

Koriyama City Safe Community Promotion Council Disaster Prevention and Environment Safety Task Force



Presenter: Haruo Kokubun, Chair

Reason (1) Japan is susceptible to disasters

Of all worldwide disasters, Japan's rate of disaster occurrence is 17.9% for number of earthquakes stronger than magnitude 6.0 and 7.9% for number of active volcanoes. These are very high numbers for a country area that is only 0.25% of the entire world.

Number of earthquakes (magnitude 6 or more)

Total for 2011 to 2020



Note) Creating by the Cabinet Office using data provided by the Japan Meteorological Agency for Japan, and data from the U.S. Geological Survey and Smithsonian Museum of Natural History for the world.

Number of active volcanos (Volcanos that have erupted in the past 10,000 years)



Excerpt from Cabinet Office official website - Disaster Prevention Information page

Situation of damage from the Great East Japan Earthquake on March 11, 2011

- Human casualties 1 death 2 serious injuries 2 Minor injuries
- Building damage

	Complete collapse	Partial collapse	Partial damage	Others	Total
Public facilities	0	8	61	134	203
Homes	2,294	18,749	32,062	168	53,273
Stores, etc.	278	918	4,333	30	5,559
Total	2,572	19,675	36,456	332	59,035

• Roads, bridges, rivers, agriculture facilities, etc.

Cracks	Land bulging	Land sinking	Others (collapse of river dikes, etc.)	Total
789	160	997	755	2,701

- City water facilities (immediately after the earthquake) Leaks Approx. 1,000 places Number of houses with water cut off Approx. 37,000 houses (Population without water approx. 97,000 people)
- Sewage facilities (immediately after the earthquake) Total distance of damaged pipes approx. 7,050m
 Damage to manhole

Damage to manholes, etc. 536 places

For Koriyama City, this was the first extensive earthquake damage since the Meteorological Agency started observing earthquakes.

Fukushima No.1 nuclear power plant accident



Impact of nuclear power plant accident on Koriyama City

Citizens had serious concerns immediately after the accident.

[Immediately after the accident] Levels of radiation exceeded normal levels. Children's outdoor activities had to be restricted, and contaminants had to be removed (decontamination), etc. Many families, especially children, voluntarily evacuated out of the prefecture, and the population dropped.

[Today] Decontamination of homes has been completed, and radiation levels have dropped markedly.

There has been no health damage from radioactive substances at this time.

Source: Koriyama City Nuclear Plant Disaster Measures (17th edition, March 2023)

	March 29, 2011	November 30, 2021	Deduction rote
Measurement place	Air radia	Reduction rate	
Koriyama government office compound	2.59 µSv/h	0.07 µSv/h	97.3%
Koriyama City Hall	2.57 μSv/h	0.12 μSv/h	95.3%

Changes in citizens' awareness Source: (Safe Community diagnosis FY2020 Survey of Citizen Awareness)

Do you have	FY2014	FY2016	FY2018	FY2020	Citizens' concerns have
concerns about nuclear disasters?	65.1%	34.8%	30.1%	15.7%	been greatly alleviated now that decontamination of homes, etc., has been completed.

(3) 2019 Typhoon Hagibis

Typhoon No. 19 of 2019 made landfall in Japan on October 12, causing record-breaking heavy rainfall in the Kanto, Koshinetsu, and Tohoku regions, resulting in extensive damage.

In our city, the periodic precipitation from 3:00 p.m. on October 11 to 6:00 a.m. on October 13 was 195.5 mm. The maximum 24-hour precipitation was 194.0 mm, and the maximum 1-hour precipitation was 27.0 mm. These were the highest values for October since the start of statistics in 1976.

Туре	Details of damage
Deaths	6 people
Complete collapse Firefighting water tank	1,306 locations
Large-scale half collapse	1,921 locations
Partial collapse	4,651 locations
Flooding above floor level	6,542 locations
Flooding below floor level	847 locations
Industrial and commercial losses	36.19 billion JPY
Crop damage, etc.	3.0663 billion JPY

Evacuation information, etc. [Evacuation warning, etc.]				
River (flooding)	85,009 people			
Landslide disaster	52,048 people			
Number of evacuation sites opened	42 locations			
Number of evacuees	3,973 people			

October 13, 2019 Koriyama Regional Fire-Fighting Union

Photos of damage



Photo by Space One Co.,Ltd.



