

**Great East Japan  
Earthquake  
Lessons Learned &  
Know-How Gained**

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Reconstruction Agency of Japan

This publication has been compiled based on a report for a project commissioned by the Reconstruction Agency in FY 2020 on the “Study and Analysis on the Development of a Collection of Lessons Learned and Know-how Gained from Reconstruction Efforts After the Great East Japan Earthquake” (by the Hyogo Earthquake Memorial 21st Century Research Institute). All content in this publication is current as of FY 2020, unless otherwise noted.

## Foreword

This year marks ten years since the Great East Japan Earthquake.

With a moment magnitude of 9.0, the 2011 off the Pacific coast of Tohoku Earthquake, which caused the disaster, was the largest earthquake in Japan's recorded history. The earthquake recorded a maximum seismic intensity of 7 on the JMA Seismic Intensity Scale, with extensive and devastating damage caused by a tsunami, as well as the accident at the TEPCO Fukushima Daiichi Nuclear Power Station. Nearly 20,000 people lost their lives in this disaster, and more than 2,000 are still missing. With approximately 120,000 homes completely destroyed and about 280,000 partially demolished, many people were left without a foundation to support their lives and were forced to evacuate for lengthy periods of time. There are some people, even today, who have been unable to return to their homes. The disaster destroyed roads, ports, airports and other key infrastructure and dealt a devastating blow to many industries. The damage wrought by the earthquake was felt in the areas directly affected by this disaster and its impacts reverberated across the country.

The disaster victims, national government, local authorities, volunteers, NPOs, private companies, and individual citizens around the country have worked together for ten years throughout the process of recovery and reconstruction in order to build back better from this unprecedented disaster. However, this process has not been without its struggles. The Great East Japan Earthquake was unique for a number of reasons:

- The wide scope and enormity of the damage translates into a tremendous amount of capital, materials and manpower required for recovery and reconstruction that cannot be fully met solely with existing systems and mechanisms.
- There is a need to deal with the extraordinary complex disaster of the earthquake, tsunami, and nuclear accident.
- The earthquake has accelerated and exposed the challenges facing local communities in Japan, such as declining birthrates, aging populations and depopulation, with areas affected by the disaster emerging on the frontlines in terms of these challenges.
- Required responses vary from region to region as the nature and extent of the damage and background differs for each of the areas affected.

These unique conditions required responses based on concepts that differed from those of disasters in the past. Specific details on these responses follow.

Firstly, the national government provided an unprecedented level of public assistance to deal with the massive damage, even compared to other large-scale disasters in the past. Special financial resources were earmarked for reconstruction and special measures were taken, such as the creation of the special reconstruction zone system through dedicated legislation and the promotion of the Fukushima Innovation Coast Framework, in addition to support measures based on existing systems. The national government also actively developed new methods of support that had not been seen in past disasters, such as detailed intangible support tailored to the conditions of those affected, the establishment of subsidies to restore facilities for small- and medium-sized companies and other

groups, and the creation of a “New Tohoku”, a vision that goes beyond simply restoring the region back to its original state. Together with local authorities outside of the disaster-affected areas, the national government also provided support to local authorities and companies in those areas in terms of human resources, including the assignment of support workers and specialists. A one-stop system was put into place to respond to the needs of local authorities that would go beyond the framework for existing ministries and agencies with the establishment of the Reconstruction Agency, the principal body tasked with the implementation of these support measures.

Secondly, significant changes have been seen in the nature of mutual aid. The critical importance of the roles of volunteers and other people in recovery and reconstruction has been acknowledged since the Great Hanshin-Awaji Earthquake. However, after the Great East Japan Earthquake, different support providers were required to cooperate and collaborate in performing their respective roles in order to provide more extensive support in response to the diverse needs of those affected by the disaster. Accordingly, networks were formed between administrative agencies, between government bodies and private organizations, such as NPOs, and between private sector groups, with intermediary organizations playing an important role in providing support as focal points for these networks. Emerging as new players in the reconstruction effort, the private sector also provided financial support, as well as assistance utilizing their knowledge and expertise (for example, IT companies providing information to confirm people’s safety), as well as support in collaboration with government agencies, NPOs and other organizations.

Thirdly, cities in areas devastated by the disaster needed to be rebuilt from the ground up. Should aspirations be on radical reconstruction, such as relocating most residents to higher ground, even if it takes more time, or should communities be rebuilt in the same locations by utilizing areas that were undamaged in the earthquake? As birthrates decline, the population ages, and depopulation progresses, at what scale should communities be rebuilt in terms of future sustainability? How can consensus be reached with residents on these issues? With no simple answers to any of these questions, municipalities found themselves faced with difficult decisions.

This process of trial-and-error throughout recovery and reconstruction offers invaluable insights into future reconstruction efforts from the Great East Japan Earthquake, as well as into disaster prevention and mitigation efforts for large-scale disasters that may occur in the future. This publication is a compilation of a two-year project combining expertise and knowledge, analyzing case studies on recovery and reconstruction efforts, and drawing lessons and know-how.

The structure and features of the publication follow below.

- This publication is divided into four sections: Support for Disaster Victims, Reconstruction of Homes and Cities, Revitalization of Industries and Livelihoods, and Collaboration and Posterity. Each section contains a summary of issues from case studies on recovery and reconstruction.
- Matrix tables have been included to provide an overview of the timing for different issues (emergency response phase, recovery phase, early reconstruction phase, late reconstruction phase) and correlating issues.
- In the main text, “Issues” are presented first, followed by an overview of the “Situation” and “Initiatives”

related to those challenges during the Great East Japan Earthquake, and the “Lessons learned and know-how gained” through these experiences.

- Specific individual initiatives are outlined at the end of the publication as “individual case studies”. Sources are also listed for examples that are not included as individual case studies.

This publication mainly covers the earthquake and tsunami disasters. Its scope does not extend to the nuclear accident, with the exception of cases that overlap with the earthquake and tsunami, since full-scale reconstruction and recovery efforts continue to be implemented following the lifting of evacuation orders and other measures.

Recovery and reconstruction efforts following the Great East Japan Earthquake have been the subject of various debates over the years, with arguments both for and against individual measures. Agencies that oversee disaster recovery and reconstruction must constantly review measures and initiatives based on the culmination of these discussions. On another front, Japan has experienced earthquakes, typhoons, torrential rains and other large-scale disasters every year since the Great East Japan Earthquake. This highlights the need for relevant agencies and institutions to actively engage in preparations to prevent and mitigate disasters based on the lessons learned from the Great East Japan Earthquake and on the premise that disasters to which conventional wisdom does not apply can occur.

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## List of Factors by Field and Phase

Section	Category	Topic	Phases				Page
			Emergency	Recovery	Early reconstruction	Late reconstruction	
I.	Support for Disaster Victims 1. Support for daily life	1) Identifying information about persons requiring special care and healthcare service provision systems	<input type="radio"/>	<input type="radio"/>			9
		2) Understanding information on wide-area evacuees and livelihood/lifestyle support (Initiatives by local authorities to where they evacuated)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	13
		3) Maintaining connections between wide-area evacuees and disaster-affected areas (Initiatives by local authorities from where they evacuated)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	16
		4) Rebuilding the livelihoods of disaster victims	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	18
		5) Emergency shelter management and community building	<input type="radio"/>	<input type="radio"/>			21
		6) Support for tenants in emergency temporary housing		<input type="radio"/>	<input type="radio"/>		25
		7) Building communities in emergency temporary housing		<input type="radio"/>	<input type="radio"/>		29
		8) Safeguarding tenants in emergency temporary housing		<input type="radio"/>	<input type="radio"/>		32
		9) Creating purpose in life and reviving local culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	36
		10) Support for tenants in disaster public housing			<input type="radio"/>	<input type="radio"/>	39
		11) Community building in the transition to permanent housing			<input type="radio"/>	<input type="radio"/>	42
		12) Support after the transition to permanent housing			<input type="radio"/>	<input type="radio"/>	45
		13) Support for individuals rebuilding on their own			<input type="radio"/>	<input type="radio"/>	48
		14) Care and training for support workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	51
	2. Schools and Children	15) Restoring schools	<input type="radio"/>	<input type="radio"/>			54
		16) School management and education in the aftermath of a disaster		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	57
		17) Mental health and physical care of children in disaster-affected areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	61
		18) Supporting children affected by the disaster in attending school and learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	64
II.	Reconstruction of Homes and Cities 1. Housing and city development, improvement of living environment	19) Preparing to formulate reconstruction city development plans	<input type="radio"/>	<input type="radio"/>			68
		20) Formulating reconstruction city development plans		<input type="radio"/>	<input type="radio"/>		72
		21) Consensus building process in city development		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	76
		22) Devising project methodologies to rebuild and relocate cities			<input type="radio"/>		80
		23) Accelerating projects to rebuild and relocate cities and responses to changes in public intentions			<input type="radio"/>	<input type="radio"/>	84
		24) Revitalization and management of city centers			<input type="radio"/>	<input type="radio"/>	88
		25) Efficient use of sites from where people relocated			<input type="radio"/>	<input type="radio"/>	92
		26) Securing construction-type emergency housing	<input type="radio"/>	<input type="radio"/>			96
		27) Building maintenance for construction-type emergency housing		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	101
		28) Securing rental-type emergency housing	<input type="radio"/>	<input type="radio"/>			105
		29) Consolidation and removal of construction-type emergency housing			<input type="radio"/>	<input type="radio"/>	109
		30) Early-stage development of an adequate supply of disaster public housing		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	112
		31) Construction of disaster public housing in consideration of communities		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	115
		32) Maintenance and management of disaster public housing			<input type="radio"/>	<input type="radio"/>	119
	2. Infrastructure development including transportation and logistics networks	33) Disaster waste management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>		123
		34) Recovery and reconstruction of road networks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	126
		35) Recovery and reconstruction of railroads, ports, and airports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	129
		36) Recovery and reconstruction of coastal levees		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	133

Section	Category	Topic	Phases				Page
			Emergency	Recovery	Early reconstruction	Late reconstruction	
III. Revitalization of Industries and Livelihoods	1. Build Back Better Industries	37) Initiatives aimed at resuming business operations	○	○			138
		38) Funding support	○	○	○	○	142
		39) Promoting corporate location		○	○	○	146
		40) Developing new sales channels and launching new businesses		○	○	○	150
		41) Securing human resources for industry		○	○	○	153
	2. Reconstruction of Shopping Streets and Commercial Facilities	42) Recovery and reconstruction of shopping streets and commercial facilities	○	○	○		157
		43) Creating and revitalizing a lively atmosphere			○	○	160
	3. Agriculture, Forestry and Fisheries	44) Initiatives to restore farmland and agricultural facilities, and resume farming operations	○	○	○	○	163
		45) Developing new sales channels for agriculture and forestry		○	○	○	166
		46) Upgrading and progressing agriculture and forestry			○	○	169
		47) Initiatives to resume business in the fisheries industry	○	○			172
		48) Developing new sales channels for the fisheries industry		○	○	○	176
		49) Upgrading and progressing the fisheries industry			○	○	179
	4. Reconstruction of Tourism	50) Restoring tourist facilities and functions	○	○			182
		51) Preservation and development of the soft aspects of tourism			○	○	185
52) Creating new tourism demand				○	○	188	
53) Promoting reconstruction tourism				○	○	191	
IV. Collaboration and Posterity	1. NPOs, private companies, etc.	54) Securing human resources such as volunteers and NPO staff, and collaborating with them from normal times	○	○			196
		55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations		○	○	○	201
		56) Support from NPOs and other groups in revitalizing communities			○	○	205
		57) Intermediary support organizations and networks	○	○	○	○	208
		58) Cooperation and division of roles between public and private sectors	○	○	○	○	211
		59) Reconstruction support from the private sector	○	○	○	○	214
	2. Mutual cooperation between administrative agencies	60) Securing support staff, and other associated tasks (Initiatives by local authorities receiving support)	○	○	○	○	218
		61) Dispatching support staff (Initiatives by supportive local authorities)	○	○			221
		62) Continuation of long-term dispatching of staff			○	○	225
		63) Ongoing support for administrative functions	○	○			228
	3. Passing down of memories and records	64) Preservation of earthquake records and dissemination of lessons learned	○	○	○	○	231
65) Preservation of disaster heritage sites and development of disaster legacy centers			○	○	○	235	
66) Passing down memories, records and experiences from disasters			○	○	○	239	



# Part I : Support for Disaster Victims: Matrix Table

Phase	Emergency Response Phase	Recovery Phase	Early Reconstruction Phase	Late Reconstruction Phase
Phase	Phase to ensure the safety of disaster victims and assist them with life in evacuation centers, etc.	Phase to support efforts to rebuild living environments in emergency temporary housing, etc.	Phase to promote the transition to permanent housing and build sustainable support systems	Phase to establish comprehensive service delivery systems, such as for medical and nursing care, to promote a spirit of self-autonomy and mutual assistance among disaster victims
	(1) Rebuilding housing and lifestyles	(2) Community, mental and physical care	(3) Wide-area evacuation	(1) Education recovery and reconstruction (2) Assistance for children
	<p><b>4) Rebuilding the livelihoods of disaster victims</b></p> <p>(1) Developing consultation systems for disaster victims (2) Handling diverse support needs → 55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations</p>	<p><b>6) Support for tenants in emergency temporary housing</b></p> <p>(1) Support for early moving into housing (2) Encouraging connections between tenants → 21) Consensus building process in city development 26) Securing construction-type emergency housing 28) Securing rental-type emergency housing</p>	<p><b>10) Support for tenants in disaster public housing</b></p> <p>(1) Ensuring residential stability (2) Maintaining human connections → 31) Construction of disaster public housing in consideration of communities 32) Maintenance and management of disaster public housing</p>	
	<p><b>9) Creating purpose in life and reviving local culture</b></p> <p>(1) Making connections, finding a sense of purpose in life, and receiving mental health care support (2) Reviving local culture</p>	<p><b>7) Building communities in emergency temporary housing</b></p> <p>(1) Promoting interaction between tenants in construction-type emergency housing (2) Preventing isolation of tenants in rental-type emergency housing (3) Promoting autonomy by tenants in emergency temporary housing</p>	<p><b>11) Community building in the transition to permanent housing</b></p> <p>(1) Creating and encouraging connections between residents and autonomy (2) Revitalizing areas affected by the disaster → 21) Consensus building process in city development 31) Construction of disaster public housing in consideration of communities 56) Support from NPOs and other groups in revitalizing communities</p>	
	<p><b>5) Emergency shelter management and community building</b></p> <p>(1) Managing evacuation centers and creating connections (2) Responding to diverse needs of evacuees</p>	<p><b>8) Safeguarding tenants in emergency temporary housing</b></p> <p>(1) Safeguarding and supporting the daily lives of the elderly and other groups (2) Supporting the health of disaster victims (3) Providing mental health care over the medium to long term → 26) Securing construction-type emergency housing → 55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations</p>	<p><b>12) Support after the transition to permanent housing</b></p> <p>(1) Developing a comprehensive system of continuous support (2) Encouraging a spirit of independence and mutual aid in disaster victims</p>	
	<p><b>1) Identifying information about person requiring special care and healthcare service provision systems</b></p> <p>(1) Identifying and supporting persons requiring special care (2) Developing healthcare service provision systems</p>	<p><b>14) Care and training for support workers</b></p> <p>(1) Caring for the mental and physical well-being of support staff (2) Training support staff</p>		
	<p><b>2) Understanding information on wide-area evacuees and livelihood/lifestyle support (Initiatives by local authorities to where they evacuated)</b></p> <p>(1) Determining the locations of wide-area evacuees (2) Providing livelihood/lifestyle support and information to wide-area evacuees.</p>	<p><b>3) Maintaining connections between wide-area evacuees and disaster-affected areas (Initiatives by local authorities from where they evacuated)</b></p> <p>(1) Providing information to wide-area evacuees (2) Supporting wide-area evacuees in the process of returning home</p>		
	<p><b>15) Restoring schools</b></p> <p>(1) Restoring educational facilities and functions quickly (2) Securing teaching staff</p>	<p><b>16) School management and education in the aftermath of a disaster</b></p> <p>(1) Promoting education on reconstruction and disaster management (2) Restoring connections between schools and communities → 66) Passing down memories, records and experiences from disasters</p>		
	<p><b>17) Mental health and physical care of children in disaster-affected areas</b></p> <p>(1) Providing care and lifestyle support for children who have lost one or both parents in the earthquake (2) Providing mental and physical care for children affected by the disaster</p>	<p><b>18) Supporting children affected by the disaster in attending school and learning</b></p> <p>(1) Supporting children learning (2) Ensuring an environment where children can learn and play → 55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations</p>		
				<p><b>Legend</b></p> <p><b>(No.) Item</b></p> <p>(1) Issue (2) Issue → Related topics in other sections</p>
	1. Support for Daily Life			2. Schools and Children

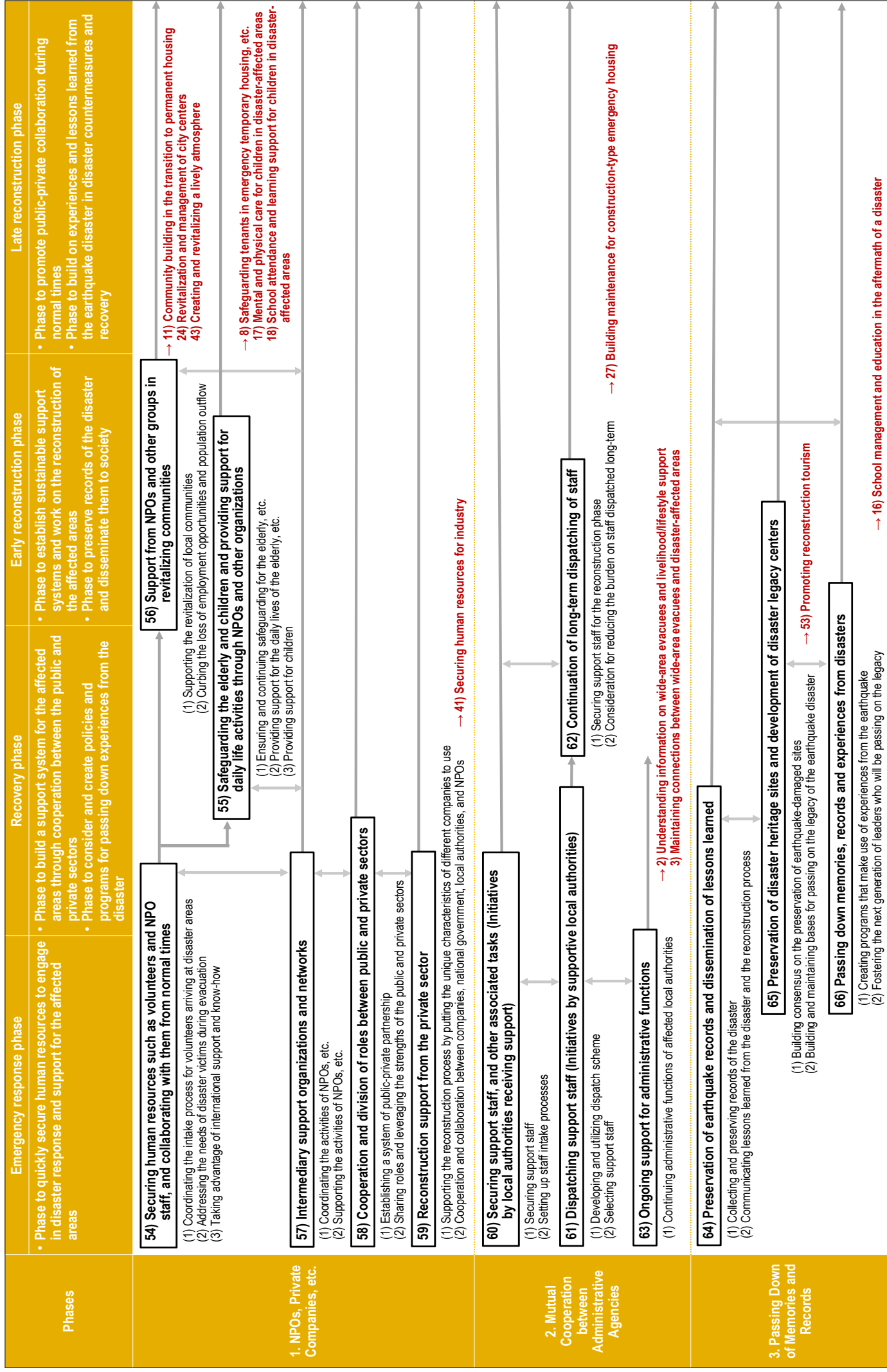
# Part II : Reconstruction of Homes & Cities: Matrix Table

Phase	Emergency Response Phase	Recovery Phase	Early Reconstruction Phase	Late Reconstruction Phase
	(1) City development  (2) Housing  2. Infrastructure Development, including Transportation and Logistics Networks	<ul style="list-style-type: none"> <li>Phase to secure and construct emergency temporary housing</li> <li>Phase to consider revitalization policies for communities</li> </ul>	<ul style="list-style-type: none"> <li>Phase to provide emergency temporary housing to disaster victims</li> <li>Phase to formulate reconstruction city development plans and start projects</li> </ul>	<ul style="list-style-type: none"> <li>Phase to develop and construct disaster public housing</li> <li>Phase to promote reconstruction city development projects</li> </ul>
	<b>19) Preparing to formulate reconstruction city development plans</b> (1) Organizing information and conditions to formulate plans (2) Securing organizational structures and human resources to formulate plans (3) Determining emergency measures needed before reconstruction projects start → 61) Dispatching support staff (Initiatives by supportive local authorities)	<b>20) Formulating reconstruction city development plans</b> (1) Ensuring safety in cities (2) Ensuring sustainability in cities → 61) Dispatching support staff (Initiatives by supportive local authorities)	<b>22) Devising project methodologies to rebuild and relocate cities</b> (1) Devising project methodologies for rebuilding and relocating <b>24) Revitalization and management of city centers</b> (1) Rebuilding city centers destroyed in the disaster as quickly as possible (2) Revitalizing hollowed-out city centers even before the disaster (3) Reclaiming attractive townscapes (4) Using developed spaces effectively → 43) Creating and revitalizing lively atmosphere	<b>23) Accelerating projects to rebuild and relocate cities and responses to changes in public intentions</b> (1) Executing extensive projects at an accelerated pace (2) Responding to changes in residents' intentions to rebuild → 61) Dispatching support staff (Initiatives by supportive local authorities) 62) Continuation of long-term dispatching of staff <b>25) Efficient use of sites from where people relocated</b> (1) Using land efficiently in sites from where people relocated → 39) Promoting company relocation 44) Initiatives to restore farmland and agricultural facilities, and resume farming operations
	<b>21) Consensus building process in city development</b> (1) Providing direction for city development at an early stage (2) Sharing information and building consensus with disaster victims → 11) Community building in the transition to permanent housing	<b>27) Building maintenance for construction-type emergency housing</b> (1) Handling the use of buildings in the long term (2) Considering the climate and barrier-free accessibility in disaster areas (3) Using vacant units → 62) Continuation of long-term dispatching of staff	<b>29) Consolidation and removal of construction-type emergency housing</b> (1) Coordinating and supporting the consolidation and removal of emergency temporary housing (2) Raising construction-type emergency housing after units are vacated → 4) Rebuilding the livelihoods of disaster victims	<b>32) Maintenance and management of disaster public housing</b> (1) Maintaining and managing large numbers of disaster public housing efficiently (2) Utilizing vacant housing units and sites (3) Maintaining and managing disaster public housing over the medium to long term → 10) Support for tenants in disaster public housing 12) Support after the transition to permanent housing
	<b>26) Securing construction-type emergency housing</b> (1) Securing a substantial number of construction-type emergency housing quickly (2) Taking aging populations, lifestyle convenience and other factors into account → 8) Safeguarding tenants in emergency temporary housing 42) Recovery and reconstruction of shopping streets and commercial facilities 61) Dispatching support staff (Initiatives by supporting local authorities)	<b>30) Early-stage development of an adequate supply of disaster public housing</b> (1) Determining the number of units and specifications (2) Constructing an extraordinary number of disaster public housing complexes <b>31) Construction of disaster public housing in consideration of communities</b> (1) Reflecting considerations for the elderly and local communities (2) Achieving a balance with city development and ensuring lifestyle convenience → 10) Support for tenants in disaster public housing 12) Support after the transition to permanent housing	<b>33) Disaster waste management</b> (1) Treating disaster waste by local authorities (2) Promoting wide-area treatment and recycling of disaster waste <b>34) Recovery and reconstruction of road networks</b> (1) Building emergency road networks quickly (2) Constructing full functional road networks	<b>36) Recovery and reconstruction of coastal levees</b> (1) Promoting the early restoration and reconstruction of coastal levees (2) Coordinating tsunami disaster prevention responses with city planning
		<b>28) Securing rental-type emergency housing</b> (1) Facilitating the supply of rental-type emergency housing (2) Handling the extensive work required to secure large housing supply → 6) Support for tenants in emergency temporary housing 20) Formulating reconstruction city development plans	<b>35) Recovery and reconstruction of railroads, ports, and airports</b> (1) Recovering and reconstructing regional transportation systems (2) Recovering and reconstructing ports (3) Recovering and reconstructing airports → 50) Restoring tourist facilities and functions	
			<b>33) Disaster waste management</b> (1) Treating disaster waste by local authorities (2) Promoting wide-area treatment and recycling of disaster waste	→ 39) Promoting corporate location

# Part III: Revitalization of Industries and Livelihoods Matrix Table

Phases	Emergency response phase	Recovery phase	Early reconstruction phase	Late reconstruction phase
1. Build Back Better Industries	<p>Phase to support business continuity and early resumption of business for disaster victims and affected businesses</p> <p><b>37) Initiatives aimed at resuming business operations</b></p> <p>(1) Supporting the early resumption of business by SMEs (2) Restoring damaged facilities and equipment</p>	<p>Phase to support the servicing of facilities and equipment necessary for business activities at affected businesses</p> <p><b>39) Promoting corporate location</b></p> <p>(1) Location of companies to disaster-affected areas → <b>25) Efficient use of sites from where people relocated</b></p>	<p>Phase to support affected businesses' expansion into new businesses and entrepreneurship</p> <p><b>40) Developing new sales channels and launching new businesses</b></p> <p>(1) Developing new products and services, and developing new sales channels (2) Promoting entrepreneurship and new industry creation</p>	<p>Phase to support businesses' transition and growth from revitalization to new economic growth</p>
	<p><b>38) Funding Support</b></p> <p>(1) Providing support for financing (2) Solving the problem of overlapping debts</p>	<p><b>41) Securing human resources for industry</b></p> <p>(1) Securing jobs for those unemployed (2) Securing human resources for SMEs</p>	<p>(3) Developing management personnel → <b>59) Reconstruction support from the private sector</b></p>	
	<p><b>42) Recovery and reconstruction of shopping streets and commercial facilities</b></p> <p>(1) Enabling stores and commercial facilities to quickly resume their businesses</p>	<p><b>43) Creating and revitalizing a lively atmosphere</b></p> <p>(1) Agglomerating commerce and revitalizing shopping streets (2) Revitalizing local commerce and creating a lively atmosphere</p>	<p>(2) Reconstructing shopping streets, etc. → <b>24) Revitalization and management of city centers</b></p>	
	<p><b>44) Initiatives to restore farmland and agricultural facilities, and resume farming operations</b></p> <p>(1) Recovering farmland and agricultural facilities (2) Expediting the resumption of farming (3) Securing agricultural workers for local agriculture</p>	<p><b>45) Developing new sales channels for agriculture and forestry</b></p> <p>(1) Recovering and developing sales channels</p>		
3. Agriculture, Forestry and Fisheries	<p><b>47) Initiatives to resume business in the fisheries industry</b></p> <p>(1) Recovering damaged fishing facilities and equipment (2) Expediting the resumption of fishing and aquaculture businesses (3) Resuming business in the fisheries industry and fisheries processing businesses</p>	<p><b>48) Developing new sales channels for the fisheries industry</b></p> <p>(1) Reclaiming lost sales channels and developing new ones</p>	<p><b>49) Upgrading and progressing the fisheries industry</b></p> <p>(1) Creating new businesses (2) Upgrading and diversifying the fisheries processing business</p>	
	<p><b>50) Restoring tourist facilities and functions</b></p> <p>(1) Restoring tourist facilities and equipment (2) Realizing business continuation at tourism businesses</p>	<p><b>51) Preservation and development of the soft aspects of tourism</b></p> <p>(1) Disseminating information to attract tourists (2) Strengthening and improving the systems for promoting tourism</p>	<p><b>52) Creating new tourism demand</b></p> <p>(1) Adding value to tourism resources (2) Attracting inbound visitors from abroad</p>	<p><b>53) Promoting reconstruction tourism</b></p> <p>(1) Tourism programs that build on the experiences and lessons learned from the disaster (2) Revitalizing regional economies through reconstruction tourism</p>
4. Reconstruction of Tourism	<p>→ <b>35) Recovery and reconstruction of railroads, ports, and airports</b></p>	<p>→ <b>25) Efficient use of sites from where people relocated</b> <b>61) Dispatching support staff</b></p>		<p>→ <b>65) Preservation of disaster heritage sites and development of disaster legacy centers</b></p>

# Part IV: Collaboration and Posterity Matrix Table



## Part I Support for Disaster Victims

## 1) Identifying information about persons requiring special care and healthcare service provision systems [emergency response phase, recovery phase]

**[Issues]** (1) How to identify and support housebound victims and other persons requiring special care.  
(2) How to develop healthcare service provision systems.

### **[Situation and issues created by the Great East Japan Earthquake]**

As large numbers of victims evacuated to various locations after the Great East Japan Earthquake, such as designated evacuation centers, public facilities, homes of relatives and acquaintances and their own homes, an important issue was the early identification of persons requiring special care, including the elderly, persons with disabilities, and infants and toddlers. A large number of hospitals (380 in total) in Iwate, Miyagi and Fukushima prefectures were also affected by the disaster,<sup>(1)</sup> which placed additional strain on the provision of medical services. Local authorities and medical institutions in disaster-affected areas were required to work together with numerous healthcare teams rushed in from outside these areas and provide healthcare and medical support to disaster victims by effectively leveraging the limited healthcare resources available.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Sharing registry information to conduct door-to-door visits to disaster victims forced to live as evacuees in their homes (Issue 1)

Local authorities and support groups patrolled the affected areas and conducted door-to-door visits to assess conditions, in order to gain insight into the situations of disaster victims who were forced to take shelter in their own homes (housebound victims).

The local authority and organizations for persons with disabilities in Minamisoma City, Fukushima Prefecture shared information registered in “disability certificates” and made door-to-door visits to offer support to about 590 persons with disabilities who were housebound victims because of difficulty in evacuating and living in evacuation centers. Although there were concerns that sharing information listed in these “disability certificates” could violate the city’s ordinance on the protection of personal information, which prohibits providing an individual’s information to outside organizations for purposes other than its intended use, the information was shared with the application of a stipulation to provide information “when deemed urgent and unavoidable to protect an individual’s life, physical condition, or property” (Case study 1-1).

- Creating registries of persons requiring assistance to evacuate and sharing information with relevant authorities (Issue 1)

Revisions to the Basic Act on Disaster Management in June 2013 required municipality heads to draw up registries of persons requiring special care who have difficulty evacuating on their own in the event of a disaster and require special assistance for smooth and speedy evacuations. The

information listed in these registries is then shared with authorized parties involved in the provision of support for evacuations, such as fire departments, prefectural police, social welfare workers, municipal social welfare councils and voluntary disaster management organizations, based on local disaster management plans formulated by municipalities. As a general rule, under normal conditions, sharing information contained in these registries requires the consent of the individual in question. However, this information can be shared without consent if provisions are stipulated in personal data protection ordinances or other regulations.<sup>(2)</sup> An individual's consent is also not required in cases when a disaster has occurred or there is a risk for a disaster occurring.

→ *Related topic: 4) Rebuilding the livelihoods of disaster victims*

- Providing information to senior citizens and persons with visual and hearing impairments (Issue 1)

Taking note of the high mortality rates of persons requiring special care in the Great East Japan Earthquake, the aging of persons with disabilities and actual conditions for persons with acquired disabilities, Aizuwakamatsu City in Fukushima Prefecture has formulated a “Master Plan for Persons Requiring Special Care”. This plan outlines efforts to share information in written form when providing information to persons requiring special care at evacuation centers to prevent people from missing announcements, as well as the care needed in using plain language and characters that are easy to understand. Information shall also be provided in audio format to accommodate persons with visual impairments.<sup>(3)</sup>

- Establishment of welfare evacuation shelters (Issue 1)

In the aftermath of the Great East Japan Earthquake, a maximum of 152 welfare evacuation shelters\* were opened for the elderly and persons with disabilities who did or could have experienced difficulties living in general evacuation centers in a disaster.<sup>(4)</sup> Welfare evacuation shelters provided support to persons requiring special care, offering them assistance to prevent stress and protect their privacy in group settings, as well as healthcare services by nurses. Lifestyle and employment counselors worked with relevant organizations to provide support, playing a central role in interviewing disaster victims about their physical health, living conditions and home environments with a view to helping them restart their lives in the community.<sup>(5)</sup> However, many of those requiring special care were forced to take shelter in their own homes because of an insufficient number of welfare evacuation shelters and a lack of space.<sup>(6)</sup>

In response to the lessons learned from the Great East Japan Earthquake, the Cabinet Office formulated “Guidelines for securing and managing welfare evacuation shelters” in April 2016. These guidelines have assembled the accumulated knowledge from the disaster to identify actions that need to be taken in ordinary times to deal with disasters and encourage municipalities to designate welfare evacuation shelters and develop operational systems before a disaster occurs.<sup>(7)</sup>

→ *Related topic: 5) Emergency shelter management and community building*

- Building healthcare and medical support networks (Issue 2)

Local healthcare providers and support teams from outside the disaster areas teamed up to provide support to disaster victims. On March 20, Iwate Prefecture established the “Iwate Disaster

Medical Support Network”, which included representatives from Iwate Medical University, Iwate Medical Association, Japanese Red Cross Society, National Hospital Organization and Iwate Prefecture, to take in support teams from outside the disaster areas and coordinate healthcare services over a wide area. Those familiar with the disaster areas, including local physicians and government staff, played key roles in activities on-site by coordinating visits to evacuation centers and sharing information on patients. The network’s structure also helped guarantee that support activities would continue even after support teams from outside the disaster areas left. Since the disaster, Iwate Prefecture has worked on developing a system of disaster medical care coordinators who are located in prefectural disaster response headquarters, public health centers, municipal disaster response headquarters and other locations to supervise medical first-aid activities during a disaster. As of December 2019, 45 coordinators have been appointed to prefectural and regional disaster response headquarters (Case study 1-2).

The Ministry of Health, Labour and Welfare issued “Enhancing and strengthening medical systems in the event of a disaster” (Notification from the Director General, Health Policy Bureau, March 2012) and “Establishing systems for healthcare and medical activities in the event of a large-scale disaster” (Joint notification from the Director, Health Sciences Division, Minister’s Secretariat; Director General, Health Policy Bureau; Director General, Health Service Bureau; Director General, Pharmaceutical Safety and Environmental Health Bureau; and Director, Department of Health and Welfare for Persons with Disabilities, Social Welfare and War Victims’ Relief Bureau, July 2017). All prefectures have been requested to establish systems that are capable of fully demonstrating coordination functions, such as dispatching medical teams. Training programs started in fiscal 2014 for prefectural disaster medical care coordinators who are assigned to healthcare coordination headquarters in areas affected by disasters (1,003 persons have completed training as of April 1, 2020). Training programs for local disaster medical care coordinators, who are assigned to public health centers and other facilities in disaster areas, were also launched in fiscal 2017 in all prefectures.<sup>(8)</sup>

- Shift from emergency aid to long-term recovery and reconstruction support (Issue 2)

Some supporters and organizations from among the aid workers and groups who arrived in the disaster areas to provide emergency aid have put down roots in local communities to provide new healthcare resources and continue their activities throughout the recovery and reconstruction period. The Japanese Association of Neuro-Psychiatric Clinics dispatched mental health care teams, primarily comprising private practitioners around Japan, to disaster areas to provide support in the cities of Sendai, Ishinomaki, and elsewhere. A team from the association established a general incorporated association called the Disaster Mental Care Network Miyagi to continue activities after the closure of the evacuation centers, and opened “Karakoro Station” in front of JR Ishinomaki Station in October 2011. As of 2020, activities at the station have continued through commissioned projects from Ishinomaki City and Miyagi Prefecture, with mental health care counseling services and salon activities offered in Ishinomaki City, Onagawa Town, and Higashimatsushima City.<sup>(9) (10)</sup>



**[Lessons learned and know-how gained]**

- (1) Establish support systems for persons requiring special care in collaboration with stakeholders in ordinary times
  - Municipalities should create lists of persons requiring assistance to evacuate, review local disaster management plans and sort out the relationship with personal information protection ordinances and regulations so that the information in these registries can be shared with related organizations even in normal times.
  - Municipalities will work with community and other local associations, medical and welfare-related groups and others to determine the locations of persons requiring special care who have evacuated to sites outside of evacuation centers and what, if any, support is required.
  - Municipalities, facility staff and support groups should consider designating and establishing operational systems for welfare evacuation shelters even in normal times and conduct trainings so that the intake process at these shelters is smooth for persons requiring special care.
- (2) Establish systems to receive teams providing aid from outside disaster areas and to coordinate the location of activities
  - Disaster medical care coordinators should be assigned to prefectural headquarters and in each region.
  - Systems should be place that allow teams to work together to support disaster victims by sharing information through regular meetings and other activities in order to ensure that activities of teams providing aid continue through local healthcare and other related organizations.
  - Local authorities should consider outsourcing programs in order to allow support teams from outside the disaster areas to continue performing activities in the recovery phase and beyond.

\* Welfare evacuation shelters: Shelters that offer special considerations and accommodations primarily for persons requiring special care, such as senior citizens, persons with disabilities, infants and toddlers, and other individuals.

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## 2) Understanding information on wide-area evacuees and livelihood/lifestyle support (Initiatives by local authorities to where they evacuated) [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to determine the locations of wide-area evacuees.  
 (2) How to provide livelihood/lifestyle support and information to wide-area evacuees.

### **[Situation and issues created by the Great East Japan Earthquake]**

The Great East Japan Earthquake forced a large number of residents to leave their domiciles and evacuate to other areas around Japan (hereinafter referred to as “wide-area evacuees”). The municipalities and prefectures (local authorities) where these residents had lived before the disaster were tasked with obtaining an accurate understanding of information on the location of wide-area evacuees. The number of evacuees who relocated to other prefectures as of December 2011 was a total of approximately 70,000 people from the three disaster-affected prefectures (1,536 from Iwate, 8,603 from Miyagi, and 59,464 from Fukushima). As of December 2019, these figures stood at 985 from Iwate, 4,010 from Miyagi, and 31,104 from Fukushima (total population of approximately 36,000), with many of the disaster victims displaced from their homes over the long term.<sup>(1)</sup> The local authorities in areas where these disaster victims had evacuated to were required to develop support systems through the public and private sectors to prevent the evacuees from feeling isolated and allow them to receive any required support for daily life over an extended period of evacuation.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Sharing information on evacuees through the National Evacuee Information System (Issues 1 and 2)

The Ministry of Internal Affairs and Communications established the National Evacuee Information System and issued a notification requesting the cooperation of local authorities throughout the country in April 2011. With the National Evacuee Information System, evacuees consent to voluntarily providing information to the prefectures and municipalities from where they evacuated, such as their name, date of birth, gender, previous address, current location and contact number, through the municipality to where they evacuated. By providing this information, evacuees are able to receive benefits, tax and insurance notifications, and other pertinent information from the prefecture or municipality from where they evacuated.<sup>(2)</sup> Municipalities to where people evacuated are making an effort to ascertain their situations by publicizing contact information for notifications and moving procedures in relation to the National Evacuee Information System.<sup>(3)</sup>

## National Evacuee Information System for the Great East Japan Earthquake

In this system, persons who have been evacuated due to the Great East Japan Earthquake voluntarily provide information on the location of their evacuation sites to the municipality to where they evacuated. This information is then provided to the prefecture and municipality from where they evacuated through the municipality to where they evacuated.  
(Implemented in cooperation with all prefectures and municipalities throughout Japan in line with Notification No.62 by the Director General, Local Administration Bureau, Ministry of Internal Affairs and Communications, April 12, 2011)

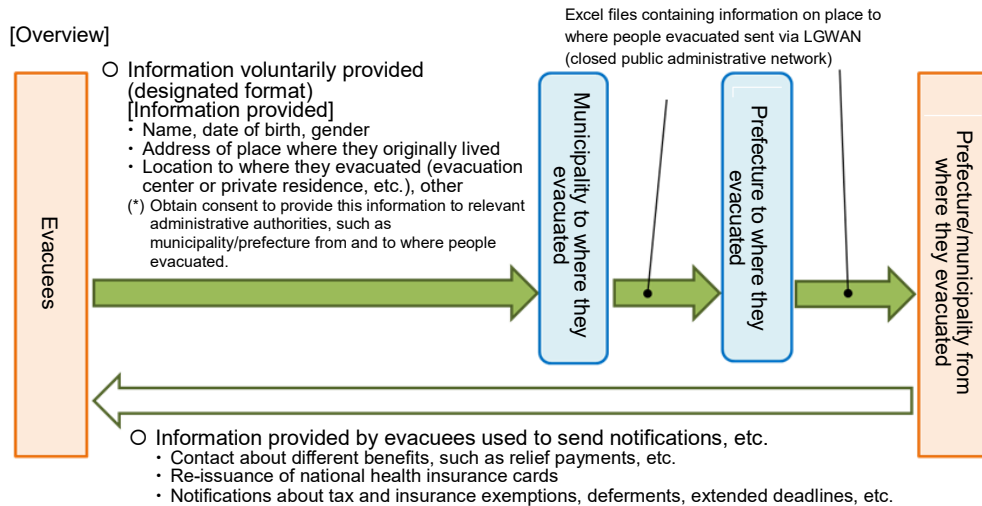


Fig. National Evacuee Information System for the Great East Japan Earthquake (image)

- Counseling services offered by local authorities and private organizations to where people evacuated (Issue 2)

Support was provided to evacuees by local authorities and support organizations to where they evacuated.

Yamagata Prefecture opened support offices for evacuees in the cities of Yonezawa and Yamagata to provide counseling services and information to wide-area evacuees. Lifestyle and employment counselors have also been assigned to municipal social welfare councils where they are engaged in monitoring activities, home visits and the organization of social events to prevent wide-area evacuees from isolation. Yamagata, Niigata and Fukushima prefectures are jointly implementing programs to improve the skills of counselors and encourage information sharing among these groups in order to enhance and continue to support the mental health care of wide-area evacuees. Comprehensive support is also being developed and promoted through public-private partnerships, such as the establishment of the Yamagata Evacuee Support Cooperative Network in August 2013, which includes the involvement of administrative agencies, evacuee support groups and other organizations within Yamagata Prefecture, and organizing training programs for supporters, such as evacuee case management training workshops, and consultation on life in the future, where wide-area evacuees can make use of individual counseling sessions on returning to their homes, relocating, housing, school, health and other issues (Case study 2-1).

Fukushima Prefecture has also established livelihood reconstruction support centers in 26 locations around Japan that are contracted out to NPOs and other organizations to provide information and counseling services to wide-area evacuees.

- *Related topics:* 3) *Maintaining connections between wide-area evacuees and disaster-affected areas (initiatives by local authorities from where they evacuated)*  
4) *Rebuilding the livelihoods of disaster victims*

**[Lessons learned and know-how gained]**

- (1) Prepare to take in wide-area evacuees even in normal times.
- Start preparations for system management and operations (such as the National Evacuee Information System) that will allow authorities to determine the location and contact details of wide-area evacuees and to share information efficiently between local authorities from and to where they evacuated.
- (2) Encourage cooperation between local authorities and private organizations from and to where they evacuated in order to provide support to evacuees.
- Put in place consultation and support systems for wide-area evacuees in the local authorities to where they evacuated, including the opening of consultation services and assignment of livelihood support counselors.
  - Build collaborative systems between local authorities and private organizations from and to where they evacuated through the implementation of joint programs to provide support that is aligned with the needs of wide-area evacuees.

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### 3) Maintaining connections between wide-area evacuees and disaster-affected areas (Initiatives by local authorities from where they evacuated) [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to provide information to wide-area evacuees.  
(2) How to support wide-area evacuees in the process of returning home.

#### **[Situation and issues created by the Great East Japan Earthquake]**

In the Great East Japan Earthquake, wide-area evacuees who departed from their place of residence and evacuated to locations around the country found themselves with no choice but to live displaced from their homes in the long term, and faced a number of different challenges in terms of how to rebuild their livelihoods and homes in these new locations. Local authorities, NPOs and other private organizations from where people evacuated were required to provide information to wide-area evacuees on the progress of recovery and reconstruction in their hometowns and to ascertain their intentions in rebuilding their lives. This information was to be reflected in services supporting the lives and desires of wide-area evacuees in returning home, as well as in reconstruction city plans in disaster-affected areas.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Sharing the living conditions of wide-area evacuees and thoughts on reconstruction efforts in their hometowns in public relations publications (Issue 1)

Namie Town in Fukushima Prefecture started publishing “*Namie-no-Kokoro Tsushin* (The Heart of Namie)” in July 2011 as a joint project between the town and the Tohoku Community Consortium. This publication was created based on interviews with people in the town who had evacuated to and were living in different locations, with questions on the areas where they had evacuated to, how they were living out their lives, and their thoughts on reconstruction and recovery efforts in the hometown. The publication is used to share the thoughts on reconstruction efforts in the hometown and to promote support for the revival of livelihoods and reconstruction projects in the town (Case study 3-1).

