one year after the villagers started returning to the Village. As the text of the pages 4-5 has no title, I have given it the sub-heading "Reflecting on six years of the whole village evacuation". Pages 6-7 are free verse with the sub-heading "Sowing Seeds". I was struck by the fact that both of these articles seem to speak for the emotional wounds of the villagers.

The first part of pages 4-5 describes the past of the village, that is, the evacuation of the entire village due to the nuclear accident, while the second part of pages 6-7 looks to the future of the village. The full texts of the two parts are presented below since they represent the emotional wounds of the villagers which should be included in this report.

I will not provide commentary for this free verse poem, so a reader is free to understand "Sowing Seeds" according to his or her own sensibilities. However, as the responsibility of the quoter, let me state the reason why I quoted them. When I

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[31] Seismic intensity (s.i.) is a Japanese scale to estimate earthquake intensity by 0~7 s.i.. Seven is maximum. 5 and 6 s.i. are divided into two levels of "-weak" and "-strong" respectively. In Japan, people think an earthquake with 5-strong s.i. and more is a severe tremor. The maximum seismic intensity of the Tohoku Earthquake was 7 s.i. in Sendai City near its epicenter. In Tokyo about 300 km south of the epicenter, the intensity was 5-weak s.i.

[32] "Madei no Kokoro wo Tsuzuru" (Records on disaster history and reconstruction of Iitate-mura exposed to the radiation: Show our spirit!), 3rd edition, Iitate-mura edit., 2018.

saw the poem, I thought it might be referring to the experience of evacuation as a seed. After re-reading the poem several times, the meaning of the poem seemed more profound when I saw seeds as seeds of wild species rather than seeds of bred plants. Unlike seeds of improved species, seeds of wild species do not germinate all at once after falling to the ground, but germinate piecemeal over a period of a month days, a year, two years, sometimes even ten or twenty years. Some can sustain their germination ability for as long as 1,000 or 2,000 years.[33]

The "Sowing Seeds" is about the future of the Village, where the experiences of the evacuees brought back to the Village with them, like wild seeds, will sustain life and bloom in Iitate-mura for future generations. In addition, "Sowing seeds" is an article which Iitate-mura posted to a prefecture-wide local newspaper "Fukushima Minpo" (morning edition), and was published on March 31, 2017, when the Village got free from the evacuation order except for the Nagadoro district.

Looking back on the past six years (Translated as literally as possible)

Source: "Madei no Kokoro wo Tsuzuru: The 2011 off the Pacific coast of Tohoku Earthquake and TEPCO Fukushima Daiichi Nuclear Accident, 3rd edition", pages 4-5.

Note: The following original text has no subheading, and so I have given it a subheading through considering the meaning of the text as "Reflecting on six years of the whole village evacuation".

At 2:46 pm on March 11, 2011, a tremor struck east Japan off the Pacific coast. The maximum seismic intensity in Iitate-mura recorded 6-weak. There was a lot of road damage by rockfalls and landslides as well as housing damage.

At the TEPCO Fukushima Daiichi Nuclear Power Station hit by the huge tsunami, the cooling function was lost, and the reactors melted down. Radioactive materials were released by a hydrogen explosion of reactor buildings. The materials carried by the wind fell down to the ground with snow and rain.

Iitate-mura was in the wind's path. The Village became an area where the annual cumulative radiation dose exceeded 20μSv (at that time), and on April 22, 2011, the whole village was designated as a systematic evacuation area. Thousands of cattle for fattening were in Iitate-mura, so it was called a livestock village. Many farmers left behind cattle brought up with their tender care as well as their familiar homes and well-maintained farmland.

We want to return home, when can we return?

Adults and children, both suffered from evacuation life without a clear vision. Although suffering, we spent every day with the cooperation of people, cities, and towns of evacuated destinations, with many people all over Japan. The evacuation lasted about six years. Long, long it was. The villagers cared for each other, looking forward, and overcame many years and months.

The Village also, without flinch, without giving up, continued to draw future plans for our home village.