Photo by Space One Co.,Ltd. Tokusada District



Photo by Kageyama Construction Co.,Ltd.

(4) Reiwa 3 (2021) Fukushima Earthquake

Outline of earthquake

Time of occurrence	February 13, 23:07
Depth of epicenter	Coast of Fukushima Prefecture at depth of 55 km
Scale of earthquake	Magnitude 7. 3
Seismic intensity in Koriyama City	[Konan, Koriyama City] Seismic intensity 6 weak (max. intensity 6 at Zao-cho, Yamagata Prefecture)

Overview of damage (as of September 30, 2021)

Туре	Extent of damage
Human damage (casualties)	13 people
Building damage	
Complete collapse	93 buildings
Large-scale half collapse	67 buildings
Medium-scale partial collapse	166 buildings
Partial collapse	1100 buildings
Semi-partial collapse	2429 buildings

Situation of evacuations				
Number of evacuation sites opened	17 locations			
Maximum number of people sheltered	29 people from 21 households			
Lifeline				
Power outage (max.)	Approx. 13,600 homes			
City water	Leaks 55 cases			
City water	Houses with water cut off: 50			
Gas leaks	2 cases			

Photos of damage



Municipal swimming area (Kaiseizan Pool)



Koriyama Station area (Omachi)



Makuuchi Bridge



Culture facilities (Kaisekan)

[Reference] Spread of COVID-19

New cases in Koriyama during 2022 occurred in the epidemic waves in April (6th wave) and August (7th wave).



Date of positive results



Hardware measures (Examples of measures in progress)

- · Earthquake proofing of infrastructure
- Maintenance of meteorological observation facilities
- Redundancy of communication and power feed systems
- Earthquake proofing of buildings
- Stocking of resources
- Installation of earthquake proof water reservoir

- Expansion of evacuation sites
- Emergency heliport
- Reinforcement of fire prevention abilities
- Flood control by renovating riverbeds, etc.

Software measures (Examples of measures in progress)

- Disaster prevention plan (Nation, Prefecture, City)
- Disaster prevention drills (Nation, Prefecture, City)
- Improvement of emergency recovery technology
- Plans to continue business, etc.

- Agreement for mutual support by municipalities
- Plan to reinforce national land
- Backup of essential data



6 members Independent Disaster Response Group Federation of Neighborhood Associations Volunteer fire corps Promotion Committee to Create Pleasant City Council of Women's Groups Association of Women Fire Corps Total 16 members

Government groups, 6 members

Related groups, 4 members

Citizen groups,

Koriyama Labor Standards Office Koriyama Regional Fire Prevention and Disaster Prevention Association Culture and Learning Promotion Association Fukushima Sakura Agriculture Coop Koriyama Regional Fire-Fighting Union Fire Defense Headquarters Environment Policy Section Rivers Section Development and Construction Guidance Section Waterworks Bureau Operations and Management Section Horticulture and Animal Husbandry Promotion Section

3. History of Disaster Prevention and Environment Safety Task Force activities



Date	Details			
April 21, 2020	1st Task Force meeting	Attention to prevent the spread of COVID-19		
July 7, 2020	2nd Task Force meeting	Review of activities		
November 17, 2020	3rd Task Force meeting	Overview of damage and response to 2019 East Japan Typhoon (Hagibis), etc.		
November 18, 2020	4th Task Force meeting	Online participation in onsite evaluation for Kagoshima City		
December 25, 2020	5th Task Force meeting	Online participation in pre-onsite guidance for Tsuru City		
June 28, 2021	1st Task Force meeting	Schedule for confirming priority challenges and each indicator		
July 2, 2021	2nd Task Force meeting	[Written] Exchange of opinions on existing indicators		
July 13, 2021	3rd Task Force meeting	Online participation in pre-onsite guidance for Chichibu City		
August 17, 2021	4th Task Force meeting	[Written] Inquiry to each member for feedback on the questionnaire survey		
October 7, 2021	5th Task Force meeting	Confirmation of materials for pre-onsite guidance, etc.		
November 17, 2021	6th Task Force meeting	Koriyama City Safe Community pre-onsite guidance		
January 28, 2022	7th Task Force meeting	[In writing] Discussion of Citizens' Awareness Survey contents		
April 15, 2022	Sector-specific task force committees 1st Task Force meeting	Review of activities and future plans		
July 29, 2022		Online participation in Toshima City on-site evaluation		
August 16, 2022	2nd Task Force meeting	[In writing] Request for opinions on promotional leaflet		
September 22, 2022	3rd Task Force meeting	[In writing] Request for opinions on on-site evaluation materials		

(Responses, n=1,680)

Natural disasters were the most common cause of concern, with earthquakes at 77.7%, followed by wind and flood damage at 30.4%. Traffic accidents were second at 39.6%.