- Sharing information with wide-area evacuees through the use of information and communications technology (ICT) (Issue 1)

Futaba Town in Fukushima Prefecture operates the ICT Kizuna Support System. In this project, the town distributes tablet-type data terminals to households that have been forced to evacuate to other places of Japan that equipped with functions for viewing administrative information from the town, interaction among users, and making use of telephone counseling services.<sup>(1)</sup>

- Establishment of counseling services for inland evacuees (Issue 2)

Iwate Prefecture opened the Iwate Inland Evacuee Assistance Center in Morioka City in May 2016. Subcontracted out to NPOs with specialist knowledge, the center offers counseling services and

support on behalf of municipalities to residents who have evacuated from affected municipalities along the coast to locations inland and outside of the prefecture, in order to gain insight into their intentions on rebuilding their homes and to secure housing.<sup>(2)</sup>

- Establishment of livelihood reconstruction support centers that offer direct counseling services in locations around Japan to where people evacuated (Issue 2)

Fukushima Prefecture established livelihood reconstruction support centers in 26 locations around Japan. NPOs and other organizations are contracted by the prefecture to provide information to and provide counseling services for wide-area evacuees at these centers. For example, the Association to Connect Great East Japan Evacuees in Yamanashi Prefecture and Supporters (“Musubukai”) trains personal supporters to offer individual and ongoing assistance to evacuees living in the prefecture and provides lifestyle consultation services and employment assistance to evacuees in collaboration with a number of different support groups. The Fukushima Cooperative Reconstruction Center set up the counseling center connecting people with Fukushima today “toiro” in Fukushima City for evacuees inside and outside the prefecture. In response to requests, this center dispatches human resources in various fields, such as housing, employment, community development, schools, health and to support returnees, and provides information at meetings with evacuees outside the prefecture (Case study 3-2).

- *Related topics: 2) Understanding information on wide-area evacuees and livelihood/lifestyle support (Initiatives by local authorities to where they evacuated)*  
4) *Rebuilding the livelihoods of disaster victims*

### **[Lessons learned and know-how gained]**

- (1) Create a means for sharing information on living conditions of wide-area evacuees and reconstruction in disaster-affected areas.
  - Gain an understanding on the living conditions and thoughts of wide-area evacuees on reconstruction efforts and share this information in public relations publications, etc.
  - Use information and communications technology to provide information and as a tool for communication between disaster victims.
- (2) Set up support centers inside and outside prefectures for wide-area evacuees to help them rebuild their livelihoods and homes.
  - Offer long-term support with continuous efforts to gain insight into the intentions of evacuees about rebuilding their lives through careful and detailed consultation services and other methods.

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#### 4) **Rebuilding the livelihoods of disaster victims** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to develop consultation systems to help disaster victims rebuild their lives.  
 (2) How to handle the diverse support needs of households.

#### **[Situation and issues created by the Great East Japan Earthquake]**

With the large number of victims emerging from the Great East Japan Earthquake, local authorities affected by the disaster were faced with the issue of how to develop counseling systems for disaster victims. The issues related to rebuilding the livelihoods of disaster victims, such as reconstruction of housing, employment, health and nursing care, and the support systems available were wide ranging and changing long-term. This required an accompanied support that would offer a level of flexibility in coordinating aid services according to situations and that would meet the support needs of households. Disaster victims also needed support with their daily life activities, such as shopping and visits to hospitals, as local stores were damaged/closed and people had moved into temporary housing with poor connections to public transport.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Establishment of consultation and support centers for disaster victims (Issue 1)

Iwate Prefecture set up consultation and support centers for disaster victims in different locations within the jurisdiction of the Northern and Coastal Regional Development Bureau (Kuji, Miyako, Kamaishi, and Ofunato cities) in July 2011. In addition to the centers' permanent advisory staff, lawyers, judicial clerks, financial planners and other specialists were dispatched to these centers on a daily basis, providing extensive responses to a wide range of consultations and inquiries from disaster victims, supporters, municipalities and other bodies. Counseling services for disaster victims were set up in all municipalities along the coast, including the establishment of sub-centers and on-site counseling services in different locations, to offer counseling and respond to inquiries from victims, depending on local conditions.<sup>(1)</sup>

- Creation of Disaster Victim Registers (Issue 2)

Iwate Prefecture promoted the introduction of the Disaster Victim Register System in municipalities affected by the disaster, with the system up and running in seven municipalities in the prefecture since July 2012. Municipalities that have introduced this system have been able to improve the efficiency of operations and identify households requiring assistance by assessing the situations of individual households affected by the disaster, support conditions, and intentions on rebuilding their homes in the future. This system has allowed municipalities to provide detailed support to disaster victims and help them rebuild their lives.<sup>(2)</sup>

The Basic Act on Disaster Management was revised in June 2013 in light of the lessons learned from the Great East Japan Earthquake, stipulating the administrative tasks related to the preparation of Disaster Victim Registers by municipality heads. Using the information contained in the registers,

each department can provide speedy assistance without having to duplicate the process of checking the situation, location and contact details of disaster victims in cases where a person has evacuated from their place of residence. Persons requiring special care, but who may not be included in lists of persons requiring assistance to evacuate, can also be identified so that the appropriate type of assistance can be provided.<sup>(3)</sup>

- *Related topics:*
- 1) *Identifying information about persons requiring special care and healthcare service provision systems*
  - 2) *Understanding information on wide-area evacuees and livelihood/lifestyle support (Initiatives by local authorities to where they evacuated)*

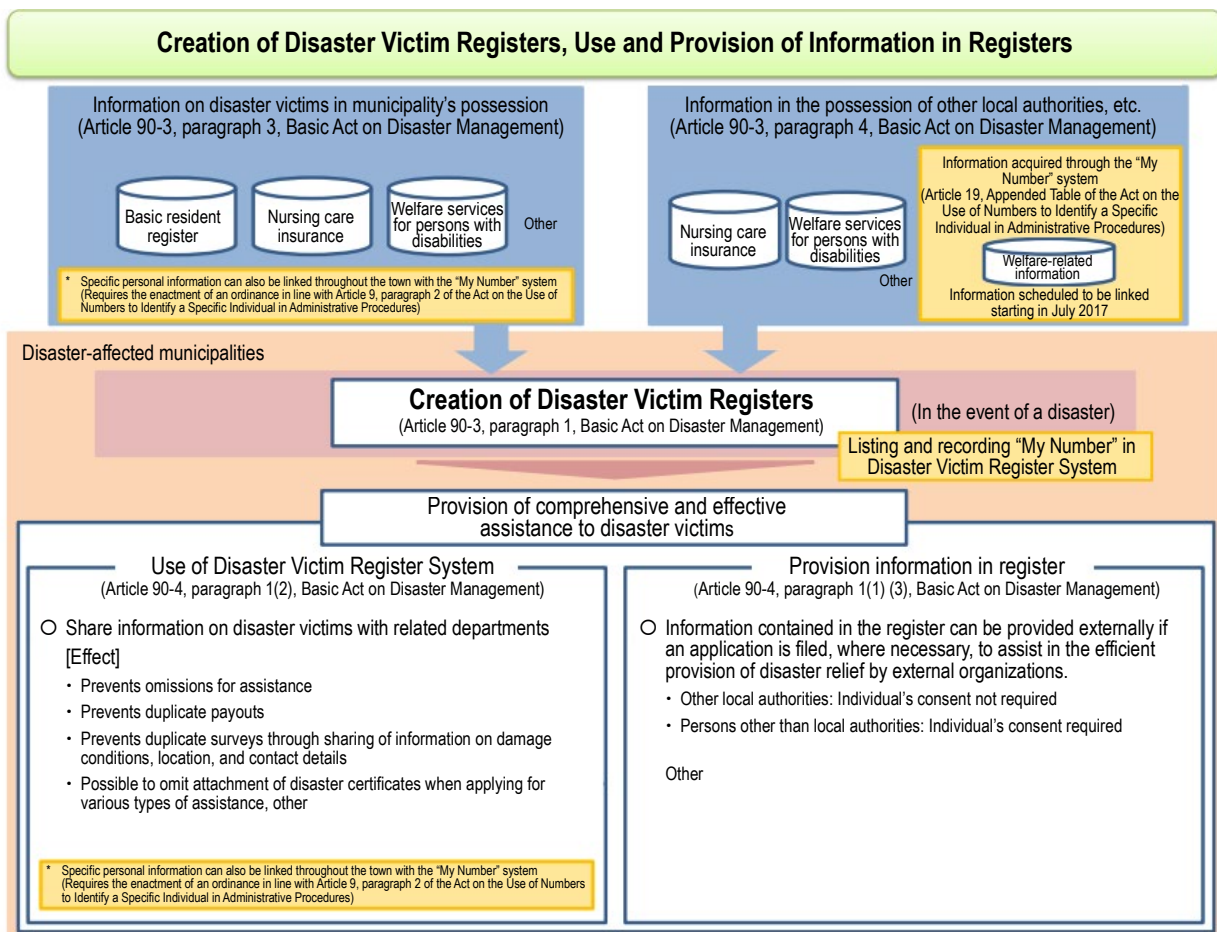


Fig. Overview of Disaster Victim Register (Cabinet Office)

• Comprehensive support through disaster case management (Issue 2)

Sendai City in Miyagi Prefecture formulated the Program for Reconstructing the Livelihoods of Disaster Victims in March 2014 to draw up support plans for individual households and combine various systems and social resources for disaster victims facing diverse challenges in rebuilding their lives, depending on support needs. The method of support employed in this program is called "disaster case management". The Personal Support Center, which is normally involved in providing assistance to persons in need, and aid-related organizations collaborated to provide comprehensive assistance to rebuilding the livelihoods of disaster victims through a combined support menu that covers a wide range of areas (Case study 4-1).



→ *Related topics: 55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations*

**[Lessons learned and know-how gained]**

- (1) Set up general consultation services and develop consultation and support systems together with experts.
  - Set up general consultation services to provide one-stop responses to disaster victims' inquiries.
  - Provide comprehensive responses to a wide range of inquiries in collaboration with lawyers, financial planners and other experts.
- (2) Centrally manage information on disaster victims and manage cases according to challenges faced by households in rebuilding their lives.
  - Share information on disaster victims in local authorities through the development of Disaster Victim Registers to provide speedy and comprehensive assistance.
  - Formulate assistance plans for each household in line with daily life challenges and manage cases by combining different support projects through collaboration between organizations and local authorities normally engaged in providing support for persons in need.

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## 5) Emergency shelter management and community building [emergency response phase, recovery phase]

**[Issues]** (1) How to manage evacuation centers and create connections with evacuees.  
(2) How to respond to diverse needs of evacuees in evacuation centers.

### [Situation and issues created by the Great East Japan Earthquake]

One week after the Great East Japan Earthquake, there were 2,182 evacuation centers spread out over a wide area around the country. The accident at TEPCO's Fukushima Daiichi Nuclear Power Station also resulted in the establishment of difficult-to-return zones, extending the period of time that evacuees lived in these centers.<sup>(1)</sup>

The municipalities affected by the disaster were compelled to manage evacuation centers, even without sufficient staff. Rules needed to be established in these centers, where large numbers of evacuees lived together for extended periods of time, to allow them to cooperate and interact with one another, while forming and maintaining new communities through these connections.

A second major challenge was deciding how to reflect the needs of the diverse groups of disaster victims that included the elderly, persons with disabilities and others requiring special care, families with infants and young children, women, and foreign nationals, into the management of the evacuation centers.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Create and raise awareness about disaster prevention in daily life (Issue 1)

Full-scale local disaster prevention drills have been held every year in residential areas in Sendai City, even before the earthquake, primarily organized by residents' associations. These drills include checking on coordination/collaboration systems used to manage evacuation centers with the elementary schools where the evacuation centers are set up. On the day of the earthquake, an unexpected number of evacuees surged into the centers, including residents from other areas and people who had difficulty returning to their homes. However, the drills that had been conducted over the years proved successful, with local residents taking the lead in setting up evacuation centers in gymnasiums to accommodate the large number of evacuees.<sup>(2)</sup>

With residents working together in areas where there was close cooperation between residents' associations and schools on a daily basis, emergency center steering committees were quickly set up in the immediate aftermath of the disaster, formed by disaster evacuees and others. However, it was sometimes difficult to make the shift to a community- and evacuee-centric management model when evacuees were not aware that they should take the lead in managing the centers and there was little interaction with the local community, leaving teachers, ward staff and facility managers with no choice but to continue to manage the centers.<sup>(3)</sup> In some cases, city staff and support personnel from other local authorities continued to be responsible for the management of these centers due to a shortage of qualified leaders.<sup>(4)</sup>

- Formulating rules under the direction of residents (Issue 1)

Municipalities employed a method of trial and error in developing management rules for evacuation centers. In Miyagi Prefecture, evacuees took part as members of emergency center steering committees at each evacuation center together with municipal and school staff and other facility managers to make decisions on rules and the division of roles with regard to the living environment and food supply at the centers.<sup>(5)</sup>

The Guidelines for Ensuring Satisfactory Living Conditions at Shelters formulated by the Cabinet Office, which were based on issues from the Great East Japan Earthquake, describe the preparation of manuals (guidelines) for managing emergency centers, training programs and drills as measures to be taken in everyday life before a disaster occurs. In contrast, the voluntary management of shelters by evacuees and clarification on the division of roles are outlined as measures to be taken after a disaster occurs.<sup>(6)</sup>

- Establishing women-only spaces and support worker assignments (Issue 2)

In the three disaster-affected prefectures, approximately 97% of community leaders playing central roles in the management of evacuation centers were male, resulting in the observation that, in some cases, awareness was limited in terms of considering the needs of women and families with children.<sup>(7)</sup> In Miyagi Prefecture, women took on leadership roles and were active participants in the management of these centers, bringing women's perspectives to the fore and taking diverse needs into account, such as women-only toilets, spaces for children to play and clotheslines to dry clothes for women.<sup>(8)</sup>

A women-only space was set up at Big Palette Fukushima, the largest shelter in Fukushima Prefecture, as a safe space for women. The Fukushima Gender Equality Center and women's organizations in Koriyama City worked together to assign female staff there on a daily basis to support women in a variety of ways.<sup>(9)</sup>

Iwate Prefecture formulated a model for drafting municipal evacuation center operation manuals based on experiences in the Great East Japan Earthquake to serve as reference for municipalities on managing shelters. This also compiled information on points to consider in order to accommodate the needs of women and others.<sup>(10)</sup>

→ *Related topic: 1) Identifying information about persons requiring special care and healthcare service provision systems*

- Setting up evacuation centers and interactive spaces for pregnant and nursing women and infants (Issue 2)

Both Yamagata Prefecture, which took in evacuees from disaster-affected areas, and JA Yamagata Chuo Association worked together to open a shelter for pregnant and nursing women and families with infants at "Kyodo-no-Mori", JA Yamagata Chuo Association's training facility, on March 25, 2011. JA Yamagata Chuo Association provided meals, milk, diapers and other items at this shelter at no cost, as well as childcare support by volunteers and health consultation services by midwives and public

health nurses. Yamagata Prefecture was the first to set up a dedicated evacuation center for pregnant women and infants.<sup>(11)</sup> Kirarin Kids in Rikuzentakata City in Iwate Prefecture designed interactive spaces in shelters to help people raising children stay connected and encourage one another by distributing powdered milk and other baby products. (Case study 5-1).

→ *Related topic: 2) Understanding information on wide-area evacuees and livelihood/lifestyle support (Initiatives by local authorities to where they evacuated)*

• Providing information to foreign evacuees (Issue 2)

Before the earthquake, Sendai City in Miyagi Prefecture created and distributed a Multilingual Disaster Information Display Sheet (in nine languages) to designated evacuation centers, in order to disseminate information on disaster management and prevention in multiple languages to foreign residents and for use in assisting foreign nationals in shelters in the event of a disaster. However, in reality, display sheets were not posted or utilized in the confusion of the earthquake disaster in some cases.<sup>(12)</sup>

**[Lessons learned and know-how gained]**

(1) Develop systems and manuals so that evacuation centers can be managed by residents.

- Set up opportunities for municipal staff, voluntary disaster prevention organizations, residents' associations, and evacuation center facility managers to discuss the establishment and operation of shelters with a focus on the local community in preparation for disasters.
- Create simple and understandable evacuation center operation manuals and conduct training programs and drills with the participation of local residents.
- Assign specific roles to evacuees when a disaster occurs to allow them to play a voluntary and active role in the management of evacuation centers.

(2) Build support systems for persons requiring special care in evacuation centers.

- Secure private rooms and dedicated spaces for women, infants and children in evacuation centers and assign support staff.
- Give due consideration to providing foreign nationals with information that is easy to understand, such as through the use of Multilingual Disaster Information Display Sheets.

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## 6) Support for tenants in emergency temporary housing [recovery phase, early reconstruction phase]

**[Issues]** (1) How to support early moving into emergency temporary housing.  
 (2) How to encourage connections between tenants in emergency temporary housing.

### **[Situation and issues created by the Great East Japan Earthquake]**

Under the Disaster Relief Act, emergency temporary housing is defined as construction-type emergency housing built immediately after a disaster, and rental-type emergency housing located in existing private rental complexes and other types of rental accommodation. In the Great East Japan Earthquake, 49,000 construction-type and 69,000 rental-type emergency housing units were made available for occupancy.<sup>(1)</sup>

Information and move-in procedures that were easy to understand were required to allow disaster victims to take up occupancy as soon as possible, as they were evacuating over a wide area. The challenge of moving into emergency temporary housing was how to select tenants so that local communities, with familiar faces and connections before the earthquake, could be preserved.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Sharing information through centralized telephone counseling services on housing and posted notices at evacuation centers (Issue 1)

Iwate Prefecture set up the “Housing Hotline” (five toll-free lines for telephone consultations, open also on weekends and public holidays) in April 2011 to provide advisory services on taking up residence in emergency temporary and prefectural housing, as well as on support systems available for rebuilding homes. The Housing Hotline closed in August 2011, when the evacuation centers were expected to be disbanded, having responded to a total of 2,006 inquiries. Housing news sheets, also known as “kawara-ban”, were posted in evacuation centers to provide evacuees with information on the status of construction of emergency temporary housing, interiors and facilities/equipment, and development conditions on group homes and assisted-living facilities for the elderly.<sup>(2)</sup> Iwate Prefecture also posted circulars about the hotline in shelters. However, it was difficult to inform people about the opening of the hotline right after the disaster as lines of communication were limited.

To set up counseling services quickly, it is necessary to start preparations in the daily life. In light of the lessons learned from the Great East Japan Earthquake and other disasters, Iwate Prefecture has put a housing reconstruction advisory system in place with the launch of a program to dispatch housing advisors in the event of a disaster, sending specialized consultants to housing consultation meetings organized by municipalities and individual counseling services.<sup>(3)</sup>

- Centralizing provision of information on rental-type emergency housing (Issue 1)

The Ministry of Land, Infrastructure, Transport and Tourism set up the Information Center on Public Housing for Disaster Victims on March 22, 2011 to provide disaster victims with a central site for

information on public housing with available space and to guide them to offices where they could apply for tenancy. In March 28, 2011, the center also added contact information on private rentals, national employee dormitories and other facilities to their services, in addition to information on local authorities' public housing and the Urban Renaissance Agency's rental housing, to assist disaster victims in finding housing.<sup>(4)</sup>

- Rental-type emergency housing found by disaster victims themselves (Issue 1)

The Ministry of Health, Labour and Welfare issued a notification on April 30, 2011, approving special measures that permitted properties found by disaster victims themselves to be rented out by government agencies as emergency housing, which increased tenancy in rental-type emergency housing. By May 2012, the number of rental-type emergency housing units exceeded those of construction-type emergency housing, with approximately 55,000 units built, in contrast to the 68,000 private units rented out.

→ *Related topic: 28) Securing rental-type emergency housing*

- Cooperation between prefectures and municipalities on administrative procedures for occupancy in construction-type emergency housing (Issue 1)

To ensure a smooth transition for disaster victims into construction-type emergency housing, Iwate Prefecture drew up diagrams, which were disseminated to municipalities, outlining the flow of the process from the start of construction to occupancy. These reflected the facts that tenants were decided before the units were completed and that appliances and other household items would be as ready as possible when the keys were handed over. In accord with schedules for the delivery of appliances, municipalities were also notified at least two weeks before the expected completion date and received diagrams of the construction-type emergency housing, so that they would have the information needed to determine occupancy procedures at an early stage.<sup>(2)</sup>

→ *Related topic: 26) Securing construction-type emergency housing*

- Selecting tenants taking community building and individual circumstances into account (Issue 2)

Selection methods for tenants in construction-type emergency housing differed by municipality. Attempts were made to put priority quotas in place for pregnant and nursing mother, the elderly, persons with disabilities and other groups, with a certain percentage of households that included persons requiring special care being placed in the same construction-type emergency housing complex as other households so that residents could help one another.<sup>(5)</sup>

In Miyako City, Iwate Prefecture, 2,010 construction-type emergency housing were built in 62 locations. Within about three months from the start of occupancy in May 2011, 3,885 tenants had taken up occupancy in 1,680 units. Miyako City listened to the hopes of all the disaster victims and as much care as possible was taken to allow them to move in according to their previous neighborhood areas, adopting the principles of "communities together," "proximity to disaster areas," "social mix (generational mix)," and "school commutes." There were no housing lotteries and all rooms were allocated by the city.<sup>(6) (7)</sup>

→ *Related topic: 7) Building communities in emergency temporary housing*

• Occupancy by local communities (district-based) (Issue 2)

Evacuees in evacuation centers in Iwanuma City, Miyagi Prefecture lived together by neighborhood, which established a policy for district-based occupancy for construction-type emergency housing. With applications opened on April 5, 2011 and occupancy completed between April 29 and June 4, this was the earliest of all the affected areas. Of the 384 units in three locations, tenants had taken up residence in a maximum of 379 units. (Case study 21-1).

Although rental-type emergency housing was efficient as a method of achieving occupancy at an early stage, it posed a challenge in maintaining of communities because tenants were spread out over a wider area.

→ *Related topics: 7) Building communities in emergency temporary housing*

*21) Consensus building process in city development*

**[Lessons learned and know-how gained]**

(1) Create centralized consultation services and service coordination systems for the development of emergency temporary housing between prefectures and municipalities.

- Set up centralized consultation services to allow local authorities to provide information on available emergency temporary housing options and to take consultation inquiries and applications from prospective tenants to support the smooth transition of disaster victims into housing. Consider methods of disseminating information in advance, as means of communication are limited in the event of a disaster.
- Set up a coordination system between prefectures that will be providing emergency temporary housing and the municipalities that will be taking care of occupancy procedures to ensure smooth communication on completion dates and key handovers, other.

(2) Create connections between tenants through district-based occupancy and mixing together a diverse range of households.

- Care should be taken by local authorities to ensure that residents can move in together with members from their previous districts to the extent possible.
- Encourage a sense of mutual support and interaction between tenants by promoting occupancy by a diverse range of households in the same construction-type emergency housing complexes, in addition to households that include pregnant and nursing mothers, the elderly, persons with disabilities and other people requiring special care.



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## 7) Building communities in emergency temporary housing [recovery phase, early reconstruction phase]

**[Issues]** (1) How to promote interaction (and prevent isolation) between tenants in construction-type emergency housing.  
 (2) How to prevent isolation of tenants in rental-type emergency housing.  
 (3) How to promote autonomy by tenants in emergency temporary housing.

### **[Situation and issues created by the Great East Japan Earthquake]**

As disaster victims extended the period of occupancy in construction-type emergency housing, a need arose to create discussion forums and mechanisms for residents to interact to decide on daily life rules, such as procedures on the use of meeting spaces and garbage disposal. In cases where emergency housing was constructed in areas located a distance away from original neighborhoods, it was also necessary for tenants to build up a relationship with local residents. On another front, preventing isolation from disaster victims' original communities, new residences, and local areas became an issue of critical importance, as the tenants in rental-type emergency housing had spread out to live in different areas.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Encourage interaction between residents through the application of housing maps (Issue 1, 3)

In many areas, occupancy in construction-type emergency housing was determined by lottery and information on tenants was not shared in order to protect personal data, resulting in a number of cases where people did not know where friends and acquaintances were living. The Fukkou Minasan-kai (All-Reconstruction Association) was set up by tenants in construction-type emergency housing and town volunteers in October 2011 in Minamisanriku Town, Miyagi Prefecture, in which members conducted door-to-door visits to tenants. With consent, the association also created and distributed housing maps, which listed the name of the primary householder and their original village or district. As residents' associations started to emerge in construction-type emergency housing, the Fukkou Minasan-kai worked with them to organize tea ceremonies, flower planting, Reconstruction Terakoya events to find out the latest information on reconstruction efforts, and other activities, which helped promote interaction and encourage community building between residents (Case study 7-1).

- Promoting autonomy of communities through cooperation between residents' associations (Issues 1, 3)

The residents' associations of construction-type emergency housing complexes in Ishinomaki City, Miyagi Prefecture held meetings with the heads of emergency temporary housing residents' associations formed at the time of the Great Hanshin-Awaji Earthquake. With the insights gained from these meetings, they established the Ishinomaki Federation of Residents' Associations in Temporary Housing in December 2011 with the participation of councils from five housing complexes. The federation carried out activities to create safe and secure living environments and share

problems in apartment complexes at regular monthly meetings under a slogan to end loneliness and solitary deaths. This federation, Ishinomaki City, the Ishinomaki City Social Welfare Council and supporting organizations launched the Ishinomaki Promotional Council of the Federation of Residents' Associations in Temporary Housing\* in February 2012, working on building community connections through the organization of events and release of informational publications to promote interactions between the construction-type emergency housing complexes. Ishinomaki Jichiren, a general incorporated association, was established in January 2016 to work on building up communities in disaster public housing by organizing morning radio exercises in these housing complexes and disseminating “*tsunagari* (connection) cards” listing emergency contact details that people could carry with them in case of a fall.<sup>(1) (2)</sup>

- Establishment of meeting spaces for residents from original communities to gather (Issues 1, 3)

The residents' associations of the areas where the residents originally lived set up meeting spaces in the Nebama district of Kamaishi City, Iwate Prefecture, where evacuees had dispersed and taken up residence in emergency temporary housing in different parts of the city. Residents gathered at these meeting spaces once a month to exchange views on housing reconstruction in the area and maintain personal connections through the opportunities provided to formulate ideas as a district. As a result, 38 households, or about 90% of those who initially expressed an interest in returning to the district to live, were able to return home in housing complexes in the Nebama district that had been relocated and built at higher elevations.<sup>(3)</sup>

- Supporting interaction and exchange between tenants in rental-type emergency housing (Issues 2, 3)

Organizations engaged in building communities and networks, planning and implementing events, and acting as liaisons between residents and governmental bodies in Tomioka Town, Fukushima Prefecture were registered as Tomioka Town Community Development Organizations. The town provided these organizations with information and financial support to promote the revival of communities with town residents who lived in rental-type emergency housing in and outside of the prefecture.

One registered organization, the Tomioka Town Residents' Association in Fukushima City and Northern Areas of Fukushima Prefecture, is continuing to work on preventing the isolation of evacuees and revive community activities by requesting the town to set up interactive salons in Fukushima City as a place for evacuees to exchange information and opening the Tomioka Town Sakura Salon. (Case study 7-2)

→ *Related topics: 2) Understanding information on wide-area evacuees and livelihood/lifestyle support (Initiatives by local authorities to where they evacuated)*

3) *Maintaining connections between wide-area evacuees and disaster-affected areas (initiatives by local authorities from where they evacuated)*

**[Lessons learned and know-how gained]**

- (1) Create opportunities for tenants in construction-type emergency housing to meet and collaborate.
  - Create housing maps to ensure that tenants know their neighbors in other apartments.
  - Create opportunities for tenants to interact with one another, such as tea ceremony parties and planting activities, etc.
  - In the event that residents from the same neighborhood have moved into different temporary housing, create opportunities for residents from the original communities to get together and promote interaction between them by providing consultation services on housing reconstruction, for example.
- (2) Support the development of connections between tenants in rental-type emergency housing.
  - Provide salon-type spaces for residents in rental-type emergency housing to gather and maintain interactions. Provide support for residents to continue activities through financial assistance and cooperation with publicity.
- (3) Create a system of coordination between residents' associations in emergency temporary housing, government bodies, and support organizations.
  - Invigorate the activities of residents' associations by sharing challenges between various residents' associations, government bodies and support organizations, such as preventing residents from becoming isolated and building systems to work together to address challenges.

\* The Ishinomaki Promotional Council of the Federation of Residents' Associations in Temporary Housing was dissolved in March 2018 due to the decreasing number of construction-type emergency housing. However, practical operations have been taken over by Ishinomaki Jichiren, a general incorporated association, which is continuing its work on building communities.

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## 8) Safeguarding tenants in emergency temporary housing [recovery phase, early reconstruction phase]

**[Issues]** (1) How to safeguard and support the daily lives of the elderly and other groups.

(2) How to support the health of disaster victims residing in emergency temporary housing.

(3) How to provide mental health care for disaster victims over the medium to long term.

### [Situation and issues created by the Great East Japan Earthquake]

As construction continued on emergency temporary housing, many of the healthcare teams that had been providing support to disaster victims in evacuation centers shut down activities. This meant that the provision of welfare and care services for tenants in emergency temporary housing complexes requiring daily support, such as the elderly and others in need of nursing care, and the development of a safeguarding system became issues. The healthcare services of local authorities and medical institutions that had their services disrupted or reduced as a result of the disaster also needed to be restored to be able to provide continued medical support to disaster victims. It was also necessary to develop systems to continue the activities of mental health care teams in the emergency response phase and address the mental health care required for disaster victims over the medium to long term.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Establishment of support centers for the elderly and other groups in emergency temporary housing areas (Issue 1)

The Ministry of Health, Labour and Welfare provided support to local authorities that would allow them to set up support centers and other facilities to provide comprehensive counseling and daily lifestyle support services for the elderly and other groups living in emergency temporary housing.<sup>(1)</sup> Support centers for nursing care and other facilities offered general counseling services to tenants in emergency temporary housing and also functioned as outreach centers for local residents.<sup>(2)</sup>

The Heita Area Support Center was built in the Heita area of Kamaishi City, Iwate Prefecture between the “care zone”, where households that included family members with disabilities and the elderly were located, and the “general zone”, where people from other households lived. A 24-hour safeguarding system was set up in the center to keep watch over tenants, functioning as a base for the provision of general counseling services on daily life and care, care insurance programs such as at-home care and day services, medical treatment, and community exchange programs. With the heads of residents’ associations and others in emergency temporary housing units conducting activities to look after people and sharing information with municipal public health nurses, a system was developed to support tenants with the cooperation of the public and private sectors. (Case study 26-2).

→ *Related topic: 26) Securing construction-type emergency housing*

*55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations*

- Support services to safeguard disaster victims through employment (Issue 1)

Livelihood support counselors who were employed through an emergency job creation program looked after and provided counseling support services to residents in emergency temporary housing in Ofunato City, Iwate Prefecture (Case study 14-2). Through this program, a number of disaster victims were hired as counselors, which enhanced the system to look after survivors and help them become more independent. However, many of these livelihood support counselors had no prior experience in how to support disaster victims, and therefore required assistance to carry out their duties, such as learning new skills and knowledge to handle consults and training opportunities to address ways to deal with stress.

→ *Related topic: 12) Support after the transition to permanent housing*

*14) Care and training for support workers*

- Health surveys and support for tenants in emergency temporary housing (Issue 2)

The Ministry of Health, Labour and Welfare supported the implementation of visiting health consultations, health classes and check-ups in emergency temporary housing and other facilities, as well as securing specialists to be involved in these activities.<sup>(3)</sup>

The Iwaki branch office of the Fukushima Soso Public Health and Welfare Office opened in Iwaki City, Fukushima Prefecture, where many evacuees lived, in June 2012. In addition to prefectural staff, public health nurses were dispatched by local authorities from outside the disaster areas, local nurses were temporarily employed, and other specialists were assigned to the Iwaki branch. These professionals went door-to-door to emergency temporary housing to carry out health surveys and provide continuous support to evacuees. Specialists were also dispatched to interactive salons and health classes organized by municipalities and other bodies to provide support for health-related issues through counseling services, exercises and lectures. (Case study 8-1)

- Preventing a sense of isolation and providing health-related support for tenants in emergency temporary housing (Issue 2)

There was an increasing number of male tenants in emergency temporary housing in the Ohashi area of Ishinomaki City, Miyagi Prefecture who were living in isolation. Dieticians, public health nurses, and dental hygienists from the city, visiting support workers and coordinators from the city's Social Welfare Council, and health coordinators from the Miyagi Nursing Association gathered together to discuss a plan of action and organized a health class called the Ohashi Men's Club. These health classes offered a variety of programs on cooking and exercise. After the conclusion of these classes, the participants voluntarily set up their own groups, which also helped to encourage interaction between the residents.<sup>(4)</sup>

- Opening clinics located near emergency temporary housing (Issue 2)

The Iwate Medical Association Rikuzentakata Clinic, run by the Iwate Medical Association, opened in Rikuzentakata City, Iwate Prefecture in August 2011, with a total of 11 departments, including dermatology, pediatrics, and ear nose and throat, which were in short supply in the disaster-affected areas. This clinic was set up on the same site near emergency temporary housing, was also open on weekends, public holidays, and during the year-end holidays, and functioned as a medical center where physicians from the prefecture's inland areas and other specialists worked in shifts to provide medical care.<sup>(5)</sup> The Ishinomaki Municipal Hospital Kaisei Interim Clinic opened in May 2012 in Ishinomaki City, Miyagi Prefecture within an emergency temporary housing complex and provided round-the-clock care, 365 days a year through home visits for medical and nursing care and visiting rehabilitation services (Case study 12-1). These clinics served as important medical care resources supporting the health of disaster victims in the period of time until housing was rebuilt and services in the region's main hospitals were restored.

→ *Related topic: 12) Support after the transition to permanent housing*

- Opening centers responsible for medium- to long-term mental health care (Issue 3)

The mental health care team from Fukushima Medical University has taken on responsibility for the mental health of disaster victims in the Soso district of Fukushima Prefecture, where it became difficult to provide mental health care in the aftermath of the Great East Japan Earthquake. The Association for the New Psychiatric Care, Health and Welfare System in Soso, an approved specified nonprofit corporation (commonly known as "Nagomi" and accredited in June 2019), was launched to continue these activities. The Soma Regional Kokoro-no-Care Center Nagomi opened in January 2012 to provide counseling services and support through door-to-door visits and salon-based activities in the community. The Fukushima Kokoro-no-Care Center was established in February 2012 by the Association for Mental Health and Welfare as part of commissioned work from Fukushima Prefecture, and is modeled on Nagomi. In addition to the key centers within Fukushima City, there are four regional centers in the prefecture (with operations for the Soma Regional Center outsourced to Nagomi) and two branches involved in providing counseling services and support to disaster victims, promoting and educating people about mental health care, training and dispatching personnel, and collecting information on mental health care. Key centers also have toll-free counseling lines open for disaster victims called the Fukukoko Line, which employs professional counselors who are on hand to respond to inquiries from evacuees both in and outside the prefecture.<sup>(6) (7)</sup>

**[Lessons learned and know-how gained]**

- (1) Establish centers and secure staff to support people requiring special care at emergency temporary housing and other facilities.
  - Establish support centers that can provide lifestyle assistance to the elderly and other people requiring special care that are integrated with emergency temporary housing.
  - Offer detailed safeguarding and support for tenants in emergency temporary housing in cooperation with specialists and residents' associations and by employing disaster victims as livelihood support counselors.
- (2) Encourage local authorities, social welfare councils, and specialist organizations to work together in providing health-related support.
  - Assess the health conditions of disaster victims through door-to-door visits to tenants in emergency temporary housing.
  - Sustain the physical and mental health of disaster victims by creating opportunities for interaction and providing support for health-related issues.
  - Secure access to medical care for tenants with the establishment of clinics located near emergency temporary housing.
- (3) Develop mental health and welfare systems in local areas that promote mental health care.
  - Establish centers (mental health centers, etc.) that can provide counselling services and raise awareness on mental health issues, train and dispatch staff, conduct fact-finding surveys on mental health and collect information, and build networks with related organizations that are engaged in mental health care and welfare services.

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## 9) **Creating purpose in life and reviving local culture** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to help disaster victims make connections with others, find a sense of purpose and receive mental health care support.  
 (2) How to revive local culture.

### **[Situation and issues created by the Great East Japan Earthquake]**

As people lost their connections with others as a result of long-term evacuation in temporary housing or relocation, an issue of critical importance emerged: how to prevent disaster victims from becoming isolated and support them through the provision of mental health and physical care, and maintaining or creating new connections with others.

The Tohoku region is also known as a “treasure trove for traditional performing arts.” The Great East Japan Earthquake damaged or washed away the tools and costumes from festivals and folk arts and entertainment, and completely destroyed or washed away these centers of activity, which has jeopardized the very survival of many of the region’s traditional arts.<sup>(1) (2)</sup> People called for the restoration of the local culture at an early stage, since local traditional arts and culture have been passed down over many years in the daily life of the local communities and are a source of emotional support that bonds them together.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Creation of spaces for disaster victims to engage in agricultural work and creative activities (Issue 1)

The Reconstruction Agency has implemented a Mental Recovery project since 2015, which provides support to organizations that carry out activities to encourage connections between people and allow those affected by the disaster to live life with a sense of purpose and a positive outlook. Physicians from the Iwate Prefectural Takata Hospital in Rikuzentakata City, Iwate Prefecture used the project to launch the “Hamarassen Farm Project” (“Hamarassen” means “come in”) in May 2012, in order to help residents live active lives in emergency temporary housing for extended periods of time. In this project, farms were set up on fallow land near temporary housing and residents shared responsibilities for caring for, harvesting and selling flowers and vegetables. These activities encouraged residents to interact with one another, which has resulted in better health and a sense of purpose in life. These activities have continued to be held in disaster public housing (Case study 9-1).

The Supporting Organization for Artists of Tohoku (SOAT) has also organized art workshops in the three prefectures in Tohoku starting almost immediately after the disaster and has implemented activities under the Nijiuro (Rainbow) Palette to help children affected by the disaster create a sense of purpose and receive mental health care through creative activities. Art workshops were also organized in six areas in the Tohoku region, where artwork was created using parts from “*sakiori*” weaving (cloth woven partly from strips of old cloth), which is a traditional skill from the Tohoku region, and presentations were held in Sendai and Tokyo (Case study 9-2).

• Revival and restoration of local traditional performing arts (Issue 2)

The Nippon Foundation established the Traditional Arts Relief Fund (Festival Fund) to support organizations involved in core performing arts and festivals in the disaster-affected areas, providing support to performing arts groups, shrines and other organizations to purchase items needed for various traditional arts and festivals.<sup>(2)</sup>

Iwate Prefecture launched a Program to Support the Restoration of Local Performing Arts in fiscal 2012 to provide assistance to folk performing art troupes that were affected by the disaster in order to maintain facilities and equipment.<sup>(3)</sup> In addition to this, the Iwate Cultural Promotion Agency has also provided support for equipment maintenance and other items through the Japan Arts Fund since September 2011.<sup>(3)</sup>

• Restoration of local culture by repairing damaged cultural heritages (Issue 2)

Since 2011, the National Institute for Cultural Heritage and 13 cultural property- and art-related organizations have implemented the Project on Salvaging Cultural Properties and Other Materials from the Great East Japan Earthquake (Cultural Property Rescue Project)<sup>(4)</sup> at the request of the Agency for Cultural Affairs. A wide range of materials related to local history and culture have been rescued and preserved through this project, including artwork, natural history specimens, official documents and books from the four prefectures of Miyagi, Iwate, Ibaraki and Fukushima. Since fiscal 2012, the Agency for Cultural Affairs has implemented the Program to Revitalize Disaster-Affected Museums, through which full-scale repairs on the above cultural properties are to be carried out (Case study 9-3).

Miyagi Prefecture launched the Project to Restore Local Cultural Heritages in Miyagi Prefecture, making use of a program subsidized<sup>(5)</sup> by the Agency for Cultural Affairs since fiscal 2011, and has been engaged in restoring the region's culture through the conservation and use of tangible and intangible cultural heritages damaged in the disaster.<sup>(6)</sup>

**[Lessons learned and know-how gained]**

(1) Create spaces for disaster victims to collaborate with others.

- Create opportunities for interaction between residents by encouraging them to share roles in agricultural work and engage in creative activities together, which can be connected to a sense of purpose in life and mental health care.

(2) Revive the local culture by promoting the restoration of local traditional performing arts and cultural heritages.

- Promote the recovery of the region by supporting the revival of local traditional performing arts and festivals that provide emotional and mental support to disaster victims.
- Revive local culture through the rescue and conservation of damaged cultural heritages.

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## 10) Support for tenants in disaster public housing [early and late reconstruction phases]

**[Issues]** (1) How to ensure residential stability for tenants in disaster public housing.  
 (2) How to maintain human connections formed in emergency temporary housing.

### [Situation and issues created by the Great East Japan Earthquake]

In the Great East Japan Earthquake, many disaster victims lost their homes, leaving them little choice but to live in emergency temporary housing. Disaster victims needed to move into disaster public housing\* as soon as possible to restore stability to their lives.

At the time of the earthquake, people moving into public housing had to meet, in principle, the following criteria: (1) income below a certain level, and (2) currently in need of housing. However, after the Great East Japan Earthquake, single people and persons requiring special care, who face difficulties in rebuilding their lives, were forced to stay in evacuation shelters for extended periods of time, indicating a need to relax tenant qualifications for disaster public housing and reduce the burden of rent. Local authorities have discretion in setting rents, but a major challenge has been in how to rents should be set.

During the Great Hanshin-Awaji Earthquake, the concentration of the elderly in disaster public housing and the increase in the number of senior citizens with dementia, mental illness, and symptoms of withdrawing into themselves posed a challenge in looking after them and creating communities.<sup>(1)</sup> In light of the lessons learned from past disasters, the challenge in transitioning from emergency temporary housing to disaster public housing was to maintain the communities built by the disaster victims and create an environment where tenants could help one another.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Relaxing occupancy requirements (Issue 1)

In the Great East Japan Earthquake, not only disaster victims whose homes completely destroyed, burnt down or washed away, but those whose homes had been damaged extensively or partially destroyed and had to be demolished were also eligible to move into disaster public housing.<sup>(2)</sup> The Act on Special Zones for Reconstruction in Response to the Great East Japan Earthquake was enacted in December 2011, which also permitted income criteria requirements to be eased for a maximum of ten years depending on the type of certification, and expanded support in terms of housing stability for disaster victims.<sup>(3)</sup>

- Reduced rents (Issue 1)

In addition to a special program on reducing rents for disaster public housing to subsidize the costs incurred by local authorities when reducing rents for disaster public housing, the Japanese government established a special program on reducing rents in response to the Great East Japan Earthquake, which subsidizes additional costs in order to reduce rents to an affordable level,

especially for disaster victims with low incomes. The program is being implemented over a ten-year period, with special reduction measures in place for the initial five years and gradual increases in rent to normal levels from year six on.<sup>(4)</sup>

Many local authorities offered exemptions that were equivalent to those available in the national government's special rent reduction programs. However, a notice issued by the Reconstruction Agency in November 2017 indicated that local authorities in disaster-affected areas could choose to reduce or waive rent. In light of this notice, local authorities in these areas examined ways to handle reductions or waivers for disaster victims with particularly low incomes and those with excess income and took measures aligned with local conditions. The towns of Onagawa and Minamisanriku and Natori City in Miyagi Prefecture implemented their own measures to reduce and waive rent and introduced rent subsidies.<sup>(5)</sup> Long-term simulations based on certain assumptions used by local authorities to examine how to set rents showed a scattering of cases with large surpluses or deficits. The reason for this is because there can be significant differences in results depending on the assumptions applied in the case of long-term simulations, such as future occupancy rates and management costs.

→ *Related topic: 32) Maintenance and management of disaster public housing*

- Maintaining community connections and considering individual circumstances of households in occupancy (Issue 2)

Occupancy in disaster public housing is based on an open application process for disaster victims who meet eligibility requirements. Some municipalities established committees to consider how to recruit tenants and set eligibility conditions and priority quotas with input from academic experts and social welfare workers.<sup>(6)</sup>

Approximately 1,500 disaster public housing units have been built in Iwaki City, Fukushima Prefecture. Comprised of academic experts and representatives from public disaster housing construction zones, the Iwaki City Review Committee on Selection Criteria for Tenants in Disaster Public Housing was set up to study and examine requests of and issues for prospective tenants. Formulated in September 2013, the Iwaki City Selection Criteria for Tenants in Disaster Public Housing offered preferential treatment for the formation of local communities and living locally, allotting more points for “groups of households affected by the disaster living in the same area at the time of the earthquake and that also expressed a desire to move into disaster public housing” and “households returning to areas where they lived at the time of the disaster.” Points were also allocated rigorously according to degree for “households with elderly members,” “households that included persons with disabilities or others in need of care,” “number of household members,” and “households with more than one child,” in order to be able to consider the situation of each in detail (Case study 10-1).

In Sendai City, Miyagi Prefecture, quotas were set for community occupancy, where five or more households from one community were permitted to apply together for space in disaster public housing, while group applications for two to four households were permitted in the general lottery. Approximately 80 households moved into disaster public housing in the Asutonagamachi area as a

community, and those communities formed in emergency temporary housing moved on to disaster public housing, developing into autonomous organizations.<sup>(7) (8)</sup>

→ *Related topics: 11) Community building in the transition to permanent housing*

*31) Construction of disaster public housing in consideration of communities*

### **[Lessons learned and know-how gained]**

- (1) Relax eligibility requirements for occupancy in disaster public housing and ease rent burdens in line with local conditions.
  - Consider tenant eligibility for disaster public housing and rent reductions in line with local conditions in a flexible manner, in order to ensure stability in the daily lives of disaster victims.
  - Consider conducting simulations on long-term income and expenditures when considering setting rent. Note, however, that results can vary significantly depending on assumptions made, such as occupancy rates, management periods and other conditions. Take a broad view by dividing up conditions into several patterns.
- (2) Check that occupancy methods consider the continuity of communities and household conditions.
  - Set up a committee of academic experts and support workers to consider occupancy methods in disaster public housing.
  - Take the circumstances of each household, such as those with elderly family members and raising children, into account when recruiting tenants.
  - Occupancy methods should take the maintenance of community ties formed by disaster victims into account, such as permitting tenants to move into housing as a group.