At last, on March 31, 2017, the evacuation order was lifted except for a district difficult to return.[34]

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[33] In Japan, there are examples of flowering lotus seeds buried underground for more than 2000 years. In 1951, lotus seeds were excavated from an archaeological site more than 2000 years old, and after they germinated and flowered, they named "Ohga Lotus", and flower every year in many places in 2022.

[34] "Madei no Kokoro wo Tuduru" (Records on disaster history and reconstruction of Iitate-mura exposed to the radiation: Show our spirit!), 3rd edition, (Iitate-mura edit.), 2018, pp.4~5.

Sowing seeds Translated as literally as possible keeping the same free poem style as the original.

Source: "Madei no Kokoro wo Tsuzuru: The 2011 off the Pacific coast of Tohoku Earthquake and the TEPCO Fukushima Daiichi Nuclear Accident, 3rd edition", pages 6-7.
Poets: The poem was cowritten by the public relations' two staff members of Iitate-mura in 2017.

Seeds kept in our heart
Seeds held in our hands carefully for 6 years
Seeds trusted from villagers who cannot return
Seeds handed over from everyone supported us

Seeds found in evacuation life

Sow those important and irreplaceable seeds

When the seeds sprout, grow them carefully
When a small flower blooms, promptly inform you
Some of them
Eventually thicken the trunk
Grow the leaves
Today's our thoughts[35]
Will transmit for generations

Sow seeds together
Seeds for nurturing the forest in the future
Seeds for a future forest

Addendum of the reporter:

Before acquiring the 23 items from the village records, I developed a framework for a chapter-by-chapter structure, considering what kind of report would help the CRRF researchers to understand the disaster situation in Iitate-mura. The initial design consisted of eleven chapters including eight ones very similar to this report plus other three chapters. The other ones were "The whole story of the TEPCO nuclear accident as seen by the villagers", "The present situation of villagers' lives after returning to the village" and "Ten years of village finances and nuclear accident compensation". In addition to the above 11 chapters, I conceived an Appendix: "Some aspects of the spread of the disaster by the TEPCO nuclear accident", to explain the nationwide impact and opinion of the TEPCO nuclear accident and the great earthquake.

I particularly expected to introduce "The whole story on the TEPCO nuclear accident as seen by the villagers" as a chapter. For this purpose, I collected and studied the literature necessary to consider a story of the TEPCO nuclear accident from my own perspective. This would give me a better understanding regarding the attitude towards the accident of the Iitate-mura villagers who were forced to evacuate. In addition, I wrote a draft of "A story of the TEPCO nuclear accident: New

[35] This article was published in a newspaper on the day of the cancellation of the evacuation order. Therefore, this expression may refer to the thought of looking back on the long and difficult evacuation life of 6 years.

scientific research findings vs. regulatory and nuclear power businesses", and I intended to include its summary in a separate Appendix. Unfortunately, because the village records showed little about the "The whole story of the TEPCO nuclear accident as seen by the villagers" contrary to my expectations, and because I could not visit Iitate-mura to interview villagers due to the Covid-19, I decided not to include it and the separate Appendix related to it.

February 2023 Nobuhiro Tsuboi

Main References

1. Iitate-mura edit.(2012), *Iitate Madei na Fukko-Keikaku* (Iitate-mura reconstruction plan) (2nd edition).
2. Iitate-mura edit.(2015), *Madei no Mura ni Hi wa Mata Noboru* (The sun rises again in Iitate-mura).
3. Iitate-mura edit.(2018), *Madei no Kokoro wo Tsuzuru* (Records on disaster history and reconstruction of Iitate-mura exposed to the radiation: Show our spirit!), 3rd edition.

Note: The above three documents are available at the following address.

Author and publisher: Iitate-mura Office
Village Development Promotion Section
Planning and Settlement Group

Address: 580-1 Aza Itamizawa
Itamizawa, Iitate-mura
Fukushima Prefecture, Japan
Post-cord: 960-1892

Appendix. Some aspects of the spread of the disaster by the TEPCO Nuclear Power Accident

Number of evacuees of the earthquake, tsunami, and nuclear power accident

The Reconstruction Agency[36] surveyed and announced the number of evacuees as of every June and December since December 2011. However, its survey includes all evacuees due to the earthquake, the tsunami, and the nuclear power accident, as well as the evacuation destinations of those victims who have spread over all Japan. The damage of the earthquake and the tsunami were terrible in Miyagi, Iwate, and Fukushima Prefecture close to the epicenter areas along the Japan Trench, and the damage to the nuclear power accident was terrible in Fukushima where the power plants were located. Therefore, the number of evacuees has been large in these three prefectures. Table A-1 shows the number of evacuees of these three prefectures as of April 2013.