Rank	Cause of injuries and accidents, etc.	Percentage
1	Earthquake	77.7%
2	Traffic accidents	39.6%
3	Storm and flood damage	30.4%
4	Fires	24.9%
5	Injuries and accidents due to COVID-19	23.2%
6	Tailgating	22.9%
7	Victim of crimes such as theft or fraud	19.6%
8	Discrimination, prejudice, and slander against persons infected with Covid-19 and their families	16.6%
9	Nuclear power disaster	15.7%
10	Falls and tumbles while outside	14.9%
11	Concerns about loneliness, isolation, and weak personal relationships	13.7%

Source: Koriyama City Safe Community diagnosis FY2022 Survey of Citizen Awareness

In some areas, preparations have reached approx. 50%, but issues related to "self-help" and "cooperation" are low.



Source: FY2022 Koriyama City Safe Community Survey of Citizen Awareness

Neighborhood Association

Neighborhood associations are the municipal organization that is closest to the residents. If a disaster occurs, they play an essential role in evacuating and guiding people, etc.

Example of roles * Excerpt from Koriyama City Community Disaster Prevention Plan

Example 1: Evacuation and situation of evacuation shall be identified in neighborhood association units

As a rule, identification of evaluation situation or adjustment of contact with evacuees is conducted in neighborhood association unit; each neighborhood association chair or a designated person should be the point of contact.

Neighborhood associations functioned effectively during the Great East Japan Earthquake.



However, the membership rate is declining yearly. 63.2% (2016) -> 61.9% (2022)

Situation of neighborhood association membership (as of June 2022)

- No. of households registered in population register: 142,215 households
- No. of households with neighborhood association membership: 89,452 households



Source: Koriyama City survey

[Timing] February to March 2020 [Number of surveys] 2,033 [Collected surveys] 1,031 [Collection rate] 50.7%

	Survey results	Excerpt
Survey items	Response	Percentage
	Confirmation of communication methods and evacuation rules in the event of a disaster	56.0%
	Preliminary confirmation of information collection methods	52.5%
Programs necessary in the future	Individual confirmation of evacuation sites and evacuation routes	49.9%
	Encouragement of neighborhood association membership and interaction with neighbors	22.2%
	Proactive participation in disaster prevention training and evacuation drills	14.0%
Evacuation mathed	Car	89.4%
Evacuation method	Foot	5.1%

Citizen awareness (5) Citizen awareness II Questionnaire survey at community visit lectures

Fig. 17

[Timing] August 2021 [Number of surveys] 107 [Targets] 3rd-year junior high school students living along rivers that flooded

Survey results Exc					
Survey items	Response	Percentage			
Programs for uniting communities	Community disaster prevention drills(raise awareness of dangers)	39%			
	Hold events (festivals, sports festivals)	33%			
	Train leaders	16%			
Participation in community activities	Participate in cleaning and waste collection	46%			
	Would participate if event was closer to home	25%			
Ease of participating in community activities	Would participate if event was on weekend or holiday	18%			

while operating agricultural machinery.

Many people are injured during harvesting work or



Source: Koriyama City FY2020 Safe Community Survey of Citizen Awareness

Fig. 18

Citizen awareness (6) Situation of injuries during farming

Citizen awareness (7) Causes of accidents during farming work



Source: Koriyama Regional Fire-Fighting Union Fire Defense Headquarters survey

4 Selection of priority challenges



5 Directions, targets, and programs for challenges



Start with the children (schools) and involve parents and grandparents.
 Check preparations in the home, evacuation routes, and notification methods.