\* Disaster public housing: Low-rent public housing maintained by local authorities for disaster victims who have lost their homes as a result of a disaster and have difficulty finding housing on their own.

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## 11) Community building in the transition to permanent housing [early and late reconstruction phases]

**[Issues]** (1) How to create and encourage connections between residents and autonomy in permanent housing.  
 (2) How to revitalize areas affected by the disaster through exchange within and outside disaster areas.

### [Situation and issues created by the Great East Japan Earthquake]

When transitioning from emergency temporary housing to disaster public housing and more permanent-type housing, local authorities were required to preserve the communities and autonomous organizations developed by disaster victims in the past and maintain relationships in which residents can help one another after the move to permanent housing. Support for interactions between tenants and establishment of residents' associations in disaster public housing became particularly important since tenants were selected through an open application process and some residents were meeting each other for the first time when moving in. With declining birthrates and aging populations, activities aiming at the sustainable revitalization of the region became critically important, such as the continuation of activities by local residents and support groups in affected areas and activities to increase the number of relocated population and exchange population who continue to visit those areas.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Promote the autonomy of residents in housing complex developed for group relocation for disaster prevention (Issue 1)

The Higashimatsushima Basic City Development Ordinance was enacted in Higashimatsushima City, Miyagi Prefecture in December 2008 to promote the development of collaborative communities and locally autonomous organizations. These foundations of community autonomy in the daily life worked effectively in the aftermath of the earthquake, with the Higashi-Yamoto Station North Area Development Council launched by relocated residents in November 2012 in that area (now, the Aoi District) where was developed as part of a project on promoting group relocation for disaster prevention. The council promoted community-led city development, actively discussing the demarcation of households on developed residential land, room layouts in disaster public housing, and cityscape rules with the aim of creating the “most livable city in Japan.” The Aoi District Association was established after the relocation, traversing residents' associations formed in each area within the housing complex. Residents themselves are now coordinating responses to cross-cutting community issues, such as organizing monitoring activities, planning events, and maintaining and managing meeting places (Case study 11-1).

→ *Related topic: 21) Consensus building process in city development*

- Support for the establishment and management of residents' associations in disaster public housing (Issue 1)

In the Prefectural Tochigasawa Apartment, a disaster public housing complex in Iwate Prefecture,

the Prefectural Tochigasawa Apartment Meeting, comprising members from Iwate Prefecture, Rikuzentakata City, the Iwate University Organization of Revitalization for the Sanriku Region and Regional Development and other related organizations, provided support for the establishment and operation of a participatory residents' association. A face-to-face meeting was held at the end of September, once residents had moved into the complex in August 2016, where they introduced and interacted with one another, discussing maintenance fees for common areas, as well as the need for a residents' association. Set up in preparation for the establishment of a residents' association, the preparatory committee provided support in a number of different areas related to operations, such as presenting proposals on posts and organizational frameworks, as well as draft rules and regulations for the residents' association, and discussing methods for electing candidates for the board, in addition to business plans and budget proposals. In Tochigasawa Apartments, support for the establishment and management of a community-led residents' association was perceptible, as seen by the fact that the manager responsible for handling the collection and payment of common expenses was selected through discussions with all tenants, rather than being appointed by a government agency before they moved in, as had previously been the practice (Case study 11-2).

- Building communities with support from community exchange staff (Issue 1)

The Iwaki Liaison Council Supporting the Victims of 3/11 (also known as “Minpuku”) was established in Fukushima Prefecture in June 2012 (The name of the council was changed to NPO Minpuku in April 2017). Commissioned by Fukushima Prefecture to implement the Lifestyle Hub Community Development Project, Minpuku assigns community exchange staff to all post-disaster public housing complexes.\* Community exchange staff provide support for building communities, working in stages starting with meetups with tenants before they move into post-disaster public housing, supporting interactions between residents through tea ceremony parties and events once they have taken up residence, assisting in the establishment and management of residents' associations in each housing complex, and helping tenants interact with residents in the surrounding areas. For example, a joint group of residents' associations in post-disaster public housing complexes in Iwaki City organized informal get-togethers to reflect on the needs of people requiring special care during disasters, and meetings were held between staff from the local ward offices and housing complexes to create a safe and secure living environment where housing tenants can build good relationships with others in surrounding areas.<sup>(1)</sup>

→ *Related topic: 12) Support after the transition to permanent housing*

- Creating community spaces where everyone can come together (Issues 1, 2)

In addition to the support, it provides for the establishment and management of residents' associations in disaster public housing, TSUNAGARI Design Center, an accredited NPO, regularly organizes events at meeting facilities in disaster public housing where local university students and volunteer groups are on hand to serve meals, in order to promote interaction between tenants and local residents. The NPO is engaged in efforts to create community spaces where everyone can come together, such as opening sharehouses by effectively using vacant houses, planting flowers and vegetables in house gardens together with tenants and local residents, and organizing friendship parties where people can commune over the harvested crops.<sup>(2)</sup>



→ *Related topic: 31) Construction of disaster public housing in consideration of communities*

- Creating both an exchange population and relocated/permanent residents (Issue 2)

NPO SET, based in Hirota Town, Rikuzentakata City, Iwate Prefecture, is developing a variety of activities with the aim of creating a city where dreams can become reality. Some examples include a private stay program that provides opportunities for people to learn and create memories unique to the countryside, career education programs for local residents, a week-long, hands-on program to revitalize the community where university students from around Japan and local residents come together to think about and put their passions into practice, and a relocation study program in which participants stay in Hirota Town for four months to challenge themselves to do what their hearts desire. These projects promote the exchange of human resources both in and outside local communities, creating an exchange population of approximately 1,500 people annually and contributing to increasing the number of young people relocating to Hirota Town.<sup>(3)</sup>

→ *Related topic: 56) Support from NPOs and other groups in revitalizing communities*

### **[Lessons learned and know-how gained]**

- (1) Support the creation of systems, such as city development and residents' associations, that allow residents to take the initiative in discussions and decision-making processes on issues pertaining to daily life.
  - Create a climate in which residents can take the initiative in daily life to solve local challenges.
  - Establish a system of resident autonomy in disaster public housing by providing continuous, step-by-step support, ranging from meetings with tenants, to establishing and managing residents' associations and encouraging interactions with others in the local community.
- (2) Revitalize the local community by creating links between people and goods both inside and outside of areas affected by disasters.
  - Expand the circle of people in the region to revitalize disaster-affected areas by coordinating leaders and recipients of support in these locations and creating experiential programs to attract people from the outside.

\* Post-disaster public housing: While classified under Japan's legal system as "disaster public housing," Fukushima Prefecture refers to this type of housing as "post-disaster public housing" to ensure a sense of housing stability for evacuees caused by the nuclear accident.

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## 12) Support after the transition to permanent housing [early and late reconstruction phases]

**[Issues]** (1) How to develop a comprehensive system of continuous support for disaster victims.  
 (2) How to encourage a spirit of independence and mutual aid in disaster victims.

### [Situation and issues created by the Great East Japan Earthquake]

Systems to safeguard and assist disaster victims emerged with the establishment of support centers for the elderly and other groups in emergency temporary housing areas. However, in the transition to permanent housing, such as disaster public housing, it became apparent that there was a need to review these systems that were developed for emergency temporary housing and to integrate them with support systems in daily life, such as integrated community care systems (where services related to medical and nursing care and lifestyle support are provided in a comprehensive way so that residents can continue to live independent lives in familiar surroundings). With declining birthrates, aging demographics and a shrinking population, as well as concerns about weakened foundations of mutual support in communities, homes, and workplaces, there was a need to encourage disaster victims to be more self-reliant, create relationships built on mutual aid, and further strengthen collaborative systems with the participation of various actors in disaster-affected areas.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Lifestyle and support advisers monitoring residents in disaster public housing (Issue 1)

The Ministry of Health, Labour and Welfare implemented a project to monitor and provide counseling services to disaster victims in order to provide a base of continuous support for disaster victims in their daily lives. In this project, counselors were assigned to social welfare councils and other organizations and visited emergency temporary housing and disaster public housing to identify disaster victims in need of support and to assist support organizations in the community in building networks to provide monitoring services and counseling support.<sup>(1)</sup>

A Support Liaison System in Temporary Housing<sup>(2)</sup> was established in Kamaishi City, Iwate Prefecture to create new jobs for individuals who had lost regular employment after the disaster, utilizing Iwate Prefecture's emergency work creation program. A total of about 80 support liaison officers looked after residents and offered support through consultation services. The activities of these support liaison officers were also applied to public disaster housing, with monitoring activities and counseling services provided for all residents in public disaster housing throughout the city as part of the Support Liaison Officer Project for Disaster Victims in the Transitional Phase of Rebuilding Livelihoods.<sup>(3) (4)</sup>

→ *Related topics: 8) Safeguarding tenants in emergency temporary housing*  
 14) *Care and training for support workers*

- Assimilation and co-existence of disaster public housing and surrounding areas (Issues 1, 2)

Safeguarding Network meetings are held in Shichigahama Town, Miyagi Prefecture to share information on monitoring activities for residents in disaster public housing. Tenants in disaster public

housing and representatives from the local community and the Shichigahama Social Welfare Council gather to report on the status of individuals who are eligible for home visits and the organization of community salons. The information shared in these meetings is fed back into respective activities. These meetings serve both as a point of contact for communicating problems and requests from residents in disaster public housing to local and governmental organizations and as an avenue for residents to connect with others in the same area.<sup>(5)</sup>

→ *Related topic: 11) Community building in the transition to permanent housing*

- Developing integrated community care systems with public involvement (Issues 1, 2)

The Ishinomaki Integrated Community Care Promotion Council in Ishinomaki City, Miyagi Prefecture includes the participation of the Ishinomaki Association for the Promotion of Autonomy in Temporary Housing, as well as governmental organizations, the municipal medical association, and Social Welfare Council. The council formulated the Basic Plan to Promote the Ishinomaki City Integrated Community Care System, which prioritizes the perspectives of individuals impacted by the disaster. Integrated care centers, which are made up of a wide range of specialists, also respond to consultations on complex cases from residents and other professionals and offer lectures in the community to encourage residents to view integrated community care systems as their own and engage in the practice of looking out for and helping others. Opened in May 2020, the Ishinomaki Sasaeai Center has been positioned as a focal point for promoting integrated community care. Activities are being developed to provide comprehensive support and promote a sense of co-existence with the local community, such as counseling support on childcare, creation of spaces for children, and the establishment of a Comprehensive Welfare Consultation Service offering advice to households dealing with complex issues, such as “double care” (childcare and caregiving), and “8050 problems” (older parents living together with children who are unemployed and have withdrawn from society) (Case study 12-1).

→ *Related topic: 7) Building communities in emergency temporary housing*

- Creating an environment of mutual aid and cooperation in communities (Issue 1, 2)

The Ofunato City Headquarters for the Promotion of Integrated Community Care, led by the mayor, was established in Ofunato City, Iwate Prefecture in April 2015. The Ofunato Community Outreach Council was also established in the same month, and included the participation of the Comprehensive Regional Support Center, outreach councils in 11 districts in the city, medical and nursing care providers, Social Welfare Council, and citizen activity support centers. Both the headquarters and council are part of a system to discuss issues that are difficult to resolve at the district level. Outreach councils have been set up at the district level, led by livelihood support coordinators that have been elected by the members, to train and identify volunteers and other lifestyle support leaders and to develop networks with stakeholders. This type of multi-layered promotional system that extends from the district level throughout the entire city has helped the integrated community care system permeate and be implemented in different areas of society with residents and relevant organizations.<sup>(6)</sup>

- Organizing conferences on the future of the region and developing local community movements (Issue 2)

Discussions on all themes related to healthcare and welfare were held during the Rikuzentakata City Conference on Mapping the Future of Healthcare and Welfare in Rikuzentakata City, Iwate

Prefecture, which saw participation from residents as well as other concerned stakeholders. Under the *Hamattekerain*, *Kadattekerain* Movement (known locally as the “Hamakada Movement”) proposed at the conference, “Hamakada spots” have been set up in a few locations around the city, where various events, such as health consultations, tea parties, childcare counseling services, physical exercises, agricultural work, karaoke and drumming, are held. The city aims to become an “intentionally inclusive community” through these activities (Case study 12-2).

### **[Lessons learned and know-how gained]**

- (1) Include support for disaster victims in support services and systems for medical and nursing care in daily life.
  - Aim to develop a sustainable and effective menu of support by incorporating support services for disaster victims into programs and systems in daily life, such as in lifestyle assistance for the elderly and integrated community care systems, etc.
- (2) Promote monitoring and support services in the community with the participation of individuals impacted by disasters and diverse groups of supporters.
  - Involve disaster victims and supporters in forums and programs to discuss support systems in communities, share local challenges, and promote collaboration as leaders.

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### 13) Support for individuals rebuilding on their own [early and late reconstruction phases]

**[Issues]** (1) How to provide support for the cost of repairing, relocating, and rebuilding homes.

(2) How to support issues related to the problem of overlapping debts, including housing loans.

#### **[Situation and issues created by the Great East Japan Earthquake]**

Around the country, close to 122,000 homes were completely destroyed in the Great East Japan Earthquake, while 283,000 were partially destroyed and about 748,000 were partially damaged.<sup>(1)</sup> Most of the homes that were completely destroyed were due to the tsunami, requiring disaster victims to relocate from the former sites that had flooded from the tsunami in order to rebuild their homes. Even in situations that did not require relocation or reconstruction, costs were incurred in relation to house repairs.

A variety of support programs were provided by the national government and local authorities following the Great East Japan Earthquake for relocating, rebuilding, and repairing houses, in addition to cash transfers made under the Act on Support for Reconstructing Livelihoods of Disaster Victims (maximum of JPY 3 million). Support was also available to smooth out the process of consolidating debts, in order to address the problem of overlapping debts for disaster victims who also had existing housing loans when rebuilding their homes.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Support for relocating and reconstructing housing (Issue 1)

Assistance was provided to disaster victims in areas designated as disaster risk areas<sup>\*1</sup> under a project on promoting group relocation for disaster prevention<sup>\*2</sup> to help them rebuild their homes at relocation sites. This support included the lease or transfer of residential land to be developed at higher elevations, subsidies for relocating housing, subsidized interest payments for borrowing funds to acquire housing, and the purchase of former housing sites.<sup>(3)</sup> However, support for disaster victims, who were not interested in collectively relocating to housing sites developed by municipalities, and instead, relocated individually to land they had prepared on their own, was channeled through a relocation project for at-risk housing located near cliffs and other hazardous locations, and included subsidized interest payments to borrow funds for the removal costs of at-risk housing and construction.<sup>(4)</sup> Costs that were not covered through the conventional relocation project for at-risk housing located near cliffs and other hazardous locations, such as subsidized relocation costs, could be covered through reconstruction grants, which ensured that the same level of assistance as that for group relocation would be available.<sup>(5)</sup> The national government also increased the reconstruction funds available for disaster-affected prefectures through a special local allocation tax for recovery from earthquake disaster, which will help municipalities provide a wide range of financial assistance for housing construction in areas that are not covered by the systems mentioned earlier, depending

on local conditions.<sup>(2)</sup>

- Support for the cost of small-scale repairs for housing (Issue 1)

Under the Disaster Relief Act, municipalities and other authorities were able to request contractors and businesses to perform minimal emergency repairs in damaged housing in areas essential to daily life, such as roofs, kitchens and toilets, for households with homes that had been partially destroyed or burnt down as a result of the disaster and were unable to perform emergency repairs with their own resources, or households recognized as having been partially destroyed on a large scale and required major repairs. Municipalities paid the cost of repairs directly to contractors, with emergency repairs performed on approximately 90,000 eligible households.

Ishinomaki City, Miyagi Prefecture created the Ishinomaki City Subsidy Scheme for Small-scale Repairs on Damaged Houses in Tsunami Flood Zones to subsidize the cost of small-scale repairs on housing for disaster victims who were living in areas flooded by the tsunami at the time of the earthquake. The following subsidy conditions applied: damage to housing is classified as “completely destroyed” or “partially destroyed on a large scale”, property to be repaired is an occupied dwelling damaged in the disaster, and the scale of repairs would not exceed JPY 1 million, with a maximum subsidy of JPY 500,000.<sup>(6)</sup>

- Formulation of Guidelines for Individual Debtor Out-of-Court Workouts (Issue 2)

Guidelines for Individual Debtor Out-of-Court Workouts were formulated in July 2011, in the aftermath of the Great East Japan Earthquake, to help individual debtors with existing debts, such as housing loans, rebuild their lives by deferring or reducing their debts by consensus between creditors and debtors, instead of through bankruptcy procedures or other legal insolvency proceedings. The Governing Body for Guidelines on Debt Management for Victims of the Great East Japan Earthquake and Natural Disasters provides assistance to disaster victims to help them rebuild their lives by allowing debtors to inform creditors that they will use the guidelines to settle debts, and by providing assistance for the development of repayment plans.

These guidelines will be integrated into Guidelines on Debt Management for Victims of Natural Disasters in April 2021, a new set of guidelines that will cover a wide range of natural disasters (Case study 13-1).

→ *Related topic: 4) Rebuilding the livelihoods of disaster victims*

**[Lessons learned and know-how gained]**

- (1) Be flexible in the application of support systems in line with how disaster victims want to rebuild their homes.
  - Utilize existing systems that are applicable to the repair, relocation and reconstruction of housing according to disaster victims' preferred methods of reconstruction.
  - Authorize local authorities to assess the housing reconstruction needs of residents and create required support programs, such as subsidies for small-scale repair costs.
- (2) Support private debt management of individual debtors through the development of guidelines and consultation services.
  - Inform individual debtors and financial institutions that function as creditors about the Guidelines on Debt Management for Victims of Natural Disasters.
  - Inform disaster victims of consultation services where they can obtain assistance from lawyers and other professionals when restructuring debts or formulating repayment plans.

(\*1) Disaster risk area: Under Article 39 of the Building Standards Act, local authorities may use ordinances to designate areas that are at significant risk from tsunamis, storm surges, water runoff, etc. as disaster risk areas, and can specify restrictions on the construction of buildings that are necessary for preventing disasters, such as prohibitions on the construction of buildings for residential use, in these ordinances.

(\*2) Project on promoting group relocation for disaster prevention: Project aiming at the group relocation of housing in areas where disasters have occurred or in disaster risk areas considered to be ill-suited for inhabitation. This project was used to relocate housing to residential areas on higher ground. Agricultural and residential land can also be purchased in areas considered suitable for promoting the group relocation of housing (relocation promotion areas). Purchased land is referred to as the original relocation site. This project is implemented by municipalities.

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## 14) Care and training for support workers [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to care for the mental and physical well-being of staff engaged in work to support disaster victims.  
 (2) How to train staff engaged in work to support disaster victims.

### [Situation and issues created by the Great East Japan Earthquake]

After the Great East Japan Earthquake, systems needed to be developed that would allow governmental staff and teachers, who were trying to support the victims while also victims themselves, and police officials who had seen the devastation and grief of the victims first-hand in their own support activities, to receive counseling services and professional care in the workplace.

Livelihood support counselors and other professionals involved in providing support to disaster victims were also assigned to municipal social welfare councils and other organizations in disaster-affected areas. However, recruitment procedures, skill level and experience of counselors and the scope and content of their work varied depending on the region, posing issues in terms of the acquisition of knowledge and skills needed to assist disaster victims to ensure quality support.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Mental health care for livelihood support counselors and social welfare workers (Issue 1)

The Iwaki branch office of the Fukushima Soso Public Health and Welfare Office offered training programs to livelihood support counselors and social welfare workers in emergency temporary housing in cooperation with the Fukushima Kokoro-no-Care Center. This training offered space to respond to problems and concerns through group meetings and provided advice and guidance to counselors and workers on watching over disaster victims, as well as self-care and suicide prevention by supporters themselves.<sup>(1)</sup>

- Mental health care for high-risk individuals engaged in support activities (Issue 1)

In Miyagi Prefecture, the prefectural Mental Health and Welfare Center and other related departments worked together to set up counseling services, conducted mental health checks and regular health surveys with their own staff for prefectural workers providing support to disaster victims, police and other staff engaged in rescue and search operations, and school faculty and staff involved in managing evacuation centers. Staff and departments that were assessed as being high risk through health surveys conducted within each department were provided with advice on measures they could take for their mental health (Case study 14-1).

- Training programs and advisory services for physicians, teachers and other professionals (Issues 1, 2)

The Hyogo Institute for Traumatic Stress provides support from outside the areas affected by the disaster by dispatching trauma teams, primarily to the three prefectures in the Tohoku region, and



continuing to provide training for physicians, clinical psychologists, mental health professionals and public health nurses in these areas, in addition to consultation services on children's mental health issues and advice on managing mental health care centers in affected areas.<sup>(2)</sup>

Counselors from within and outside the prefectures were dispatched to schools in disaster areas under a project for the emergency dispatch of school counselors to schools. Counselors talked with teachers and provided advice on support policies for children, which, in some cases, also served as a way to address mental health care for teachers.<sup>(3)</sup>

- Training programs for livelihood support counselors who are also victims of the disaster (Issue 2)

The Nippon Foundation and NPO IWATE Fukko Collaboration Center conducted training programs in Ofunato City, Iwate Prefecture for groups of livelihood support counselors made up primarily of residents living in emergency temporary housing who had no experience in providing support to disaster victims. These trainings focused on listening skills that would help them pay careful attention to what others say, stress care to ease the minds and emotions of individuals experiencing high levels of physical and mental stress, and computer skills (Case 14-2).

→ *Related topics: 8) Safeguarding tenants in emergency temporary housing*

*12) Support after the transition to permanent housing*

- Support for counselors through public-private partnerships (Issue 2)

The Miyagi Prefectural Support Centre Office was established in September 2011 in Miyagi Prefecture to provide training programs for livelihood support counselors. In fiscal 2012, the cost of attending initial training for care workers was subsidized so that livelihood support counselors that had completed their term of employment could continue to utilize their knowledge and experience in care and welfare work. In fiscal 2013, local welfare coordinator training programs were planned and implemented with the aim of creating networks to encourage program participants to work as local welfare leaders in the future and encourage cooperation between support groups in different areas.<sup>(4)</sup>

- Enhance the qualifications of governmental workers through on-site training programs in disaster-affected areas (Issue 2)

Since 2012, Hyogo Prefecture has been conducting training programs for newly hired staff on the theme of learning from disaster areas affected by the Great East Japan Earthquake. With advice from NPOs, social welfare councils and other organizations, the program aims to enhance the qualifications of governmental workers by preparing them to provide much-needed support to disaster-affected areas, nurture a spirit of service, and acquire disaster response skills through volunteer activities in temporary housing in these areas.<sup>(5)</sup>

In the past, the Japan Association of Public Health Nurse Directors developed manuals on healthcare activities during disasters. However, in response to the support activities for disaster victims in the Great East Japan Earthquake, systematic disaster response training programs, from those for new staff (as part of basic training) to those for supervisors and managers, were positioned in human resources development plans.<sup>(6)</sup> The Ministry of Health, Labour and Welfare has also

developed manuals and guidelines for social welfare workers and other welfare professionals.<sup>(7)</sup>

**[Lessons learned and know-how gained]**

(1) Put mental health measures in place for support workers in daily life.

- Governmental organizations responsible for formulating and implementing disaster responses should take systematic measures in daily life, such as providing educational and training opportunities on mental health.
- Share information between prefectural mental care centers and mental health centers in daily life.

(2) Offer training programs to build the skills and competencies of support workers in order to provide appropriate levels of assistance to disaster victims.

- Offer training programs for livelihood support counselors and social welfare workers who may have little experience in providing support to disaster victims, so that they can acquire the knowledge and skills required to perform their jobs and to improve the quality of support.
- Encourage livelihood support counselors who have completed their period of employment to continue to participate in training programs so that they can work in positions that make use of their knowledge and experience, and train them as human resources that support local welfare activities.
- Set up programs to support disaster victims within training programs for governmental workers, teaching staff and other professionals in daily life.

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## 15) Restoring schools [emergency response phase, recovery phase]

**[Issues]** (1) How to restore educational facilities and functions damaged in the disaster quickly.  
 (2) How to secure teaching staff to reopen schools.

### [Situation and issues created by the Great East Japan Earthquake]

The Great East Japan Earthquake, saw 659 school-related deaths, 79 missing persons and 262 injuries (infants, children, students, staff, others), with more than 12,000 cases of physical damage to school property, social education facilities, and cultural properties around the nation (as of September 14, 2012).<sup>(1)</sup>

In the immediate aftermath of the disaster and during the emergency response phase, one of the major challenges was the ability to restore educational facilities and functions at an early stage and resume educational activities as quickly as possible. This included restoring lifelines, securing classrooms in line with the number of classes, ensuring safe means of transportation to schools, and procuring school lunch and supplies for children.

Finding teaching staff for public schools was also a challenge in order to address the need to provide careful instructional support and mental health care for children and students affected by the disaster.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Early reopening of schools through the use of other schools and temporary buildings (Issue 1)

In response to requests, Fukushima Prefecture opened “satellite schools” in areas where high school classes could be offered by borrowing space in other local schools and public facilities. While this posed issues ranging from students spread out across a wide area, restrictions on experiments, practical learning and other classes, and placed a burden on teaching staff who traveled between satellite schools on a daily basis, this system provided a formula for continuing high school education in the event of a forced widespread evacuation within the same prefecture due to a disaster.<sup>(2)</sup>

Many schools in Iwate Prefecture that were unable to use school buildings and other facilities found other learning spaces by borrowing/renting out spaces from others schools and facilities and using school facilities that had closed. However, when renting out these spaces for extended periods of time, a number of problems came to light, as seen in the impact on the mental and physical health of children and students, leading, in some cases, to a shift in policy to construct temporary school buildings and other facilities.<sup>(3)</sup> Otsuchi Town was one of the first municipalities in the prefecture to construct temporary school buildings. At the end of September 2011, Otsuchi Junior High School was relocated from rented space in another junior high school, bringing that period of shared use to an end.<sup>(4)</sup> In contrast, Takata High School in Rikuzentakata City used space in a school building in Ofunato City as a temporary school facility, operating a bus service from Rikuzentakata City to the temporary school until March 2015, when a new school building was completed.<sup>(3)</sup>

→ *Related topic: 16) School management and education in the aftermath of a disaster*

- Dispatching the EARTH Team to help with reopening schools (Issue 1)

The Emergency And Rescue Team by school staff in Hyogo (EARTH), an organization of teachers and other staff established by the Hyogo Prefectural Board of Education following the Great Hanshin-Awaji Earthquake, sent members of the team to Miyagi Prefecture where they provided a variety of support to help schools reopen, including, but not limited to, checking up on the safety of children, managing evacuation centers, providing advice on mental health care for children and students, and organizing mental health care training programs for teachers and staff (Case study 15-1). The Miyagi Prefectural Board of Education has used this opportunity to launch the Disaster School Support Team Miyagi in December 2019, in which teachers and staff involved in providing support for reopening schools at the time of the Great East Japan Earthquake support schools affected by large-scale disasters, and pass on the experiences and lessons learned from the disaster to children and other teachers and staff.<sup>(5)</sup>

The Ministry of Education, Culture, Sports, Science and Technology opened the Great East Japan Earthquake Children's Learning Support Portal Site in April 2011, which lists the needs of children and students in disaster-affected areas and support available. The site contains information on personnel support, such as teaching and professional staff, as well as physical material support, such as equipment and school supplies. It was used as a system to match up requests for support from disaster-affected areas and other areas around Japan able to provide support.<sup>(6)</sup>

- Developing teaching staff systems in public schools (Issue 2)

The Ministry of Education, Culture, Sports, Science and Technology put special additional measures into place for schools affected by the Great East Japan Earthquake and those that took in affected children and students after the earthquake, which included provisions on the number of teachers and staff available to provide special guidance and instruction to those affected by the disaster in support of their learning and mental health care. Since fiscal 2011, the ministry has implemented additional measures as needed in response to requests from disaster-affected areas.<sup>(1)</sup>

**[Lessons learned and know-how gained]**

- (1) Restore school functions at an early stage through the use of other schools and facilities and the construction of temporary school buildings.
  - Open satellite schools to ensure ongoing learning opportunities for students who were forced to evacuate over a wide area.
  - Promote the reopening of schools at an early stage by renting out space in other schools and facilities, building temporary school buildings, and operating buses to/from schools.
- (2) Reopen schools by accepting help from school recovery support teams.
  - Use the professional expertise of teaching staff support teams to reopen schools.
- (3) Secure the required number of teaching staff for children and students affected by the disaster.
  - Boards of education should strive to secure the required number of teaching staff in response to requests from the field in order to provide support for learning and mental health care for children and students affected by the disaster.

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## 16) School management and education in the aftermath of a disaster

[recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to promote education on reconstruction and disaster management following a disaster.  
 (2) How to restore connections between schools and communities.

### [Situation and issues created by the Great East Japan Earthquake]

It was crucial for schools in disaster areas severely damaged by the earthquake to develop effective educational curriculums on reconstruction efforts and disaster management/prevention so that the experience from the Great East Japan Earthquake did not fade away and could be used to prepare for and recover from disasters in the future. This also pointed to the need to promote educational curriculums focused on disaster management and prevention and other areas, taking advantage of local features and with the participation of a broad array of residents in order to strengthen ties with the community around schools.<sup>(1)</sup> The challenge was in identifying ways to restore connections between schools and local communities, which had been transformed as a result of the evacuation and relocation of residents.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Promoting school safety and disaster management/prevention education in Japan (Issue 1)

The Ministry of Education, Culture, Sports, Science and Technology is engaged in enhancing disaster management in schools, including through the development of “Guidelines on the creation of school disaster prevention manuals (earthquake and tsunami disasters)” (March 2012)<sup>(2)</sup> and revisions to school safety manuals “Safety education in school to develop a ‘zest for life’” on safety in school (March 2019).<sup>(3)</sup> In fiscal 2016, the ministry launched the “MEXT x School Safety” portal site<sup>(4)</sup> to actively disseminate information, such as by introducing activities in different prefectures. A notice<sup>(5)</sup> was issued in 2019, in light of the Okawa Elementary School lawsuit over tsunami victims, requesting schools around the country to review educational content on disaster management and prevention in order to move further ahead in promoting practical educational practices in this area.

- Promoting education on disaster management and prevention in the three prefectures affected by the Great East Japan Earthquake (Issues 1, 2)

“Disaster prevention officers” have been assigned to all public schools in Miyagi Prefecture since April 2012, with “senior disaster prevention teachers” located in elementary and junior high schools that serve as bases in each municipality. In October 2012, the prefecture formulated its own new guidelines, Miyagi Basic Guidelines on School Safety, covering the three areas of education on disaster management and prevention, road safety and daily life safety (including crime prevention). Far-reaching school safety initiatives are also being promoted, such as with the release of a publication on “Building a new school disaster management system to protect children's lives” in December 2020.<sup>(6)(7)</sup> The Miyagi Pilot School Project on Promoting Disaster Management Education, launched in fiscal 2014, presented a model for education on disaster management and prevention (Miyagi Model) for use in schools in the prefecture through classes on disaster management and

prevention using the “Miraieno Kizuna (Link to the future)” Supplementary Reader for Miyagi Disaster Prevention Education.<sup>(8)</sup> Koriyama Junior High School in Sendai City, which is implementing the Disaster Management and Prevention Education Challenge Plan (Disaster Management and Prevention Education Challenge Plan Executive Committee), is conducting student-led community disaster prevention drills, raising awareness on disaster management, prevention and mitigation, and putting educational curriculums into practice together with the local community.<sup>(9)</sup>

In February 2012, Iwate Prefecture created a curriculum on “Reconstruction Education in Iwate,” which was implemented in 50 designated schools in every municipality in the prefecture, known as “reconstruction education promotion schools” (elementary and junior high prefectural schools), as a way to educate the children who are the future of Iwate Prefecture. Notably, Otsuchi Town, which offers a continuous educational curriculum that extends from primary through to early secondary levels at the Otsuchi Municipal Otsuchi Gakuen (compulsory education) and Otsuchi Municipal Kirikiri Gakuen (combined elementary and junior high school), is promoting a “course of study on hometowns” as a special curriculum focus based on the concepts of “vitality” and “hometown creation.” Under the course, schools, local communities and families work together and collaborate on a variety of studies, such as work experience in the community and joint evacuation drills with local residents, with a focus on original educational studies on reconstruction, disaster management and prevention, and careers (Case study 16-1).

By the same token, Fukushima Prefecture has focused its attention on educational curriculums on radiation and disaster management/prevention to help children acquire basic knowledge about these areas and foster an attitude of contributing to the development of the community as members of society. The prefecture creates, publishes and encourages the use of instructional materials and collections of practical case studies based on its experiences in the Great East Japan Earthquake in order to develop unique educational curriculums on radiation and disaster management and prevention that is tailored to local conditions and the actual needs of children and students.<sup>(10)</sup>

- Developing future-creating education in Fukushima Prefecture (Issues 1, 2)

With no prospects in sight for resuming classes in original school buildings in Futaba District, Fukushima Prefecture, the Council on Education and Reconstruction in Futaba District, Fukushima Prefecture (established in December 2012), organized by the Futaba District Board of Superintendents in July 2013, decided on and announced the launch of a Vision on Reviving Education in Futaba District, Fukushima Prefecture. This vision is focused on the establishment of a prefectural integrated educational curriculum extending from junior to senior high. Following discussions between the prefecture and the Futaba District Local Towns and Villages Association, the Fukushima Prefectural Futaba Future School high school division opened in April 2015, followed by its junior high division in April 2019. Futaba Future School is engaged in the development of “future-creating education” based on the school philosophy of “Be Innovators” and the school’s motto of “independence, collaboration and creativity,” and is implementing original educational activities, including “hometown creation studies” (referred to as Future Creation Studies (junior high school) and Future Creation Exploration (high school)) that challenge students to solve regional problems in practical ways.<sup>(11)</sup>

- Participating in reconstruction city development and tsunami disaster prevention (Issues 1, 2)

Before the earthquake, the machinery course at Iwate Prefectural Miyako Technical High School had used a tsunami model, which was capable of reproducing the types of floods that occur with a tsunami, when conducting classes at local events and elementary and junior high schools located nearby. In the aftermath of the earthquake, the course's scope of activities has expanded to include the promotion of tsunami disaster prevention, with lectures given around the country and welcoming visitors for tours from overseas.<sup>(12)</sup>

Students at Otsuchi High School in Iwate Prefecture have continued to use their perspectives as high school students to contribute to the reconstruction of the region by taking part in local reconstruction city development and offering ideas on land readjustment and recommendations on new city development policies. These student-led activities have resulted in the establishment of a Reconstruction Study Group, which has carried out activities such as fixed-point observations to record changes in the townscape with photographs taken at 180 locations in the town three times a year since April 2013, and talking about reconstruction activities through exchanges with high school students from outside the prefecture.<sup>(13)</sup>

→ *Related topic: 66) Passing down memories, records and experiences from disasters*

### **[Lessons learned and know-how gained]**

- (1) Create educational programs and curriculums that utilize lessons learned from the disaster and local features to develop the human resources of the future in areas affected by the disaster.
  - Establish a system to promote education on disaster management and prevention through the creation of educational programs and curriculums that will serve as reference for schools and assigning teachers to be responsible for education on disaster management and prevention.
  - Provide practical and effective disaster prevention and recovery education in cooperation with local communities and related organizations.
- (2) Create opportunities for schools, which are at the heart of city development, to interact with the local community.
  - Offer learning opportunities to think about the community and local issues.
  - Promote the participation of youth in reconstruction city development, and local disaster management and prevention activities and encourage interaction with local residents.

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## 17) Mental health and physical care of children in disaster-affected areas [emergency response phase, recovery phase, early and late reconstruction phases]

- [Issues]** (1) How to provide care and lifestyle support for children who have lost one or both parents in the earthquake.
- (2) How to provide mental and physical care for children from areas affected by the disaster.
- (3) How to create medium- and long-term support systems for children.

### [Situation and issues created by the Great East Japan Earthquake]

The Great East Japan Earthquake left 243 children who lost both parents and 1,557 children who lost one parent (as of March 2020, survey by the Ministry of Health, Labour and Welfare), requiring that support be provided to those children.

Mental health care for children from disaster-affected areas is an issue of critical importance. Losing their homes, family members and friends in the disaster, and witnessing the damage caused by the tsunami has led to symptoms of stress, such as anxiety and insomnia, which in some cases, interferes with a person's quality of life and can become a major obstacle to growth and development.

Caring for a child's mental health must continue long after a disaster, and requires medium- to long-term support systems, such as the establishment of child mental and emotional health care centers in different regions.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Individualized support for children orphaned and bereaved in the earthquake (Issue 1)

Since all 94 children orphaned by the earthquake in Iwate Prefecture were fostered by relatives, the prefectural Child and Family Division of the Health and Welfare Department launched the Relative Foster Care Support Program<sup>(1)</sup> in 2011 to support relatives (grandparents, siblings, etc.) caring for children who lost their parent or parents as a result of the earthquake. This program is ongoing, with management staff from the prefectural foster care association and staff in charge at the prefecture's social welfare council holding regular salon meetings for relative foster caregivers, where they can receive advice on care and other issues.<sup>(2)</sup>

The Ashinaga Tohoku Rainbow House, located in the cities of Sendai and Ishinomaki in Miyagi Prefecture and Rikuzentakata City in Iwate Prefecture, have opened various rooms in the facilities designed for children to cope with their grief and emotions. One-day programs or get-togethers (sleepovers) and other programs are held at these facilities where children from the same generation with similar backgrounds can talk about their feelings and lived experiences. Programs to train volunteer facilitators to support these activities are also offered (Case study 17-1).

- Support for the mental health care of children (Issue 2)

The Ministry of Education, Culture, Sports, Science and Technology has implemented a project for the emergency dispatch of school counselors to schools. In this project, local authorities in

disaster-affected areas send school counselors and other staff to schools and institutions in response to requests from areas affected by the disaster.<sup>(3)</sup> Specialists such as guidance counselors who provide counseling and employment support to high school students, outside experts in special support schools, and advisors with a wealth of knowledge and experience in counseling students are dispatched through this project to strengthen the student counseling system.<sup>(3)</sup> Special measures have also been taken to add a set number of teachers and staff who can handle mental health care and other needs. In addition, the ministry also compiled and published counseling reference materials for teachers and staff, "Mental health care for children in schools: Don't miss the signs," in March 2014 to provide support for the mental health and emotional care of children according to their situations, developmental stages, regional characteristics, and actual situations at schools.<sup>(4)</sup>

The Japan Child and Family Research Institute, Imperial Gift Foundation Boshi-Aiiku-Kai established the Central Children's Support Center of the Great East Japan Earthquake in October 2011 at the request of the Ministry of Health, Labour and Welfare. The center collected and analyzed information on the situation of children from disaster-affected areas, coordinated the dispatch of experts in line with the actual situation on the ground in prefectures affected by the disaster, planned workshops on children's mental health and emotional care and provided counseling services for childcare workers and teachers engaged in helping children.<sup>(5)</sup>

Under Fukushima Prefecture's Mental Health and Emotional Care for Pre-school Children Program (outsourced to the Fukushima Society of Certified Clinical Psychologists), clinical psychologists and other specialists from both in and outside the prefecture have traveled to facilities where infant health checks and childcare spaces are organized, as well as nurseries, kindergartens, shelters and temporary housing to assess the mental and emotional state of children and provide mental health and emotional care to pre-school children and their guardians since June 2011.<sup>(6)</sup> This program has been implemented with support from the Japan Committee for UNICEF.

→ *Related topics: 15) Restoring schools*

*55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations*

- Long-term support by local specialized organizations (Issue 3)

In Iwate Prefecture, Mental Health and Emotional Care Centers for Children were established in Miyako, Kesen, and Kamaishi districts from June 2011. The Iwate Children's Care Center (outsourced to Iwate Medical University) was also established in Yahaba Town in May 2013 with assistance from the State of Kuwait and the Japanese Red Cross Society, in order to develop a prefecture-wide base for the development of long-term, stable support for the mental and emotional health of children. These centers are involved in providing support, counseling services and collaborating with communities on medical care and treatment for people in disaster-affected areas, with particular focus on care for children's mental and emotional health. Activities include treatment at child psychology clinics and in coastal areas, case conferences involving staff from multiple disciplines, and training for support staff (Case study 17-2).

**[Lessons learned and know-how gained]**

- (1) Provide support to children who have lost one or both parents in the earthquake in line with their individual situations and needs.
  - Develop support services according to the individual situations of children and provide continuous support to foster parents and guardians.
  - Set up spaces and facilities with children who have lost one or both parents in the earthquake where they can talk about their emotions and experiences.
- (2) Dispatch school counselors and other experts to offer mental and physical care for children affected by the disaster.
  - Dispatch school counselors, school social workers, guidance counselors/career advisors and other specialists to schools affected by the disaster in response to requests from these areas.
  - Assess the mental and physical conditions of pre-school children through infant and child health check-ups and childcare spaces, and provide complete care, including to guardians.
- (3) Provide long-term support that goes above and beyond a disaster response through local specialized organizations.
  - Create specialized networks to support the care of children's mental and emotional health.

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## 18) Supporting children affected by the disaster in attending school and learning [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to support children attending school and learning.  
 (2) How to ensure that children are in an environment where they can learn and play.

### [Situation and issues created by the Great East Japan Earthquake]

To help children and students who had been affected by the Great East Japan Earthquake and had difficulty attending school for financial reasons to be able to study without worry, reducing the financial burden on families was an issue of pressing concern.

A diverse menu of support is also needed to cope with extended evacuation periods. Creating spaces, such as environments for learning and playing in new communities, is also a challenge.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Support for school attendance and learning for children in cases of financial difficulty (Issues 1, 2)

The Ministry of Education, Culture, Sports, Science and Technology has implemented financial support for attendance at school program for children affected by the disaster as a fully government-subsidized grant project. The program subsidizes the cost of school supplies, school commutes, school trips, and school meals for elementary and junior high school students, in order to support students who have difficulty attending school for financial reasons.<sup>(1)</sup> The ministry is also implementing a project to help rebuild communities by providing support for learning opportunities to children (in relation to the reorganization of temporary housing), which aims to improve learning environments and build up communities in cooperation and collaboration with local residents and schools, primarily for children in areas where the earthquake has made the environment ill-suited to learning.<sup>(2)</sup>

Iwate Prefecture revised its ordinance on prefectural school tuition and other fees, which allows prefectural schools to waive entrance screening fees, entrance fees, correspondence course fees and boarding fees.<sup>(3)</sup> Set up in June 2011, the Iwate Learning Hope Fund offers benefit-based scholarships to children and students affected by the disaster through donations from Japan and overseas.<sup>(4)</sup>

Chance for Children (CFC) in Sendai City, Miyagi Prefecture is engaged in activities to guarantee educational opportunities for children who are the future and to support the long-term recovery of areas affected by the disaster. CFC provides “study coupons” for cram schools, lessons, and experiential learning that can be used by children from elementary to high school who are facing financial difficulties as a result of the disaster.<sup>(5)</sup>

→ *Related topics: 15) Restoring schools*

*17) Mental health and physical care of children in disaster-affected areas*

- Learning support by volunteers, NPOs and others (Issue 2)

In the Learning Room (now, Learning Time) Project in Rikuzentakata City, Iwate Prefecture, school facilities are opened at night for children who have no place to study because of cramped living conditions in temporary housing. Learning support counselors, which include former local teachers and cram school instructors, are engaged in activities to support learners.<sup>(6)</sup>

In the earthquake's immediate aftermath, the NPO KidsDoor set up a Tohoku Division and started to offer learning support to children in Minamisanriku Town, Miyagi Prefecture. For example, the Tokura Children's After-School Program was opened as a space where children could play and learn while waiting for the school bus. Mothers in the community volunteered as staff to help look after the children (Case study 18-1).

NPO KATARIBA has offered guidance on learning and mental and emotional care to children affected by the disaster since 2011. Activities include the launch of the "Collaboration School" as an after-school space for children in Onagawa Town (Miyagi Prefecture) and Otsuchi Town (Iwate Prefecture), and the start of "Futaba Mirai Labo (Future Lab)" in 2017 to support the Futaba Future School (high school division) in Hirono Town, Fukushima Prefecture (Case study 55-2).

→ *Related topics: 55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations*

- Building playspaces with the know-how of free schools (Issue 2)

NPO Beans Fukushima launched the Utsukushima Fukushima Children's Future Support Project (September 2011), making use of its expertise in the management of free schools. Beans Fukushima is engaged in activities to create spaces for children and support learning from the perspective of mental and emotional care through play, as well as the learning opportunities and experiences that have been provided to date (Case study 18-2).

- Building play areas with playground equipment (Issue 2)

NPO Playground of Hope launched a charity project called "Children x Play = Future" in 2012 in cooperation with outdoor playground equipment manufacturers in the United States, NPOs and volunteers. This project helped rebuild local communities, encouraging interaction between both children and adults, with the use of large pieces of equipment to create playgrounds for children in the corners of parks or temporary housing in areas where are short of play space about once a month.<sup>(7)</sup>

**[Lessons learned and know-how gained]**

- (1) Provide assistance and support to children and students who face difficulties in attending school for financial reasons.
  - Provide needed support to children with financial difficulties to attend school.
  - Reduce financial burdens through public scholarship systems, in addition to reducing and waiving tuition and enrollment fees.
- (2) Support the creation of spaces to learn and play outside of school, such as after lessons and on holidays.
  - Use playground equipment to create spaces for children, in addition to providing support for learning and experiential opportunities.
  - Secure spaces for children to learn after school by utilizing the support services of NPOs and other third sector organizations.