The Reconstruction Agency's statistics on evacuees defines an evacuee as "a person (including foreign residents) who has left his/her place of residence as of 11 March 2011 as a result of the Great East Japan Earthquake, etc.", with the further remark that the evacuee must "have the intention to return to his/her previous residence". The Statistics are created by the following procedures. The evacuee registers his/her status as an evacuee with the destination municipality. The

[36]The Reconstruction Agency is a government organization with a Minister, and it was organized in February 2012 for twenty years until March 2031. The government has taken special measures to secure tax revenue to appropriate reconstruction costs and reconstruction bond redemption costs. For limited years, the government has added some percent of tax amount as a reconstruction tax: 2.1% for income tax, 10.0% for corporate tax and etc.

destination municipality provides the registered information to the source municipality, the source municipality compiles the number of evacuees in the municipality and reports it to the prefecture, which in turn reports it to the Reconstruction Agency, which publishes it as the number of evacuees. The notification forms for evacuation registration do not include a column for declaring the disaster that caused the evacuation, i.e., earthquake, tsunami or radioactive contamination, and the number of evacuees by cause is not known from the Reconstruction Agency's evacuee numbers.

The transitions of the number of evacuees are as follows. The peak of evacuation is estimated to be on March 14, 2011 with about 470,000 evacuees, three days after the earthquake and the nuclear accident.[37] According to the above Agency's survey, the number decreased from the peak to 346,987 persons in June 2012, and after that it gradually decreased to 251,419 persons in June 2014, 154,782 persons in June 2016, and 40,128 persons in June 2021.[38] The decrease in the number of evacuees seems be due to the inclusion of those affected by the earthquake and the tsunami for whom it was relatively easy to return home rather than those affected by the nuclear power accident.

Table A-1 shows the number of evacuees of the Tohoku three prefectures of Fukushima, Miyagi, and Iwate. The total of three prefectures accounted for about 98% of the total evacuees including those of other prefecture origins. Another particular point is the following. About 36% of the total evacuees of Fukushima are those evacuated to places outside the prefecture. On the other hand, the other two prefectures" amounts are 4~7%. Fukushima's number of evacuees outside of the prefecture is particularly high because the nuclear accidents occurred in that prefecture.

Table A-1 Number of evacuees by evacuation destinations of Tohoku's three prefectures

- As of April 2013 -

	Number of evacuees by evacuation destination (approximate persons)			
	Total (a)	Within Prefecture	Outside Prefecture (b)	% (b/a)
Fukushima Prefecture	151,800	96,200	55,600	36.6
Miyagi Pref.	111,900	104,100	7,800	7.0
Iwate Pref.	39,700	38,100	1,600	4.0
Total of Japan	309,000	---	---	---

Source: Takehiro Izumi, "Present situation of supports and tasks for victims and evacuees of Fukushima Prefecture", "Investigation and Legalization" (House of Councilors Secretariat Planning and Coordination Office edit.), No.341, 2013.6.

Number of evacuees due to the nuclear power accident

There were three kinds of evacuees: those due to the earthquake, the resulting tsunami, and the nuclear power accident. Some evacuees in areas hit by the tsunami on the Pacific coast are affected by both the tsunami and the earthquake, while in inland areas around nuclear power plants, which are not hit by the tsunami, there are evacuees who are affected by both the earthquake and the nuclear accident. Furthermore, since the nuclear power plants are located on the coast, some evacuees in areas around nuclear power plants where the tsunami hit are affected by triple disasters: the earthquake, the tsunami, and the nuclear power plant accident.