Main programs	 Promote of preparation of community disaster prevention maps. Promote disaster prevention classes at public places (schools and community halls, etc.) Promote disaster prevention in the community (circular, events, etc.) 	
Examples of initiatives	(1) [Fig. 25] (2) [Fig. 26] (4) [Fig. 28] (6) [Fig. 29] (7) [Fig. 30] (8) [Fig. 31]	2

5 Directions, targets, and programs for challenges



(1) Select advanced and pilot districts.(2) Increase exchanges (mutual help) within the community through disaster prevention activities.

Main programs	 Encourage residents to participate in community disaster prevention activities (drills, lectures, etc.). Survey disaster prevention awareness. 	
Examples of initiatives	(1) [Fig. 25] (2) [Fig. 26] (4) [Fig. 28] (6) [Fig. 29]	22

5 Directions, targets, and programs for challenges



(1) Publicize information at related stores and through various meetings.(2) Implement measures to raise awareness of safety during farming work.

Main programs	 Promote measures to prevent heatstroke during farming Promote safety measures for common farming equipment.
Examples of initiatives	(3) [Fig. 27]

Outline of programs for challenges

Fig. 24

Challenge	Category	National level	Municipality level	Community level
nor	Improve environment	Victim support system Improvement of community disaster prevention ability	System to assist people Support and strengthening of disaster prevention organization	Mimamori-watching of people in need Evacuation guidance and rescue
Common	Rules and restrictions	Development of laws, formulation of plans	Formulation of plans and development of manual	Formulation of plan
(1) (2)	Education and awareness- promotion	Holding of drills and lectures	Dissemination of disaster prevention information Holding of drills and lectures Creation and distribution of disaster prevention pamphlet	Holding of drills and lectures Safety inspections in the community Promotion of disaster prevention awareness

Challenge	Category	National level	Municipality level	Community level
	Improve environment	Establish counseling services Workers' compensation insurance benefit system	Guide to counseling services	Safety and health management
(3)	Rules and restrictions	Development of laws, formulation of plans	Development of manual	Development of manual
	Education and awareness- promotion	Promotion of safety and health Safety seminar	Promotion of safety and health Safety lectures	Employee training Safety inspection promotion

* Within the jurisdiction of relevant Labor Standards Bureau 24



Fig. 25

(Canceled in 2020 and 2021, postponed in 2022 due to COVID-19)



Example of initiative (2) "Distribution of enlightenment booklets " (A city-centered)

Our Home's Disaster Prevention Handbook created (revised) and distributed

[Main improvements]

- A page on daily preparations (disaster prevention action plan) in the home was added to "Our Home's Disaster Prevention Handbook"
- Possible flooding depths were indicated on the evacuation site map to indicate the degree of danger at homes, etc.
- The booklet was revised to include an explanation of evacuation information (page 1) and emergency contact information (front cover).

The neighborhood associations distributed copies to all homes by the end of May 2121.

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A multi-language

version (5 languages)

was updated



Fig. 26

Hazard map

Published in April 2020

GOALS

Example of initiative (3) "Creation and distribution of leaflet"

Fig. 27



 Holding community visit lectures and creating and distributing leaflets, etc., on preventing injuries and accidents during farming work.



SC promotion leaflet





Agriculture Policy Newsletter. published 2 times a year

Example of program (4) Disaster prevention training

Seminar was held to provide citizens with opportunity to learn how to prepare for disasters by getting up-dated information about condition of disasters, and available services upon the revision of Basic Act on Disaster in May, 2021

[Date] Saturday, November 6, 2021 am 10:00-11:30 (YouTube live-streaming)
 [Participants] Approx. 60 people: Community residents, voluntary disaster prevention organizations, Women's Fire Fighting Cooperation Association, etc.

[Subject] Involvement of local disaster prevention power (lecturer: Koriyama City meteorological disaster prevention advisor)





Example of program (5) Training seminar for disaster prevention specialists, etc. (Human resource training)

To train local disaster prevention leaders, we have held disaster prevention lectures and seminars for citizen disaster prevention leaders, and conducted a new training program for disaster prevention specialists.