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## Part II Reconstruction of Homes and Cities



## 19) Preparing to formulate reconstruction city development plans [emergency response phase, recovery phase]

**[Issues]** (1) How to organize information, conditions, and other data to formulate plans.  
(2) How to secure organizational structures and human resources required to formulate plans.  
(3) How to determine the emergency measures needed before the start of reconstruction projects.

### **[Situation and issues created by the Great East Japan Earthquake]**

The 2011 Tohoku earthquake off the Pacific coast was the largest mega-thrust earthquake in recorded history. The ensuing tsunami spread across a wide area and caused extensive damage primarily in the coastal areas. Inevitably, urban areas and villages that had been entirely washed away had to be rebuilt from the ground up. Out of necessity, some local authorities needed to consider city development in a new light because existing comprehensive plans and city development master plans did not contain preliminary arrangements for reconstruction.

Many local authorities affected by the disaster had limited experience in project-based city development. With administrative functions severely compromised in some areas, the lack of information, human resources and technical expertise posed a challenge in terms of how to proceed with the process of ascertaining damage and formulating plans.

Many of the local authorities impacted by the disaster started to explore reconstruction-based city planning sometime in June 2011, when the Ministry of Land, Infrastructure, Transport and Tourism launched a study on reconstruction methods for urban areas affected by the tsunami. However, these areas were compelled to formulate their own plans, as specific project systems and financial resources for reconstruction-based city development had not been finalized since the Act on Special Zones for Reconstruction in Response to the Great East Japan Earthquake and General Plan for Subsidies for Reconstruction from the Great East Japan Earthquake were not enacted until nine and ten months later, respectively.

A secondary issue lay in the need to find a balance between building restrictions for planned city development and in helping the affected population rebuild as quickly as possible, since decisions on specific reconstruction plans and projects took time.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

• Assessing damage conditions and examining patterns for reconstruction through surveys directly supervised by the Ministry of Land, Infrastructure, Transport and Tourism (Issues 1, 2)

The Ministry of Land, Infrastructure, Transport and Tourism launched and directly supervised a joint survey in June 2011 with related ministries and agencies to examine methods for reconstructing urban areas affected by the tsunami. The survey was first conducted in 62 municipalities in the six prefectures affected by the tsunami, namely, Aomori, Iwate, Miyagi, Fukushima, Ibaraki and Chiba,

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and covered tsunami inundation areas, damage to buildings and infrastructure, and status of evacuation of residents. Results of the survey were provided to local authorities and published online. In response to requests by municipalities, the Ministry of Land, Infrastructure, Transport and Tourism also studied reconstruction patterns in urban areas affected by the disaster and specific reconstruction methods in urban areas in 43 municipalities in six prefectures, in accordance with damage conditions, urban characteristics and community intentions, and provided assistance to municipalities for the formulation of reconstruction and project plans. This survey was conducted in coordination with local authorities and in close contact with local communities, which included the opening of local consulting offices for the survey. Local authorities involved in implementing the survey were able to utilize the results to formulate reconstruction plans.<sup>(1)</sup>

- Planning work implemented with various specialized sectors (Issue 2)

Planning work for reconstruction from the Great East Japan Earthquake far exceeded the ability of any one local authority to handle. Support staff were dispatched from the national government, prefectures and other local authorities, with assistance provided by the Urban Renaissance Agency (UR), in addition to the use of consultants from the private sector.

The reconstruction vision in the Kitakami district of Ishinomaki City, Miyagi Prefecture was formulated with active support from universities and private organizations and reflected detailed feedback from residents affected by the disaster, not simply through the government's efforts alone. Including third parties in the support process allowed the government and disaster victims to engage in forward-thinking discussions and avoid confrontation.<sup>(2)</sup> Support staff were dispatched to Noda Village, Iwate Prefecture (Case study 22-1) at an early stage (April 2011), which made it possible to provide technical expertise and access to information on other areas, starting in the formulation stage for reconstruction city development plans.<sup>(3)</sup>

→*Related topics: 61) Dispatching support staff (Initiatives by supportive local authorities)*

- Restrictions on construction of buildings based on the Building Standards Act and other laws and regulations (Issue 3)

Miyagi Prefecture and Ishinomaki City designated building restriction zones on April 8, 2011 in accordance with Article 84 of the Building Standards Act, and implemented restrictions on the construction of buildings until May 11, 2011, in order to prevent construction that could hinder the planned development of urban districts in disaster areas. Both Miyagi Prefecture and Ishinomaki City designated building restriction zones in accordance with provisions in the Act on Special Measures Concerning Building Restrictions of Urban Districts Damaged by the Great East Japan Earthquake (enacted and enforced on April 29, 2011), which restricted or prohibited construction for a period of six months (or up to eight months if extended) from the date the disaster occurred. With the exception of some areas, restrictions were in place until November 11, 2011.<sup>(1)</sup> In contrast, Iwate and Fukushima prefectures did not designate building restriction zones as per Article 84 of the Building Standards Act. Iwate Prefecture briefed municipalities in disaster areas about the details of systems in place for disaster risk areas (Article 39 of the Building Standards Act) or urban disaster recovery

promotion areas (Act on Special Measures concerning Reconstruction of Urban Districts Damaged by Disasters) and appealed for them to consider designating these zones, with numerous municipalities responding by calling on residents to voluntarily refrain from building for a set period of time.<sup>(4)(5)</sup>

**[Lessons learned and know-how gained]**

(1) Clarify processes, timetables and systems for formulating and executing plans as early as possible after a disaster.

- Clearly indicate the processes, timetables and systems that will be used for reconstruction in the future as early as possible after a disaster while assessing damage and organizing records of past reconstruction efforts.
- In this context, surveys should be conducted in a timely and appropriate manner in order to determine the damage in urban areas and the status of disaster victims.

(2) Ensure that systems are in place to formulate reconstruction plans.

- Establish systems within the local authority in order to formulate reconstruction plans in line with the policies in (1) above, and secure the human resources required, as necessary, including support staff from other local authorities, academic experts, consultants, and NPOs engaged in city development.

(3) Examine building restrictions in urban areas in cases of severe damage.

- Building restrictions should be considered for a set period as an emergency measure to prevent construction that could hinder planned development in urban areas, if extensive damage is found in urban areas and a specified period of time is required to formulate reconstruction plans and launch projects. When considering building restrictions, allowances will be made for damage conditions, timetables for formulating reconstruction plans and the status of rebuilding by disaster victims themselves, since there are several methods that can be employed.

(4) Prepare reconstruction city plans before a disaster occurs.

- In the immediate aftermath of a disaster, the above measures ((1) to (3)) will be implemented in a limited period of time and under restricted systems. Preparations should be made to develop reconstruction city plans prior to a disaster, since disasters are expected to involve multiple challenges from the perspective of time and systems, and present situations where it is difficult to make decisions calmly (e.g., incorporate reconstruction systems, procedures, and training drills in local disaster prevention plans; take action to prevent tsunami disasters based on the Act on Development of Areas Resilient to Tsunami Disasters.) Another effective method would be to incorporate activities to prepare for reconstruction in advance in the action plans of municipalities related to urban planning.

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- Specific initiatives involved in the development of reconstruction urban plans before a disaster occurs include: the collection and organization of basic data on land use conditions, infrastructure development and other information required to formulate reconstruction plans; continuous updates and upgrades; and verification of systems for reconstruction that set out the roles and chains of command for stakeholders involved in reconstruction. Building cooperative and trusting relationships within local authorities, as well as with outside organizations, and establishing systems before a disaster occurs are also effective measures.
- Issues inherently found in city development emerge or accelerate in a disaster, so it would be effective to look ahead to the future when examining reconstruction city planning by confronting changes in socioeconomic conditions, such as population decline and aging, before a disaster occurs.
- Reconstruction city planning is based on the objectives in a municipality's comprehensive plan, which signals basic approaches to city development before a disaster occurs, and urban structures for the future in city development master plans. However, the direction of conventional city development may need to be reconsidered if a large-scale disaster destroys urban areas and significantly impacts socioeconomic activities. To prepare for such a development, the direction of urban structures for reconstruction can be incorporated into municipal master plans, if needed, in light of damage conditions and public intentions.

\* Refer to Guidance on city development to recover from damage from tsunamis and Guidelines for preparations for reconstruction city planning (Ministry of Land, Infrastructure, Transport and Tourism) for more details on the above.

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## 20) Formulating reconstruction city development plans [recovery phase, early reconstruction phase]

**[Issues]** (1) How to ensure safety in cities in terms of planning.  
(2) How to ensure sustainability in cities in terms of planning.

### **[Situation and issues created by the Great East Japan Earthquake]**

The Central Disaster Management Council presented a basic approach for future tsunami disaster prevention measures in June 2011 to serve as new guidelines for disaster prevention and mitigation against flooding caused by tsunamis, in order to formulate reconstruction city development plans. Local authorities in disaster areas were requested to formulate reconstruction city development plans to mitigate disasters, focusing on minimizing damage in line with this approach, and resting on the foundation that preparations should be made for relatively frequent tsunamis (L1) by improving coastal protection facilities and that the largest class of tsunamis (L2), equivalent to or larger than the Great East Japan Earthquake, should be handled through city development and evacuation measures.

In the immediate aftermath of the earthquake, there was a strong propensity to strive to develop reconstruction plans with almost zero disaster risk so that there would be no second time. However, the larger the project scale to raise the level of safety in the city, the longer the time required for reconstruction. Given the supposed trade-off, as it were, the issue lies in how to balance safety and project scales in reconstruction plans.

In addition, population decline and aging, gradual trends that were already on the scene in disaster areas, picked up speed. In order to heighten local sustainability, the scale of planning in reconstruction for local cities with declining and aging populations had to be appropriate in terms of future populations, and municipalities were required to build cities and areas with concentrations of basic functions to sustain the lifestyles of communities, such as commerce and trade, medical care, and welfare. Concerns were also noted on the future sustainability of small apartment complexes due to ongoing population decline and aging.<sup>(1)</sup>

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

• Review of reconstruction plans based on urban structures, damage conditions, and expected damages identified through tsunami simulations (Issue 1)

A survey directly conducted by the Ministry of Land, Infrastructure, Transport and Tourism (Study on reconstruction methods in tsunami-devastated areas) was also applied in municipalities affected by the disaster to review reconstruction city development plans, based on urban structures, damage conditions, and expected damages identified through tsunami simulations.

The major challenge in relation to this was how to establish disaster risk areas subject to permanent building restrictions in inundation areas, and how to gain the public's understanding. Approaches for designating disaster risk areas differ according to a combination of factors, such as ideas on inundation depth based on tsunami simulations and criteria for building applications and structures.<sup>(2)</sup>

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Several patterns were considered in each municipality, with the majority of reconstruction efforts falling under the following: (1) Reconstruction on-site (enhancing safety with embankments and other infrastructure, and revitalizing urban areas in current locations), (2) Rebuilding at elevated heights (rebuilding with increased level of safety by elevating the pre-disaster height of urban areas), (3) Development of new urban areas (creating new urban areas at higher elevations and relocating urban functions), and (4) Rebuilding at elevated heights + relocation to higher ground (some actions will include a combination of relocation to higher ground and reconstruction on-site, in addition to raising heights).<sup>(3)</sup> For example, in terms of (1), reconstruction was achieved quickly in the eastern district of Kamaishi City, Iwate Prefecture, the city's central urban area, with the application of the concept of attenuating the force of the tsunami with embankment-like structures that included commercial areas, in addition to breakwaters and coastal levees at the entrance to the bay, which also allowed for a certain level of inundation from the tsunami. In terms of (2), plans were developed to build a safe urban area in the Machikata district, Otsuchi Town, Iwate Prefecture by raising the level of the city center that had seen catastrophic devastation. In terms of (3), plans were developed to relocate the damaged Nobiru district of Higashimatsushima City, Miyagi Prefecture to a new area built at a higher elevation behind the JR Senseki Line. In terms of (4), plans were developed to relocate housing in Onagawa Town, Miyagi Prefecture to higher elevations, with the area near the sea raised and developed into commercial land. Some local authorities, such as Rikuzentakata City, Iwate Prefecture, improved safety by raising the entire city area and relocating to higher elevations.

→*Related topics: 19) Preparing to formulate reconstruction city development plans, 22) Devising project methodologies to rebuild and relocate cities, 36) Recovery and reconstruction of coastal levees*

- Comprehensive coordination between the national, prefectural, and municipal governments (Issue 1)

When formulating reconstruction city development plans, these plans must be coordinated with other plans for social infrastructure facilities managed by the national, prefectural, and municipal governments. For example, there may be a need to review and align a municipality's project on promoting group relocation for disaster prevention with the prefectural government's coastal, river and road projects. The development of coastal levees has become particularly important in reconstruction city development. While some areas were not able to coordinate quickly and required more time, overarching discussions were held in the Akahama district in Otsuchi Town, Iwate Prefecture, for example, which touched upon land use inland, rather than simply discussing the construction of coastal levees, as per the local community's intentions. The town considered the feasibility of the project in coordination with managers of coastal levees and other infrastructure, together with the use of the combined patterns of coastal levees, prefectural roads and residential areas identified through a survey by the Ministry of Land, Infrastructure, Transport and Tourism.<sup>(4)</sup>

→*Related topics: 36) Recovery and reconstruction of coastal levees*

- Promotion of sustainable, compact city development (Issue 2)

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The population in Ofunato City, Iwate Prefecture was planned at a suppressed number of 730 people, compared with the city's population of 1,300 before the disaster. The level of the city was effectively raised with the reorganization of zoning for residential and industrial areas and the establishment of compact residential areas on the mountain side of the JR Ofunato Line. Both tangible and intangible elements were considered at the same time to encourage the relocation of commercial areas at an early stage.

Several communities (6 areas) in Iwanuma City, Miyagi Prefecture were relocated inland adjacent to existing communities, and commercial facilities, clinics, and daycare centers for the elderly and children were also located there. The city also promoted the creation of a place that people would find easy to return to and that reflected the intentions of future residents, with consideration given to helping people move into disaster public housing, grouped by neighborhood association from the time they lived in evacuation shelters and temporary housing, to prevent the local community from breaking up and by providing spaces for discussions on the image and future vision of reconstruction city development for the entire community (Case study 21-1).

Yamamoto Town, Miyagi Prefecture formulated plans aiming at the creation of a compact city through the merger and relocation of 10 villages affected by the disaster into three new urban areas, formed around the new station and other areas in conjunction with the relocation of the damaged JR Joban Line. Connected by the JR Joban Line, the two districts in the public/commercial zone and one district located in the medical/welfare zone complement one another, creating a compact and networked town.<sup>(3)</sup>

*→Related topics: 21) Consensus building process in city development,*

*23) Accelerating projects to rebuild and relocate cities and responses to changes in public intentions*

**[Lessons learned and know-how gained]**

(1) Develop plans based on cross-sectoral and comprehensive perspectives.

- Create more compact cities and towns by consolidating and rebuilding several communities or rebuilding on land located next to existing areas. Transform the city/town into one with a sustainable urban structure by attracting urban functions, such as commerce, industry, medical care, and welfare, and by securing transportation functions that are compatible with city development.
- Share the future vision of sustainable city development with stakeholders through a detailed review process with public participation before moving forward with this type of city development.

(2) Formulate plans with an appropriate scale and content based on future population decline and aging and that take timeframes into account.

- Formulate plans that will ensure the sustainability of cities/towns by determining needs and demands in light of changes in socioeconomic conditions, such as population decline and aging, due to disasters.
- In the immediate aftermath of the earthquake, there is a strong propensity to strive to develop reconstruction plans with almost zero risk so that no disasters will occur again. However, it is important to take a comprehensive approach to city development that will reduce risk through a combination of intangible elements, such as the evacuation of residents and land use, rather than seeking to eliminate all risk through infrastructure alone.
- Level raising and land development will be limited to the minimum required area, especially in the case of large-scale construction, as residents' intentions to rebuild may change over the course of the project.

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## 21) Consensus building process in city development [recovery phase, early and late reconstruction phases]

- [Issues]** (1) How to provide the direction for city development at an early stage.  
(2) How to share information and build consensus with various disaster victims.  
(3) How to understand the shifting intentions of residents over time.

### **[Situation and issues created by the Great East Japan Earthquake]**

In the aftermath of the disaster, it took time for detailed city development plans to be formulated. However, the government needed to share the direction of these plans at an early stage in order to allay the concerns of residents and other stakeholders and offer them hope for the future.

Conversely, disaster victims found themselves in a position where they were forced to evacuate over a wide area because of the profound damage caused by the Great East Japan Earthquake. Victims also varied in terms of occupation, age, and household composition, requiring time and innovation for providing information, understanding the intentions of, and building consensus with disaster victims who had evacuated and were spread out over a wide area, and those with diverse characteristics. The reconstruction city development process involved a variety of stakeholders and developed in diverse ways according to the conditions of creating local communities, existence of city development activities, and the involvement of outside third parties.

Changes also occurred over time in the intentions of residents and businesses to rebuild. The larger the scale of the reconstruction project and the longer the project period, the more residents' intentions to rebuild were impacted.<sup>(1)</sup>

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Communication of the mayor's basic stance and approach to reconstruction city development at an early stage (Issue 1)

Immediately after the disaster, local authorities were required to present a firm stance to worried disaster victims that they were taking action toward recovery. The mayor of Kamaishi City, Iwate Prefecture visited evacuation centers immediately after the earthquake and spoke repeatedly with citizens, issuing a press release on April 11, 2011, one month after the disaster, which contained a message about the people's indomitable spirit and determination. At that time, the city also announced the direction they were aiming towards and a timetable for reconstruction city development as its basic policy.<sup>(2)(3)</sup>

- Conscientious provision of information (Issue 2)

When residents and businesses consider options to rebuild, they have difficulty in arriving at a decision unless they have enough information about the existence of housing restrictions under reconstruction city development plans, the possibility of receiving property compensation under reconstruction projects, the amount of time and costs required to rebuild their livelihoods, and

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conditions of housing sites being developed. It was also necessary to consider the support needed by residents in rental-type emergency housing and evacuees dispersed over a wide area, who have difficulty exchanging information through existing communities, as well as the needs of persons with disabilities and foreign nationals. Therefore, newsletters and the media were used to provide information to evacuees located across a wide area, and opportunities were provided to share information through the organization of briefing sessions and individual consultations.

- Detailed understanding of the intentions of residents at the household and individual level (Issue 2)

In addition to an overall understanding of people's intentions at briefings for all residents, individual consultation sessions were held to ascertain the specific intentions of each household since these were sometimes difficult for victims to express at general meetings. Individual interviews and questionnaires were also conducted to gain an understanding of intentions at the individual level, as there are a number of cases where opinions may differ within one household. Consultation sessions were held for individuals in May and June 2012 in different districts in Ishinomaki City, Miyagi Prefecture to verify the intentions of residents about housing and other issues for the future.<sup>(3)</sup>

- Diverse consensus building processes (Issue 2)

A variety of activities were implemented to build consensus on reconstruction city development, in line with the level of involvement of residents and the government.

Iwanuma City, Miyagi Prefecture organized a workshop in cooperation with a university in the Tamuranishi district (Case study 21-1) on group relocation to the Tamuranishi district from six coastal areas. Residents' opinions about the layout and location of housing and meeting halls, parks and roads and other development policies were reflected in city development plans. Higashimatsushima City, Miyagi Prefecture had promoted city development together with residents even before the earthquake, which included training and development of local autonomous organizations and the establishment of community centers. The public's intentions were reflected in the layout of housing and road development in the Aoi district, where groups relocated, through the district's City Development Council (Case study 11-1).

A city development council, formed with the involvement of local residents and businesses, was established in the Naiwan district of Kesenuma City, Miyagi Prefecture, where many residents opposed the construction of coastal levees (Case 21-2). Local residents collected a variety of opinions with the support of experts and proposed a plan to the prefecture and city for a coastal levee that would maintain the landscape. Consensus was reached through repeated dialogue on the construction of a coastal levee that would achieve a balance between community safety and city development.

Local residents in the Akahama district of Otsuchi Town, Iwate Prefecture joined together to form the Akahama Area Reconstruction Council and submitted a draft reconstruction plan and model created in cooperation with a university to the town through the regional reconstruction council. The residents' intentions were incorporated into the development of the town's draft reconstruction plan.<sup>(4)</sup>

→*Related topics: 11) Community building in the transition to permanent housing*

- Ongoing process to understand residents' intentions (Issue 3)

In Miyako City, Iwate Prefecture, all records of past opinion surveys and individual interviews (with all households in disaster areas) on residents' intentions to rebuild were input into a single database (containing individual medical records, district-level and project-level opinion lists) and used to infer intentions to rebuild and review project plans in line with shifting goals.<sup>(5)</sup>

**[Lessons learned and know-how gained]**

(1) Identify intentions and build consensus, taking timeframes for planning and rebuilding livelihoods into account.

- There is a trade-off between speed and completely mature plans as time is required to formulate reconstruction plans after a large-scale disaster and for the lives of disaster victims to settle down. Move ahead with plans by taking into account the cycle of formulating government reconstruction plans and thinking about how to help disaster victims rebuild their livelihoods.

(2) Early communication of messages from mayors and municipality leaders on reconstruction city development.

- Mayors and municipality leaders should first strongly communicate their fundamental ideas on reconstruction city development as quickly as possible.

(3) Provide information, taking into account the diverse group of residents, including evacuees spread out across a wide area.

- Provision and dissemination of straightforward and comprehensible information by the government on reconstruction city development that considers the diversity of residents, such as those living in rental-type emergency housing or dispersed over a wide area, persons with disabilities, foreign nationals, and other groups, through appropriate media.

(4) Choose suitable consensus building techniques in line with local conditions and residents' needs.

- Choose consensus building techniques and processes that suit local conditions, in consideration of a variety of conditions, such as the scale of the local authority and disaster area, local features, existing experience with city development, and presence of supporters from outside the region.
- Ascertain the intentions of residents through a variety of opportunities, such as briefing sessions, individual consultation meetings, and public workshops.
- Promote collaborative city development with residents before a disaster occurs and build a relationship of trust.

**(5) Continue to assess residents' intentions**

- Continue to assess residents' intentions to rebuild as they will change over time.
- Compile and organize the status of intentions and opinions into a database broken down by individual and household units.

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## 22) Devising project methodologies to rebuild and relocate cities [early reconstruction phase]

**[Issue]** (1) How to devise project methodologies for rebuilding and relocating cities.

### **[Situation and issues created by the Great East Japan Earthquake]**

Local authorities have employed different projects and methods to rebuild and relocate cities in disaster areas affected by the Great East Japan Earthquake, including projects on promoting group relocation for disaster prevention, land readjustment projects concerning reconstruction of urban districts damaged by disasters<sup>\*1</sup> (hereinafter, “land readjustment projects”), reconstruction base development projects in areas affected by the tsunami,<sup>\*2</sup> projects to strengthen disaster management functions in fishery villages,<sup>\*3</sup> and others, with financial support from the national government provided through the Reconstruction Grant system established through the Act on Special Zones for Reconstruction in Response to the Great East Japan Earthquake. Urban and community structures, disaster conditions, and residents’ intentions needed to be considered when selecting project methodologies. However, in some cases, residents’ intentions diverged, with some indicating a preference to reconstruct housing in the same location and others wanting to relocate to areas inland or higher ground outside of disaster areas.

Methods of selecting and combining projects also needed to be considered so that industries and livelihoods, such as fishing and seafood processing, could be rebuilt, and lifestyle functions, such as commerce, trade, and welfare, could be secured, in addition to safety.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Selection of project methodologies for reconstructing urban areas in alignment with local characteristics (Issue 1)

All of the projects related to rebuilding or relocating cities have their own distinctive characteristics.

For example, in projects on promoting group relocation for disaster prevention, disaster victims have the option to select relocation sites for the collective relocation of residences to safer locations. The key point here is securing land for relocation.

Land readjustment projects allow infrastructure to be developed and residential land to be arranged while maintaining rights that existed before the disaster, creating opportunities to rebuild cities that include a diverse mix of land applications, such as commercial, industrial, and public utilities. Since land located in areas affected by the Great East Japan Earthquake can be built up if certain conditions are met, these projects were also used to reconstruct safer housing in original sites. However, vacant land may persist until landowners decide on land use policies after land is converted for other purposes.

The aim of reconstruction base development projects in areas affected by the tsunami is to restore base functions at an early stage, with land developed and raised through land acquisition methods.

The projects outlined above were utilized in a number of areas, but purposes and approaches varied, even within the same project method. Methodologies were selected based on the features of

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each project, taking urban structures, damage conditions, and residents' intentions into account.

In Kamaishi City, Iwate Prefecture, many small communities located on the peninsula section of a deeply indented coastline were relocated in groups to higher elevations in the outskirts of disaster areas through a project on promoting group relocation for disaster prevention, since it was difficult to ensure safer environments with the reconstruction of housing at original sites.<sup>(1)</sup> This project was utilized to relocate communities affected by the disaster near the coast in the plains to the Tamauranishi area inland. In this project, commercial facilities, clinics, and other convenient public facilities were established and public nursery schools that had been damaged by the disaster were rebuilt (Case study 21-1). Vacant lots scattered throughout villages that escaped damage along the outskirts of the disaster area in the Okirai district in Ofunato City, Iwate Prefecture were grouped together and treated as housing complexes to be collectively relocated for disaster prevention, allowing communities to maintain cohesiveness and develop quickly in new locations.<sup>(2)</sup>

The city center (Machikata district) in Otsuchi Town, Iwate Prefecture, which was damaged by the tsunami, was rebuilt at the original site. A land readjustment project was applied to build up the land and improve infrastructure to make the area safer against tsunamis.<sup>(3)</sup> An uninhabitable, low-lying area in the Omagari district of Higashimatsushima City, Miyagi Prefecture was redeveloped into an industrialized urban area through the same project.<sup>(4)</sup>

Ofunato City, Iwate Prefecture applied a reconstruction base development project in areas affected by the tsunami in conjunction with a land readjustment project to quickly establish a base in the city center (Case study 24-1). An industrial base was developed in the Akaiwaminato Fish Processing Industrial Complex in Kesenuma City, Miyagi Prefecture through the base reconstruction project in tsunami-affected areas.<sup>(5)</sup>

The earthquake caused liquefaction over a wide area, including reclaimed land along the Kanto coast and former river channels inland. Although some local authorities were engaged in projects on liquefaction measures in urban areas, it was difficult to build consensus among residents in some locations.

*→Related topics: 21) Consensus building process in city development, 24) Revitalization and management of city centers*

### • Reconstruction in fishing villages (Issue 1)

Fishing villages retained traditional communal-type communities, with many districts possessing a strong awareness of disaster prevention practices based on lessons learned from tsunami disasters in the past, which allowed some communities to leverage this strength to promote reconstruction projects. Before the Great East Japan Earthquake, the local government, residents' association, and fishers in the Kerobe district of Kamaishi City, Iwate Prefecture had discussed the need for a coastal levee as a preventive measure against a tsunami. These discussions yielded the selection of a reconstruction city plan for the fishing community that did not include a coastal levee. Fishery-related facilities, village roads and other infrastructure were constructed in the district's disaster risk areas through the application of a project to strengthen disaster management functions in fishery villages, and households affected by the disaster were relocated to higher elevations

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constructed through the project on promoting group relocation for disaster prevention.<sup>(6)</sup>

### • Effective combinations of projects (Issue 1)

In some cases, it has been effective to combine multiple projects while taking urban structures, damage conditions and residents' intentions into account and incorporating perspectives on improving disaster preparedness and rebuilding the livelihoods of disaster victims.

For example, small villages along the coast that were damaged in the disaster (Maita, Minamihama, Shimoakka, Nakazawa districts) in Noda Village, Iwate Prefecture were relocated and rebuilt through a selection or combination of project methodologies, such as projects on promoting group relocation for disaster prevention and projects to strengthen disaster management functions in fishery villages, based on the residents' intentions to relocate to higher ground or rebuild on original sites in consideration of their livelihoods, and taking the cohesiveness of the communities into account.<sup>(7)(8)</sup> (Case study 22-1).

In the plains, some areas were developed with built-up parks and roads that functioned as a secondary levee to attenuate the force of a tsunami, in addition to coastal levees, in order to reduce tsunami flooding inland. Secondary levees were constructed in urban areas in Ishinomaki City, Miyagi Prefecture as elevated embankment roads and disaster prevention green areas running parallel east to west along the coast, with these serving as a way to develop urban areas inland in their original locations.<sup>(9)</sup>

In some instances, the process of relocation to higher ground was conducted through projects on promoting group relocation for disaster prevention, in combination with land readjustment projects implemented to convert land use in areas that included the original sites. For example, residences in the Kama/Okaido and Minamihama/Kadonowaki districts in Ishinomaki City, Miyagi Prefecture, located near the coast that were extensively damaged by the tsunami, were relocated inland to the Shin-Hebita area through a project on promoting group relocation for disaster prevention, while areas that included the original sites were developed as industrialized urban areas through a land readjustment project.<sup>(9)</sup>

In the groups of disaster victims in the Haragama and Obama districts in Soma City, Fukushima Prefecture who were relocating to higher ground, some expressed intentions to rebuild on their own, while others wished to move into disaster public housing. Therefore, housing lots for disaster victims to rebuild on their own and public facilities (e.g., community facilities) were developed through a project on promoting group relocation for disaster prevention, while housing complexes at relocation sites were developed in combination with a project on the construction of disaster public housing.

*→Related topics: 23) Accelerating projects to rebuild and relocate cities and responses to changes in public intentions, 25) Efficient use of sites from where people relocated*

### [Lessons learned and know-how gained]

- (1) Select and plan project methodologies in line with the features of disaster areas and residents' intentions to rebuild.
- Select appropriate project methodologies based on urban structures, disaster conditions and residents' intentions (e.g., rebuilding at original locations, rebuilding outside of areas).
  - In some cases, it may be effective to develop multiple options for reconstruction, such as the combined use of multiple reconstruction city development project methodologies, or by integrating the construction of disaster public housing with entire area development projects.
  - It may be effective to minimize project areas for land readjustment projects subject to land conversion (especially areas reclaimed by raising and filling where heavy investment is expected), in addition to promoting independent reconstruction through a combination of relocation projects for at-risk housing located near cliffs and other hazardous locations with acquisition-type projects, such as those on promoting group relocation for disaster prevention and reconstruction base development projects in areas affected by the tsunami, to be implemented in phases by dividing up project areas and construction zones.

\*1 Land readjustment project concerning reconstruction of urban districts damaged by disasters: In this project, public facilities and residential areas can be developed in a planned and integrated manner in order to reconstruct urban areas damaged in a disaster. This project was applied to reconstruction in entire areas affected by the disaster, as it was possible to build up land in original locations while also maintaining land rights that were in place before the disaster. Municipalities serve as project implementing bodies.

\*2 Reconstruction base development project in areas affected by the tsunami: In this project, urban facilities that have been incorporated into urban planning as key to the formation of a tsunami disaster prevention base are constructed in a single complex with the acquisition of land, in order to urgently develop tsunami-resilient and safe urban areas that integrate residential, public utility and business facilities for the purpose of creating a base that will lead reconstruction efforts in areas affected by the tsunami. This project was used to recover base functions at an early stage, with municipalities serving as project implementing bodies.

\*3 Projects to strengthen disaster management functions in fishery villages: In this project, ground levels are raised and lifestyle-related infrastructure and disaster prevention/safety facilities are improved to ensure safe and secure living environments in fishing villages in disaster-affected areas, in order to achieve the smooth and rapid reconstruction of areas that were extensively damaged, including the loss or destruction of a significant number of residences, public facilities, and other buildings. Municipalities serve as project implementing bodies.

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## **23) Accelerating projects to rebuild and relocate cities and responses to changes in public intentions [early and late reconstruction phases]**

**[Issues]** (1) How to execute extensive reconstruction city development projects at an accelerated pace.  
(2) How to respond to changes in residents' intentions to rebuild since rebuilding and relocating cities can take time.

### **[Situation and issues created by the Great East Japan Earthquake]**

Small in scale, many of the local authorities that were extensively damaged and had functions that were significantly impaired in terms of personnel and facilities, simply lacked the systems and technical capabilities needed to execute large-scale projects to build cities anew, starting with land acquisition and development.

Completing large-scale projects took time even after they were launched, and residents' intentions on rebuilding also changed over time. It was also pointed out that lengthy project periods could lead to an exodus of large numbers of disaster victims out of the area, resulting in vast belts of unused land that had been built up and developed through these projects. This required that local authorities, as implementing bodies, be flexible in switching up methodologies and plans in response to changes in residents' intentions on rebuilding.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

• Measures to accelerate the pace of rebuilding housing and implementing reconstruction city development projects (Issue 1)

The national government implemented close to 100 measures to accelerate the pace of projects between 2013 and 2015 to circumvent bottlenecks in their execution.

For example, at the national level, a variety of methods were compiled into programs to accelerate the pace of land acquisition processes in order to address issues faced in the early stages of projects, including reducing the time required for court hearings on property management procedures, shortening the time required for land expropriation procedures, outsourcing administrative work to compensation consultants for site acquisition and other issues, with detailed advice provided to local authorities in disaster-affected areas. The development of survey methodologies and dispatch of specialists to disaster areas from around Japan helped to expedite administrative work for surveys on buried cultural properties.

Staff were dispatched by the national and prefectural governments and other local authorities, with support from the Urban Renaissance Agency (UR), and the involvement of private consultants and construction companies to secure project implementation systems in local authorities that had been impacted by the disaster. A variety of ordering methods were applied when executing projects, including Construction Management (CM),<sup>\*1</sup> Program Management Consulting (PMC),<sup>\*2</sup> and Design Build (DB), which leverage the technical capabilities and workforce of the private sector and others.

To secure construction systems, requirements for concurrent posts by chief engineers were also

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relaxed, order lots were expanded, costs per unit of labor were raised, and ready-mixed concrete plants were built by the private and public sectors to smooth the process of securing engineers, skilled workers and materials.<sup>(1)</sup>

→*Related topics: 61) Dispatching support staff (Initiatives by supportive local authorities), 62) Continuation of long-term dispatching of staff*

- Creating a visual for reconstruction city planning to develop a clear outlook for rebuilding homes (Issue 2)

The national, prefectural, and municipal governments have collaborated in creating “housing reconstruction progress sheets” that indicate the status and schedules of supply of residential land and disaster public housing, in order to provide disaster victims with prospects for rebuilding their homes. These sheets were first released in March 2013 and have been updated periodically.<sup>(2)</sup>

Local authorities are also engaged in efforts to provide clear visuals for reconstruction city planning, as can be seen in an example in Miyagi Prefecture, where “Reconstruction city development project charts” were created to provide a way to understand plans for reconstruction city development projects in the prefecture. These charts were first released in March 2013 and are updated.<sup>(3)</sup> Public facilities and the intentions of landowners on rebuilding at individual sites have been mapped out in key areas in Otsuchi Town, Iwate Prefecture since July 2016 in an effort to create visuals and publicize plans.<sup>(4)</sup>

- Review of project methodologies and plans in response to shifting intentions by residents on rebuilding (Issue 2)

Initial plans in the Yuriage district of Natori City, Miyagi Prefecture called for the entire area to be reconstructed in the original location through land readjustment projects to build up housing lots and the construction of secondary levees to provide a multifaceted defense. However, at briefing sessions, residents’ opinions were divided between reconstructing housing at original locations and relocating inland, due to differences in awareness of the risk of future disasters. It was also difficult to build consensus due to the lack of prospects for industrial land use in low-lying areas. For this reason, policies were amended to allow for a combination of land readjustment projects and projects on promoting group relocation for disaster prevention, with comprehensive measures taken by combining projects, such as the acquisition of land in disaster risk areas, purchase of land for disaster victims who want to relocate to land readjustment project areas, and the construction of disaster public housing in other areas.<sup>(5)</sup>

In the Taro district of Miyako City, Iwate Prefecture, some plots owned by landowners who intended to quickly rebuild at the original sites were located in the land readjustment project area, in addition to land acquired by the city through projects on promoting group relocation for disaster prevention, for which prospects for use were uncertain. The city kept in continuous contact with residents to determine their intentions to rebuild and consolidated the land of owners who intended to quickly rebuild in the original locations for priority development. In terms of land owned by the city with uncertain demand, Miyako City aims to improve the efficiency of the maintenance and management

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of unutilized land by converting this into large city blocks instead of narrow streets, where possible.

Residents in Ishinomaki City, Miyagi Prefecture were briefed on projects related to housing from November 2011 through questionnaires and the exchange of ideas with the public on city development. Residents' intentions were confirmed on the basis of this through individual consultations between May and June 2012, after which project scales were planned. Since then, specific details about the cost of rebuilding and other factors have been presented at consultation sessions to assess residents' intentions, an ongoing process conducted during the project proposal stage; for example, the planned population in the Shin-Hebita area was about 6,200 in April 2013, but approximately 5,300 as of April 2019. Under such conditions, the project was divided up into three land readjustment areas and launched in phases in each area, with an eye on demand for land. Housing complexes in land readjustment areas were also reduced in number, as residents changed their minds from rebuilding independently within the complexes to moving into disaster public housing.<sup>(5)</sup>

Surveys to assess residents' intentions were conducted in Ofunato City, Iwate Prefecture on an ongoing basis and in stages, i.e., immediately after the disaster, before projects were developed, when land was readjusted, and when housing lots were completed. Initial plans called for the application of a land readjustment project for the entire city center. However, a decision was made to exclude part of the land in the readjustment project area and combine this with a reconstruction base development project in areas affected by the tsunami to acquire land for use in order to respond to landowners' intentions to sell land.<sup>(5)</sup>

There have been few vacant housing complexes as municipalities have planned and developed housing under projects on promoting group relocation for disaster prevention, all while continuing to keep a close eye on residents' intentions to rebuild. However, there were cases in which municipalities utilized systems to sell vacant lots that occurred to disaster victims who were not eligible under this project or to the general public through procedures for handling government-subsidized property, in order to effectively use land and help revitalize the local area.

In response to the decreasing number of people intending to rebuild their homes at the project implementation stage as can be seen in the examples above, efforts were made in each of the land readjustment projects to control costs by scaling down areas to be built up and consolidating land purchased by local authorities from disaster victims to divide up into larger lots by reducing the number of roads in the area. However, there are still some areas where land has been developed but is not in use. Efforts are also being made in cooperation with real estate agents in Otsuchi Town and Rikuzentakata City, Iwate Prefecture to utilize residential land that has been developed by matching landowners with parties that would like to use the land, in addition to actions being taken to provide a visual of the reconstruction city planning process (see above).

*→Related topic: 21) Consensus building process in city development*

**[Lessons learned and know-how gained]**

- (1) Eliminate project bottlenecks and accelerate the pace of processes by expediting procedures and securing implementation systems.
  - Leverage the technical capabilities and workforce from the private sector and other specialized sectors through Construction Management (CM), Program Management Consulting (PMC), and Design Build (DB).
- (2) Create a visual for reconstruction city planning in order to develop a clear outlook for rebuilding homes.
  - If the project period for reconstruction is expected to be extended for a prolonged period due to extensive damage, an effective way to provide disaster victims with a clear outlook on rebuilding their homes would be to create a visual of goals and progress related to reconstruction projects for housing and city development, as well as a future vision for the area.
- (3) Continuously assess residents' intentions and be flexible in reviewing projects in response to changes.
  - Projects should be flexible to allow them to be implemented in phases or reconfigured with a continuous understanding of the intentions of residents that are assumed will change even during the project implementation phase.
  - An effective way to handle unused land that may occur even after a project has been appropriately reviewed would be to engage in activities to match up land in cooperation with real estate agents and other professional groups.

\*1 Construction Management (CM): In this method, a Construction Manager (CRM) performs all or part of a variety of management tasks for the ordering party, such as design review, construction order method review, process management, quality management, and cost control at each stage of design, order, and construction, and maintains a technical neutral stance.

\*2 Program Management Consulting (PCM): This method supports the implementation of administrative projects, such as planning duties and tasks for which each division is in charge. This method is used for overall budget management and coordination between projects and departments, as well as for planning policies and conducting reviews on concepts and plans.

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## 24) Revitalization and management of city centers [early and late reconstruction phases]

- [Issues]** (1) How to rebuild city centers destroyed in the disaster as quickly as possible.
- (2) How to revitalize hollowed-out city centers even before the disaster.
- (3) How to reclaim attractive townscapes.
- (4) How to effectively use developed spaces.

### **[Situation and issues created by the Great East Japan Earthquake]**

City centers in each local authority were damaged by the Great East Japan Earthquake in many cases. Revitalizing these areas is essential in maintaining and developing the vitality of local areas after reconstruction. Local authorities and communities also hoped for city centers to be reconstructed as soon as possible from the perspective of preventing businesses that wanted to rebuild quickly from leaving the area and to ensure a base to support the livelihoods of disaster victims. As regional hubs, it was necessary for local authorities and residents to thoroughly discuss a vision for the future, including the development of infrastructure and ideal approaches to livelihoods and public facilities and engage in activities to recover quickly in order to rebuild city centers. However, in many cases, this was extremely difficult to implement without adequate preparation.

Even in cities with central areas that managed to avoid being destroyed in the disaster, however, there were many central areas that had hollowed out even before the earthquake. It was the hope of local authorities and residents that the earthquake would serve as an opportunity to reorganize and strengthen urban functions so that they could be developed into hubs for reconstruction.

As the tsunami had also destroyed the landscapes of these hometowns, the reconstruction process required the development of attractive town and cityscapes that would serve as a source of pride for residents, the formation of symbolic spaces, and the creation of landscapes that could pass on the memories of the areas.

Some housing sites were left unused in urban areas developed through land readjustment projects and other schemes due to changes in the intentions of landowners and for other reasons. The effective utilization of these spaces posed a challenge from the perspective of creating a lively hub of activity.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Promoting city planning and development for reconstructing commercial facilities and other infrastructure (Issue 1, 2)

To promote city development to reconstruct commercial facilities and other infrastructure, area-wide city development projects, such as land readjustment and reconstruction base development projects in areas affected by the tsunami, were combined with projects to reconstruct and improve commercial facilities aiming at creating lively and stimulating atmospheres in line with revitalization plans for city centers.<sup>(1)</sup>

The Kawamachi-zukuri approach (river-based city development) was promoted in Ishinomaki City,

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Miyagi Prefecture in areas along the former Kitakami River in the existing urban area, to link river levee development projects by river administrators and land readjustment projects implemented by the city to the consolidation of land for business and commercial use and infrastructure development. The Ishinomaki City Center Revitalization Plan was formulated for the central city area, including this district, to promote the creation of lively centers of activity, such as the Ishinomaki Genki Ichiba Marketplace, a tenant-based commercial facility operated by a local urban renewal company.

The tsunami-devastated area around Shinchi Station on the JR Joban Line in Shinchi Town, Fukushima Prefecture has been built up through the application of land readjustment and reconstruction base development projects in areas affected by the tsunami to create a central hub of activity, based on lessons learned from the earthquake and tsunami. Public facilities, such as firefighting and disaster prevention centers and disaster public housing, and regional energy centers to supply renewable energy were constructed in this area, in addition to commercial complexes, hotels and a cultural exchange center. Public facilities and residential, commercial, and industrial areas are also being restored and consolidated to create a safe and secure urban area and revitalize industries.

*→Related topics: 22) Devising project methodologies to rebuild and relocate cities, 43) Creating and revitalizing a lively atmosphere*

- Reconstruction of devastated urban areas and creation of added value through area management (Issues 1, 4)

A reconstruction base development project in areas affected by the tsunami was utilized in the devastated city center of Ofunato City, Iwate Prefecture to develop a base area that needed to be rebuilt as quickly as possible and to respond to the intentions of landowners to sell their land.<sup>(1)</sup> This project allows for urgent redevelopment through land acquisition methods after excluding sections of land readjustment project areas. By separating land ownership and use, businesses were able to resume operations on leased land, which helped in revitalizing the area. Ofunato City established a working group for area management in 2013 in the area around JR Ofunato Station, in which the local community, businesses, and the government collaborated in examining ideal approaches to creating a sustainable city center with the application of city development mechanisms. To promote this project, Ofunato City signed an area management partnership agreement with Kyassen Ofunato Co., Ltd., a private company, which played a lead role in the selection of commercial lessees and development of other projects that add value to the area<sup>(2)(3)</sup> (Case study 24-1).

*→Related topic: 43) Creating and revitalizing a lively atmosphere*

- Revitalization efforts in existing city centers: Development of a base with the consolidation of public and public service functions (Issue 2)

Positioned in the existing city development master plan, the city center in Miyako City, Iwate Prefecture was revitalized to serve as the “face” of the city. The city formulated the Miyako City Center Facility Development Project & Basic Concept in 2014, aiming to develop as a disaster prevention base and consolidate public facilities through the application of reconstruction base

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development projects in areas affected by the tsunami, in order to create a “disaster-resilient compact city”.<sup>(4)</sup>

- Development of symbolic spaces and creation of new hometown landscapes (Issue 3)

Young residents in Onagawa Town, Miyagi Prefecture, which suffered catastrophic damage and lost most of its administrative functions, played a key role in organizing the Onagawa Town Reconstruction Liaison Council, engaging in activities to revitalize the city center, taking both the reconstruction of shopping areas, as well as town planning and housing development into consideration. The town applied land readjustment and reconstruction base development projects in areas affected by the tsunami to construct a square in front of JR Onagawa Station and a brick road for pedestrians extending from the square to Onagawa Bay, creating a new symbolic space in the town with a concentration of commercial, business, interactive facilities, and public functions. The town is putting a system in place that will enable continuous efforts to be made in developing the townscape, including the formulation of the Onagawa Machinaka (Town Center) Revitalization Plan and Townscape Design Guidelines in the Onagawa Reconstruction Town Plan for the development and operation of tenant-type commercial facilities by local development companies, and the establishment of a subsidy for projects focusing on the creation of shopping areas in Onagawa Town.<sup>(5)(6)</sup>

The history-filled landscape of the Imaizumi district of Kesen-cho in Rikuzentakata City, Iwate Prefecture, which thrived as a post town, was lost in the tsunami. Affected businesses opened up a commercial facility, Fermentation Park CAMOCY,<sup>(7)</sup> on the site of a former soy sauce brewery at the center of the historical landscape in an effort to pass on memories of the town.