It is difficult for us to know the number of evacuees by each category of disaster. All evacuees from the government-designated evacuation areas are identified and published as the number of nuclear power plant accident evacuees. Since

[37] I cannot distinguish the number of evacuees due to the earthquake and tsunami and due to the nuclear power accident at present. I think the evacuees due to the tsunami were much more in Miyagi and Iwate Prefecture, and those of the nuclear accident seem to be very few, and in Fukushima those of the nuclear accident were more than those of the tsunami. The government issued evacuation orders due to the nuclear accident only to 11 municipalities in Fukushima prefecture, which were heavily contaminated with radiation. (Source: 202009_Pamphlet_fukkojokyo-torikumi.pdf (reconstruction.go.jp), p.8)

[38] "Situation of reconstruction from Higashi Nihon Daisinsai and future tasks" (Reconstruction Agency edit.), Sept. 2020, p.8.

the evacuation orders were only issued for 11 municipalities in Fukushima Prefecture, the statistics show that there are no nuclear accident evacuees in the other Fukushima municipalities and other prefectures. However, there were likely some voluntary evacuees, that is not by orders, even if there are not many and if they are not captured by the statistics, from the order outside-designated areas not only in the Fukushima Prefecture but also in other prefectures including Tokyo Metropolitan.

Table A-2 shows the number of evacuees by the order quoted from the Reconstruction Agency's survey. The main reasons why the number of evacuees by the order has decreased is because the decontamination work has progressed and the evacuation order was gradually lifted since 2014. Evacuees are defined as those who intend to return to the town or village from which they were evacuated, so if some decide to settle in the evacuation area and lose the intention to return, the number of evacuees will decrease by that much. This cannot be ignored as a reason for the decrease in the number of evacuees.

Table A-2 The number of evacuees of Fukushima Prefecture origin

As of	Number of evacuees by evacuation order	Number of all evacuees*
March 2012	113 thousand persons	161 thousand persons
December 2012	110	175
September 2013	102	142
October 2014	99	119
September 2015	70	99
January 2019	24	42
January 2021	23	36

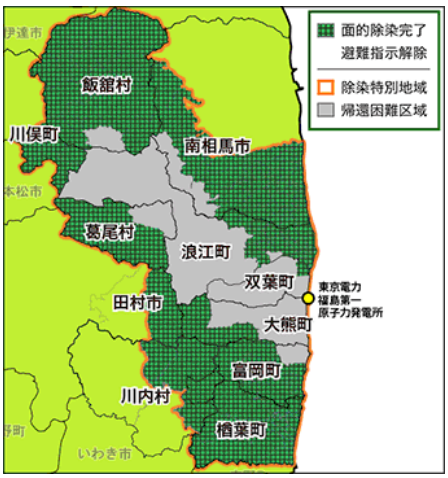
Source: Reconstruction Agency, "Present situation of reconstruction and its tasks", each year.

* The number of evacuees in Fukushima Prefecture includes those affected by the tsunami and earthquake as well as those caused by the TEPCO nuclear accident.

The spread of contamination

The radioactive material diffused on the wind and fell to the ground due to rainfall and snowfall, so the contamination was widespread. The contaminated area was designated as either a "special decontamination area" or an "area of priority survey on contamination statuses". The special decontamination areas are located in Fukushima Prefecture and shown in the Figure A-1 as Special decontaminated areas.

Figure A-1 Special decontaminated areas



-- As of August 2021 --

Source: HP of Ministry of Environment. "Josen Joho Site".

Note: 1. Areas with mesh are a systematic evacuation area where the decontamination work finished, the evacuation order was lifted, and the return home begun as of August 2021.

2. Areas with gray colour are warning areas and the decontamination work hasn't started i.e., "areas difficult to return" as of August 2021.