•(Existing) Training program for citizen disaster prevention leaders (from 2004)

[Participants] Members of independent disaster response groups in the City

[Number of participants] 26 people (FY2019) [Details]

- Lecture, practice, first aid, map-based training
- Canceled in 2020 and 2021 due to COVID-19 pandemic

•(Existing) Koriyama City Independent Disaster Response Group Liaison Council "Training program"

[Participants] Independent disaster response group members, etc. [Number of participants] Approx. 100 people

- [Details] Disaster prevention seminar by meteorological disaster prevention advisor
 - Canceled in 2020 and 2021 due to COVID-19 pandemic



• Training program for disaster prevention specialists (from 2022)



Citizen disaster prevention leader training program (2020)



 Lectures for a wide range of citizens from elementary and junior high school to the elderly. FY2020 17 sessions 628 people (2020-2021: Slight decrease because of COVID-19 pandemic) FY2021 24 sessions 1,344 people * Online seminars also held FY2022 18 sessions 1,286 people (as of September 30, 2020) [Reference] FY2019 29 sessions 2,345 people (before Covid-19 pandemic)





Community-visit lecture held online because of COVID-19

3rd-year junior high school students living along Abukumagawa River

Lecturer

Example of program (7) Communicating information on disasters (A city-centered)



The information system has been strengthened by installing of additional disaster prevention administrative radios along the river and introducing VACAN, an information application that allows users to check the status of evacuation centers and their use.



Example of program (8) Expansion of evacuation sites (A city-centered)

- Securing evacuation sites by borrowing facilities at private companies, etc.
- Securing space for in-car evacuation for citizens who wish to evacuate in their cars (from 2020)

Evacuation site name	Number of partitions	Evacuation sites for car evacuations	Number of parking spots
Koriyama Gakuin School Keisen Business College	89 partitions	Big Palette Fukushima parking lot (12 facilities)	2,307 cars
Toho Academy Foundation School Koriyama Institute of Health Sciences	127 partitions	Niraku Corporation (9 stores)	3,230 cars
Shinkyo Chisui Co., Ltd.	25 partitions	Parks (14 locations)	1,344 cars
Nihon University College of Engineering	246 partitions	Culture Park parking lots, etc. (2 locations)	1,817 cars
Teikyo Asaka High School	200 partitions		

[Others] Evacuation sites using ryokan and hotels that have entered an agreement with the Koriyama Association of Ryokan and Hotels (September 23, 2020)





Short- to mid-term performance indicators

	2016	2017	2018	2019	2020	2021
No. of disaster prevention studies (community-visit lectures, etc.) participants	426 people	886 people	1,173 people	2,280 people	628 people	1,421 people
No. of people who have prepared for disasters in the home or community	6,226 people	6,773 people	7,081 people	8,045 people	240 people	140 people
No. of groups that have created a community disaster prevention map	2 groups	-	3 groups	2 groups	-	2 groups
No. of people participating in disaster prevention activities	6,226 people	6,773 people	7,081 people	8,045 people	240 people	140 people

Long-term performance indicator

	2017	2018	2019	2020	2021	2022
[Awareness of disaster prevention] Community disaster prevention drills						
Have participated	-	18.6%	-	17.6%	-	20.6%
Have not participated	-	75.3%	-	77.8%	-	77.1%
Reasons for not participating						
Didn't know that the drill was being held	-	42.2%	-	48.6%	-	48.0%
Don't like interacting with people	-	9.2%	-	11.5%	-	13.4% 33

Covid-19

Problem points in each challenge and how to proceed Fig. 34

<u>.</u>	robiem points in each challer	lige and new to proceed
Priority challenge	Problem points	How to proceed
(1)	To promote disaster preparedness among people of all ages, it is necessary to gain the understanding of schools and companies, including on how to deal with the COVID-19 pandemic.	 Actively inform schools, businesses, etc., of disaster prevention projects organized by the city and local communities through various opportunities and means. Study methods of non-in-person activities, such as using the Internet.
(2)	A decline in the participation rate of neighborhood associations, the parent body of voluntary disaster prevention organizations. In addition, the status of disaster prevention activities and interaction (mutual help) among neighbors varies depending on the district.	The project will be disseminated to other districts through exchanges with advanced (model) districts in the city and the introduction of case studies from advanced cities.
(3)	It is difficult to improve the awareness of older workers who tend to overexert themselves and an unspecified number of people with kitchen gardens.	Get opinions from cooperating stores, etc., and study methods and changes to gain the interest of targets.

Thank you for listening.