*→Related topic: 43) Creating and revitalizing a lively atmosphere*

- Promoting the effective use of land (Issue 4)

Efforts were made to effectively use land in cooperation with private area management organizations and real estate businesses, such as through land matching, in order to promote the effective use of land readjustment projects and other development projects for land that is not being used due to changes in landowner intentions and for other reasons.

**[Lessons learned and know-how gained]**

- (1) Link the sustainable revitalization and management of city centers with spatial development and livelihoods.
  - Achieve the objective of sustainable city development through area management, such as by separating the ownership and use of land/buildings, restarting business operations as soon as possible, and attracting tenants to meet consumer needs.
  - Share visions for the future by providing opportunities for the local government, residents, and businesses to consider linkages between spatial development and livelihoods in city development master plans and site selection plans before a disaster occurs.
- (2) Effectively develop public facilities and other infrastructure that will be instrumental in the revitalization of city centers.
  - The redevelopment of public facilities serves as a valuable resource for revitalizing city centers. In order to effectively develop public facilities, consider the location, scale, and concentration of functions, in light of existing city development plans and future population trends that have been examined from a medium- to long-term perspective.
- (3) Create new hometown landscapes that will serve as a source of pride for residents.
  - Implement projects that consider the formation of landscapes, such as those to create attractive townscapes, not simply restoring or attracting commercial business functions.
  - Rebuild historical streetscapes and create landscapes that will pass on the memories of local areas to avoid disruptions to the continuity of local lifestyles and the history and culture of these areas.
- (4) Collaborate with stakeholders to implement activities for the effective use of land.
  - Take measures, such as land matching, in cooperation with private area management organizations and real estate businesses for land that must be used effectively. Similar activities are also practical for the effective use of idle land in urban areas before disaster occurs.

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## 25) Efficient use of sites from where people relocated [early and late reconstruction phases]

**[Issue]** (1) How to efficiently use land in sites from where people relocated under projects on promoting group relocation for disaster prevention.

### **[Situation and challenges in the aftermath of the Great East Japan Earthquake]**

Low-lying areas that were extensively damaged by the tsunami and were not suitable for use as sites for housing were designated as disaster risk areas. Municipalities purchased the residential land in these areas under projects on promoting group relocation for disaster prevention to encourage residents to relocate (purchased land hereinafter referred to as “sites from where people relocated”). However, this resulted in a mixture of a number of sites from where people relocated (which became public land) and private land that was not eligible for purchase in low-lying areas affected by the disaster (sites from where people relocated and surrounding privately owned land are collectively referred to as “sites from where people relocated, etc.”). This convergence of land rights made it difficult for sites from where people relocated, etc. to be used for large-scale industrial land. In some cases where there was demand for land for industrial use, these sites from where people relocated, etc. were consolidated and built up for use by the private sector. However, where there was little demand for land, it was necessary for municipalities to preserve and manage these sites.

In the early reconstruction stage, priority was assigned to rebuilding the homes of disaster victims, with few districts making full-scale efforts to utilize land at sites from where people relocated. However, as housing was being constructed, discussions focused on how the land at sites from where people relocated could be utilized to revitalize local communities. Local authorities in affected areas started to consider how to preserve this land, since there were concerns that municipalities would become responsible for managing unused land.

As of December 2019, 1,522.8 ha of the 2,121.5 ha of available land at sites from where people relocated (72% of the total) is being utilized.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Development of systems for governmental initiatives (Issue 1)

Ofunato City, Iwate Prefecture established a department in 2015 dedicated to promoting land use at sites from where people relocated, etc. based on the conviction that this land would play an essential role in revitalizing the community.<sup>(1)</sup>

- Versatile use of sites from where people relocated, etc. based on needs and land conditions (Issue 1)

Under projects on promoting group relocation for disaster prevention, sites from where people relocated are publicly owned land, which local authorities in disaster areas decide on how to handle according to their needs. For example, in some cases, local authorities aim to revitalize local areas through the use of this land for public facilities or industrial use, while others decide to control

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management costs by naturally preserving extensive tracts of land. Sites from where people relocated initially purchased to promote the relocation of residents vary in both location and configuration, with the needs for and actual use of the sites differing significantly depending on conditions.

In some cases, sites from where people relocated were used as land for public facilities, such as levees and parks, while in other cases, land was utilized by the private sector. Where locations are optimal and anticipated industrial needs are high, sites from where people relocated and other areas have been developed as industrial parks through land readjustment projects. In the Omagarihama district in Higashimatsushima City, business districts have been developed through land readjustment projects on sites from where people relocated, with companies engaged in the transportation, manufacturing and construction industries located there. In Sendai City, Miyagi Prefecture, an investigative committee made up of residents and experts in different fields formulated the “Policy for the utilization of sites from where people relocated in the eastern and coastal areas of Sendai City” to serve as the city’s basic philosophy and land use policy. Under this policy, an open call was made for proposals on creating new attractions using the unconventional ideas of the private sector. For example, local resources in the surrounding area, large tracts of land and easy access are being utilized to set up experiential tourist farms and other agritourism facilities in the Arahama district. Sites from where people relocated in some areas along the Sanriku coast are also being effectively used as industrial land, as there was not much flat land to begin with (see case study on Ofunato City, described below). Land readjustment projects have also been applied to develop and utilize sites from where people relocated and other areas in Yamada Town, Iwate Prefecture for commercial facilities and seafood processing.

In communities that are not located near urban areas, projects to strengthen disaster management functions in fishery villages were applied in sites after residents moved to higher ground as part of projects on promoting group relocation for disaster prevention, with the land developed as areas for fishers to store fishing equipment and nets. Iwanuma City, Miyagi Prefecture utilized the Comprehensive infrastructure development project for reconstruction of agricultural, mountain and fishing villages to develop large plots of land for farmland and agricultural facilities. In cases where the location is not particularly favorable and it is difficult to use land for industrial purposes, land can be developed for community use and natural conservation in collaboration with local residential groups and NPOs. In one example in Ishinomaki City, Miyagi Prefecture, a square was constructed on the outskirts of a swimming beach and a community garden for local residents was set up.<sup>(2)</sup>

The Fukushima Robot Test Field (RTF) was developed in a restricted disaster risk area in Minamisoma City, Fukushima Prefecture as part of the Fukushima Innovation Coast Framework, a national project that aims to develop new industrial infrastructure to revitalize industries.<sup>(3)(4)</sup>

→*Related topics: 39) Promoting corporate location, 44) Initiatives to restore farmland and agricultural facilities, and resume farming operations*

- Use of land with reduced infrastructure and development of large lots (Issue 1)

Infrastructure developed in residential areas before the disaster (e.g., small roads) may not

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necessarily be applicable for use in industrial sites. The restoration of nonessential infrastructure also increases maintenance costs and may not necessarily contribute to sustainable urban reconstruction. Accordingly, there are cases of land being redeveloped for industrial use while reducing the need to restore damaged infrastructure. A land readjustment project was implemented in the Yuriagehigashi district of Natori City, Miyagi Prefecture in large lots suitable for industrial use, with fewer roads than before the disaster. With the elimination of roads that had been part of a residential complex in the Ogawara district of Massaki-cho in Ofunato City, Iwate Prefecture before the earthquake and tsunami, the entire complex was rezoned into a single site for industrial use and a tomato plant was built on the site.<sup>(5)</sup>

- Regulating the arrangement of mixed public and private land (Issue 1)

In cases where sites from where people relocated that are publicly owned are mixed with private land in surrounding areas, land can be swapped to create a considerably sizable site. The Japanese government took special measures in 2016 to exempt the exchange of public and private lands from registration and licensing taxes in order to implement reconstruction and development projects. Iwate, Miyagi, and Fukushima prefectures also introduced special provisions in the same year that exempted real estate acquisition taxes in similar cases. Ofunato City, Iwate Prefecture took advantage of these special measures to construct community plazas and industrial sites.<sup>(2)</sup> For example, a strawberry farming facility has been located in the Okirai district of Ofunato City by adjusting the integrated use of private and public land and actively engaging in activities to attract companies to the area by cooperating with local companies on local descriptions.<sup>(6)</sup>

- Promoting land use by the private sector through the provision of information on land, other (Issue 1)

Land conditions in sites from where people relocated, etc. vary by plot. However, in some cases, municipalities have organized basic information on plots that are similar to explanations on important matters in typical real estate transactions and have made this information available online in order to promote the use of land by private entities. In some cases, municipalities also provide information on privately owned land with the landowners' consent in order to facilitate the integrated use of sites from where people relocated and private land in surrounding areas. Miyako City has published Land Charts that indicate the status of infrastructure and legalities on the use of sites from where people relocated in the Akahama district, as well as privately owned land that can potentially be used in combination with sites from where people relocated.<sup>(7)</sup>

**[Lessons learned and know-how gained]**

(1) Consider versatile uses for sites from where people relocated, etc. according to potential and needs.

- Examine policies for use and conservation based on the potential and needs of sites from where people relocated, under the premise that the area has been designated as a disaster hazard area and promote new uses by organizing land and improving infrastructure, as needed.
- All sites from where people relocated do not necessarily need to be utilized, so natural and extensive conservation should be considered as well.

(2) Collaborate with stakeholders to effectively use land.

- Sites from where people relocated are publicly owned, meaning that government action should be taken first. Administrative systems should be developed, including the establishment of dedicated organizations within the local government.
- In some cases, local communities have strong attachments to sites from where people relocated, etc. as they initially resided there. Build consensus with local communities on land use policies.
- If the land will be used for industrial purposes, information should be provided to companies. Likewise, community groups and NPOs are important players in terms of the development of land for community use and natural conservation, so cooperation should be encouraged with different stakeholders depending on land potential.

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## 26) Securing construction-type emergency housing [emergency response phase, recovery phase]

**[Issues]** (1) How to quickly secure a substantial number of construction-type emergency housing.  
(2) How to take aging populations, lifestyle convenience and other factors into account.

### **[Situation and issues created by the Great East Japan Earthquake]**

The earthquake and tsunami of the Great East Japan Earthquake caused immense damage to residences, requiring a large number of emergency temporary housing units to be secured as quickly as possible. Construction-type emergency housing was built in considerable quantities, in addition to the rental-type emergency housing described below. The issues that emerged throughout this process involved determining the number of units needed and securing land for construction and labor.

The elderly and persons requiring special care were also considered in designs for housing units and apartment complexes to be built, as well as protection against the cold and lifestyle convenience.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

#### • Surveys on number of units required (Issue 1)

In the aftermath of the disaster, municipalities conducted surveys at evacuation centers and other locations through questionnaires for disaster victims who wanted to move into emergency housing, in order to determine the number of units required. However, it was difficult to determine the number of units needed due to staffing shortages in municipalities, evacuations related to the nuclear accident, and provision of rental-type emergency temporary housing (see below).<sup>(1)</sup> On March 14, 2011, Iwate Prefecture applied to construct 8,800 units, approximately half the number of households expected to be evacuated, although the extent of the damage could not be fully assessed in the immediate aftermath of the disaster. However, the number of units required was revised following discussions with the Health and Welfare Department, which had made similar assumptions about the receipt of relief supplies, as the number of units was expected to increase due to the severity of the damage. As of March, the number of units required was estimated at about 15,000 units. However, this number was set at 18,000, 3,000 more than originally estimated, in light of the experiences from the Great Hanshin-Awaji Earthquake, which required more units to be constructed than originally anticipated, prolonging the construction period. This figure was subsequently revised to 14,000 units on May 9, after receiving the number of applications from municipalities, with 13,984 units constructed in the end. The number of units required in Iwate Prefecture was determined at an earlier stage than in Miyagi and Fukushima prefectures, where the number of disaster victims for rental-type emergency housing was higher and more time was required to determine the number of units needed.<sup>(2)</sup>

→*Related topic: 28) Securing rental-type emergency housing*

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### • Securing sites (Issue 1)

Planned sites for the construction of construction-type emergency housing in some areas had been flooded by the tsunami, which made construction impossible.<sup>(3)</sup> The prefectural and municipal governments worked together to secure sites for the construction of construction-type emergency housing immediately after the disaster. In the midst of continued uncertainties from aftershocks and other factors, information on government-owned land, farmland and privately owned land was collected in order to select sites, with technical staff involved in construction (e.g., overall building frame), civil engineering (e.g., building exteriors), facilities (e.g., plumbing), and electric (e.g., electrical equipment) conducting surveys at each site. Subsequently, difficult arrangements were made in terms of the order of priority of sites with the Self-Defense Forces camp, debris yard, and disaster public housing sites.<sup>(1)</sup> For example, no construction-type emergency housing was built in the Kerobe district of Kamaishi City, Iwate Prefecture so that disaster public housing could be constructed there.<sup>(4)</sup> When privately owned land was used, leasing fees were paid and property taxes were reduced or exempted.<sup>(3)</sup> Suitable sites could not be found in the disaster-affected Kesenuma City and Onagawa Town, in Miyagi Prefecture, so construction-type emergency housing was built in other municipalities,<sup>(1)</sup> with two- to three-story buildings constructed on narrow sites.<sup>(5)</sup>

After housing was constructed, different factors were taken into account in terms of the original function of the site. For example, in Miyako City, Iwate Prefecture, a project to secure, maintain and improve regional public transportation networks was used to operate new bus routes for temporary housing at a distance of over 500 m to the nearest bus stop and to provide taxi services to and from bus stops.<sup>(6)</sup> Buses were used to take children to and from other facilities for physical education classes and outdoor club activities at schools where school grounds were used for construction-type emergency housing.<sup>(7)</sup>

### • Dispatching staff to support the development of construction-type emergency housing (Issue 1)

On March 12, 2011, the day after the disaster, the Ministry of Land, Infrastructure, Transport and Tourism started to send staff to the Tohoku Regional Development Bureau and the three affected prefectures. One staff member from each organization was dispatched to the areas, primarily at the planning specialist to assistant director level, to provide support for setting up building and housing departments in the prefectures affected by the disaster and to serve as local contact points, where they gathered information and communicated with the government until July 2011. Twenty-seven government agencies and the Urban Renaissance Agency (UR) sent technical staff to survey construction sites. By the end of August 2011, 7,000 people had been dispatched to the three prefectures affected by the disaster.<sup>(1)</sup>

→*Related topics: 61) Dispatching support staff (Initiatives by supportive local authorities)*

### • Ensuring the services of construction companies and building temporary wooden housing (Issues 1, 2)

As has been the case in the past, the Standardized Architecture Committee of the Japan Prefabricated Construction Suppliers and Manufacturers Association, which had concluded disaster

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agreements with prefectures prior, took the lead in building construction-type emergency housing. However, with the massive construction expected, requests were made to involve the Japan Federation of Housing Organizations, the association's parent body, and house builders from the association's Housing Committee also took part in the construction process.<sup>(1)(8)</sup> An open call was also made to local contractors and other groups from the perspectives of quick construction, improving employment conditions and revitalizing the economies of affected areas, and continuous maintenance. Iwate Prefecture lowered the requirements for open applications to encourage the participation of small- and medium-sized construction companies.<sup>(2)</sup> As of October 2011, 43,206 units had been constructed by the Japan Prefabricated Construction Suppliers and Manufacturers Association (28,660 units by the Standardized Architecture Committee and 14,546 by the Housing Committee), with 9,307 units constructed by local contractors.<sup>(1)</sup> Many wooden construction-type emergency housing units were built by local contractors with local lumber.<sup>(5)</sup> Some issues, such as differences in the speed of construction, costs and habitability, were observed among different groups involved in the provision of construction-type emergency housing.<sup>(9)</sup>

- Reflecting aging populations, lifestyle convenience, and other factors in construction (Issue 2)

In addition to the construction of barrier-free construction-type emergency housing for the elderly and other tenants requiring special care,<sup>(11)</sup> other types of housing were also constructed, such as group home-type emergency housing equipped with common dining halls and other facilities to encourage residents to cooperate with one another, and construction-type emergency housing equipped with support centers for nursing care and other services (Case study 26-1).

Barrier-free care zones, childcare zones for families raising children, and general zones were designed within individual housing complexes, and construction-type emergency housing plans with entranceways designed to face each other were built in Iwate and other prefectures, in consideration of communities (Case study 26-2). Ingenuity was observed in terms of equipping housing with open verandas and outdoor tables and benches.<sup>(10)</sup> In listening to feedback from residents, efforts were also made to construct new interactive spaces (Minna-no-ie) in the construction-type emergency housing complexes into which people had already started to move.<sup>(11)</sup>

Construction-type emergency housing and temporary facilities, such as stores selling goods and restaurants, were built in the Taro district of Miyako City, Iwate Prefecture at the request of the city, in order to make life more convenient for residents and to help revive the local commercial environment.<sup>(1)</sup>

→*Related topics: 8) Safeguarding tenants in emergency temporary housing, 42) Recovery and reconstruction of shopping streets and commercial facilities*

- Utilizing unit houses (Issues 1, 2)

More than 2,000 construction-type emergency unit houses were supplied over a short construction period in disaster areas in Iwate, Miyagi, Fukushima and other prefectures to ensure a constant housing performance level.<sup>(12)(13)</sup>

**[Lessons learned and know-how gained]**

(1) Estimate the number of housing units required before a disaster occurs based on damage estimates.

- Confirm appropriate methods<sup>(14)</sup> for calculating the number of construction-type emergency housing units to be built after a disaster occurs. Take the supply of rental-type emergency housing into account and create estimates (training) based on these assumptions.
- Enlist the cooperation of construction departments and welfare departments, which will receive relief supplies, when calculating the number of housing units to be constructed. Assess needs through opinion surveys of disaster victims even after the number of units required has been estimated, and revise the number of units, as needed.
- Inevitably, there will be a certain number of vacant units inside construction-type emergency housing (e.g., due to changing intentions). Therefore, the number of units required should be calculated after consulting with the national government on estimated vacancies in advance.

(2) Take measures to secure land for construction in accordance with the estimated number of units needed.

- Select publicly and privately owned land that can be used as construction sites before a disaster occurs, and examine how to coordinate with debris yards, reconstruction housing sites and other locations. Fees for leasing privately owned land should also be considered.
- Consider collaboration with municipalities in surrounding areas if suitable sites cannot be found within the municipality.
- If housing is expected to be constructed in areas with poor access to transportation, collaborate with private bus operators and local communities when considering the operation of new routes. Be flexible in responding to the shifting needs of communities by changing and increasing the number of service routes in response to requests from residents.
- The use of school yards and other land for construction-type emergency temporary housing, which may interfere with the original intended use of the site, should be avoided as much as possible.

(3) Take measures in advance for collaboration, such as agreements with construction contractors and organizations.

- Set up agreements with construction contractors and local construction companies before a disaster occurs to exchange information and confirm materials supply and personnel for building construction-type emergency housing, in order to be prepared to respond in the event of a disaster.



**(4) Consider specifications for emergency temporary housing, taking into account aging populations and lifestyle convenience.**

- Take the different types of construction-type emergency housing that can be built into account, such as those that are barrier-free and provide community care, in consideration of aging populations, lifestyle convenience, and the climate at construction sites. Consider the type of construction-type emergency housing that is best for communities before a disaster occurs, taking these issues into account (e.g., construction speed, cost, equity among tenants).

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## 27) Building maintenance for construction-type emergency housing

[recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to handle the use of buildings in the long term.  
(2) How to consider the climate and barrier-free accessibility in disaster areas, while also taking construction costs into account.  
(3) How to use vacant units.

### [Situation and issues created by the Great East Japan Earthquake]

The maximum period for the provision of emergency temporary housing under the Building Standards Act is two years and three months, although this period can be extended yearly in extremely severe emergencies (specified disasters). This provision was applied in the case of the Great East Japan Earthquake due to the long duration of reconstruction efforts.<sup>(1)(2)</sup> With housing provided for an extended period of time, support for building repairs became an issue, as buildings in construction-type emergency housing complexes deteriorated from wind and rain, requiring reinforcement.<sup>(3)(4)</sup>

In contrast with construction-type emergency housing provided after the disaster, prefabricated construction-type emergency housing supplied in the early days immediately after the disaster proved problematic in terms of livability,<sup>(3)</sup> with various schemes conducted to improve this. However, the rise in construction costs that accompanied these improvement measures presented problems.

Vacant units<sup>(5)</sup> in construction-type emergency housing complexes, which occurred after construction was complete due to insufficient staffing during required unit surveys, supply of rental-type emergency housing, and inconvenient locations where complexes were built because of a lack of construction sites, also had to be addressed.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Installation of maintenance and management centers (Issue 1)

In Miyagi Prefecture, repairs needed for the long-term use of construction-type emergency housing were carried out through contact points in each municipality. However, in Iwate Prefecture, the Iwate Prefectural Home Construction Center was commissioned to establish the Maintenance and Management Center for Emergency Temporary Housing to serve as a central contact point for requests for repairs and issues related to construction-type emergency housing in the prefecture. The center responded to complaints and requests from residents, such as the installation of handrails and ramps to make it easier for the elderly and others with special needs to use facilities (Case study 27-1).

- Reinforcing and filling foundations with concrete (Issue 1)

Iwate Prefecture promoted the systematic repair of foundations (wooden piles) for construction-type emergency housing before defects occurred (four to five years after the disaster). Inspections were conducted on housing units with foundations that were found to have deteriorated and were

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expected to be used for more than eight years after the disaster. Foundations were reinforced with the installation of steel beams alongside deteriorating wooden piles.<sup>(6)</sup>

- Considering the climate and barrier-free accessibility in disaster areas in efforts to improve livability (Issue 2)

A variety of actions were implemented to improve habitability primarily in prefabricated, construction-type emergency housing.

Protective measures for heat and cold included insulation on exterior walls, installation of vestibules, double-glazed glass, awnings, eaves, bathtubs with reheating functions, stoves, carpets, and heated toilet seats, as well as greenery.<sup>(3)(7)</sup>

In addition to the installation of handrails and ramps mentioned above, barrier-free measures included laying down pavements in construction-type emergency housing complexes.<sup>(7)</sup>

With the cooperation and guidance of university faculty and students who are experts in the field of architecture and the participation of residents themselves, efforts were made to replace tatami mats<sup>(7)</sup> and renovate construction-type emergency housing to make it easier to use, in order to improve livability both indoors and outdoors. Under these initiatives, storage spaces under eaves, ledges and indoor shelves were created, with these activities playing an instrumental role in the formation of communities in construction-type emergency housing complexes.<sup>(8)</sup>

However, construction costs soared with due in part to these ongoing efforts. Initially, Miyagi Prefecture estimated the construction cost for each unit at JPY 5.52 million, taking into account the standard cost for one unit at JPY 2.387 million with the addition of construction site development and new installations for water supply and electricity. However, as of October 2012, that figure is estimated at JPY 7.44 million per unit, due in part to efforts to improve livability.<sup>(5)(9)</sup> Construction costs for construction-type emergency housing built by the Japan Prefabricated Construction Suppliers and Manufacturers Association's Housing Committee are estimated at JPY 5 and 6 million, with costs estimated at JPY 6 to 6.5 million for wooden construction-type emergency housing built by local contractors.<sup>(3)</sup> (Both figures are for purchase only, and do not include demolition/dismantling costs.)

- Effective use of vacant units (Issue 3)

The Ministry of Health, Labour and Welfare approved the use of vacant units in August 2011 as meeting and common spaces, and for the use of several units in cases of multiple-member households where living spaces are extremely cramped. In January 2012, permission was granted, as a special exception in this disaster, for vacant units in construction-type emergency housing for which there were no applicants to be used as lodging for support staff from other local authorities and volunteers working at the request of, or commissioned by, local authorities until such time as prospective tenants came forward.<sup>(5)(10)</sup>

Construction-type emergency housing complexes with vacancies were permitted to be used in a variety of effective ways as a special exception in this disaster only, including as dormitories<sup>(5)</sup> for support staff from other local authorities and common rooms,<sup>(11)</sup> as well as housing for people other

than disaster victims who were returning to the area and new job seekers engaged in reconstruction projects in disaster areas.<sup>(12)</sup>

→Related topic: 62) Continuation of long-term dispatching of staff

### [Lessons learned and know-how gained]

(1) Consider long-term maintenance and management measures based on damage conditions.

- Provide construction-type emergency housing based on damage conditions, while also proactively using rental-type emergency housing (approximately JPY 1.83 million per unit over a two-year period<sup>(13)</sup>).
- Perform appropriate maintenance and management in the event that the prefectural governor or other authority grants permission to extend the period of emergency temporary housing in accordance with the provisions set out in the Act on Special Measures Concerning Specified Disasters.

(2) Consider appropriate measures when vacancies are unavoidable.

- Over time, if vacancies become unavoidable, properties may be discontinued after consulting with the national government and converted for another use.
- In some cases, permission was granted to use vacant units for households with large numbers of people, as dormitories for support staff from other local authorities, and for other purposes, as a special exception for the Great East Japan Earthquake (Note, however, that this may only be permitted as a special exception in the event of a large-scale disaster, such as the Great East Japan Earthquake.)

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## 28) Securing rental-type emergency housing [emergency response phase, recovery phase]

**[Issues]** (1) How to facilitate the supply of rental-type emergency housing using existing private rental housing.  
(2) How to handle the extensive work required to secure large housing supply.

### **[Situation and issues created by the Great East Japan Earthquake]**

There was a need to secure emergency temporary housing quickly and in massive quantities for victims from the Great East Japan Earthquake because of the incalculable damage caused by the earthquake and tsunami, as well as the number of evacuees from the nuclear power plant accident. In addition to typical methods of building prefabricated construction-type emergency housing and opening up vacancies in public housing, local authorities also rented out space in existing private rental housing complexes for use as emergency temporary housing (i.e., rental-type emergency housing). Approximately 53,000 construction-type emergency housing units had been built by May 2012, with 68,000 units available for rent in private rental housing complexes,<sup>(1)</sup> a clear indication that rental units exceeded those constructed. In contrast to construction-type emergency housing, rental units offered the advantage of being able to supply housing quickly.<sup>(2)</sup> In some cases, agreements had been in place between related organizations and local authorities on the process of using private rental housing in the event of a disaster even before the earthquake. However, the lack of practical details and time required to identify available housing made it difficult to quickly rent out these types of housing units.<sup>(3)</sup>

The challenges faced included how to secure and facilitate the supply of existing private rental housing, as well as how to handle the considerable amount of work involved in leasing out private rental housing and extending occupancy periods.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Supplying housing through the matching processes of local authorities (Issue 1)

In rental-type emergency housing, local authorities use a process to match prospective tenants with available properties. Rental units were provided in the immediate aftermath of the disaster in the three prefectures. As of the end of April 2011, this process was not being utilized to its fullest potential, as only 745 units had been occupied (14 in Iwate, 4 in Miyagi, and 727 in Fukushima).<sup>(4)</sup>

Iwaki City, Fukushima Prefecture made extensive use of this matching process to supply 695 housing units. Initially, this system did not function adequately because of duplicate property listings provided to the prefecture by three real estate organizations. However, city officials took great pains to secure properties by directly visiting real estate agents in the city. This process was effective for the fact that priority was given to households with elderly members, persons with disabilities and pregnant women and people. However, some challenges were observed, such as the difficulty of turning down opportunities to move into a property if conditions were poor because of mediation by local authorities.<sup>(4)</sup>

- Notice from the Ministry of Health, Labour and Welfare and selection of properties by disaster victims

(Issue 1)

The Ministry of Health, Labour and Welfare issued a notice on April 30, 2011 on the treatment of private rental housing as emergency temporary housing.<sup>(5)</sup> This notice was issued in light of the number of cases in which disaster victims had moved into private rental housing on their own and the extended time spent living in shelters due to issues in terms of securing land for construction-type emergency housing. It allowed a property contracted in a victim's name after the disaster to be approved as emergency temporary housing, which would be paid for by the national government, if the name on the contract was replaced with the prefecture's name (designated municipality) after the contract was signed.

As with the 2008 Iwate–Miyagi Nairiku earthquake, Miyagi Prefecture notified municipalities about the decision to provide emergency temporary housing using private rentals. However, with the notification from the Ministry of Health, Labour and Welfare that the scope of costs borne by the national treasury had been expanded, the prefecture revised its administrative procedures and notified municipalities of this development on May 13. The system offered a number of advantages for disaster victims, including the ability to move in to housing earlier and select their own properties based on convenience for commuting to work or school, which led to a rapid increase in the number of applications. However, confusion arose, as the public was not well-informed about the system, with a flood of complaints to the prefectural government.<sup>(2)</sup>

→*Related topic: 6) Support for tenants in emergency temporary housing*

- Providing rental-type emergency housing outside of disaster areas (Issue 1)

In cases where housing could not be secured near disaster areas due to the delayed identification of available properties, a large number of rental-type emergency housing was provided in areas other than the municipalities and prefectures where people were living at the time of the disaster, since properties needed to be secured in urban areas where there were more options available.<sup>(6)(7)</sup> In this context, private rental housing was widely provided to residents who had evacuated to other prefectures.<sup>(8)</sup> In some respects, this prompted population outflow to locations outside the disaster area.

- Concluding agreements to facilitate the use of private rental housing (Issue 1)

In February 2012, the Ministry of Health, Labour and Welfare and the Ministry of Land, Infrastructure, Transport and Tourism established a study group on the use of private rental housing in a disaster. An interim report was released in April 2012 outlining the division of roles between prefectures and related organizations, criteria for renting housing, and contracting procedures for situations in which the prefecture itself rents properties and selects tenants, and methods in which disaster victims themselves apply to rent properties they prefer.<sup>(9)</sup>

- Outsourcing the enormous volume of work related to occupancy in private rental housing (Issue 2)

Rental-type emergency housing was basically provided under a three-party contract between landlords (lessors), prefectures (lessees), and disaster victims (tenants).<sup>(10)</sup> In Miyagi Prefecture, housing was rented in two-year lease contracts, which were renegotiated each time the term of the lease was extended. Both the landlord and tenant were asked to confirm their intention to renew the

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contract, and if both parties agreed, the contract was extended. In the event that the lessor did not agree to an extension, a system was created to allow a tenant to move into other properties in private rental housing, if there were no vacancies in prefabricated construction-type emergency housing, public housing or other options.<sup>(1)</sup>

Miyagi Prefecture, which supplied the largest number of units in disaster areas (approximately 26,000), had an enormous volume of work to handle, including three-party contracts, rental payments, and renegotiating contracts when the term of the lease was extended. The prefecture outsourced related work to external parties, including payment services to banks and financial institutions designated by the prefecture (Case study 28-1).

### **[Lessons learned and know-how gained]**

#### **(1) Identify information on private rental housing that can be supplied as rental-type emergency housing.**

- Conclude agreements in advance with related organizations (e.g., real estate agencies and other related bodies).

#### **(2) Determine contract formats, occupancy periods, rent and other leasing terms with related organizations.**

- Consider matching processes by local authorities and search procedures by disaster victims themselves in advance.
- Set the terms and conditions of leases, including formats for three-party contracts between landlords (lessors), local authorities (lessees), and disaster victims (tenants), length of occupancy under lease agreements, and rent.

#### **(3) Consider mechanisms to efficiently handle the enormous volume of work related to contracts with landlords and tenants.**

- Consider the use of support staff to efficiently handle the considerable volume of paperwork involved in lease agreements, rent collection and leasing period extensions for private rental housing. If the volume of paperwork is too large, consider outsourcing, such as the use of call centers in related organizations, after consulting with related ministries and agencies.

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## **29) Consolidation and removal of construction-type emergency housing [early and late reconstruction phases]**

**[Issues]** (1) How to coordinate and support the consolidation and removal of emergency temporary housing.  
(2) How to determine ways to reuse construction-type emergency housing after units are vacated.

### **[Situation and issues created by the Great East Japan Earthquake]**

As housing was being rebuilt for disaster victims, some households were observed having difficulty in deciding on rebuilding plans for their own homes.<sup>(1)</sup> As more and more residents moved out of construction-type emergency housing (hereinafter, temporary housing complexes) and vacancies increased, issues emerged in terms of preventing residents from becoming isolated, preventing crime, and maintaining the vitality of communities.<sup>(2)(3)</sup> In some cases, temporary housing complexes constructed on school grounds or privately owned land needed to be vacated so that they could be made available to students and landowners as soon as possible.<sup>(2)</sup> In this context, support was required to help households that had not yet decided on housing rebuilding plans, consolidate temporary housing complexes, and dismantle/remove temporary housing complexes that were no longer of service after tenants had vacated the premises.

An enormous volume of construction-type emergency housing emerged as a result of the Great East Japan Earthquake that could not be leased through the Japan Prefabricated Construction Suppliers and Manufacturers Association alone. Approximately 40,000 of the 50,000 units constructed became the property of prefectures under purchase agreements. After the units were no longer in service, purchase agreements were required so that the complexes could be reused, in order to reduce waste.<sup>(4)</sup>

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Multiple levels of support to resolve issues related to emergency temporary housing (Issue 1)

Local authorities in disaster areas offered multiple levels of support for closing emergency temporary housing, in cooperation with social welfare councils, NPOs, lawyers, judicial scriveners, and other experts. This support included surveying tenants about their plans for rebuilding homes, support for moving into emergency public housing and private housing, and financial and job support needed for rebuilding. Staff in local authorities providing this assistance also received advice from experts in order to improve the quality of support.<sup>(1)</sup>

Assistance, such as that described above, was actively provided in Iwate and Miyagi prefectures, especially in terms of the removal of temporary housing complexes constructed on school grounds. As a result, the number of temporary housing complexes built on the grounds of 35 schools in Iwate Prefecture and 32 schools in Miyagi Prefecture in 2011, fell to 11 schools in Iwate and three in Miyagi by the end of August 2018. All are expected to be removed by the end of fiscal 2019.<sup>(5)</sup>

Lawsuits were filed in some cases where tenants did not vacate the units, despite the various

types of support provided.<sup>(6)</sup>

→*Related topic: 4) Rebuilding the livelihoods of disaster victims*

• Plans for consolidating emergency temporary housing (Issue 1)

Municipalities formulated plans for consolidating emergency temporary housing, specifying land priority and timeframes for the removal and consolidation of temporary housing complexes, and promoted the consolidation of construction-type emergency housing (Case study 29-1). At that time, work was performed to reinforce foundations and replace corroded floorboards and defective equipment in construction-type emergency housing in the temporary housing complexes that were being consolidated, so that they could continue to be used. However, in certain respects, it was difficult to ask residents to move out of the apartment complexes where they had lived for a period of time, and in some cases, although plans for consolidation were formulated, the process did not actually proceed according to plans. The removal of housing was performed block by block, and it was difficult to start this process when households were still occupying units in these housing complexes.<sup>(2)</sup>

→*Related topic: 27) Building maintenance for construction-type emergency housing*

• Reuse of emergency housing after units are vacated (Issue 2)

In some cases, prefectures purchased and reused sections of construction-type temporary housing that no longer served a purpose after tenants had moved out.

The three prefectures affected by the disaster transferred materials free of charge to local authorities and companies upon request. Fukushima and other prefectures used the materials in disaster public housing and for the construction of interactive facilities for people moving from urban areas to encourage them to settle there.<sup>(7)</sup>

Gagyū Sankeikai (Kakuda City, Miyagi Prefecture) is a social welfare corporation providing support to persons with disabilities. The organization has taken over a meeting hall in a temporary housing complex in Yamamoto Town, Miyagi Prefecture, which it plans to use as a meeting space for staff.<sup>(7)</sup>

A construction-type emergency complex in Noda Village, Iwate Prefecture was relocated to a new foundation as a site for post-disaster structural remains. The complex is open for overnight stays that allow people to experience life at the time of the earthquake.<sup>(8)</sup>

During the torrential rains in western Japan in 2018, Soja City, Okayama Prefecture, which was affected by the disaster, requested Fukushima Prefecture to pass on old wooden construction-type emergency housing units. These were reused in 48 housing units and a meeting hall, and were well received by residents for the wonderful texture of the wood.<sup>(7)</sup>

In some cases, the reuse of these housing complexes were considered, but never came to fruition. A variety of proposals for a three-story, construction-type emergency housing complex built with containers on a baseball field in Onagawa Town, Miyagi Prefecture were considered as its period of use expired, including as sports camp boarding facilities. However, while the Chinese-made containers could be used as structural materials for the frames in construction-type emergency housing, they could not be converted into structural materials in permanent buildings, and so the

complex had to be dismantled.<sup>(9)(10)</sup>

**[Lessons learned and know-how gained]**

(1) Minimize the need to consolidate housing units, and collaborate, consider, and consult at early stages in the process of consolidation.

- Collaborate with social welfare councils, lawyers, and other specialists before a disaster occurs.
- It is important to avoid using school grounds and other locations as sites for temporary housing complexes that cannot be used for extended periods of time as much as possible. If school yards and other such locations must be used, consider their use from a long-term perspective by anticipating removal at an early stage.
- Discuss with residents as early as possible when the possibility for consolidation arises and request them to prepare.

(2) Consider how housing complexes can be reused, such as by being converted into different facilities, either before demolition or after construction.

- Temporary facilities, such as construction-type emergency housing and other components that no longer serve a purpose may be effectively used in a variety of ways. Examine the possibilities of reusing structures both in and outside the area before removal.

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### **30) Early-stage development of an adequate supply of disaster public housing** [recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to determine the number of units and specifications based on residents' intentions to move into disaster public housing.  
(2) How to construct an extraordinary number of disaster public housing complexes.

#### **[Situation and issues created by the Great East Japan Earthquake]**

The Great East Japan Earthquake caused extensive damage across a wide and vast area, requiring a total of about 30,000 disaster public housing units to be constructed in eight prefectures.<sup>(1)</sup>

Residents' intentions needed to be understood in order to ascertain the number of disaster public housing units to be built and determine the specifications for each unit. With such a large number of disaster victims, evacuations were widespread over a prolonged period due in part to the fact that rental-type emergency housing was available outside of disaster areas, and residents' intentions changed over time and as infrastructure was restored, which posed a challenge in how to conduct surveys on residents' intentions to determine the appropriate number of housing units and their specifications.<sup>(2)</sup>

Municipalities played a key role in the development of these housing units in cooperation with prefectural governments.<sup>(2)</sup> Many municipalities were required to quickly construct disaster public housing units, numbering in the hundreds to thousands.<sup>(3)</sup> Many of the sites that were suitable for construction could not be used because they had been damaged by the tsunami, which required coordination with construction-type emergency housing sites and other locations.<sup>(3)</sup> Local authorities with little experience in the original construction of public housing were also affected by the disaster and overwhelmingly lacked the technical staff needed, such as those in the architectural and civil engineering fields, as well as staff capable of acquiring land, so labor shortages persisted even with support staff dispatched from other local authorities.<sup>(3)</sup> The need to quickly secure sites and identify methods other than direct construction by municipalities drove cooperation with the national and prefectural governments, Urban Renaissance Agency (UR), private businesses, and others.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Repeat surveys on residents' intentions for the construction of disaster public housing (Issue 1)

Many of the local authorities in disaster-affected areas carefully examined the number of units to be built and their specifications by conducting repeat surveys on victims' intentions to move into disaster public housing. The Housing Bureau of the Ministry of Land, Infrastructure, Transport and Tourism also conducted analyses on the results of intention surveys as a measure to support the construction of disaster public housing in affected areas.<sup>(2)</sup> An appropriate number of units were supplied based on the results of calculations and adjustments made from the intention surveys conducted by local authorities, which indicated an occupancy rate for disaster public housing that was as high as 91.0% in Iwate Prefecture, 95.9% in Miyagi Prefecture, and 88.4% in Fukushima

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Prefecture (as of December 2019).<sup>(4)</sup>

- Promoting construction through diverse partnerships (Issue 2)

In some cases, roles were shared between Iwate Prefecture, which built large apartment building complexes over a wide area, and municipalities building small detached housing in different areas, while in other cases, the prefecture was commissioned by municipalities to construct housing on their behalf.<sup>(5)(6)</sup> There were also cases in Miyagi Prefecture where municipalities commissioned the prefectural government to build housing on its behalf, while in Fukushima Prefecture, roles were divided between construction by municipalities for tsunami and earthquake victims, and that by the prefecture for evacuees from the nuclear power plant accident.<sup>(2)</sup> Miyagi Prefecture also provided information on idle land and other sites owned by the prefecture to municipalities in order to secure sites for construction, prompting Tagajo City to secure a site with the sale of prefecture-owned land.<sup>(3)</sup>

The national government launched a reconstruction grant program to support the construction of disaster public housing by increasing the subsidy rate for the construction, purchase, and leasing of housing (from 3/4 to 7/8) of the normal rate for severe disasters. Land for construction was also secured through subsidies covering land acquisition and development costs and the use of government-owned land for construction sites. The government also expanded and enhanced special additions to construction costs in line with local conditions in the three disaster-affected prefectures, such as soaring construction costs due to reconstruction demand, special foundation construction work on soft ground, and costs for transporting materials and equipment for construction on remote islands.<sup>(3)</sup>

Cooperation with UR was also seen in some cases. UR was engaged at all stages from design to construction in Miyagi Prefecture, at the request of municipalities, which purchased completed complexes. UR also provided support for the purchase of land, as well as comprehensive construction work through construction management (CM), including city development projects.<sup>(3)</sup>

In some cases, construction was performed in cooperation with private contractors, with specific methods that included, among others: (a) the purchase of buildings designed and constructed by private contractors on sites secured by municipalities after completion; (b) site proposal and purchase that includes calls for applications from private contractors, including securing sites; and (c) leasing private rental housing constructed by private contractors or existing housing<sup>(3)</sup> for a certain period of time. In some cases, municipalities (d) ordered the construction of and then purchased detached wooden disaster public housing in bulk to newly established councils of local architects, contractors, wood suppliers and other professionals to increase production capacity<sup>(7)</sup> (Case study 30-1).

In Miyagi Prefecture, these methods of purchasing housing from UR and private contractors were actively applied, accounting for about two-thirds of all housing. Cases in which the private sector rather than local authorities secured sites, as in (b), were effective. The method outlined in (c) was not utilized as much (1.4% of all housing), due to the need for continued residence at the end of the leasing period and other issues.<sup>(3)(8)</sup>

Although performed quickly and smoothly through a variety of different systems, it has been

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pointed out that the priority on efficiency and haste in construction resulted in a lack of consideration for the community, while in other cases, criticism was levied on housing that was carefully designed by private contractors as being too ornate compared to other types of housing.<sup>(7)</sup>

### **[Lessons learned and know-how gained]**

#### **(1) Conduct resident intention surveys carefully and repeatedly.**

- Determine the appropriate number of required housing units and specifications through the conduct of surveys on residents' intentions, which may change over time, before constructing disaster public housing.

#### **(2) Collaborate and share roles in construction with various organizations.**

- In cases where a large volume of housing must be developed, the municipal, prefectural and national governments, UR, and major/local private companies will share roles to meet needs. In this case, development methods will be considered according to local characteristics, such as organized development in urban areas, or construction in small units in villages.

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### 31) Construction of disaster public housing in consideration of communities [recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to reflect considerations for the elderly and local communities when constructing disaster public housing.  
(2) How to achieve a balance between the construction of disaster public housing and city development to ensure lifestyle convenience.

#### **[Situation and issues created by the Great East Japan Earthquake]**

The damage caused by the tsunami in the Great East Japan Earthquake was both extensive and enormous, with ensuing reconstruction projects dramatically altering the structures of cities. This has led to the formation of new housing and communities that differ from those of the past, requiring that consideration be given to the elderly and local communities from the planning stages for disaster public housing, and calling for sustainable city development to integrate housing and other functions, a balance with city development, such as the revitalization of city centers, and ensuring lifestyle conveniences.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Innovative ideas in intention surveys for prospective tenants (Issues 1, 2)

Over the course of frequent surveys by local authorities in disaster areas on people's intentions to move into disaster public housing, interviews were conducted on the number of senior citizens within groups of tenants, senior housing, wheelchair-accessible housing, group occupancy, and people's preferences for lifestyle support services after moving in (e.g., monitoring and nursing care, shopping assistance) to ensure that due consideration was given to the elderly and communities, as well as lifestyle conveniences.<sup>(1)</sup>

→*Related topic: 10) Support for tenants in disaster public housing*

- Innovative ideas on location and facility layouts 1: Construction near original residences and at evacuation sites (Issue 1)

In many cases, housing lots for projects on promoting group relocation for disaster prevention and relatively small-scale disaster public housing were planned together in order to keep original communities together, such as along the ria coastline. Mostly wooden detached and row-house type housing, these buildings were designed to maintain a balance with houses that were rebuilt by residents as part of projects on promoting group relocation for disaster prevention.<sup>(2)</sup> In this context, it was effective, from the perspective of securing land, to construct disaster public housing together on land formed through area-wide development projects, rather than by constructing them independently.<sup>(3)</sup>

However, disaster public housing was constructed in Morioka City, Iwate Prefecture and other areas inland, as many people had evacuated inland and built up a foundation for their lives by moving into rental-type emergency housing and the application rate for public housing along the coast was



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high. There were concerns at that time about population outflow from the coastal areas, so with construction moving forward on disaster public housing, only people who had already evacuated inland were eligible to move into housing, after views were exchanged with municipalities along the coast.<sup>(4)(5)</sup>

- Innovative ideas on location and facility layouts 2: Formation of compact cities, revitalization of urban areas affected by the disaster, and securing lifestyle conveniences (Issue 2)

Some municipalities planned to concentrate disaster public housing in designated base areas in order to promote the development of compact cities with the implementation of reconstruction projects.<sup>(2)</sup> In some instances, public facilities and public transportation were developed in conjunction with the scale of disaster public housing as it was built in new urban areas located in relocation sites, and commercial facilities were also relocated to these areas.<sup>(3)</sup> In other cases, disaster public housing was actively planned in areas that had flooded during the Great East Japan Earthquake after land readjustment projects had been carried out to build up the land, with the aim of revitalizing urban areas damaged by the disaster (Case study 31-1).