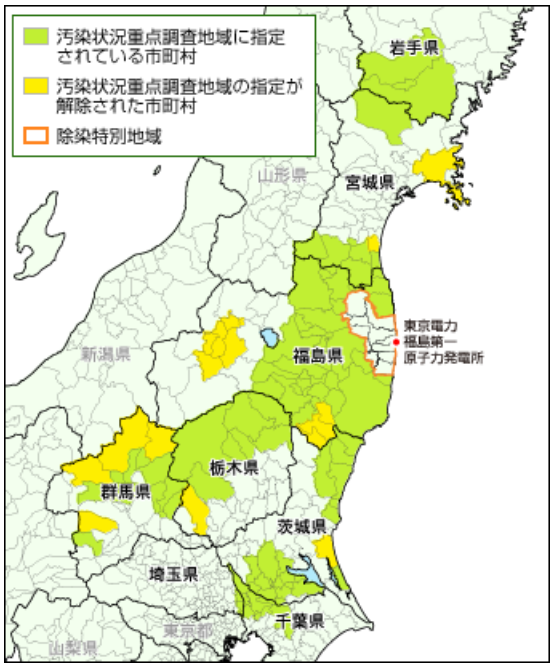
3. The TEPCO Nuclear Power Station site is shown in the warning area of Figure A-1 by a small black circle along the coast.

4. Words with kanji characters in bold except the TEPCO site are names of a municipality.

5. Iitate-mura is in the north edge of the systematic evacuation areas.

As shown in Figure A-1, the special decontamination area is an area around the TEPCO site. There are 11 municipalities within these areas. These areas consist of "warning areas" within a radius of 20km from the TEPCO Fukushima Daiichi Nuclear Power Station, and "systematic evacuation areas" where the cumulative dose for one year after the accident may exceed 20 millisieverts. Iitate-mura is located at the northwest edge of the area with the mesh.

Figure A-2. The spread of contaminated areas with green and yellow colour



Source: HP of Ministry of Environment.

Note: 1. Thick lines show boarders of prefectures, lakes and coastlines.

2. The third prefecture with the thick three kanji characters from the top of the Figure is Fukushima Prefecture.
3. A small black circle shows the site of the TEPCO Nuclear Power Station.
4. A small sea area at the center of bottom of the Figure is Tokyo Bay, and Tokyo Metropolitan is a small prefecture west of Tokyo Bay.

Figure A-2 shows the spread of the areas of the priority survey on contamination statuses with green and yellow colours (hereinafter, "priority survey area"). Thick lines in Figure A-2 show borders of prefectures, lakes and coastlines, and the third prefecture from the top of the Figure is Fukushima Prefecture. A small black circle along the coast of Fukushima Prefecture shows the site of the TEPCO Nuclear Power Station. The priority survey areas were widespread such as about 190km in Oshu City, Iwate Prefecture in the north, about 120km in Mishima Town, Fukushima Prefecture in the west, and about 230km in Shimonita Town, Gunma Prefecture in the southwest in terms of direction and distance from the TEPCO site. The priority survey area reached 210km in Matsudo City, Chiba Prefecture in the south-southwest. Even in the municipalities between the nuclear power station site and these municipalities, there were municipalities where doses were below the decontamination standard or were not contaminated. These municipalities were not designated as a priority survey area and the decontamination work was not carried out. Matsudo City is adjacent to Tokyo across the Edo River.

The Achievement of the Decontamination work

The decontamination work was carried out in the special decontamination areas (including Iitate-mura) and in the areas of priority survey on contamination status. The decontamination results of both areas are shown in Figure A-2. Table A-3 shows its achievements.

Table A-3. Achievement of decontamination works in all contaminated areas

- As of March 2021 -

Special decontamination Area (11 municipalities)* in Iitate-mura	**Resident site*** **		**Farm land**	**Forest**	**Roads**
	23,000 houses		8,700 ha	7,800 ha	1,500 ha
	2,100		2,400	2,100	330
Priority survey area (Total 92 municipalities) (Of which in Fukushima Pref.**)	**Resident site**	**Public facility**	**Farm land**	**Forest**	**Roads**
	566,239 houses	23,761houses	32,649 ha	4,778 ha	24,240 ha
	418,583	11,958	31,061	4,478	18,841

Source: Ministry of Environment, HP "Information of decontamination".

* Special decontamination areas were designated only in the Fukushima Prefecture. As of August 2021, decontamination work has not yet started on dwellings, farmland and roads in the "areas difficult to return" shown in grey in Figure A-1.