However, in some cases, disaster public housing was built in suburban areas with relatively low lifestyle conveniences because publicly owned land in existing urban areas had already been used to build construction-type emergency housing, and land in flooded areas could not be used right away due to construction to build up the area.<sup>(2)</sup> There were also concerns in other cases about the decline in lifestyle conveniences when public disaster housing was planned in conjunction with group relocation to higher ground. In these cases, various services were provided in line with local conditions in active collaboration with the private sector, such as the operation of local community buses, provision of medical and welfare transportation services, house calls and round-the-clock medical examinations at meeting halls, mobile shops, and patrols to monitor residents.<sup>(3)</sup>

→*Related topics: 12) Support after the transition to permanent housing, 20) Formulating reconstruction city development plans, 24) Revitalization and management of city centers*

- Innovative ideas on residential units and buildings (Issues 1, 2)

Innovative ideas for residential units were seen in examples of living rooms positioned so that they face common areas, making them more visible from the outside so that it is easier for residents to look out for, greet and talk with one another (Case study 31-2). In other cases, detached, wooden public housing for disaster victims was constructed (Case study 30-1), which is also intended to promote local construction companies and other industries, as well as sell housing (and, in turn, lower maintenance costs over the medium to long term).<sup>(7)</sup>

Innovative ideas for residential buildings include examples where meetings spaces were constructed that were open to non-residents to encourage community building,<sup>(2)</sup> spaces for socializing were installed at entrances and near stairs, counseling rooms/offices for livelihood support assistants (LSA) were set up, row-type and group home-type disaster public housing was constructed to promote a sense of mutual aid by connecting residential units with indoor corridors

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and enhancing dining rooms and other common spaces, and layout plans were designed to create continuous connections between spaces for flowerbeds and squares and traffic lines.<sup>(3)(6)</sup> For example, in the Haragama district of Soma City, Fukushima Prefecture, disaster public housing called the Idobata row house was built to form communities and prevent senior citizens from feeling lonely. Washing machines were installed in a common space for shared use, similar to how wells had been shared in years past.<sup>(6)</sup>

However, in some cases, the system did not function as originally envisioned, such as when residents shut the curtains on windows designed to watch over them.<sup>(3)</sup>

Disaster public housing in Kesenuma and Ishinomaki cities,<sup>(8)</sup> Miyagi Prefecture was constructed in areas that had flooded during the Great East Japan Earthquake. The lower floors were used for commercial facilities, in consideration of tsunami evacuations (Case study 31-1).

→*Related topics: 30) Early-stage development of an adequate supply of disaster public housing, 32) Maintenance and management of disaster public housing*

### **[Lessons learned and know-how gained]**

(1) Consider measures to watch over the elderly and create communities in consultation with stakeholders.

- Before constructing disaster public housing, carefully conduct intention surveys in order to ensure that considerations for the elderly and communities are reflected in plans.
- With smaller housing complexes, it will be easier to build disaster public housing close to original residential areas and keep the local community together.
- Innovate ways to watch over senior citizens and create communities in plans for residential units and buildings. Consider plans for more user-friendly housing units and buildings after discussing how to design spaces that are easy to use with businesses, departments in charge of services, such as monitoring, and with prospective tenants.

(2) Construct disaster public housing after examining city development policies for the entire region.

- Strategically set out locations, layout plans, building plans, structures, and other elements for disaster public housing after considering policies for city development over the medium to long term, such as the formation of compact cities and revitalization of urban areas affected by disasters.
- Consider land use in advance, including coordinating sites with other purposes, such as construction-type emergency housing.
- Incorporate tsunami evacuation measures when constructing disaster public housing in tsunami inundation areas.

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### **32) Maintenance and management of disaster public housing** [early and late reconstruction phases]

**[Issues]** (1) How to efficiently maintain and manage large numbers of disaster public housing.  
(2) How to utilize vacant housing units and sites  
(3) How to maintain and manage disaster public housing over the medium to long term.

#### **[Situation and issues created by the Great East Japan Earthquake]**

Approximately 30,000 disaster public housing units were constructed in the aftermath of the Great East Japan Earthquake.<sup>(1)</sup> The number of public housing units managed as a whole by some local authorities increased several-fold from before the earthquake,<sup>(2)</sup> leaving affected municipalities and prefectures in the position of figuring out how to efficiently maintain and manage these units.

Although local authorities have conducted surveys on a continuous basis on the intentions of disaster victims in terms of rebuilding housing, there are still a number of vacant units and sites, which require measures to be put in place so that they can be utilized.

Disaster public housing is constructed specifically for victims of disasters. However, after disaster victims move out, these complexes are handled in the same way as ordinary public housing, requiring considerations on how they can be maintained and managed together with existing public housing in the medium to long term.<sup>(2)</sup>

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

• Outsourcing and streamlining administrative work (Issue 1)

When unable to manage operations directly, the municipalities in Miyagi Prefecture affected by the disaster outsourced management operations to the Miyagi Housing Supply Public Corporation, which was responsible for managing prefectural housing. As of the end of fiscal 2018, approximately two-thirds of municipalities have outsourced work to the corporation. At that time, eligibility requirements for tenants (e.g., handling persons who fail to pay taxes, requirements for co-signers) varied between municipalities, prompting the need for coordination between cities, towns, the Miyagi Housing Supply Public Corporation, and the prefecture so that administrative work could be standardized for managing occupancy.<sup>(2)</sup>

In Fukushima Prefecture, information was received from tenants about various malfunctions, including construction defects and requests for repairs and improvements. Thereafter, the prefecture issued a notice on how to handle defects in 2016 and clarified the division of roles and administrative procedures for designated managers, builders, and others involved in disaster public housing in terms of how to address defects that involve more than one party. In addition, receipts and report forms for repairs were standardized in order to allow relevant organizations to respond quickly when information is received from tenants about malfunctions and other problems. A collection of case studies containing summaries on problems was prepared each quarter for distribution to construction

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offices and designated managers involved in the management of public disaster housing units.<sup>(3)</sup>

- Utilization of vacant housing units and sites (Issue 2)

Municipalities in Miyagi Prefecture affected by the disaster relaxed requirements for the number of residents in order to recruit additional applications from prospective tenants when vacant units became available and to address mismatching in terms of room type. Housing units with no prospective tenants even after additional applications and relaxing requirements were made available as ordinary public housing to people who had not been affected by the disaster, after recruitment and other activities were carried out for disaster victims throughout the prefecture for a certain period of time. Some municipalities have also tried to use housing by accepting people who are returning to the area, are moving from urban to rural areas, or moving to a slightly larger city near a rural area (referred to as U-turn, I-turn, and J-turn, respectively). Vacant sites, when they occurred, were used as public land (e.g., parks, green spaces, community squares, meeting halls) in disaster public housing complexes or in communities, or municipalities returned reconstruction grants and sold the sites as general residential lots<sup>(2)(4)</sup> (Case study 32-1).

There were also a number of tenants, other than disaster victims, who had difficulty moving into ordinary housing in disaster areas in the past (e.g., persons with income restrictions, older people living alone, persons with disabilities). As time passed after reconstruction, mutual aid and monitoring services in disaster public housing stopped functioning,<sup>(5)</sup> making it difficult to continue monitoring and other activities.

→*Related topic: 12) Support after the transition to permanent housing*

- Formulating overall plans to extend service life, including for existing public housing (Issue 3)

Municipalities affected by the disaster in Miyagi Prefecture revised (or newly formulated) plans to extend the service life of disaster public housing, in order to reduce overall maintenance and updating costs, including for existing public housing using projects to promote the effectiveness of reconstruction grants. All 21 municipalities that have constructed disaster public housing plan to revise or newly formulate these plans by fiscal 2020.<sup>(2)</sup>

- Sale of disaster public housing (Issue 3)

The Act on Special Zones for Reconstruction in Response to the Great East Japan Earthquake made it possible to accelerate the timing of the sale of disaster public housing in order to reduce the burden of managing disaster public housing in the future. In response to this, Soma City, Fukushima Prefecture sold wooden, detached disaster public housing in 2018. The price paid for these two types of detached houses (single- and two-story)) ranged from between JPY 3.85 to 4.76 million/housing unit, with JPY 700,000/unit supported by the city through a fund. Proceeds from the sale were used for the maintenance and management of municipal housing. Other municipalities are also considering selling this housing, with approval received by Onagawa Town, Miyagi Prefecture from the government as of the end of fiscal 2019, and Sendai City engaged in negotiations with the national government.<sup>(2)(6)</sup> However, there were some households in Soma City that initially requested

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to purchase housing units, but did not actually pay off the sale, which requires further studies based on the actual situation.

- Potential for accelerating the timeline for demolition (Issue 3)

Some local authorities performed their own estimates on future income and expenditures based on population forecasts by the National Institute of Population and Social Security Research in order to avoid falling into the red due to population decline. These estimates indicated the possibility for starting the demolition of disaster public housing made with reinforced concrete after 40 years, with the timing moved up from the initially assumed 70 years after the start of management.<sup>(7)(8)</sup>

- Continued support from the national government in relation to lowering rent and special rent reduction projects (Issue 3)

The national government has provided support to stabilize housing conditions in disaster public housing for residents affected by the Great East Japan Earthquake through projects designed to lower rent and those for special rent reductions. However, a decision was made to increase subsidy rates for projects designed to lower rent up to 10 years after the start of management and to continue the special rent reduction project in fiscal 2021 and beyond, which is after the first phase of the reconstruction and revitalization period. This is based on the future state of financial management in each of the affected local authorities for disaster public housing, examples of large-scale disaster efforts in the past, appropriate division of roles between the national government and local authorities, and equity among local authorities that started managing disaster public housing at different times.<sup>(9)</sup>

*→Related topic: 10) Support for tenants in disaster public housing*

**[Lessons learned and know-how gained]**

- (1) Standardize and clarify management tasks for outsourcing and the division of roles.
  - Outsourcing work is also effective in handling the high volume and diverse management tasks involved with disaster public housing. If a number of stakeholders are involved, clarify the division of roles and procedures between residents, managers, construction contractors, and other parties. Consideration should also be given to developing a collection of case studies on potential responses at this time.
- (2) Relax occupancy requirements and target persons other than those affected by the disaster if vacant units or sites occur.
  - If vacant units or sites occur in disaster public housing, consider additional recruitment of potential tenants, easing occupancy requirements, public use, and opening up housing to applicants other than disaster victims. Take the needs of the community for public housing into account.
- (3) Perform maintenance and management over the medium to long term with a view to utilizing systems to sell off land and dismantle buildings.
  - Efficiently perform maintenance and management over the medium to long term by promoting planned repairs through the formulation of plans to extend service life and the reduction of maintenance and management costs by selling unwanted assets.
  - Consider more economically efficient management approaches by estimating future income and expenditures based on statistical data and other information.

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### **33) Disaster waste management** [emergency response phase, recovery phase, early reconstruction phase]

**[Issues]** (1) How local authorities treat disaster waste.  
(2) How to promote wide-area treatment and recycling of disaster waste.

#### **[Situation and issues created by the Great East Japan Earthquake]**

An enormous amount of waste was generated by the Great East Japan Earthquake, including about 11 million tons of tsunami deposits of soil and sand, as well as 20 million tons of disaster waste, such as from houses and household belongings.<sup>(1)</sup> In Iwate Prefecture, this amounts to nine years' worth of municipal waste generated in a year, while in Miyagi Prefecture, it amounts to 14 years.<sup>(2)</sup> Large volumes of disaster waste also flowed over onto roads and private property, which posed a challenge in terms of quick removal and securing temporary storage sites for rescue operations and recovery/reconstruction. Other issues included the disposal of disaster waste in a short period of time, establishment of temporary treatment facilities, wide-area collaboration with other local authorities, and efficient disposal of disaster waste, such as with the reuse of waste materials.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Formulation of Guidelines (Master Plan) for Disaster Waste Management after the Great East Japan Earthquake, Ministry of the Environment (Issue 1, 2)

The Ministry of the Environment issued guidelines on the removal of damaged houses and structures immediately after the earthquake and formulated the Guidelines (Master Plan) for Disaster Waste Management after the Great East Japan Earthquake in May. With targets set for completing disposal by March 2014, the guidelines also indicated methods of treating disaster waste, the division of roles between the national, prefectural, and municipal governments, financial measures by local authorities, and the need for wide-area treatment. Local authorities in disaster areas formulated action plans for the disposal of disaster waste based on these guidelines.<sup>(3)</sup>

- Securing and installing primary and secondary temporary storage sites (Issue 1)

Disaster waste was transported to primary storage sites after being roughly sorted on-site as much as possible. There were more than 300 temporary storage sites set up in municipalities along the coast in the three prefectures affected by the disaster. Alongside with this, plans were solidified for the intermediate treatment of disaster waste through crushing, sorting, and incineration primarily by the prefectural government, with temporary incinerators installed and secondary temporary storage areas secured where waste could be collected.<sup>(4)</sup> It was difficult to secure temporary storage space, as it required coordination with construction sites for temporary housing and negotiations with private landowners.<sup>(4) (5)</sup> In addition to securing sites for temporary storage, the construction of temporary disposal facilities also requires that ordering procedures and staff are in place. Sendai City started operations in the shortest amount of time in October, followed by Miyagi Prefecture in April 2012. All facilities were in operation by February 2013.<sup>(4)</sup>



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- Wide-area disposal in cooperation with local authorities (Issue 2)

As with the Great Hanshin-Awaji Earthquake, wide-area disposal was carried out in cooperation with local authorities that had available capacity for waste treatment/disposal, as there was a lack of disposal facilities in the local authorities affected by the disaster. With the formulation of guidelines on the wide-area disposal of waste by the Ministry of the Environment in August 2011, Yamagata Prefecture was quick off the mark in promoting wide-area disposal, with the movement subsequently spreading to dozens of local authorities. Only waste confirmed to be safe through radioactive contamination checks after the Fukushima Daiichi Nuclear Power Plant were eligible. Overall, the percentage of waste disposed over a wide-area was 20%, which helped significantly with the disposal of combustible materials, a cause of fires, and in landfilling non-combustible materials, fishing equipment and fishing nets.<sup>(2)(6)</sup>

- Reuse of disaster waste in public works (Issues 1, 2)

In the immediate aftermath of the disaster on March 18, the Ministry of the Environment launched a liaison committee with the Ministry of Land, Infrastructure, Transport and Tourism and the Ministry of Agriculture, Forestry and Fisheries to request cooperation in preparing lists of materials needed for restoration work and to provide a matching list to departments in charge of waste disposal. By the end of March 2014, 13.39 million tons of disaster waste had been utilized in projects for park maintenance, levee reconstruction, and Coastal Disaster Prevention Forests. Concrete waste and tsunami deposits were also utilized for reclamation in port restoration projects. In total, 81% of disaster waste and 99% of tsunami deposits were reused.<sup>(7)</sup>

- Recycling of disaster waste (Issue 1, 2)

Private cement plants also helped with the reuse of disaster waste. Taiheiyo Cement Corporation's Ofunato Plant processed disaster waste into cement resources, as the composition of tsunami deposits is similar to limestone and iron, the raw materials for cement, and combustible waste can be used as fuel. The company also invested in new equipment to remove salt from disaster waste and tsunami deposits immersed in seawater so that they could be reused. The plant also received and processed waste from the Kanto region, as well as after the Kumamoto earthquake (Case 33-1).

Soso Smart Eco-Company Co., Ltd. also recycles non-combustible waste generated in specified reconstruction and revitalization base areas.<sup>(8)</sup>

→*Related topic: 39) Promoting corporate location*

### [Lessons learned and know-how gained]

- (1) Formulate disaster waste management plans in each local authority before a disaster occurs.
  - Prepare to secure land for temporary storage sites to remove and dispose of disaster waste.
  - Talk with relevant government agencies and companies about how to proceed with the disposal process for disaster waste.
  
- (2) Consider the development of a wide-area disposal system to prepare for a large-scale disaster.
  - A regional block council, set up and led by a regional environment office, should formulate specific action plans with concerned parties, in order to establish a wide-area system for the disposal of disaster waste.
  - Conduct joint training drills at the regional block level before a disaster occurs so that appropriate responses can be taken in the event of a disaster. The Ministry of the Environment manages the D.Waste-Net (Disaster Waste Treatment Support Network), which consists of experts in the field of disaster waste management, to record and verify responses to different disasters in relation to disaster waste, pass on knowledge, and provide quick support in the event of a disaster. The network collaborates with businesses, experts, research institutes and others through the exchange of information among all parties involved.<sup>(9)</sup>

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### **34) Recovery and reconstruction of road networks** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to quickly build emergency road networks immediately after a disaster.  
(2) How to efficiently construct fully functional road networks by taking different perspectives into account.

#### **[Situation and issues created by the Great East Japan Earthquake]**

The road network was cut off by the Great East Japan Earthquake, key infrastructure for the transport of people and logistics. Right after the disaster, emergency restoration work was needed quickly to allow for the passage of emergency vehicles to save lives and transport relief supplies, which included the immediate establishment of rescue routes (elimination of obstacles) with the minimum removal of debris as quickly as possible.<sup>(1)</sup>

Approximately 570 elementary and junior high school students in the Unosumaicho district of Kamaishi City, Iwate Prefecture, which was damaged by the tsunami, were all saved by escaping to the Sanriku Coast Expressway (Kamaishi Yamada Road), which had been constructed on higher ground just before the earthquake. The students were able to use that road to move to a gymnasium where they found shelter. The road was also used as a detour route to move people and goods around, which demonstrated its function as a “path to life” during a disaster and as a way to avoid isolating the area.<sup>(2)</sup> The subsequent full-scale road network restoration and reconstruction processes that were based on these experiences called for the establishment of a new disaster-resilient network connecting the region inside and out that would include functions to facilitate reconstruction in each area, support people in their daily lives (e.g., medical services, industries, tourism), and protect lives in a disaster (evacuation, critical care, recovery).<sup>(3)</sup>

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Recovery and reconstruction of roads (Issues 1, 2)

<Emergency response>

Starting one day after the earthquake, the national government worked together with local construction companies, Japan’s Ground Self-Defense Force, police, and other groups to clear roads of debris to ensure they were wide enough for ambulances, police, the SDF, and other emergency vehicles to pass through, based on an agreement concluded by the Tohoku Regional Development Bureau with local construction industry associations on the emergency restoration of roads. Amidst relentless aftershocks immediately after the disaster and tsunami warnings, workers pushed through the debris to open up roads, in consideration of both survivors and those who had perished. Emergency restoration work was carried out on collapsed areas with an eye on full restoration. In less than a week after the disaster, the vertical axis along the inland and coastal areas, and multiple horizontal lines connecting them had been cleared for use as access roads for relief supplies and aid (Case study 34-1).<sup>(1)(4)</sup>

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National and prefectural roads in the coastal region flooded during high tide due to land subsidence, so the roads were raised using embankments. Finely tuned responses were taken, such as checking the tide level and only closing the road when it flooded. The Japan Prestressed Concrete Contractors Association and Japan Bridge Association performed emergency inspections of bridges that are important for emergency transport until mid-May.<sup>(1)</sup>

### <Recovery and reconstruction>

With the restoration and reconstruction of roads, access to newly constructed disaster prevention group relocation housing complexes was ensured. Road construction was integrated with land readjustment projects, and bridges and other structures were built to be more earthquake resistant with extended service lives in many areas.<sup>(5)</sup>

Road projects were developed for reconstructed roads, such as the Sanriku Coast Expressway (Pacific coastal axis which serves as the backbone for reconstruction), and reconstruction support roads (cross-sectional roads connecting the Pacific coastal area and Tohoku Expressway), both of which are instrumental to reconstruction, and road construction connecting the entire Tohoku region was completed within fiscal 2020, the reconstruction and revitalization period, excluding some sections. In light of experiences during the disaster in the Unosumaicho district and other areas, the basic design was reviewed in order to complete reconstruction of the roads equipped with required functions within 10 years from the disaster. Six design concepts were formulated ((1) Ensure resilience [routes should avoid tsunami flooding areas], (2) Achieve low costs [construct two lanes and compact ICs], (3) Support reconstruction city planning [consider access with residential zones planned to be constructed on higher ground in Minamisanriku Town], (4) Flexible location of ICs connected to hubs [additional installation of half IC in Miyako City that connects to commercial and industrial facilities around rest stops], (5) Strengthen evacuation functions [set up emergency escape routes and stairs], and (6) Check accessibility through ICT (information and communication technologies)).<sup>(3)(6)(7)</sup>

Interviews were held with local leaders on routes, IC locations, and IC types during the preliminary design process, and by working with local communities, it was possible to open all but a few roads during the reconstruction and revitalization period. Undoubtedly, only roads that are truly necessary should be constructed and wasteful spending should be eliminated, built on the premise of future city development in the region.

Road development in Iwate Prefecture has also been coordinated with reconstruction city planning. For example, the Noda section of the Noda-Yamagata route, a major regional road, was newly developed (and opened to traffic in December 2018) to connect areas that have been relocated to higher ground to National Route 45 in conjunction with a project on promoting group relocation for disaster prevention.<sup>(8)</sup> The Omoehanto route, a key regional road in Miyako City (Kumanotaira—Tsugaruishi) was constructed by relocating a prefectural road along the coast to the mountain side in order to eliminate any sense of isolation caused by flooding from the tsunami. This route also serves to support the region's key fisheries industry by improving access from the Omoe fishing port to National Route 45. Connected to the general prefectural highway Tsugaruishi-Teishajo route (Tsugaruishi), this route was put into service prior to the opening of Sanriku Railway (March 2019)

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and is directly connected to the reconstructed Tsugaruishi Station, which opened on the Sanriku Railway's Rias Line in March 2019.<sup>(9)(10)</sup>

### [Lessons learned and know-how gained]

#### (1) Develop systems to ensure quick recovery based on diverse partnerships.

- Develop a collaborative system before a disaster occurs with related organizations to ensure emergency responses and recovery for road networks, as it will be necessary to collaborate in a number of different ways, including securing routes immediately after a disaster.
- Road work should be done quickly during emergency response and recovery periods, but with an eye on the main restoration work ahead.

#### (2) Aim to complete reconstruction roads as quickly as possible, taking different perspectives into consideration.

- When roads being constructed will help in the reconstruction process, roads should be developed as quickly as possible, taking different perspectives into consideration, such as improving disaster prevention capabilities and use in city development.

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### **35) Recovery and reconstruction of railroads, ports, and airports**

[emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) Recovery and reconstruction of regional transportation systems, such as railways  
(2) Recovery and reconstruction of ports  
(3) Recovery and reconstruction of airports

#### **[Situation and issues created by the Great East Japan Earthquake]**

Transportation and logistics networks, such as railways, ports, and airports, were heavily damaged in the Great East Japan Earthquake. Emergency responses were required to restore these networks as quickly as possible to save lives and supply aid.

In the full-scale recovery and reconstruction process that followed, local transportation networks were required to reflect changing areas and declining/aging populations, as well as to build new disaster-resilient networks both in and outside regions, and to revitalize the local economy as a result.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Recovery and reconstruction of railways (Issue 1)

<Emergency response>

Railway and bus operators worked together to operate replacement bus services on the JR Yamada Line, Sendai Municipal Subway Namboku Line, Sendai Airport Access Line, and other lines that were not in service, while railway operators worked hard to restore derailed trains and damaged elevated bridges and tracks. Due in part to seismic reinforcement and other measures, most lines were restored in one to two months, with the exception of damaged routes along the coast. In addition to transporting support personnel, JR Freight's emergency oil train played an active role in transporting fuel that had been depleted in disaster areas, detouring along the JR Uetsu Line, JR Ou Line, Aomori Railway Line, and Iwate Galaxy Railway Line to enter Morioka.<sup>(1)</sup>

<Recovery and reconstruction>

The JR Yamada Line's coastal route (Miyako—Kamaishi), which had been out of service, reopened in March 2019 with the transfer of control to Sanriku Railway, which had been operating in the coastal areas of Iwate Prefecture since that time. This move was made in response to the desire of local authorities located along the railway line to restore operations and with the aim of creating a sustainable railway through efficient, community-based management. This will connect 163 km of Iwate Prefecture's coastline into a single line, making Sanriku Railway the longest third-sector railway company in Japan, and is expected to play a role in supporting reconstruction efforts.<sup>(2)(3)</sup>

In light of advancing motorization and decline in railway passengers before the earthquake, the JR Kesenuma and Ofunato lines resumed operations in December 2012 and March 2013, respectively, through Bus Rapid Transit (BRT) services combining bus routes and general roads, which allowed operations to be restored at lower costs and in shorter times than could be achieved by restoring rail services. These lines are highly convenient, with new stations being built or relocated

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and allowing for flexibility in route changes made in line with reconstruction city planning (Case 35-1).

In addition to railways, efforts were also made to provide bicycle parking for electric carts for senior citizens who moved to higher ground at bus stops as a form of local transportation to ensure mobility for disaster victims.<sup>(4)</sup> Ishinomaki City and the Japan Car Sharing Association also worked together on an initiative to operate a car sharing project,<sup>(5)</sup> which was instrumental in building communities, as well as improving local mobility issues.

→*Related topic: 50) Restoring tourist facilities and functions*

### • Recovery and reconstruction of ports (Issue 2)

#### <Emergency response>

In the immediate aftermath of the disaster, the national government issued a request to the Japan Dredging and Reclamation Engineering Association and other organizations, with which the Tohoku Regional Development Bureau and other bodies had concluded agreements in advance, to open sea routes. From March 14, the day after the tsunami advisory was lifted, the Regional Development Bureau and port administrators (Iwate, Miyagi, Fukushima, and other prefectures) opened up sea routes at major ports with the use of shipping vessels owned by members of the Japan Dredging and Reclamation Engineering Association and other organizations. With the arrival of the first ships at the ports in Miyako and Kamaishi on March 16, port and land transport companies began to transport emergency relief supplies received at the ports. Systems had been launched and implemented for this type of work to restart operations and the subsequent emergency restoration of port facilities, including the establishment of a liaison and coordination committee by the Tohoku Regional Development Bureau that included the participation of construction companies, submarine operators, and others from the private sector.<sup>(6)</sup>

#### <Recovery and restoration>

The Tohoku Regional Development Bureau and administrators at each port affected by the disaster established a council that included representation from local authorities and companies located at ports. Restoration and reconstruction work on port facilities proceeded based on restoration and reconstruction policies and timetables developed by the council after examining how logistics functions could support industrial recovery.<sup>(6)</sup>

These activities resulted in the restoration or new construction of levees and other structures for disaster prevention, as well as the formulation of port BCPs at key ports and the implementation of disaster drills based on these BCPs. From an economic perspective, some ports that had been affected by the disaster, such as the Port of Sendai-Shiogama, Hachinohe Port, Port of Onahama, and Kamaishi Port, handled more cargo than before the disaster, reaching record highs. This is due to the development of enhanced port functions (e.g., construction of shipping channels, quays, wharves, cargo handling machinery), construction of high-standard roads behind ports, and an increase in the number of related companies locating to these areas as a result. The number of domestic and international cruise ships calling to the Tohoku region has also increased steadily and reached a record high in 2019.<sup>(7)</sup>

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### • Recovery and reconstruction of airports (Issue 3)

#### <Emergency response>

The Ministry of Land, Infrastructure, Transport and Tourism's TEC-FORCE (emergency disaster response team) began emergency drainage using drainage pump vehicles at Sendai Airport on March 13, and the SDF and U.S. military began the process of removing debris from March 14. Partial operations resumed on April 16, with the airport subsequently serving as a base for the U.S. military's TOMODACHI operations. Commercial flights resumed on April 13.<sup>(8)(9)</sup>

During the period of time Sendai Airport was out of service, support workers from national aviation authorities landed at Hanamaki, Yamagata, and Fukushima airports. For about one month after the disaster, the airports operated 24 hours a day, serving as bases for transporting relief workers and supplies to disaster areas. Medical services were also provided, including the establishment of an airport SCU (Staging Care Unit, temporary medical facility for wide-area transport bases) at Hanamaki Airport, and stays by DMATs (Disaster Medical Assistance Teams) at Fukushima Airport.<sup>(2)(10)(11)(12)</sup>

#### <Recovery and restoration>

Restoration and reconstruction efforts at Sendai Airport included the restoration of damaged facilities and equipment, as well as improvements to earthquake resistance.<sup>(13)</sup> In May 2013, Miyagi Prefecture launched the Sendai Airport Supporter Meeting to Achieve 6 Million Passengers & 50,000 Tons of Freight, a public-private partnership that aimed to double the number of passengers and volume of cargo handled at Sendai Airport from previous peak periods. Five meetings were held to build momentum and disseminate information on outsourcing operations at Sendai Airport to the private sector, which was achieved in July 2016.<sup>(14)(15)(16)</sup>

### **[Lessons learned and know-how gained]**

(1) Quickly implement emergency responses based on collaborative agreements developed with various organizations in advance.

- Collaboration with private companies and local authorities is essential for prompt and accurate emergency aid for transportation and logistics networks and emergency restoration of port activities in the immediate days after a disaster. A collaborative system designed for this purpose should be created before a disaster occurs.

(2) Promote the restoration and reconstruction of transportation networks with a view to the future of the region.

- Reconstruction projects for transportation infrastructure must be implemented in accordance with local characteristics, while also taking sustainability into account. Restoring infrastructure back to its original form may not be the only option available, so it is necessary to consider innovative ideas, such as introducing BRT to restore railway operations, enhancing port functions, and applying the expertise of the private sector.



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### **36) Recovery and reconstruction of coastal levees** [recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to promote the early restoration and reconstruction of coastal levees.  
(2) How to coordinate tsunami disaster prevention responses with city planning for the development of coastal levees.

#### **[Situation and issues created by the Great East Japan Earthquake]**

Many coastal protection facilities and other infrastructure were damaged by the tsunami during the Great East Japan Earthquake, as the height of the tsunami far exceeded the design target height when they were constructed, causing extensive destruction in back lying areas. In response, the Central Disaster Management Council in the Cabinet Office announced a policy in June 2011 for the development of comprehensive tsunami measures for L2 tsunamis (largest class of tsunamis that occur infrequently, but cause extensive damage) centered on the evacuation of residents, as well as for the construction of infrastructure to protect coastal areas against L1 tsunamis (those that occur more frequently than the largest class of tsunamis and cause significant damage, although heights are lower). The policy also indicated the need for structures\* that would allow the facility to remain unshakable even if waves exceed the L1 tsunami height. Various requests were also received on coastal protection facilities from the perspective of city development.<sup>(1)</sup>

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

• Acting agency on the direct behalf of the government on recovery efforts in the southern coast of Sendai Bay (Issue 1)

The Great East Japan Earthquake tsunami that hit the southern coast of Sendai Bay, located in the southern part of Miyagi Prefecture, was so large that it exceeded 10 meters in height in some places, completely destroying almost the entire length of the levees that had been installed along a series of coastlines. The Tohoku Regional Development Bureau of the Ministry of Land, Infrastructure, Transport and Tourism acted as the agency for integrating disaster recovery efforts in response to an emergency request from the governor of Miyagi Prefecture on March 30, 2011. Coastal levees were restored by the end of fiscal 2012 in areas behind Sendai Airport, sewage treatment plants and other facilities essential for the recovery and reconstruction of the region. The remaining sections were completed by the end of fiscal 2016.

• Recovery and reconstruction of coastal levees based on discussions on city development (Issues 1, 2)

With the severe damaged sustained by infrastructure to protect coastal areas, such as coastal levees, it became necessary to stipulate new top heights for levees and other infrastructure, in order to conduct emergency restoration work in stages to prevent secondary disasters caused by tsunamis and storm surges and move forward with the main restoration work on coastal levees for

## 2. Infrastructure Development Including Transportation and Logistics Networks

reconstruction in areas affected by the disaster. Subsequently, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Land, Infrastructure, Transport and Tourism presented methods for setting water levels designed for tsunamis and other criteria in July 2011 to determine the heights of coastal levees that served as the basis for formulating reconstruction plans. Equipped with this information, the three prefectures of Iwate, Miyagi, and Fukushima determined water levels designed for tsunamis for each of the regional coastlines in the prefectures (cohesive series of coastlines assumed to be designed with settings for the same external tsunami force) by October 2011, based on the opinions of related municipalities and other parties.<sup>(2)(3)(4)</sup> As coastal administrators, prefectural and municipal governments specified the heights of coastal levees on the premise of these designed tsunami levels, comprehensively taking into account the diversity of coastal functions, environmental preservation, balance with surrounding landscapes, economic efficiency, ease of maintenance and management, workability, and public accessibility, while also considering discussions by municipalities on city development.<sup>(5)</sup>

Reconstruction measures for urban areas were discussed from the perspective of city development, such as rebuilding in “areas where sites are not inundated by an L2 tsunami (generally at a depth of 2 meters or less)” and relocation to higher ground or elevated land with embankments in “areas where sites are inundated by an L2 tsunami (generally at a depth over 2 meters)”, or a combination of both.<sup>(6)</sup>

As a result of integrating the restoration and reconstruction of coastal levees with city development, the prefectural and municipal governments in the six prefectures affected by the earthquake conducted reviews in their capacity as coastal administrators on 197 coastal levees, or about 30% of the 621 levees that were already being constructed, lowering the height of the levees to below designed tsunami levels and changing locations, based on discussions with local communities, and in light of conditions in designated disaster risk areas and group relocation to higher ground.<sup>(5)</sup>

- Improvements to sluice gates and river levees (Issue 1)

In addition to the construction of coastal levees, tsunami run-up measures were also put in place at the mouths of rivers, including the reconstruction and new construction of sluice gates, as well as the raising and new construction of existing levees. Restoration work was carried out in Miyagi Prefecture adopting levees rather than sluice gates,<sup>(7)(8)(9)</sup> prompting restoration work to be carried out by covering the front and back sides and tops of the levees with concrete.<sup>(10)</sup>

- Consideration of diverse perspectives (Issue 2)

With the main focus of restoring coastal levees lying on the construction of a continuous structure along the coast, it was important to consider the impact on local landscapes.

Experts in river, coastal, and landscape engineering and relevant government officials compiled Guidance on Landscape Considerations in the Restoration of River and Coastal Protection Structures to support the reflection of considerations by the national and prefectural governments on landscapes in plans, with the aim of maintaining and improving landscapes in coverage areas after restoration was complete.

## 2. Infrastructure Development Including Transportation and Logistics Networks

Coastal levees and other structures were developed in local areas through consensus building with local communities, and with the following diverse perspectives in mind.

### <Securing views from urban areas to the sea>

Local residents were concerned that the newly constructed levees would obscure ocean views, so Onagawa Town, Miyagi Prefecture responded with a combination of relocation to higher ground and building up areas. In response to feedback from communities asserting that the landscape itself is a local asset, the national route at Hikado fishing port in Kesenuma City, Miyagi Prefecture will be raised along with the levees so that the sea can be seen from the road behind the levees. A combination of flap-gate levees and raising the levees on the land-facing side secured views from local communities to the sea in Naiwan district in Kesenuma City, Miyagi Prefecture (Case study 36-1).

### <Considerations for the tourism industry>

Public and commercial facilities have been integrated into levees constructed in Naiwan district in Kesenuma City, Miyagi Prefecture and the Yuriage district in Natori City, Miyagi Prefecture. In the former example, the first floor of the facility is connected to the city center, with the second floor connected to the levees, which creates a waterfront facility linking the city center to the seaside. In the latter example, commercial facilities are constructed on top of levees, which provide pleasant and comfortable spaces for dining by the water (Case study 36-1). Levees in the Nebama district of Kamaishi City, Iwate Prefecture were not raised, leaving the swimming beach and other facilities on the seashore with the construction of a road that functions as a secondary levee.<sup>(11)</sup>

### <Considerations for the landscape and natural environment>

Levees designed with greenery and decorative stones were planned and constructed in the coastal areas of Fukushima Prefecture,<sup>(12)</sup> Hikado fishing port (Kesenuma City, Miyagi Prefecture), Iwanuma City (Miyagi Prefecture), and the Ogatsucho-Namiita district (Ishinomaki City, Miyagi Prefecture), out of consideration for the landscape and other factors. In some cases, local residents are also involved in their maintenance, management, and use, with innovative ideas that make these landscapes feel more familiar to communities (Case 36-1).

In some cases, careful consideration has been given to the surrounding ecosystems in design and construction plans. The construction plan at Hikado fishing port (mentioned above) was developed in consideration of birds landing in the vicinity (Case study 36-1). Benthic organisms and vegetation have been taken into consideration, in addition to birds, and transplanted at Nakajima Beach in Kesenuma City.<sup>(13)</sup>

### [Lessons learned and know-how gained]

- (1) Envision the effective integration of infrastructure to protect coastal areas and reconstruction measures for urban areas before damage from a tsunami.
  - Envision reconstruction measures for urban areas to facilitate rapid restoration and reconstruction on the basis of disaster management and prevention measures for L1 and L2 tsunamis.
  
- (2) Determine the height of coastal levees according to local conditions, even if water levels are designed for an L1 tsunami.
  - Develop coastal levees from the perspectives of securing views from urban areas to the seas, considerations for the tourism industry, landscapes, and natural environment, as well as safety, while building consensus with local residents.

\* Levees that can reduce the amount of flooding and increase lead times for evacuation, even if a tsunami breaches a coastal protection structure, by extending the time until structures are destroyed or collapse.<sup>(1)</sup>

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## Part III: Revitalization of Industries and Livelihoods

### 37) Initiatives aimed at resuming business operations [emergency response phase, recovery phase]

**[Issues]** (1) How to support the early resumption of business by SMEs.  
 (2) How to proceed with the restoration of damaged facilities and equipment.

#### [Situation and issues created by the Great East Japan Earthquake]

The Great East Japan Earthquake dealt a heavy blow to industrial and economic activities, particularly in the Tohoku region. According to the Small and Medium Enterprise Agency, there were approximately 800,000 companies located in the tsunami- and earthquake-affected regions, and the total damage to commerce and industry was estimated at approximately 1,255.8 billion yen in the three Tohoku prefectures.<sup>(1)</sup> In particular, there was a high concentration of automotive and electronics industry companies in the affected areas, and disruptions to these supply chain links resulted in a record 15.5% month-on-month decline in the national Industrial Production Index in March 2011, and a 3.5% year-on-year decline for the entire year which caused significant disruptions to our country's production activities.<sup>(2)</sup>

Affected areas faced challenges in resuming business activities as soon as possible, setting up temporary offices, and restoring damaged facilities and equipment. In particular, the rebuilding of SMEs with limited financial resources was an urgent task for the recovery of regional economies.

#### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Business continuity through emergency response efforts and production outsourcing (Issue 1)

Oil Plant Natori Corporation in Natori City, Miyagi Prefecture had a business continuity plan (BCP)\* in place in preparation for emergencies, and was able to minimize their damage by safely shutting down critical equipment at its plant, and directing tanker truck drivers and other drivers to evacuate vehicles to inland locations when the tsunami hit. Since its reprocessing plant was damaged, the company transported waste oil to industry peer companies in Iwate and Yamagata prefectures to continue their refining operations<sup>(3)</sup> in accordance with their BCP.

Yamani Soy Sauce Co., Ltd. in Rikuzentakata City, Iwate Prefecture, lost its head office and factory in the tsunami, but was able to continue its business through fables production (a method of running a business in which a company completely outsources production to other companies without operating their own production facilities) using their surviving production recipes and contracting out their production to Sasacho Brewing Co., Ltd. in Hanamaki City under a license agreement.<sup>(4)</sup>

These events reaffirmed the importance of formulating a BCP in normal times, deciding on ways and means of carrying out business activities — including through production outsourcing — and actively collaborating with other companies in order to minimize damage in an emergency.<sup>(1)</sup>

- Business continuity support by industry associations (Issue 1)

The All Japan Federation of Printing Industry Associations (AJ-PIA) asked printing machinery manufacturers nationwide to provide maintenance for machines installed in the affected areas, and

asked manufacturers of supplies nationwide to ensure a stable supply of goods and stable prices. AJ-PIA also set up a system where member companies that were able to take on additional work would be referred to affected member companies who faced manufacturing difficulties so that member companies would be able to substitute production for each other.

At the request of AJ-PIA, Kinki Printing Machinery & Equipment Association member companies provided maintenance services for affected business connections to assist in their recovery, and also repaired salt-damaged machinery almost free of charge. As for raw materials, organizations such as the Japan Recovered Paper Association asked its members to prioritize domestic supply, and ensure stable supply and prices.<sup>(5)</sup>

- Setting up business consultation desks and dispatching business specialists (Issue 1)

In November 2011, Miyagi Prefecture set up the Recovery Consultation Center Regional Office to serve as consultation offices at chambers of commerce and industry, and commerce and industry societies in the coastal areas. By assigning management and financial specialists as earthquake disaster advisors, these Centers provided instructions on how companies can smoothly carry out procedures that were required to resume their business.<sup>(6)</sup>

The Organization for Small and Medium Enterprises and Regional Innovation, JAPAN (SME Support, JAPAN) set up a Reconstruction Support Advisor System and dispatched SME management consultants and other business specialists to affected SMEs to provide advice on business reconstruction planning, and sales channel development, as well as to local authorities and support agencies to provide advice on reconstruction planning.<sup>(7)</sup>

- Resumption of business operations through the construction of temporary offices (Issue 1)

In order to help affected companies resume business operations as soon as possible, SME Support, JAPAN built temporary business offices on sites provided by municipalities and leased them to affected companies free of charge via their municipalities.

Many businesses located in Iitate Village, Fukushima Prefecture, were forced to evacuate due to the nuclear accident. The village asked for cooperation from municipalities to where businesses in the village evacuated so that they could continue their activities in places to where they evacuated. In response, Fukushima City, one of places to where the villagers evacuated, developed plans for temporary factories for affected Iitate businesses in the city's Matsukawa Industrial Park, and this paved the way for SME Support, JAPAN to build temporary factories and other facilities.<sup>(8)</sup>

- Business resumption support through a network of industry support organizations (Issues 1, 2)

Industry support organizations across the country utilized their regular networks to support the early resumption of business by SMEs and others affected by the disaster. The Japan Chamber of Commerce and Industry (JCCI) implemented their Free Matching Support Project for Idle Machinery as a way to provide idle machinery and other assets in the possession of JCCI members nationwide to SMEs affected by the disaster. Specialists — "machine connoisseurs" — matched idle machinery and other equipment to the needs of affected SMEs, greatly contributing to the early resumption of



their business (Case study 37-1).

In addition, in August 2015, the Public-Private Fukushima Soso-region Revitalization Joint Team run by the national government, Fukushima Prefecture, and private sector was established to assist affected businesses and farmers in Hamadori and other regions of Fukushima Prefecture resume their businesses. The team provides support including individual visits, consultancy support, sales channel development, and the securing of human resources. Based on the amended Act on Special Measures for the Reconstruction and Revitalization of Fukushima promulgated and enforced in May 2017, the Ministry of Economy, Trade and Industry and the Ministry of Agriculture, Forestry and Fisheries dispatched officials to the Organization for Fukushima Soso-region Revitalization, the core of this team.

- Support for the restoration of facilities and equipment through group subsidies (Issues 1, 2)

In order to expeditiously recover the economy and employment in affected regions, steps needed to be taken to promote the "revival of industrial vitality," "reconstruction of affected regions," "revitalization of communities," and "preservation of employment" in a multilayered manner for the entire region, and not for the recovery of any one particular business. In order to promote joint projects by groups of businesses, the subsidy for disaster recovery costs for SME associations and other common facilities were introduced (Subsidy Project for the Recovery and Installation of Facilities for Groups of SMEs) in FY2011, under which 3/4 (1/2 by the national government and 1/4 by the prefecture) of the cost of facility restoration and other actions based on the group's reconstruction project plans taken by a business in a group of SMEs, etc., were to be subsidized. The formulation of reconstruction project plans by groups of affected SMEs were expected to make substantial contributions to the formation of supply chains, and to the regional economy and employment. This led to effective support for the recovery and reconstruction of affected regions.

Minex Co., Ltd. in Kamaishi City, Iwate Prefecture, used the subsidy for disaster recovery costs for SME associations and other common facilities (Subsidy Project for the Recovery and Installation of Facilities for Groups of SMEs) to build fertilizer production facilities, etc., and worked with raw material suppliers, etc., to develop high value-added fertilizers, etc., and established a supply chain to ensure the expeditious and stable supply of fertilizers, thereby contributing to the resumption of agriculture in tsunami affected regions through actions including the supply of fertilizer for salt removal measures. The company has also contributed to stimulating the local fishery industry by developing fertilizers that use unused fishery resources.<sup>(9)</sup>

**[Lessons learned and know-how gained]**

- (1) Provide support through inter-company collaboration and industry support organizations to help affected companies continue and resume their businesses.
  - Formulate a BCP in normal times and make arrangements for emergency response, including the outsourcing of production.
  - Establish a support scheme at an early stage, including support from associations and experts, to enable the early resumption of business.
  - Promote joint projects run by groups of businesses to enable early recovery of the economy and employment in affected regions.
- (2) Provide support for securing sites for temporary factories, and the introduction of equipment.
  - If a site for a temporary factory, etc., cannot be secured within a municipality, secure a site outside the municipality through inter-municipal cooperation.
  - To restore equipment, make use of industry support organizations' networks and support measures for SME groups.

- \* Business Continuity Plan (BCP): A plan that defines activities that businesses should carry out during normal times, and the methods and means for ensuring business continuity in the event of a natural disaster, major fire, terrorist attack, or other emergency, for the purpose of enabling the continuation or early recovery of core businesses while minimizing damage to business assets.

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### 38) Funding support [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to support financing for affected businesses for reconstruction.  
 (2) How to solve the problem of overlapping debts, which is an obstacle to business recovery.

#### **[Situation and issues created by the Great East Japan Earthquake]**

Since immediately after the earthquake, the government asked financial institutions to be flexible in making changes in their terms and conditions, such as for concessions on repayments, in light of the severe situations that disaster victims faced. In addition, in order to recover and reconstruct industries, the most pressing issue was how to expeditiously and smoothly procure funds that affected businesses needed to recover their operations. In particular, the problem of overlapping debts\* incurred by businesses, where debts from before the earthquake would place a burden on business recovery — which was an obstacle to industrial recovery in the Great Hanshin-Awaji Earthquake — is a policy issue that must be resolved for this earthquake as well. In addition, because financial institutions in the affected areas were themselves affected by the disaster, and there were concerns that their financial conditions would deteriorate significantly, there was a need to maintain and strengthen the financial functions in these regions and provide peace of mind for depositors.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Expanding loan and credit guarantee programs (Issue 1)

The national government implemented strong support measures for cash flow, which included establishing the Great East Japan Earthquake Reconstruction Special Loan (implemented since May 2011), under which the Japan Finance Corporation and the Shoko Chukin Bank provide long-term, low-interest loans for equipment and working capital needed for business recovery, providing expeditious and smooth financing for SMEs and small businesses that incurred direct or indirect damage from the earthquake, as well as establishing the Emergency Credit Guarantee for Recovery from the Great East Japan Earthquake (implemented since FY2011), in which credit guarantee associations guarantee 100% of loan amounts (up to 280 million yen) in addition to the normal guarantee limit to supplement the creditworthiness of SMEs that lost real estate and other assets in the earthquake. By the end of September 2020, 304,000 special loans were provided for a total of 6,123.2 billion yen, and 148,000 emergency guarantees were provided for a total of 2,989.6 billion yen, <sup>(1)</sup> contributing to the early recovery and reconstruction of many SMEs and small businesses that were affected by the disaster.

The local government of the three prefectures affected by the disaster (Iwate, Miyagi, and Fukushima), established a program that provided guarantee fee supplementations for loans to disaster victim businesses that were guaranteed by credit guarantee associations, under which private financial institutions provided cash flow support.

- Procuring funds by crowdfunding (Issue 1)

In some instances, during recovery, there were cases where crowdfunding was used to collect funds on the Internet from an unspecified number of supporters. For example, Yagisawa Shoten Co., Ltd. of Rikuzentakata City, Iwate Prefecture, a soy sauce and miso manufacturer that has been in business for over 200 years, lost all of its factory and storehouse equipment in the tsunami, but resumed soy sauce production by OEM in April 2011, and rented a factory in Ichinoseki City in December 2011 to resume production of its broth and sauce. To raise funds to restart its business, the company utilized a hybrid investment and donation mechanism called the Securite Disaster Area Support Fund run by Music Securities Inc. (where individuals choose a fund for a project they wish to support and deposit their funds, about half of which is earmarked as an investment and about half as a donation), and was able to raise its target amount of 50 million yen in three months from its Yagisawa Shoten Fund. Combined with its follow-up Yagisawa Shoten Soy Sauce Brewing Fund, the number of the company's supporters exceeds 3,000.<sup>(2)(3)</sup>

The company rebuilt its own factory in Ichinoseki City in October 2012 and began manufacturing in February of the following year. Since the earthquake, the company has developed a large number of processed foods, such as Pacific saury dried with soy sauce and other ingredients, and is expanding its business through online sales as well.<sup>(4)</sup>

- Maintaining and strengthening the financial functions in affected areas (Issue 1)

In June 2011, the Act on Special Measures for Strengthening Financial Functions was amended with the addition of special provisions for earthquake disasters, easing the conditions for government capital participation in regional financial institutions that face the need to enhance their capital base to provide smooth access to credit in the affected areas. Through these special provisions for earthquake disasters, 12 financial institutions, including Kesenuma Shinkin Bank in Kesenuma City, Miyagi Prefecture, were injected with 231 billion yen in public funds by the end of 2012 (a portion of which has already been repaid to the government) <sup>(5)</sup>, thereby preserving and strengthening regional financial functions. This enabled regional financial institutions to provide SMEs with a smooth supply of funds and multifaceted support for recovery from the earthquake, thereby contributing to the restoration of the regional economy and reconstruction of affected regions (Case 38-1).

- Establishment of the Industry Reconstruction Corporations and the Corporation for Revitalizing Earthquake-Affected Business(Issue 2)

In order to solve the problem of overlapping debts, the six affected prefectures (Iwate, Miyagi, Fukushima, Aomori, Ibaraki, and Chiba) established Industrial Recovery Consultation Centers in October 2011 as extensions of their prefectural Recovery Support Councils, and also established Industry Reconstruction Corporations (excluding Aomori Prefecture) through joint investment from local financial institutions and the Organization for Small and Medium Enterprises and Regional Innovation, JAPAN<sup>(6)</sup> to formulate business recovery plans and coordinate with creditors. As of the end of November 2020, there were 6,825 consultations and 1,374 agreements of support from

financial institutions (339 decisions to purchase loans).<sup>(7)</sup>

In February 2012, the national government established the Corporation for Revitalizing Earthquake-Affected Business. The corporation provided support including loan purchases, debt guarantees, and debt relief<sup>(8)</sup> to businesses that had formulated business recovery plans that cover up to 15 years, and have been approved for support. As of the end of November 2020, there were 2,938 consultations, 744 approvals for support, and 709 loan purchases.<sup>(9)</sup> This support led to a total of approximately 14,200 jobs preserved in three of the affected prefectures. Meanwhile, all organizations experienced longer periods of time than they would have liked to reach agreements with concerned financial institutions, revealing issues such as some cases taking more than the ideal amount of time before support could be provided.<sup>(10)</sup>

### **[Lessons learned and know-how gained]**

#### **(1) Provide expeditious and smooth cash flow support for affected businesses.**

- Expeditiously establish strong loan and guarantee programs to enable the early recovery and reconstruction of affected businesses.
- Businesses use crowdfunding to raise funds from a large pool of individuals.
- Establish and appropriately manage a framework that preserves and strengthens the financial functions of regions.

#### **(2) The problem of overlapping debts incurred by affected companies that are expected to generate sufficient cash flow going forward should be addressed through the purchase of old debts and other avenues, as well as long-term business recovery plans.**

- SME Revitalization Support Councils, etc., should work with financial institutions in normal times to provide support for business recovery.
- In order to expeditiously resolve the problem of overlapping debts, systems and the like should be established if necessary to carry out case processing.

\* The problem of overlapping debts: A problem in which businesses with existing debts face difficulties in obtaining new loans when they need to borrow large amounts of money in response to natural disasters, etc. Business owners and others whose factories and stores were swept away by the tsunami in the Great East Japan Earthquake faced this problem when they sought to recover their businesses.

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### 39) Promoting corporate location [recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to promote the location of companies to disaster-affected areas for sustainable growth.  
 (2) How to link companies newly locating in the region to the strengthening of regional industrial agglomerations.

#### **[Situation and issues created by the Great East Japan Earthquake]**

The earthquake damaged factories and disrupted supply chains in the Tohoku region, causing severe damage to the region's manufacturing industry. The value of shipped manufactured goods, etc. from the coastal areas of the three affected prefectures fell sharply immediately after the earthquake. Although generally recovered to pre-earthquake levels in 2018, there still continued to be disparities in the state of recovery among local authorities in the coastal areas, and it was necessary to consider how to provide appropriate business support in line with local issues and realities.<sup>(1)</sup>

In order to achieve sustainable economic growth and full-scale industrial recovery in the affected areas, it was necessary to promote the location of new industries with high growth potential in addition to strengthening the competitiveness of existing industries. Based on the lessons learned from the nuclear accident, the coastal areas of Fukushima Prefecture have been strategically promoting the location of new industries that will drive Japan's national economy.

Another important industrial policy issue is to promote the strengthening of the agglomeration of key industries in the region, in conjunction with moves by major companies to locate their production bases in the affected areas as part of reconstruction assistance.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Incentives through company location subsidy programs (Issue 1)

The national government has created various company location subsidy programs that address regional issues, such as the Subsidy for Companies Locating Businesses and Creating Jobs in Areas Affected by Tsunami and/or Nuclear Disasters (Tsunami Location Subsidy) for the coastal tsunami-affected areas of Tohoku and Fukushima Prefecture, and the Subsidy for Companies Locating Businesses in Support of Residents' Independence and their Returning Home (Independence Location Subsidy) for areas under evacuation orders in Fukushima Prefecture to support the residents' return to their hometowns. The subsidies have contributed to regional industrial promotion and job creation by strong supporting efforts to attract new companies and the improvement of the production capacity of existing companies.<sup>(2)(3)</sup>

NS KIKI Co., Ltd., a precision machining company in Ishinomaki City, Miyagi Prefecture, expanded its factory and hired four new employees, taking advantage of a Tsunami Location Subsidy program in order to respond to the growth in orders for aircraft engine parts and other products.<sup>(4)</sup>

- Leveraging the region's locational environment to attract companies (Issue 1)

BioChem Corporation makes effective use of unused marine resources by manufacturing bulk pharmaceuticals, cosmetic ingredients, health food ingredients, and other products extracted from salmon milt. BioChem used the Tsunami Location Subsidy program to construct a new plant on a site from where people relocated of the project on promoting group relocation for disaster prevention located in Rikuzentakata City (operations launched in 2021). The Sanriku coast is rich in salmon and other marine resources, and there is a concentration of fishery processing companies near the construction site, making it an ideal location for companies and university research facilities that use marine resources (Case 39-1).

→ *Related topic: 25) Efficient use of sites from where people relocated*

- Promoting the Research and Development, and New Industries Creation Center Initiative (Issues 1, 2)

In the Hamadori region of Fukushima Prefecture, the Fukushima Innovation Coast Framework is being implemented as a national project that aims to build a new industrial foundation with a focus on six areas: decommissioning; robots and drones; energy, environment, and recycling; agriculture, forestry, and fisheries; medical care; and aerospace. Japan Atomic Energy Agency has built a research building for the Collaborative Laboratories for Advanced Decommissioning Science in Tomioka, Fukushima Prefecture, the Fukushima Innovation Coast Promotion Organization (FIPO), established in July 2017, is working with the national government and Fukushima Prefecture to realize the initiative, and is carrying out robot development and demonstrations at the Fukushima Robot Test Field in Minamisoma City and Namie Town. With the aim of creating new industries based on these centers of research, FIPO also organizes seminars for companies who potentially seek to relocate, match-makes local companies with companies that have moved to the area, and match-makes for businesses related to nuclear power plant decommissioning.<sup>(5)</sup>

In the environmental domain, Soso Smart Eco-Company Co., Ltd. (Okuma Town, Fukushima Prefecture) has been engaged in a project that recycles asphalt and other noncombustible waste generated from the construction of specified reconstruction and recovery zones since October 2020.<sup>(6)</sup>

→ *Related topic: 25) Efficient use of sites from where people relocated*

- Promoting the Next-Generation Medical Industry Agglomeration Project (Issues 1, 2)

Fukushima Prefecture is home to many production centers of major medical equipment manufacturers, as well as concentrations of SMEs that support their production, forming a major cluster for medical equipment manufacturing that boasts the highest contracted production value of medical equipment, and production value of parts for medical machinery and equipment in Japan. The prefectural government has positioned the agglomeration of medical-related industries as one of its priority projects for earthquake recovery, and supports manufacturers in medical equipment development, and the development of domestic and international sales channels. The Fukushima Medical Device Development Support Centre opened in November 2016 to provide integrated



support for medical device development through to commercialization, promoting further agglomeration of medical-related industries by providing support for safety evaluations, consultation and advice on commercialization, and human resource development and training.<sup>(7)</sup>

- Agglomerating the automotive industry through a virtuous cycle between parts and machining companies, and assembling manufacturers (Issues 1, 2)

Miyagi Prefecture established the Miyagi Automotive Industry Promotion Council in May 2006 in response to increased production at Kanto Auto Works' Iwate Plant, and had already begun efforts to pave the way for local companies to newly enter automobile-related industries and grow their business, and agglomerate industries. In May 2012, after the earthquake, the Toyota Group established Toyota Motor East Japan, Inc. in Ohira Village, Miyagi Prefecture, which was charged with planning, developing, and producing compact cars. Based on this, the prefectural government formulated the Miyagi Automobile Industry Promotion Plan in May 2012 to support the development of automobile production technologies and human resource development at SMEs, and also provided match-making services to match technologies and prototypes developed by these SMEs with suppliers. Orders increased as a result of these efforts, with 219 new orders received by the end of FY2015.<sup>(8)</sup>

#### **[Lessons learned and know-how gained]**

(1) Promote full-scale industrial recovery by strategically agglomerating next-generation growth industries.

- Promote industrial recovery by strategically agglomerating next-generation growth industries relating to such as robotics and medical equipment.

(2) Support the strengthening and growth of industrial agglomeration in the region.

- Provide support for attracting new companies and strengthening the production capacity of existing companies.
- In attracting companies, the advantages of the region's natural environment, labor force, and industrial agglomeration should be emphasized, in addition to the availability of subsidy programs.
- Support the development of a business environment, including technological development and human resource development, to enable local companies to newly enter key industries and to grow their business.

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## 40) Developing new sales channels and launching new businesses

[recovery phase, early and late reconstruction phases]

**[Issues]** (1) How companies develop new products and services and develop new sales channels.

(2) How to promote entrepreneurship and new industry creation that will drive the economic growth of affected areas.

### [Situation and issues created by the Great East Japan Earthquake]

In order to achieve sustainable growth as affected companies resumed their business and production activities recovered, it became necessary to not simply return to pre-earthquake conditions, but to develop new products and services that properly address changing consumer needs, market globalization, and other factors, and engage in the creative reconstruction of industries that will pioneer new markets. In addition, local authorities faced the challenge of how they can support the creation of new innovations (technological innovations) at companies, and the promotion of entrepreneurship and the creation of new industries in order to achieve recovery and reconstruction from the earthquake as well as sustainable economic growth.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Creating new businesses based on experiences from the disaster (Issue 1)

Prior to the earthquake, ONETABLE Inc. had been running agriculture-themed hands-on learning classes for children in Hokkaido. The company had just relocated its offices to Miyagi Prefecture seeking to start an agriculture-related business when the earthquake hit. The manager of the company, despite the fact that he himself suffered damages from the disaster, supplied food supplies to evacuation centers. However, he had doubts about the dried bread, cookies and other stockpiled supplies of food that were tough to chew and required water. Based on this experience from the disaster, the company developed “LIFE STOCK,” a nutritionally balanced jelly product for stockpile purposes that can be stored at room temperature for five and a half years after manufacture. Furthermore, building on this technology that enabled food stockpiling, the company is currently working to create new businesses, including their development of health food and space food (Case 40-1).

- Developing new products through match-making with major corporations (Issue 1)

The Reconstruction Agency has been running the “*Yui no Ba*” Regional Reconstruction Matching initiative since the fiscal year following the disaster as a venue where support projects can be formed in which major companies and other entities offer a wide range of their own management resources, including technology, information, and sales channels, in order to resolve the diverse management issues faced by companies in the affected regions. By FY2020, the “*Yui no Ba*” event was held 28 times in the three affected prefectures, and 436 collaborative projects have been launched.

Banzai Factory Co., Ltd., after it was founded in Morioka City, Iwate Prefecture, moved its

workshop to Akita Prefecture, and relocated again to Rikuzentakata City post-earthquake to offer support to affected areas. The company collaborated with Musashino Art University to develop an elegant and easy-to-grip wooden iPhone case which it went on to commercialize in 2016. Furthermore, the company took part in the “*Yui no Ba*” in 2017, and developed a smartphone case with a variety of scents based on Fujitsu Limited’s patented technology. Their wooden smartphone cases have been a steady success, winning the Japan Wood Design Award supported by the Forestry Agency. The company is working to develop high value-added products by supplementing its lack of technical and design capabilities through collaboration with universities and other companies, and aims to improve product quality by working with producers and universities (Case 40-2).

- Developing sales channels by adding value by working with producers and collaborating with universities, etc. (Issue 1)

Kawaki Co., Ltd., a noodle manufacturing company in Kamaishi City, Iwate Prefecture, 70% of whose output was being shipped to the Tokyo Metropolitan Area, suffered a sharp decline in sales as its sales channels were lost due to logistics coming to a halt after the earthquake. In order to recover its sales channels, the company secured raw ingredients in ways that would ensure that 100% of the buckwheat flour used in its products is sourced from Iwate Prefecture, and developed high value-added products that retain their original flavor and have a longer shelf life without relying on additives. The company was able to secure Iwate-grown buckwheat flour by growing buckwheat in cooperation with local farmers with whom it was associated before the earthquake. The company worked with Iwate University and an equipment development company to develop additive-free, long-shelf-life fresh noodles. They were able to successfully bring this product to market by jointly developing a production method that uses high-temperature air stream to sterilize the buckwheat flour. The finished product was branded by the Tohoku Economic Federation’s Project for Supporting Marketing and Intellectual Property Commercialization, and marketed as “Iwate Nanbu Jikona Soba.” This led to business with many high-end supermarkets and department stores in the Tokyo Metropolitan Area, leading to a steady recovery of its sales channels.<sup>(1)</sup>

- Local authorities supporting start-up companies that will drive economic growth in Tohoku (Issue 2)

In February 2014, the City of Sendai formulated the Sendai Economic Growth Design with the aim of recovering and rebuilding regional industries in the aftermath of the earthquake, and achieving new economic growth through technological innovation, brand enhancement, and other innovations. The city aims to become the “most startup-friendly city in Japan,” and one of the areas it is focusing its efforts on is startup support. For example, in January 2014, it founded the Sendai City Entrepreneurship Support Center “Assista” which provides support for entrepreneurs including advice on business plan development, seminars, and a networking salon. In December 2019, working with Tohoku University, the Tohoku Economic Federation, the Tohoku Bureau of Economy, Trade and Industry, the 77 Bank, and other organizations, the city established the Sendai Startup Ecosystem Acceleration Council that would act as a unified team consisting of industry, university,

and government as well as local financial institutions to provide support to startup companies who seek to grow through their innovative business models.<sup>(2)(3)</sup>

**[Lessons learned and know-how gained]**

- (1) Launch new businesses and develop new products based on experiences from the disaster, and develop new sales channels.
  - Aim to identify issues based on experiences from the disaster and develop new sales channels by launching new businesses, etc.
- (2) Promote new product development, etc. through joint industry-academia research and collaboration with companies.
  - Companies collaborate with major companies and other organizations that are providing support for reconstruction to promote the development of new products that leverage their own technology.
  - With the aim of recovering sales channels lost in the earthquake disaster, companies are encouraged to utilize technologies owned by research institutes and other organizations to help solve problems they may be having with their own products.
- (3) Promote the creation and development of start-up companies through initiatives led by local governments.
  - Local authorities set forth policies to achieve further economic growth once recovery from the earthquake is achieved and provide strong support for entrepreneurs.
  - Local authorities collaborate with regional industry, universities, government, and financial institutions to form a unified team in providing support to startup companies that aim to grow through innovative business models.

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## 41) Securing human resources for industry [recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to secure jobs for those unemployed due to the earthquake.  
 (2) How SMEs in the affected areas secure human resources.  
 (3) How to develop management personnel to achieve sustainable growth.

### [Situation and issues created by the Great East Japan Earthquake]

There were approximately 2.75 million workers in the three affected prefectures before the earthquake, but by September soon after the earthquake, this number dropped to 2.6 million, making the recovery of employment a major issue.<sup>(2)</sup> In particular, the fishery processing industry, which had been a place of employment for many women, sustained severe damage, making the employment situation for women more difficult. This meant employment measures were required in addition to industrial recovery measures.<sup>3)</sup> Meanwhile, the securing of human resources became a serious management issue. According to a questionnaire conducted by the Tohoku Bureau of Economy, Trade and Industry (2016), the “securing and development of human resources” was the most common management issue cited by 57.9% of respondents in all industries among businesses that received group subsidies, and particularly high in the fisheries and food processing industry, cited by 60.4%.<sup>(1)</sup> Under these circumstances, the national government launched the ‘Japan as One’ Work Project to take measures to secure employment for disaster victims.

The challenge was to train human talent that regional SMEs and fishing industry were able to secure, and furthermore, in how company management personnel can be developed in ways that enable local economies to grow sustainably towards their goal of full-scale reconstruction.<sup>(3)</sup>

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Providing emergency employment for unemployed persons through Cash for Work (Issue 1)

In the immediate aftermath of the Great East Japan Earthquake, the affected areas faced the challenge of securing employment for the large number of people who had become unemployed. To address this issue, an initiative was launched based on the Cash for Work idea where unemployed disaster victims would earn income from disaster response work. Local disaster victims would be hired on an emergency basis and paid a daily stipend for the work they performed. For example, whereas in FY2011, the Ofunato City Fisheries Cooperative Association relied on the Fishing Grounds Productivity Restoration Support Project run by the Fisheries Agency for debris removal, starting in FY2012, the cooperative employed its own members through the Emergency Job Creation Program for debris removal tasks, thereby achieving both early recovery of their fishing ports and securing income for its members.<sup>(4)</sup>

→ *Related item: 47) Initiatives to resume business in the fisheries industry*

- Support for employment, etc. at Hello Work (Issue 1)

As part of its employment measures for disaster victims, the Ministry of Health, Labour and Welfare

provided extensive employment support for disaster victims by establishing special consultation counters at Hello Work offices nationwide, including in the affected areas, implementing wide-area job placement programs, making consultation visits to evacuation centers, and securing job offers for disaster victims.<sup>(5)</sup>

- Attracting local human resources by developing comfortable work environments (Issues 1, 2)

Iwate Moriya Co., Ltd., an apparel company located in Kuji City, Iwate Prefecture, is focusing on training young people by actively hiring local high school students and having them participate in business meetings with clients to improve their skills. The company is also taking steps to improve its childcare leave and childcare support systems to create a workplace environment where women can work for longer years (Case study 41-1).

The Starting Over Sanriku initiative carried out by Recruit Career Co., Ltd. is an initiative aimed at securing human resources who seek to work long-term for companies in the disaster-affected areas and settle down in those areas. This was a matching program launched in 2014, in which entire towns recruit human resources and introduce job seekers to the appeal of Sanriku as well as to companies in the disaster-affected areas that are looking for human resources. This is an example of a major corporation contributing to the securing and development of human resources in the affected areas by leveraging their know-how in connecting people with businesses, which includes not only their hiring operations, but also HR training for management, middle-management, and new employees of the hiring companies, as well as proposals for municipalities on how to develop an environment that will be more conducive to attracting new businesses and where potential employees will be able to settle down in.<sup>(6)</sup>

- Attracting new workers through image improvement (Issues 2, 3)

In order to develop the devastated fishing industry in a sustainable manner, Fisherman Japan in Ishinomaki City, Miyagi Prefecture, is targeting young men with an improved image of the fishing industry as the new 3K — cool, profitable, and innovative (kakkoi, kasegeru, and kakushinteki) — and carrying out activities to attract new workers to the fishing industry. Specifically, the organization actively communicates on its website the appeal of fishery as a profession and its efforts to take in young interns. The organization is also working to renew the image of the industry by developing sales channels and promoting its business in the food and beverage industry as well as overseas to secure new human resources (Case study 41-2).

- Developing management talent through exchanges with businesspersons (Issue 3)

With the aim of achieving independent and creative reconstruction of the affected areas, the Tohoku Initiative for Future Creation (overall organizers: Tohoku University and Tohoku New Business Conference), with the cooperation of the Japan Association of Corporate Executives (Keizai Doyukai), ran the Human Resource Development Dojo for five years starting in 2012 to foster the next generation of leaders in the affected areas. Practical initiatives were carried out where business owners from affected areas would develop business concepts under the guidance of

Doyukai member companies and present them to local residents, and business models developed by entrepreneurs would be evaluated and put to group discussions to foster new talent who will lead next-generation industries. <sup>(7)</sup> <sup>(8)</sup>

In addition, business owners and other individuals with ties to Fukushima from across the country launched the Fukushima Revitalization School to foster new leaders for Fukushima. Specifically, the School welcomes a diverse group of young people from within and outside of the prefecture who are motivated to take charge of Fukushima's reconstruction and future, and fosters them as leaders of the next generation in Fukushima through the School's activities. <sup>(9)</sup>

→ *Related item: 59) Reconstruction support from the private sector*

### **[Lessons learned and know-how gained]**

- (1) Provide jobs in restoration work to unemployed disaster victims to secure employment.
  - Provide unemployed disaster victims with jobs in restoration work based on the Cash for Work idea, thereby ensuring both the restoration of infrastructure, etc., and employment.
  - Provide matching support for job seekers and potential employers through Hello Work's employment support function.
- (2) Secure young people and women for employment by creating comfortable work environments and improving the image of industries.
  - Secure young people and women for employment by providing training for young people and creating work environments that women will be comfortable working in.
  - Carry out initiatives to significantly change the conventional image of industries that receive few employment applicants.
- (3) Through exchanges with innovative businesspersons, raise awareness to transform conventional ways of management.
  - Review management practices and promote management innovation through exchanges with businesspersons who lead industry.

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## **42) Recovery and reconstruction of shopping streets and commercial facilities** [emergency response phase, recovery phase, and early reconstruction phase]

**[Issues]** (1) How to enable stores and shopping streets to quickly resume their businesses.  
(2) How to proceed with the reconstruction of shopping streets, etc.

### **[Situations and issues created by the Great East Japan Earthquake]**

As a result of the Great East Japan Earthquake, local commercial facilities and individual stores suffered damage to their stores and loss of merchandise, etc., resulting in damage totaling 304.4 billion yen.<sup>(1)</sup>

Local commercial facilities and individual stores are employers in their communities and are essential for local residents in making a living. They are also an essential element in promoting the return of residents. For these reasons, the issues at hand were how we were to proceed with the reconstruction of shopping streets, etc., including the early recovery of stores and shopping streets so that merchants who lost their stores in the earthquake could resume business as soon as possible, as well as how to make the transition from temporary to permanent shopping streets.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Early recovery of commercial functions through the development of temporary stores and shopping streets (Issue 1)

In the aftermath of the Great East Japan Earthquake, the Organization for Small and Medium Enterprises and Regional Innovation (SMRJ) built temporary stores and factories, which were leased, as a general rule, free of charge through municipalities to SMEs and others. Among these, a total of 70 temporary shopping streets were constructed.<sup>(2)</sup>

In May 2011, a shared store opened its doors in two tents that were loaned free of charge by the prefecture in the Taro district of Miyako City, Iwate Prefecture on the grounds of a resort facility. In September the same year, Taro-chan House, a temporary shopping street, was built on the same grounds to accommodate additional temporary stores where ultimately 22 businesses, including the owner of the tent business, formed a cooperative and moved in. This temporary shopping street adjacent to 407 temporary housing units served as a community gathering place for disaster victims and played an important role in supporting their daily lives.<sup>(3)</sup>

In the Osumi district of Takata Town in Rikuzentakata City, a temporary shopping street Takata Osumi Tsudoi no Oka Shopping Arcade housing 13 businesses opened in June 2012. When the evacuation deadline came in September 2018, they acquired a temporary facility disposed of by the city and took in businesses and non-profit organizations from another temporary shopping street to re-launch a new space for personal interactions. This space, Tamagomura, was created through a cross category collaboration between a cafe, co-working space provider and other businesses.<sup>(4) (5)</sup>

→ *Related item: 43) Creating and revitalizing a lively atmosphere*

## 2. Reconstruction of Shopping Streets and Commercial Facilities

- Strengthening local community functions through the development of commercial facilities that serve a central role in communities (Issues 1, 2)

Group subsidies were implemented to support local shopping streets, etc., that were central and vital to the local community.

Housing 36 retailers, the Seaside Town Mast shopping center was the only large-scale local commercial facility in Otsuchi Town, Iwate Prefecture. It was inundated up to the second floor by the tsunami and also caught fire, requiring 1.2 billion yen to rebuild. Otsuchi Commercial Development Co., Ltd., the facility operator, formed a group with 30 retailers and was accepted for a group subsidy. In addition, the group secured funds to resume operations through a loan purchase by the Iwate Industry Reconstruction Corporations, and subordinated loan financing from a fund formed by the Development Bank of Japan and Iwate Bank.

Owing to these efforts, the shopping center reopened in December 2011 with 48 retailers, 12 more than before the earthquake. When it reopened, its community nucleus function for the town was enhanced with stores designed in cooperation with local merchants, a bus stop, clinic, bank, and space for providing town information, as well as a public space for residents' meetings.<sup>(6)</sup>

- Reconstructing local commerce through collaboration among shopping streets (Issues 1, 2)

The massive tsunami created by the earthquake swept away most of the buildings on the flatlands in Minamisanriku Town, Miyagi Prefecture, and completely destroyed the several shopping streets that were there, bringing the town's commercial functions to a complete halt. Businesses in the Shizugawa area that had lost their stores got together and organized the Minamisanriku Shopping Arcade to take matters into their own hands, despite having no store or products to sell. Their Minamisanriku Shopping Arcade held Fukko-Ichi (Recovery Markets) with support from the Bosai Asaichi Network (an organization of shopping streets across the country that was formed to network shopping streets and help each other in the event of disaster). Building on these achievements, the Arcade reopened in 2012 in temporary structures as the Minamisanriku Sun Sun Shopping Street. Stores here were arranged in a unique round-tour-oriented layout and the site hosted entertaining events to make it enjoyable for everyone from local residents to tourists.<sup>(6)</sup>

The Suehirocho shopping street in Miyako City, Iwate Prefecture, suffered flood damage from the tsunami, but shop owners removed the sludge and debris on their own and reopened their stores in support of the victims. In order to recover sales after the earthquake, they held the Miyako Akindo Recovery Market jointly with an adjacent shopping street in June 2011. Furthermore, seven commercial organizations led by the Shopping Street Promotion Association and 108 supporting businesses established the Iwate Miyako Machinaka Akindo Group, which was on a larger scale, to launch projects aimed at revitalizing the entire region. The group promoted the reconstruction of local commerce through cooperation between shopping streets, such as by holding the Fukko-Ichi (Recovery Market) twice a year, attracting 15,000 visitors every event, as well as issuing a local currency called Rias Currency, and providing support for children orphaned in the earthquake.<sup>(6) (7)</sup>

**[Lessons learned and know-how gained]**

- (1) Development of temporary stores and shopping streets is important for the early recovery of regional commercial functions.
  - Support communities and the livelihoods of disaster victims by developing temporary stores and shopping streets adjacent to temporary housing.
  - Carefully design the placement of stores and parking areas according to the actual conditions found in communities.
- (2) Support shopping streets, etc., that are central to communities to restore local communities in the affected areas.
  - Provide financial support for the resumption of business in shopping streets, etc., that are central to these regions.
  - In reopening shopping streets, etc., that are central to communities, local community functions such as public facilities should be provided in addition to installing core stores and providing a variety of different store configurations.
- (3) Cooperation among shopping streets is key in promoting the recovery of local commerce.
  - Reconstruction events carried out in collaboration with other shopping streets lead to large-scale visitor traffic and drive the recovery of local commerce.
  - Collaboration among shopping streets create new models for driving the recovery of local commerce.

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### **43) Creating and revitalizing a lively atmosphere** [early and late reconstruction phases]

**[Issues]** (1) How to promote commercial agglomeration and shopping street revitalization in city centers.  
(2) How to promote the revitalization of local commerce and the creation of a lively atmosphere.

#### **[Situation and issues created by the Great East Japan Earthquake]**

As reconstruction progressed in general urban areas in municipalities whose urban areas were devastated by the tsunami, various facilities that were central to these areas, in addition to housing, had to be rebuilt. Among other issues, a key challenge was to agglomerate commerce and revitalize shopping streets in city centers. To this end, in January 2014, the national government formulated the Guidelines for Accelerating the Revitalization of Urban Commercial Agglomerations and Shopping Streets in Affected Areas and presented standard procedures for the revitalization of commercial agglomerations and shopping streets in urban areas. In accordance with these guidelines, the government and private sector pooled their understanding to develop the Machinaka (Town Center) Revitalization Plan for the development of commercial agglomerations and shopping streets, as well as a plan for the development of commercial and other facilities, and proceeded to carry out these projects. In addition, commercial facilities that were included in the Machinaka (Town Center) Revitalization Plan were eligible for the national government's Subsidy for Companies Locating Business and Creating Jobs in Areas Affected by the Tsunami and/or Nuclear Disasters (private commercial facilities development type) (Tsunami Location Subsidy), and this led to the transformation of temporary shopping streets into permanent establishments.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Ensuring the continuity of commercial facilities, etc. (Issue 1)

Onagawa Town in Miyagi Prefecture formulated the Onagawa Machinaka (Town Center) Revitalization Plan (Approval No. 1) in December 2014, and decided to rebuild the city center by raising and developing a 7.4 ha area centered around the JR Onagawa Station. Onagawa Mirai Sozo Co., Ltd. (established in June 2015), a city development company, leased town-owned land free of charge and used the tsunami location subsidy to develop tenant-lease commercial facilities Seapal-Pier Onagawa (opened in December 2015) and Jimoto Ichiba [Local Market] Hama Terrace (opened in December 2016).

The commercial facilities are owned by Onagawa Mirai Sozo Co., Ltd., and tenant mobility is ensured by separating building ownership from retail space use, resulting in a sustainable shopping street that enables disaster-affected businesses in the region to rebuild their businesses, and also attracts attractive shops from outside the region (Case study 43-1).

In commercial facility developments carried out by city development companies, the continuity of commercial facility operations must be ensured by employing "attractive designs that attract

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customers while keeping costs low" and through arrangements such as the above-mentioned "separation of building ownership from retail space use." For these reasons, the city development company received expert advice on commercial facility development and management as it proceeded with the project. Additionally, disaster-affected businesses scheduled to move into the commercial facility also received expert management guidance to ensure the continuity of their store operations.

→ *Related item: 24) Revitalization and management of city centers*

- Inducing investment in city centers through the effective location of public and commercial facilities (Issues 1, 2)

Kamaishi City, Iwate Prefecture, applied the Tsunami Reconstruction Base Development Project to develop a new urban area in the eastern part of the city, and as part of the project, new commercial functions were developed centering around disaster-recovery public housing, a civic hall, and a large commercial facility. In December 2014, Kamaishi City Development Co., Ltd. used a group subsidy to build joint storefronts in the new urban area which house nine disaster-affected merchants. In addition, the city, in its reconstruction promotion plan, defined a special commercial zone applicable for special tax exemptions on land adjacent to this area, and took steps to attract large-scale commercial facilities. The revitalization of commerce through planned regional development is moving forward, for example, with the March 2014 opening of AEON TOWN Kamaishi, which housed a supermarket and 51 specialty stores, and the rebuilding of a restaurant district in 2017 through a public-private partnership between Daiwa Lease Co., Ltd., and Kamaishi City.<sup>(1)</sup>

- Attracting visitors and creating a lively atmosphere through area management (Issue 2)

Area management refers to "proactive efforts carried out by residents, business owners, landowners, and others to retain and improve the good environment and value of an area." In some areas where commercial facilities, etc., have been developed, area management of commercial areas, led by city development companies established by local stakeholders, have been carried out to the extent that they were effective commensurate with the size of the city center for the purpose of maintaining the good environment of these commercial areas, increase their attractiveness and value, and revitalize local commerce and create a lively atmosphere.

In Ofunato City, Iwate Prefecture, city development company Kyassen Ofunato Co., Ltd. (established in December 2015) used the tsunami location subsidy to develop a tenant-leased shopping street in two of eight city blocks, which opened in April 2017. Kyassen Ofunato Co., Ltd. carries out area management projects that make the district more attractive, attract customers, and create a lively atmosphere, such as sales promotion events, city development projects, and landscape preservation with dues it collects from commercial area tenants (Case study 24-1).

→ *Related item: 24) Revitalization and management of city centers*

- Creating a lively atmosphere by integrating commercial and public functions (Issue 2)

Opened in April 2017 in a section of the new urban area where large-scale land-raising work was

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done, Abasse Takata in Rikuzentakata City, Iwate Prefecture, is a large-scale commercial complex built using the tsunami location subsidy, and consists of a specialty store area and supermarket. A municipal library is attached to its specialty store area, and this integration of commercial and public facilities helps stimulate personal interactions, thereby contributing to the city's revitalization.<sup>(3)</sup>

In addition, Rikuzentakata Honmaru Co., Ltd., a city development company, is working with commercial facilities and shopping streets in the city center to improve the attractiveness of land through publicity and events, while promoting area management initiatives such as land sales and lease deal matching so that unused land can be put to use.<sup>(2)</sup>

In addition, Tamagomura, which was re-launched in the Osumi district of Takada Town in Rikuzentakata City, is working with Tonarino, a city development company, to enhance the community's functions and attract new demand from outside the region by leveraging the Shopping Street Revitalization and Tourist Consumption Creation Project to develop an incubation program, provide sharing services for the child-rearing generation, develop a menu of activities for tourists, and create a health-themed playroom.

→ *Related item: 42) Recovery and reconstruction of shopping streets and facilities*

### **[Lessons learned and know-how gained]**

- (1) Develop commercial agglomerations and shopping streets in city centers in a planned manner.
  - Ensure tenant mobility by separating commercial property ownership from retail space use.
  - Employ attractive designs that attract customers while keeping costs low.
  - Seek expert advice to ensure the continuity of commercial facilities and stores run by disaster-affected businesses.
- (2) Implement area management with city development companies, etc., playing a leadership role.
  - Induce investment in city centers through the effective location of public and commercial facilities.
  - Make the region more attractive by planning and organizing attractive projects and events that make the most of regional characteristics.
  - Carry out land sales and lease deal matching for unused land while taking steps to improve the attractiveness of land.

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#### **44) Initiatives to restore farmland and agricultural facilities, and resume farming operations** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to proceed with the recovery of farmland and agricultural facilities.  
(2) How to tackle the issue of expediting the resumption of farming.  
(3) How to secure agricultural workers for post-earthquake local agriculture.

#### **[Situation and issues created by the Great East Japan Earthquake]**

In the Great East Japan Earthquake, damage to agriculture, forestry, and fisheries, the key industries in the affected areas, amounted to 2.38 trillion yen, or about 26 times that sustained in the Great Hanshin-Awaji Earthquake and about 18 times that sustained in the Chuetsu-Oki Earthquake in Niigata Prefecture. Of this amount, agriculture and forestry suffered 1.12 trillion yen in damage, and 21,480 ha of farmland was washed away or flooded by the tsunami.

In the affected areas, the challenge was to resume farming operations as soon as possible by removing debris and salt from farmland, the production base of agriculture, restoring agricultural facilities, and providing support to farm management organizations. In restoring farmland, the challenge was not to simply return it to its pre-earthquake state, but also to improve agricultural productivity by expanding field plots and consolidating farmland for use by workers in local agriculture.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

• Disaster recovery projects for farmland and agricultural facilities (Issue 1)

The affected areas made use of national government subsidies to restore farmland by removing debris, sediment, and salt, as well as restore drainage channels, drainage pump stations, and other agricultural facilities. After the Great East Japan Earthquake, new salt removal projects were formed due to the severe flooding damage caused by the tsunami, and farmland restoration from the disaster was also carried out as projects under direct control of the national government.

At the request of eight coastal municipalities, including Rikuzentakata City, Iwate Prefecture dispatched a Farmland and Agricultural Facilities Disaster Recovery Support Team to gather information on damage from the disaster, and conducted disaster assessments and restoration work on behalf.<sup>(1)</sup>

In order to implement disaster recovery projects for the vast amount of farmland and agricultural facilities in the three affected prefectures, requests were made to the national government and all prefectures to dispatch agricultural civil engineers. As a result, engineers were dispatched as support staff for a total of 9,000 person-months (as of the end of FY 2019).<sup>(2)</sup>

→ *Related item: 61) Dispatching support staff (initiatives by supportive local authorities)*

• Promoting the expansion of field plots, and collaboration with other reconstruction projects (Issues 1, 2)



In the wake of the earthquake, prefectural governments became the implementing body of projects to restore farmland and expand field plots (0.5 ha or larger) with the use of the reconstruction grant, etc., in order to improve farming productivity. In the Sendai Higashi District of Sendai City, Miyagi Prefecture, based on requests from Miyagi Prefecture and Sendai City, the national government carried out field plot expansion work on 1,900 ha of farmland as part of its National Government Disaster Recovery Project, and also promoted the organization and incorporation of farming organizations.<sup>(3)</sup>

The orderly use of land, including pre-relocation sites, was implemented in Iwanuma City, Miyagi Prefecture, and other locales through farmland development that was carried out in conjunction with the project on promoting group relocation for disaster prevention in which houses that previously stood in tsunami-affected coastal areas were relocated to higher ground.<sup>(4)</sup>

→ *Related item: 25) Efficient use of sites from where people relocated*

- Early resumption of production areas by securing alternative sites (Issue 2)

The Miyagi Watari Agricultural Cooperative in Yamamoto Town and Watari Town, Miyagi Prefecture, was the largest strawberry producing region in Tohoku before the earthquake, with a growing area of 96 ha, 380 farms, and sales volume of 3,600 tons. Although 96% of the region's growing area was damaged in the earthquake, abandoned plots of land in inland areas were secured as alternatives by October 2011, pipe structure greenhouses were constructed using the national government's Grant for Agricultural Production Measures, and production and shipment of soil-grown strawberries resumed in November on acreage amounting to 20% of that before the earthquake. Since 2012, the towns of Watari and Yamamoto have developed land for 7 complexes and built greenhouses for growing (40.6 ha) based on the reconstruction grant, and 51 households resumed farming in September 2013. In this new strawberry complex, a new production method called elevated bed nutriculture was introduced to increase farmers' work efficiency. Under this system, planters are installed at a height of about 1 meter above the floor and fed with nutrient solution in which fertilizer is dissolved. Furthermore, production got back on track and full-scale farming resumed with the completion of the strawberry selection plant, and in 2018, shipments exceeded pre-earthquake levels (Case study 44-1).

- Consolidating farmland use in the hands of agricultural workers by establishing agricultural cooperative corporations (Issue 3).

Before the earthquake, a large number of farmers in the Arahama community in the Sendai Higashi district of Sendai City, Miyagi Prefecture, were dual-income earners, and primarily conducted farming operations under contract with agricultural corporations. The corporation that played a central role was dissolved following the earthquake, and a new receptacle was needed to take over the farmland. At the time, farmland in the Sendai Higashi area was to be expanded (from 30 to 90 a) in a project under the direct control of the national government, and the use of farmland was also an issue that needed to be considered.

As a result of discussions within the community, in January 2015, 41 dual-income farmers took the

lead in establishing Sendai-Arahama, an agricultural cooperative jointly owned by JA. Rather than establishing usage rights with individual farmers, Sendai Arahama utilized a project for intermediary farmland management to consolidate and integrate 88% of the entire 120 ha of farmland in the Arahama community. In the expanded plots of land, large-scale agriculture is being implemented with the introduction of large machinery to grow rice, soybeans, and wheat at low cost, as well as using nursery houses to grow mini-tomatoes and other high-profit crops.<sup>(5)(6)</sup>

#### **[Lessons learned and know-how gained]**

- (1) Promote the expansion of farmland plots with the aim to expedite the recovery of farmland and agricultural facilities, and improve productivity.
  - Take steps to restore farmland and agricultural facilities expeditiously with support from the national and prefectural governments.
  - In addition to restoring farmland, expand farmland plots to expand the scale of operations and achieve productivity improvements.
  - Consider the orderly use of land through farmland development carried out in conjunction with the project on promoting group relocation for disaster prevention.
- (2) Expeditiously resume farming operations by securing alternative land, etc.
  - Expeditiously resume farming operations by securing alternative land, and recover production areas through the introduction of advanced cultivation management systems and other means.
- (3) Use farmland effectively by consolidating farmland use in the hands of new agricultural workers.
  - Secure new workers in local agriculture through the establishment of corporations, etc.
  - Work with the Institution for Intermediary Farmland Management to consolidate farmland in the hands of agricultural workers to keep farmland owned by farmers who decide to leave farming from being abandoned or underutilized.

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## 45) Developing new sales channels for agriculture and forestry [recovery phase, early and late reconstruction phases]

**[Issue]** (1) How to approach recovering and developing sales channels.

### **[Situation and issues created by the Great East Japan Earthquake]**

The three Tohoku prefectures affected by the earthquake and tsunami collectively make up one of the nation's leading agricultural regions, with an agricultural output of 629.6 billion yen in 2010, accounting for 7.6% of the national total, and a total crop acreage of 376,000 ha, or 9% of the national total. However, since it took at least a year to complete debris removal and salt removal measures to restore farmland from the earthquake, the challenge was to recover sales channels lost during that time and to develop new sales channels by developing new products.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Securing stable sales channels by collaborating with companies outside the affected areas (Issue 1)
 

In September 2015, the evacuation order on Naraha, Fukushima Prefecture, an Evacuation Order Cancellation Preparation Zone, was lifted, and the challenge was to create new forms of agriculture to promote the return of its residents. At the time, Shirohato Farm Corporation of the Shirohato Group, which was pursuing the sextiary industrialization of sweet potatoes, was exploring new growing sites and sought the cooperation of the town of Naraha in securing farmland, to which the town agreed. The company began sweet potato cultivation in 2018. In addition, all sweet potatoes produced by farmers who received technical assistance from the company were purchased by Shirohato Food Industry Corporation. In April 2019, Fukushima Shirohato Farm Corporation was established, and with this, the company expanded its growing area, and in September 2020, the town developed a sweet potato storage facility and leased it to the company, enabling a stable supply year round. Furthermore, the town is working to create a major sweet potato production region in cooperation with companies, such as by increasing the number of growers (Case study 45-1).
  
- Product development utilizing local resources (Issue 1)
 

With the aim of eliminating abandoned farmland, which was a problem for the community, the Towa district of Nihonmatsu City, Fukushima Prefecture, had been preparing to convert land to vineyards even before the earthquake. After the earthquake, the Towa Fruit Wine Research Association was founded, which planted about 300 seedlings, and obtained a small volume liquor brewing license under the Fruit Wine (Wine) Special Zone System of the Special Structural Reform Zone System, and established Fukushima Farmers' Dream Wine Co., Ltd. in 2012. Subsequently, the company brewed and sold out ciders made from the prized Hayama apples of Nihonmatsu City — whose demand had declined due to negative hearsay — and went on to brew its first wine in the fall of 2013. Since then, it has attracted much attention from within and outside of the prefecture, and has expanded its sales channels around the country, including being sold in the restaurant of the JR East sleeper train Shikishima (Case study 45-2).