** In Fukushima Prefecture there were 36 municipalities of the priority survey areas.

*** Includes schools, parks, cemeteries, and big facilities such as a supermarket.

The number of municipalities designated as priority survey areas has increased to 92 municipalities as of September 2019, of which 36 municipalities belonged to Fukushima Prefecture and 56 belonged to other 7 prefectures. The number of designated municipalities was smaller in Fukushima than in other prefectures. However, as Table A-3 shows, the amount of decontamination work in Fukushima Prefecture was much more than in the other 7 prefectures.

Time to complete the decontamination and time to cancel the evacuation order

The decontamination in the special decontamination areas, excluding the difficult-to-return areas, was completed progressively between June 2013 and March 2017. As of March 2020, the decontamination work had not yet been started in the difficult-to-return areas.

Compensation for evacuees

As already indicated by the fact that Iitate Village records only two cases on the issue of compensation, it is difficult for Iitate-mura to record compensation issues. However, it is also difficult to understand the recovery from the nuclear power plant evacuation without mentioning the role of compensation. Therefore, some of the individual compensations published by TEPCO and a third-party committee which deliberates on compensation are presented below.

This section quotes from the Nihon Keizai Shimbun (a national newspaper specializing in economics: nikkei.com) an article on "Actual compensation payments for the Fukushima nuclear accident" announced on 25 October 2013 by the Nuclear Damage Dispute Review Panel of the Ministry of Education, Culture, Sports, Science and Technology, and also from TEPCO's announcement of "Actual compensation payments by TEPCO". All of these figures are the actual payments on average per household or the total for claims from all areas affected by the TEPCO Nuclear Power Plant Accident including Iitate-mura. Many proceedings on damage compensation for the TEPCO accident have been ongoing, and the first judgement came out from Maebashi District Court in 2017. The damage compensation has not yet been settled. Table A-4 and Table A-5 show the payment achievements as of September 2013 and June 2021.

The average amount of compensation paid per household by September 20, 2013 was as follows:

> TEPCO's actual payment is 90 million Yen for a four-person household and 45.1 million Yen for a single-person household. 'Nihon Keizai Shinbun' (Nikkei) suggested the following. On October 25, 2013, the Nuclear Damage Compensation Dispute Review Board of Ministry of Education, Culture, Sports, Science and Technology announced the results of compensation for the accident of the TEPCO Nuclear Power Station. The compensation amount paid by TEPCO to the residents who lived in the difficult-to-return areas before the

accident was 90 million Yen on average per four-person household. The Board has plans to add three points to the compensation guideline: a consolation fee for those who cannot return for a long time, continuous compensation after the evacuation order is lifted, and compensation for the cost required to purchase a new house. Therefore, the amount may increase. (Fukushima nuclear accident compensation achievements, Nihon Keizai Shinbun (www.nikkei.com)).

There is detailed information on items set in the estimation of the amount of compensation for the nuclear accident and the method of estimation in the website of the Nuclear Damage Compensation Dispute Review Board (www.mext.go.jp).

Table A-4. Achievement of average compensation amount for evacuees in the difficult-to-return areas/household by TEPCO

- As of October 20, 2013 -

	Four-person household	One-person household
Goods	49,100 thousand Yen	32,100 thousand Yen
Work loss	10,900	5,500
Mental loss	30,000	7,500
Total	90,000	45,100

Source: Fukushima nuclear accident compensation result, "Nikkei electronic version", 2013.10.26 (nikkei.com).

In addition, TEPCO has announced the compensation results from the beginning to June 25, 2021 for nuclear compensation claims of individuals and corporations nationwide as shown in Table A-5 below.

Table A-5. Achievement of compensation amount by TEPCO

- As of June 25, 2021 –

	Individual	Individual*	Business owner**
Number of claims accepted	1,132,000	1,296,000	525.000
Number of claims paid	1,009,000	1,296,000	450,000
Total amount of claims paid	3,217 billion Yen***	353.7 billion Yen	6,306.3 billion Yen

Source: Status of payment for claims, TEPCO (tepco.co.jp)

*Persons evacuated on a voluntary basis.

**Both of sole proprietorship and corporation.

***One billion = One thousand million.