- Product branding and developing overseas sales channels (Issue 1)

Strawberry growers' greenhouses in the town of Yamamoto Town, Miyagi Prefecture were devastated in the Great East Japan Earthquake. A local individual who had been the head of an IT company in Tokyo established a new agricultural production corporation, GRA Co. Ltd., working with local farmers and others. The company utilizes ICT-related know-how in agriculture, collecting and analyzing information on the central management performed by environment control computers, and on how skilled growers manage their work to make their techniques visible, thereby raising and equalizing the level of growers' skills and conveying to them the techniques used by skilled growers.

GRA brands high-quality strawberries that meet certain standards Migaki-Ichigo and is developing its own sales channels in the Tokyo metropolitan area and Tohoku region, as well as selling them directly to consumers on a mail-order website. The company is also developing and marketing new products such as sparkling wine and cosmetics made from strawberries. Since brewing liquor with strawberries requires a high level of skill, the company carries out the development and production of liquor in collaboration with brewers, such as by outsourcing production to outside breweries.

In addition, the company takes part in food export business meetings organized by the Japan External Trade Organization (JETRO), and is actively working to expand sales channels not only domestically but also overseas. In addition, since one of the characteristics of the ICT-based nutrient solution growing system is its ability to produce crop without being affected by climate or soil, the company has formed a project team with companies and NPOs, and has begun working on strawberry growing in India.<sup>(1)(2)</sup>

#### **[Lessons learned and know-how gained]**

##### **(1) Work with companies outside the prefecture to resume farming and expand business.**

- Local authorities are to take a leadership role in attracting companies from outside the affected areas by working on finding them farmland, etc.
- Collaboration with companies outside the affected area help stabilize producers' business and create local employment opportunities.

##### **(2) Develop new sales channels by developing new products or branding products that are made from local resources.**

- Develop new sales channels by adding value by developing products that use local resources and by branding high quality agricultural products.
- Aim to develop new businesses by leveraging know-how on growing gained from growing on land affected by the disaster.

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## 46) Upgrading and progressing agriculture and forestry [early and late reconstruction phases]

**[Issues]** (1) How to improve productivity in agriculture.  
(2) How to upgrade and diversify agricultural business operations.

### **[Situation and issues created by the Great East Japan Earthquake]**

In order for agriculture in the affected areas to continue to develop and grow sustainably and achieve a full-fledged reconstruction, the challenge was to improve productivity by developing high value-added products that keep pace with diversifying consumer needs and changing market structures, and introducing new technologies. In addition, there was the need to upgrade and diversify agricultural operations, such as by diversifying operations by moving into the manufacturing and service industries.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Improving productivity by introducing cutting-edge technologies (Issue 1)

The Koizumi district of Kesenuma City, Miyagi Prefecture, was severely damaged by the tsunami, making it difficult for individual farmers to resume farming. Under these circumstances, Mitsubishi Corporation made a proposal to Kesenuma City for a large-scale greenhouse initiative, and in October 2014, local farmers established Sun Fresh Koizumi Noen Co., Ltd. With support such as the Great East Japan Earthquake Grant for Agricultural Production Measures and investment from the Mitsubishi Corporation Reconstruction Assistance Foundation, the farm built a large-scale Dutch-style nutriculture facility (2 ha) where it grows 43,000 tomato seedlings and ships approximately 600 tons per year. The facility is equipped with state-of-the-art ICT technology that provides fully computerized control of the nutrient solution, temperature, and carbon dioxide concentration in the greenhouses, and records and analyzes data on crop growth, labor, and inventory control of pesticides and other chemicals to identify problems and make improvements. This has resulted in improved yields and reduced costs, and the system was certified under the international certification, Global GAP. In addition, the company's hydroponic cultivation facilities do not require heavy labor compared to conventional systems, making it easier for women to work there. 70% of the company's employees are women, which contributes to solving the shortage of agricultural workers and the creation of local jobs.<sup>(1)(2)</sup>

- Creating new agricultural businesses through collaboration between agricultural production corporations and the manufacturing industry (Issue 2)

Butai Farm Co., Ltd. is an agricultural production corporation established in 2003, and has been aiming to achieve sextiary industrialization through the production of rice and cut vegetables for fresh consumption, as well as expansion to a sushi delivery service primarily for Sendai City, Miyagi Prefecture but suffered catastrophic damage from the earthquake disaster.

In 2011, the company and Iris Ohyama Co., Ltd. jointly established a new company, Butai Agri Innovation Co., Ltd., in Watari Town, Miyagi Prefecture, and built a new rice milling plant in July 2014. With an emphasis on the consumer's perspective, this plant incorporates the know-how and technologies of the two companies to produce rice that retains its flavor with cold storage, milling, and packaging, and has launched products contained in small packs that are easy for consumers to use. In addition, to ensure a stable supply of rice, the company contributes to the maintenance and expansion of the supply chain of agricultural products by providing farming guidance to young farmers and entering into contracts with production farmers to purchase all of their rice (Case study 46-1).

Butai Farm Co., Ltd. is working to expand its business such as by expanding its business to Minamisoma City in 2017, and establishing Fukushima Butai Farm Co. in Namie Town, Fukushima Prefecture, in 2019 to engage in the production and distribution of rice and other agricultural products.<sup>(3)</sup>

- Cooperation between agriculture, and the manufacturing and service industries and the integration of these industries (Issue 2)

Tomato Land Iwaki Co. in Iwaki City, Fukushima Prefecture, has been expanding its business since before the company was established in 2001, building a Dutch-style nutriculture facility, the first in Honshu, to produce tomatoes, figs, and strawberries, and launching a processing business for agricultural products in 2007.

After the earthquake, while working on replanting seedlings and establishing an inspection regime to counter negative hearsay generated from the nuclear power plant accident, the company opened a tomato-picking experience and developed processed foods such as tomato juice in 2013, and opened Wonder Farm, a complex facility with restaurants serving dishes made from fresh local vegetables and shops selling local agricultural products in 2013.

Additionally, in 2014, the company established JR Tomato Land Iwaki Farm jointly with JR East and has been developing a variety of businesses that go beyond agriculture, such as building tomato growing greenhouses based the plant factory method, and utilizing JR East's network to expand its business in the Tokyo Metropolitan Area (Case study 46-2).

**[Lessons learned and know-how gained]**

(1) Improve productivity by introducing cutting-edge technology.

- Achieve consistent and efficient crop production by introducing ICT and advanced technologies.

(2) Create new business models by collaborating with companies from different industries.

- By collaborating with companies from different industries, create new business models by leveraging each other's strengths and technologies.

(3) Develop a diversified business portfolio in collaboration with other industries.

- In addition to the production of agricultural products, develop a diversified businesses portfolio that includes processing and sales, restaurant businesses, and tourism.
- Work to expand sales channels in collaboration with other industries.

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## **47) Initiatives to resume business in the fisheries industry [emergency response phase, recovery phase]**

**[Issues]** (1) How to proceed with the recovery of damaged fishing facilities and equipment.  
(2) How to tackle the issue of expediting the resumption of fishing and aquaculture businesses.  
(3) How to tackle the issue of expediting the resumption of business in the fisheries industry and fisheries processing businesses.

### **[Situation and issues created by the Great East Japan Earthquake]**

Fisheries-related damage from the Great East Japan Earthquake and tsunami amounted to 1.26 trillion yen, including damage to fishing ports, fishing boats, aquaculture facilities, and fisheries processing facilities. Seven prefectures from Hokkaido to Chiba Prefecture, which account for 50% of the nation's fishing and aquaculture production, suffered extensive damage. Notably, the fisheries and fisheries processing industries are key industries in the coastal areas of the three Tohoku prefectures that were severely damaged by the tsunami, and the early restoration of fishing facilities and equipment, the early resumption of the fishing and aquaculture industries, and the resumption of operations at small-scale fish processing businesses were critical issues for the revival and reconstruction of local economies.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- National government projects carried out on behalf of prefectural governments to restore fishing ports and upgrade fishing port functions (Issue 1)

To support early recovery of the Ishinomaki and Kesenuma fishing ports, which were national fisheries hubs, the national government undertook disaster recovery projects on behalf of prefectural governments, the port administrators.

Ishinomaki fishing port, which boasts one of the largest fish catches in Japan, took the earthquake disaster as an opportunity to rebuild its fisheries industry, and constructed, in a single project, a fish market that supports advanced sanitation management and quay walls reinforced to withstand earthquakes.<sup>(1)</sup> <sup>(2)</sup> The Ishinomaki City Fishery Processors' Cooperative Association, located inland from the port, took advantage of the government's Restoration and Improvement Project for Joint-Use Fisheries Facilities to restore freezing refrigerators and other equipment used by processors.<sup>(3)</sup>

- Debris removal from fishing ports by fishermen (Issue 1)

Fishermen proceeded to remove debris from the fishing grounds with government and prefectural subsidies. For example, the Ofunato City Fisheries Cooperative Association utilized the Fisheries Agency's Project to Support the Restoration of Fisheries Productivity in FY2011 and the Emergency Job Creation Program in FY2012 to hire its members to work on debris removal. Consequently, it was able to both quickly restore the fishing port by removing debris and secure employment

opportunities for disaster-affected fishermen.<sup>(4)</sup>

→ *Related Item: 41) Securing human resources for industry*

- Expediting the resumption of fishing and aquaculture industries through government and prefectural subsidies (Issue 2)

In April 2011, the Fisheries Agency established a Reconstruction Assistance Project Team and dispatched team members to the affected areas. Team members interviewed fishermen, fishery cooperatives, local wholesale markets, and other stakeholders in the affected areas about the current state of the fisheries industry and their needs for reconstruction assistance, and set up a local support system to ensure that appropriate support is provided through the dissemination of information about recovery and reconstruction measures, explanations on government support programs, and advice on documentation and other matters.

To support fishermen whose fishing vessels and other equipment have been damaged, the national government provided subsidies to fishing cooperatives for the purchase of fishing vessels and fixed nets. The government also provided subsidies for fishermen to convert to more profitable modes of operation, such as running two types of operations (i.e., one-line fishing and roll netting), and for the restoration of business operations through joint aquaculture operations.<sup>(5)</sup>

The government subsidy program was also effective in providing assistance to affected fishery and fisheries processors' cooperative associations in the restoration of shared-use facilities such as ice-making facilities, as well as processing facilities for oyster and wakame seaweed farming, and facilities for producing seedlings for release.<sup>(6)</sup>

- Expediting the resumption of fishing through cooperative members working under a joint scheme (Issues 2, 3)

While the Omoe Fishery Cooperative in Miyako City, Iwate Prefecture, boasted the largest catch of cultured wakame seaweed and wild abalone in Japan, and also had active salmon and kelp fishing operations before the earthquake, it suffered catastrophic damage from the earthquake disaster, with 798 of the cooperatives 814 fishing boats washed away, and its kelp and wakame seaweed growing and processing facilities completely destroyed.

Three days after the earthquake, the head of the cooperative set up a task force and, in order to resume fishing as soon as possible, secured fishing boats by purchasing used boats from areas such as on the Sea of Japan coast which received no tsunami damage, and also by repairing immobile boats that remained in the rubble or were washed up on high ground. 70 boats were out fishing for natural wakame seaweed in May. Still, because the cooperative was not able to restore all of its fishing boats, a fishing boat sharing scheme was devised. Specifically, groups of four to five people were formed to share the use of available fishing boats, and until a sufficient number of boats became available, the proceeds from the catch were divided equally among group members. In 2012, when the number of fishing boats approached normal levels, operations gradually returned to their original form, with fishermen boarding boats at staggered times even under the joint scheme and the catch divided per each fishing trip. As a result, fishermen who lost their boats were able to resume

fishing at an early date without incurring any personal debt.<sup>(7)(8)</sup>

- Resuming operations through collaborative and organizational arrangements between fisheries and fish processing industries (Issue 3)

The tsunami from the Great East Japan Earthquake caused catastrophic damage throughout the entire Shishiori district of Kesenuma City, Miyagi Prefecture. In order to quickly restore the local fishery industry, the community united and established the Kesenuma Shishiori Processors' Cooperative Association in August 2012 with the participation of 17 disaster-affected fisheries processing businesses and support from several major trading companies. The Cooperative made use of the Fisheries Agency's Fisheries Infrastructure Improvement Project to raise the land, and after this work was completed, it used the Restoration and Improvement Project for Joint-Use Fisheries Facilities to build a large-scale refrigeration facility and seawater sterilization facility. The development of versatile facilities in the district led to increased operational efficiency, and the joint ownership of facilities has had the effect of significantly reducing capital investment costs (Case study 47-1).

#### **[Lessons learned and know-how gained]**

- (1) Upgrade fishing port functions to meet new needs, along with achieving early restoration of fishing port facilities.
  - The national government acts on behalf of prefectures in restoring major fishing ports to ensure the early restoration of the fisheries industry.
  - Develop a fish market that supports advanced sanitation management and quay walls reinforced to withstand earthquakes.
- (2) Quickly set up a local support system to ensure that various national and prefectural support programs can be properly used.
  - Promptly inform the public about national and prefectural support programs, and ensure that these are properly utilized to achieve early resumption of operations.
- (3) Revitalize businesses and manage these businesses efficiently through collaborative and organizational arrangements.
  - Implement fishing boat sharing to quickly resume fishing.
  - Build on union connections to heighten member solidarity.
  - Small-scale fisheries processors are to build an efficient management system under a collaborative arrangement or by establishing a cooperative.

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## **48) Developing new sales channels for the fisheries industry** [recovery phase, early and late reconstruction phases]

**[Issue]** (1) How to approach reclaiming lost sales channels and developing new ones.

### **[Situation and issues created by the Great East Japan Earthquake]**

The revitalization of the fisheries and fisheries processing industries, which are key industries of the Tohoku coastal region, is an important issue not only for the revitalization of local economies, but also for the future of Japan's fisheries and fisheries processing industries. Fishermen and fisheries processing businesses affected by the disaster needed to resume operations and reclaim lost sales channels as soon as possible. In addition, they needed to develop new value-added products that would correctly address consumer needs and changes in the seafood market, and to develop new sales channels both domestically and internationally.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Organizing trade show/business meeting events (Issue 1)

The Chamber of Commerce and Industry, and other associated organizations in the fisheries industry formed a consortium, Center for Promoting the Recovery of Sales Channels of the Reconstructed Fisheries Processing Industry (consisting of the Tohoku Federation of Chambers of Commerce and Industry, National Federation of Fisheries Processors' Cooperative Associations, etc.) to support the reconstruction of the fisheries processing industry. The Center has held the Tohoku Recovery Processed Fisheries Trade Show/Business Meetings events in Sendai since FY2015, utilizing the Fisheries Agency Project Promoting the Recovery of Sales Channels of the Reconstructed Fisheries Processing Industry, etc. By FY2019, a total of approximately 600 companies exhibited and 25,000 buyers visited the event. Thanks to pre-event research on what buyers are looking for so that they can be match with exhibitors, this event is known for having a higher closing rate compared to general business meetings. As such, this meeting that leads to business has contributed to the development of sales channels.<sup>(1)</sup>

- Developing sales channels overseas (Issue 1)

Because the domestic market for seafood products is shrinking, fisheries processors in the Sanriku coastal area took the earthquake as a turning point to develop new sales channels overseas. However, the number and volume of products that a single company could provide were small, and securing personnel familiar with overseas sales and trade practices was also a challenge. To address this situation, seven companies in the fisheries business in the Sanriku coastal area, through a joint investment, established the Sanriku Corporation in September 2016, the region's first export trading company, for the purpose of complementing and sharing business resources. By jointly running this business, the seven companies were able to provide a product lineup at a certain scale.

For overseas expansion, the company developed products that met the needs of overseas

markets, including the creation of packages with overseas specifications under the unified SANRIKU brand, mainly for Southeast Asian market including the Philippines and Thailand. In addition to making regular business visits to and tasting proposal meetings at local retailers and restaurants, etc., the company also worked with retailers to carry out promotional activities for local consumers to promote understanding on how to enjoy these products and their quality, etc. In addition, the company is working to strengthen its overseas expansion structure by inviting local importers and wholesalers to the production areas to deepen their understanding of its products through tours of processing plants and other activities, as well as by hiring overseas staff to serve as sales representatives. The number of participating companies has now grown to 11, and the company is steadily developing its sales channels.<sup>(2)</sup>

- Local businesses jointly producing processed food products and developing their sales channels (Issue 1)

In 2016, ten fisheries processing companies in Ishinomaki City, Miyagi Prefecture, established Ishinomaki Umaimono Co., Ltd., and in 2018, seafood dealers each with their own specialty, a bonito flake company, a company with retort pouch facilities, and other businesses jointly launched the Ishinomaki Kinka Chazuke (boiled rice with tea poured over it), selling 100,000 meals in the first year. These were also sold in department stores in Miyagi Prefecture and have become popular souvenir and gift items. In December 2019, the product was included as part of in-flight meals on JAL international flights and served to many passengers from Japan and abroad. The company followed this up with the development of "Ishinomaki Kinka Kamameshi (rice boiled with various ingredients in a small pot)" and "Gyosho (fish sauce)."

These product development operations are supported by a virtual joint factory structure in which companies share their manufacturing facilities, know-how, and raw material information with each other. Also in the area of sales, the strengths of these companies are creating a synergistic effect, such as where ten companies are working together to develop sales channels.<sup>(3)</sup>

In developing new products, the company also took advantage of the Reconstruction Agency's Model Project for Revitalization of the Fisheries Processing Industry by Forming Teams (support for innovative efforts in product development and sales channel development carried out by multiple fisheries processors in the affected areas working together).

- Improving quality and brand value by reforming production structures (Issue 1)

Since before the earthquake, the Togura Department of the Shizugawa Branch of the Miyagi Prefectural Fisheries Cooperative, which produces the Togurakko Oyster brand of oysters in Minamisanriku Town, Miyagi Prefecture, had been battling the problem of declining quality caused by overcrowded oyster farming racks with only narrow spaces between them that kept oyster spat from getting enough nutrients. After the tsunami washed away all of the farming racks and spat, the organization drastically revised its production methods and implemented a revolutionary structural reform that reduced the number of farming racks to one-third of what they had been. In FY2012, it launched a new farming method by utilizing a government-supported project, and this improved

oyster quality and improved the value of the brand. Thanks to these efforts, the organization became the first in Japan to be certified under the international "ASC certification" (ASC: Aquaculture Stewardship Council) (Case study 48-1).

**[Lessons learned and know-how gained]**

- (1) Create business opportunities with new businesses by holding and exhibiting in trade shows and business meetings.
  - Hold trade show/business meeting events to increase opportunities for organizations to enter business negotiations with businesses with which they have not had business relationships in the past.
  - Boost the momentum for recovering local fishery by jointly organizing these events with business organizations, and fisheries processing industry organizations from the affected areas.
- (2) Develop new sales channels through the development of distinctive, high value-added products.
  - Develop products that meet the needs of the Asian market, which is expected to grow, to develop new sales channels.
  - Take the disaster as a turning point to reform conventional production structures, improve quality, and increase brand value to develop new sales channels.

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## **49) Upgrading and progressing the fisheries industry** [early and late reconstruction phases]

**[Issues]** (1) How to promote the creation of new businesses in the fisheries and fisheries processing industries.

(2) How to upgrade and diversify the fisheries processing business.

### **[Situation and issues created by the Great East Japan Earthquake]**

In order for the fisheries and fisheries processing industries, key industries of the disaster-affected areas, to continue to develop and grow and achieve full-fledged recovery in the midst of intensifying global industrial competition, fisheries processing operations needed to be upgraded and diversified, such as through the creation of new businesses that would properly address changes in the market, as well as the introduction of new technologies, and research and development for rebuilding the fishery industry, along with the development of new products that are made from local resources.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Research and development for rebuilding the fishery industry (Issue 1)

With the aim of supporting the reconstruction of the fishery industry, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) has been implementing the Tohoku Ecosystem-Associated Marine Sciences (TEAMS) project since FY2011, a research and study project of marine ecosystems in the affected areas led by Tohoku University, the Atmosphere and Ocean Research Institute (AORI) of the University of Tokyo, and the Japan Agency for Marine-Earth Science and Technology (JAMSTEC).

Specifically, Tohoku University has been elucidating the changes in fishing ground environments primarily in Onagawa Bay and Sendai Bay along the southern Sanriku coast, and the process of recovery of their ecosystem; the Atmosphere and Ocean Research Institute of the University of Tokyo has been elucidating, based out of Otsuchi Bay, the process of biological resource recovery mainly in the northern Sanriku coast; and the Japan Agency for Marine-Earth Science and Technology has been elucidating the mechanism of environmental change by monitoring the ecosystem of offshore bottom layers. Through surveys of fishing ground environments and ecosystem preservation that were a part of these efforts, the team developed fisheries technology for the fishing and aquaculture industries in the coastal areas of Miyagi and Iwate prefectures that had suffered catastrophic damage.

Results from this project are being shared with fisheries-related businesses and other parties on a database and in symposiums to contribute to the efficient implementation of fisheries and aquaculture operations, and after the conclusion of this project in FY2020, will be put to use in restoring the fishery industry in cooperation with local communities and eventually in creating related industries.<sup>(1) (2)</sup>

- Create new business models by introducing the latest technologies (Issue 1)



The cells of fishery products deteriorate when they are simply frozen and thawed, and this can result in loss of texture, flavor, etc., making it a challenge to maintain the freshness of freshly caught products.

Sanriku Toretate Ichiba Co. in Ofunato City, Iwate Prefecture, introduced the latest freezing technology, CAS (Cells Alive System), which keeps the deterioration that occurs during the freezing process to a minimum, and the use of unique know-how has resulted in improved quality, such as in how drips (tissue fluid of fish cells) are not produced when products are thawed. Taking advantage of this opportunity, the company is developing a new business model, shifting from its previous focus on fresh fish to value-added frozen processed products that take into account the consumer's perspective.<sup>(3) (4)</sup>

• Business innovation by incorporating new ideas in product development (Issues 1, 2)

Hachiyo Suisan Co., Ltd., a fisheries processing company in Kesenuma City, Miyagi Prefecture, suffered catastrophic damage to its head office building and all four of its plants during the earthquake disaster. While the company was able to restart one of its factories in March 2012, sales deteriorated due to the loss of its sales channels.

In restarting its business, the major challenges that the company faced were to develop products based on the changing needs of consumers during the time that it was away from the market, and to address the shortage of human resources caused by the closure of subcontractor plants that handled primary processing, and the increase in administrative tasks including quality inspections. In response, the company actively utilized the Reconstruction Agency's Internship Program for Reconstruction and Creation to take in student interns, and proactively carried out product development and promotional operations based on new ideas from these students. The company utilizes the intern system with the aim to both respond correctly to changes in the market and to eliminate labor shortages (Case study 49-1).

**[Lessons learned and know-how gained]**

(1) Introduce new technologies to develop high value-added products and create new business models.

- Utilize new technologies to develop high value-added products that meet consumer needs.
- Promote high productivity in fishing and aquaculture industries by utilizing the results of research and development at universities and research institutions.

(2) Carry out management innovations based on flexible ideas in ways that correctly address market changes.

- Correctly understand consumer needs and market changes, and develop business strategies that capitalize on the company's individuality and strengths.
- Expand exchanges through work experience and other activities to revitalize the local fisheries industry.

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## 50) Restoring tourist facilities and functions [emergency response phase, and recovery phase]

**[Issues]** (1) How to proceed with the restoration of damaged tourist facilities and equipment  
 (2) How tourism businesses in the affected areas realize business continuation.

### [Situation and issues created by the Great East Japan Earthquake]

The Great East Japan Earthquake forced about a quarter of the 285 registered ryokan and hotel facilities in the six Tohoku prefectures to temporarily close down, and these included eight facilities that were severely damaged. Many other registered ryokans and hotels were forced to operate on a limited basis due to damage to their facilities.<sup>(1)</sup>

In order to revive all industries in the affected areas, it was important to attract more people from outside the affected areas. A major challenge was to secure accommodations and quickly restore tourist facilities in order to create an environment that would enable large numbers of people to visit the affected areas.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Sand beach revitalization movement by local residents (Issue 1)

The Namiita Beach in Otsuchi Town, Iwate Prefecture, was known for its beautiful white sand and green pine trees, and its one-way waves, where waves come in but do not go out. The beach used to be bustling with surfers and bathers. Because the sand beach was swept away in the tsunami, in June 2012, local surf shops and surfers led the Namiita Coastal Beach Restoration Project to clean up the beach and dispose of debris so that they could open the beach as soon as possible. In December 2015, the Japan Amway Foundation built the Remember HOPE Namiita Beach Village, which houses a surf shop and cafe, and serves as a center for personal exchanges between people from the community and elsewhere. Taking these actions into consideration, Iwate Prefecture began holding the Nebama Coast Reconstruction and Beach Care Technology Review Committee and other meetings in 2019 to investigate whether restoration of the beach would be technically feasible, and is working on beach restoration construction.<sup>(2) (3)</sup>

- Reopening facilities quickly by networking with industry peers (Issues 1, 2)

Aquamarine Fukushima (Fukushima Marine Science Museum), an aquarium in Iwaki City, Fukushima Prefecture, suffered no human casualties from the earthquake disaster, but the tsunami isolated the facility, and many fish were killed due to damage to buildings, tanks, and electrical equipment. After evacuating the surviving captive fish and other animals through a network of neighboring aquariums, the facility was restored and reopened in July 2012.

At the 10th World Aquarium Congress held in Onahama in 2018, Aquamarine Fukushima presented its activities to the world. Although the number of visitors has remained sluggish since the

earthquake, the aquarium has friendly relations with 13 facilities in Japan and abroad, especially with five facilities in China, South Korea, and Hong Kong, with whom it will cooperate not only on staff and technical exchange but also in attracting visitors (Case study 50-1).

- Hotels continuing their business and serving as hubs of information on reconstruction (Issue 2)

The Minamisanriku Hotel Kanyo in Minamisanriku Town, Miyagi Prefecture, became an evacuation shelter for 350 hotel guests and 600 local residents since the building was left undamaged although the tsunami had reached up to its second floor. A month after the earthquake, the hotel decided to reopen its restaurant given that general recovery was long delayed. Four months after that, it began operating a storytelling bus service to keep memories alive with hotel employees acting as storytellers to let the many town visitors learn about the realities of the disaster. The hotel also created a Minamisanriku Ten-Ten Map that showed stores that were open in town, and extended hotel guests' check-out times, contributing to the revitalization of local commerce. Hotels are where visitors stay when they visit the town, and the role that they play as hubs of information on the region's reconstruction contributes to reconstruction.<sup>(4)</sup>

- Hotels continuing their business and serving as hubs of exchange with other regions (Issue 2)

The ryokan "Hamabe no Ryoriyado Horaiken" in the Unosumai district of Kamaishi City, Iwate Prefecture, was hit by a tsunami that swept into the second floor of this four-story building, and most of the sand beach on the Nebama coast which could be seen from the ryokan was lost due to land subsidence. Horaikan reopened for business in January 2012, and the proprietress of the ryokan herself worked to disseminate information about the region such as by telling stories about her own personal experiences from the disaster. In 2016, she also established Nebama MIND, a general incorporated association engaged in disaster prevention and mitigation activities, developing local specialty products, and taking in volunteers and sightseeing tours from within and outside the prefecture. Furthermore, the association is actively engaged in exchange activities to attract people from other regions to Kamaishi, which is not a tourist city, including its work in bringing a 2019 Rugby World Cup game to the city. In addition, Iwate Prefecture has been conducting the Nebama Coast Sand Beach Reclamation Project since 2019. The project was partially completed in 2020, and the beach was opened to the public for the first time in nine years.<sup>(5)</sup>

- Recovery of railroads as a tourism resource (Issue 2)

Sanriku Railway Co., Ltd. (headquartered in Miyako City, Iwate Prefecture), which has a total line length of approximately 100 km along the Sanriku coastline in Iwate Prefecture, suffered extensive damage from the tsunami, including the loss, damage, or destruction of bridges, rails, and station buildings. The company was forced to suspend operations on all lines. As part of its efforts to encourage disaster victims, the company decided to reopen operations on partial segments 10 days after the disaster, and then two months later launched a disaster area front-line training tour, with crew members acting as guides explaining the disaster situation. Subsequently, the national government and Iwate Prefecture established a new restoration support program for third-sector

companies, and in April 2012, a portion of the North Rias Line reopened for operation. This was followed by the resumption of full operation in April 2014, encouraging residents to return and live along the line which had become a symbol of reconstruction for the Sanriku region. The company developed businesses that made use of its railroad resources, including the sale of damaged rails as Great East Japan Earthquake Reconstruction Prayer Rails. <sup>(6)</sup> In FY2013, the Sanriku Railway Rias Line attracted significant attention as a location for the NHK morning TV series "Amachan," which contributed to the growth in the number of people engaging in personal exchanges, and attracting tourists.<sup>(7)</sup>

→ *Related Item: 35) Recovery and reconstruction of railroads, ports, and airports*

### **[Lessons learned and know-how gained]**

(1) Achieve early restoration of facilities based on networks and cooperative relationships that were already formed in normal times.

- Utilize networks with industry peers to promote the early resumption of business.
- Utilize overseas networks to promote exchange of staff and technology, and increase the number of visitors.

(2) Businesses attract visitors by disseminating information on their own experience of reconstruction.

- Store owners and innkeepers themselves disseminate information about their reconstruction and have exchanges with people from other regions.
- People who sympathize with a community's revitalization efforts promote exchanges with other communities.
- Promote the attractiveness of local railroads, etc., as regional tourism resources to increase the number of people engaging in personal exchanges and tourists.

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## 51) Preservation and development of the soft aspects of tourism [early and late reconstruction phases]

**[Issues]** (1) How to disseminate information in ways that will attract tourists.  
(2) How to strengthen and improve the systems for promoting tourism.

### [Situation and issues created by the Great East Japan Earthquake]

The earthquake and tsunami disaster, and the nuclear power plant accident caused by the Great East Japan Earthquake had a significant negative impact on the number of tourists, not only due to hardware damage, such as damage to and loss of tourist facilities, but also due to soft damage, such as negative rumors relating to the disaster and a prevailing mood of self-restraint among potential tourists. In the affected areas, the challenge was about how to promote local attractions and disseminate information in ways that communities, in particular the coastal areas, can attract returning tourists as well as further increase the number of tourists. Another major challenge was how to strengthen and develop systems for attracting tourists on an ongoing basis.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Promote the region's attractive cuisine and culture (Issue 1)

The Matsukawaura area of Soma City, Fukushima Prefecture, is known for having the best port in the prefecture and its scenic beauty. However, almost the entire area was damaged by the tsunami, and due to fishing restrictions and negative rumors caused by the nuclear power plant accident, it has been difficult for tourism businesses to recover on their own. To address this issue, the Matsukawaura Tourism Promotion Group was formed by 27 businesses, led by the Soma City Tourism Association and the Matsukawaura Ryokan Association, and applied for a group subsidy to restore facilities and equipment (Case 51-1). In addition, the group developed a Revival Challenge Rice Bowl dish made from local seafood. This was offered at member restaurants and ryokan, and became a hot topic of conversation. In addition, the group promoted Matsukawaura, the town of delicious fish, nationwide through the planning and implementation of shore excursions, and achieved an increase in the number of tourists.<sup>(1)</sup>

- Promote exchange-oriented experiential tourism which fosters personal exchanges with local communities (Issue 1)

Since before the earthquake, Tanohata Village, Iwate Prefecture, had begun an exchange-oriented experiential tourism program utilizing a cluster of *banya* (fisherman's huts) that stood on Tsukuehama beach. The village established the NPO Experience Village Tanohata Network in 2008 to host exchange programs with fishermen as well as *sappa* boat (surfboat) cruises, which were beginning to produce results. Since the *banya* were swept away in the tsunami caused by the earthquake, the village launched the Tsukuehama Banya Restoration Project as a symbol of reconstruction, and the *banya* cluster was reconstructed with the 2.3 million yen it received in donations from 94 supporters

nationwide, and the reconstruction grant obtained by the village. The village is also working to attract tourists by resuming *sappa* boat cruises and hosting storytelling events of people's experiences from the tsunami and guided tours.<sup>(2)</sup>

- Developing a nationwide campaign for the affected areas (Issue 1)

Every year, the six JR Group companies launch the Destination Campaign, a large-scale tourism campaign, in collaboration with local authorities and tourism-related parties to convey information on new regional attractions to the rest of Japan and attract tourists. After the Great East Japan Earthquake, campaigns were conducted in Iwate Prefecture in 2012, in Sendai City, Miyagi Prefecture, in 2013, and in Fukushima Prefecture in 2015 to bring tourists back to the affected areas from all over Japan. Local authorities and tourism businesses in the six Tohoku prefectures plan to work together as a cohesive team to launch the Tohoku Destination Campaign for six months starting April 2021, aiming to create and expand tourism to the Tohoku region by developing tours that are based on various themes along different routes in the six prefectures and disseminating information on these tours.<sup>(3) (4)</sup>

- Developing independent projects to strengthen organizations that promote tourism (Issue 2)

At the time of its incorporation in 2009, the Minamisanriku Tourist Association in Minamisanriku Town, Miyagi Prefecture, had only one full-time staff member (several employed under an emergency employment program), and although it carried out projects commissioned by the town, it was not in a position to develop its own tourism projects. However, after the Great East Japan Earthquake, the association took advantage of the national government's emergency employment programs and support projects to hire more than a dozen temporary staff with various skills, including information and design, to organize speaking events by storyteller guides and earthquake study tours which it has marketed nationwide since August 2011. The association is now the designated manager of operating the town's campgrounds and is expanding its operations. Furthermore, the association is strengthening its organizational base, such as by converting the employment status of temporary staff to full-time employment.<sup>(5) (6)</sup>

- Bringing the community together as a cohesive team to promote tourism by forming a regional DMO (Issue 2)

In November 2015, the Japan Tourism Agency established a registration program for Destination Management/Marketing Organizations (DMOs) as legal entities engaged in regional development through tourism, and provides support on matters such as the focused implementation of support measures provided by relevant ministries and agencies. There is growing momentum in many regions for establishing regional DMOs in which local authorities and businesses work together to formulate tourism strategies.

In Kesenuma City, Miyagi Prefecture, the City, the Tourism & Convention Bureau, and the Rias Tourism Creation Platform established "Kesenuma Regional Strategy," a regional DMO, in April 2017 in which regional stakeholders work together as a cohesive team to develop marketing and

tourism strategies, and carry out PR and product development. At the time, it was decided that the Kesenuma Tourism Promotion Organization, which was established by the City, the Chamber of Commerce and Industry, Kesenuma Regional Strategy, and other organizations, would be responsible for overall decision-making and management in tourism. The establishment of Kesenuma Regional Strategy not only organized the roles among administrative agencies and industries related to the city's tourism, but also provided a bird's-eye view of tourism overall in Kesenuma, making it possible to carry out projects under a more robust structure than before the earthquake.<sup>(7)</sup>

### **[Lessons learned and know-how gained]**

(1) Improve the ability to attract visitors by disseminating information on cuisine and culture that are distinct to the region, and by developing experience-based programs.

- Disseminate information promoting the region's unique and attractive resources to improve the ability to attract visitors.
- Increase the number of people engaging in personal exchanges with the local community through experience-based programs, rather than simply “sightseeing” programs.
- Local authorities, tourism-related parties, and transportation operators work together to promote attractive tourism resources both domestically and internationally.

(2) Strengthen the structure of the tourism association and establish regional DMOs to reinforce the structures that promote tourism.

- The tourism association develops independent projects to strengthen its structure, such as by improving profitability and securing personnel.
- Establish an organization where local government agencies and tourism businesses can work together as a cohesive team to plan, manage, and promote tourism.

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## 52) Creating new tourism demand [early and late reconstruction phases]

**[Issues]** (1) How to add value to the tourism resources in the affected areas.  
 (2) How to attract inbound visitors from abroad.

### [Situation and issues created by the Great East Japan Earthquake]

In order to vitalize tourism in the affected areas, it is essential not only to restore pre-disaster tourism facilities and equipment, but also to enhance the attractiveness of local natural settings and culture as tourism resources, create new tourism demand, and attract new tourists from outside the region.

In particular, the number of foreign visitors to Japan increased rapidly nationwide through FY2019, and the number of total foreign overnight stay visitors in Tohoku finally recovered to its pre-disaster level in 2015. The national government set a target of 1.5 million total foreign overnight stay visitors in the six Tohoku prefectures by 2020<sup>(1)</sup> and worked on the recovery of tourism in Tohoku by positioning 2016 as the First Year of Tohoku Tourism Recovery. The target was achieved in 2019.

In order for the economies of affected areas to continue to grow sustainably and realize full-fledged reconstruction, the challenges are how value can be added to local tourism resources, how these can be marketed as attractive tourism products, and how to strategically increase the number of inbound visitors from abroad, a segment where much demand is expected to exist.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Sea-themed experiential tourism programs (Issue 1)

Konpira-maru Blue Tourism in Minamisanriku Town, Miyagi Prefecture, conducts new tourism projects that make multifaceted use of the sea as a tourism resource, primarily in coastal regions with thriving scallop, oyster, and wakame seaweed fishing industries. Specifically, they are promoting the use of tourism resources in blue tourism by developing attractive experiential tourism programs such as marine leisure, fishing experiences, and trekking to attract large numbers of tourists, and by selling local specialty products online that tourists can purchase even after they leave.<sup>(2) (3)</sup>

- Developing overnight or extended stay facilities using local forest resources (Issue 1)

In September 2014, Hakoneyama Terrace Co., Ltd., in Rikuzentakata City, Iwate Prefecture, developed an overnight or extended stay facility that utilized local forest resources and took advantage of the lush green mountain environment overlooking Hirota Bay, attracting many tourists from within and outside the region.

Its buildings' walls and floors are made of Kesen cedar and timber grown in the prefecture. Wood pellet-fueled stoves and boilers have been installed to provide heat energy that does not rely on electricity, giving the facility a woody warmth. It has successfully attracted not only extended stay guests but also overnight business guests. In addition to the cafe bar and terrace on its premises, the attached workshop room serves as a venue for seminars where visitors can experience Kesen

carpentry techniques and join workshops to learn DIY projects using wood, making this a place where local residents can enjoy personal exchanges. As such, it also contributes to the growth of local industry.<sup>(4)</sup>

- Attracting wealthy inbound guests (Issues 1, 2)

The Tohoku Premium Supporters Club was formed under the leadership of Diamond Big Co., Ltd., by about 20 tourism-related companies, including travel agencies, ryokan and hotels, regional DMOs, and transportation companies with the aim of creating tourism programs that targeted affluent westerners. The Club is working to promote Tohoku travel products by having businesses jointly develop Tohoku travel products for wealthy westerners and promoting them to overseas travel agencies and media. In FY 2018, the first year of the project, the total number of annual overnight guests reached 1,194, far exceeding its target of 200, and is attracting significant attention from foreign visitors to Japan (Case study 52-1).

- Establishing regional DMOs targeting inbound travelers (issues 1, 2)

Miyagi Prefecture has enhanced its systems for receiving inbound visitors by establishing inbound DMOs in each region to implement programs for foreign visitors to Japan. Four organizations were established in the prefecture: Kesenuma Regional Strategy, Ishinomaki Area Tourism Promotion Organization, In-Outbound Sendai-Matsushima Inc., and Miyagi Inbound DMO to promote regional development through DMO-led tourism.

In-Outbound Sendai-Matsushima Inc., which primarily operates in Sendai City, Natori City, and Higashi-Matsushima Town, has designated six cities and three towns, including Sendai, and cities and towns in the surrounding areas, including Sendai Airport, as central urban areas, and is developing new tourism plans featuring each of the areas' hot springs, natural settings, history, culture, and other tourism resources.<sup>(5)</sup>

Miyagi Inbound DMO was established in March 2017, under the leadership of VISIT Tohoku Inc., which promotes inbound tourism projects.<sup>(6)</sup> Based on the tourism strategy formulated by the Miyagi Inbound Promotion Council, which was established by four cities and nine towns in southern Miyagi Prefecture, this DMO builds on the experience of private companies in developing wide-area tours and creating content. Through such clarification of the division of roles between the public and private sectors, and collaboration among disaster-affected local authorities, efforts are being made to attract educational tours from abroad, provide information to foreigners, train personnel for inbound tourism, and make websites multilingual.<sup>(7) (8)</sup>

**[Lessons learned and know-how gained]****(1) Re-create local resources into value-added tourism products.**

- Reexamine the appeal of local resources, and develop and disseminate information on high value-added products.
- After attracting tourists, continue to promote attractive products from the affected areas online.

**(2) Strengthen and improve the systems for attracting inbound visitors and develop travel products and conduct promotional activities.**

- Build a collaborative system that transcends public and private sector boundaries, and create strategies and mechanisms for attracting inbound visitors.
- Build a collaborative system between businesses that transcends regional boundaries to attract inbound visitors.

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### 53) Promoting reconstruction tourism [early and late reconstruction phases]

**[Issues]** (1) How to build on the experiences and lessons learned from the disaster in tourism programs.  
 (2) How to connect reconstruction tourism to the revitalization of regional economies.

#### [Situation and issues created by the Great East Japan Earthquake]

In order to pass down the lessons of the Great East Japan Earthquake, a disaster of unprecedented scale, to the next generation, the rest of the country, and internationally, efforts are underway in various disaster-affected areas to develop earthquake legacy facilities, preserve disaster heritage sites, and pass down the lessons of the disaster through storytelling activities.

Reconstruction tourism has great significance in terms of raising awareness in disaster mitigation and prevention by having tourists learn about the experience and lessons learned from the disaster and tsunami at actual disaster sites, and directly experience the progress of reconstruction. This is also highly significant for the affected coastal areas where commerce and tourism are major industries along with fisheries, in that these initiatives will increase the number of people engaging in personal exchanges and help recover local economies. The key issues to be addressed were how to communicate the experiences and lessons learned from the earthquake, and how to increase the number of visitors from other regions through reconstruction tourism and link this to the sustainable growth of local economies.

#### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Attracting visitors with programs for learning from the earthquake experience (Issues 1, 2)

Hotel and ryokan operators in the disaster-affected areas are creating programs that guide visitors to disaster sites, earthquake legacy facilities, and disaster heritage sites, attracting more visitors from outside the affected areas.

The Minamisanriku Hotel Kanyo in Minamisanriku, Miyagi Prefecture, operates a storytelling bus service (500 yen for adults) where hotel staff provide bus tours to disaster sites in town to keep memories of the disaster alive, and to inform tourists about the reality of the damage caused by the earthquake and tsunami. This storytelling bus initiative has been highly acclaimed, winning the Japan Tourism Award Grand Prize in 2017.<sup>(1)</sup>

- Learning about disaster prevention from disaster heritage sites (Issues 1, 2)

In March 2014, the city of Miyako purchased the Taro Kanko Hotel in the Taro district of Miyako City, Iwate Prefecture, which was damaged up to the fourth floor of its six-story building by the tsunami. The building is now preserved as a tsunami heritage site. Tours of the interior of the building are available for participants of the Guided Tour to Learn Disaster Prevention hosted by the Miyako Cultural Exchange Association. Tsunami footage taken by the hotel operator from the 6th floor on the day of the disaster can only be seen here, and as of March 2020, a total of 170,000 people have

visited the hotel. Miyako City introduces the Taro Kanko Hotel and the Earthquake Disaster Memorial Park Nakanohama in three languages: Japanese, English, and Chinese, in its Miyako City Tourism Brochure to communicate the severity of the tsunami damage to tourists (Case study 53-1).

KIBOTCHA in Higashimatsushima City, Miyagi Prefecture, is a tourist facility created in an elementary school that was closed after the earthquake. It provides services that fuse entertainment, education, and disaster prevention together. The former Nobiru Elementary School, which closed down due to the earthquake, was renovated and reconstructed with Miyagi Prefecture's Subsidy for Projects that Develop Model Facilities for Increasing the Number of People Engaging in Personal Exchanges in Coastal Areas. As a tourist facility that offers various disaster education programs such as its Disaster Prevention Education Camp, the facility attracts tourists from within and outside the disaster area.<sup>(2)</sup>

→ *Related Item: 65) Preservation of disaster heritage sites and development of disaster legacy centers*

- Networking disaster memorial groups and facilities (Issues 1, 2)

In order to more effectively and efficiently pass down the legacy of the earthquake disaster, the "Disaster Memorial Network Council<sup>(3)</sup>" (Tohoku Regional Development Bureau, Aomori, Iwate, Miyagi, and Fukushima Prefectures, and Sendai City) was formed to register disaster legacy facilities as well as develop maps and guide signs. By networking disaster memorial facilities scattered throughout regions, the council has been promoting various initiatives related to disaster prevention and mitigation in the form of the "3.11 Densho Road" and connecting these to effective disaster prevention education. As of February 2021, 271 facilities have been registered, and pictograms are used to communicate information in 123 facilities. One initiative that makes use of these disaster legacy facilities is a tour program called the 3.11 Densho Road Workshop, which is developed and run by the 3.11 Densho Road (Disaster Memorial Road) Promotion Organization.<sup>(4)</sup> Model tour courses include a tour of "Seapal-Pier Onagawa" in Onagawa Town, Miyagi Prefecture, and the "former Kitakami River embankment site" in Ishinomaki City, Miyagi Prefecture, to learn about creating liveliness, as well as a tour of the Tsunami Memorial Hall in Kamaishi City and Taro Kanko Hotel in Miyako City, both in Iwate Prefecture, to learn about the wisdom gleaned by people of tsunami-vulnerable areas and their fight against tsunami, enabling visitors to learn about recovery and reconstruction initiatives that suit their areas of interest in an effective way (Case study 65-2).

→ *Related Item: 65) Preservation of disaster heritage sites and development of disaster legacy centers*

- Hope Tourism, a program of learning trips to disaster-affected areas for personal growth (Issue 1)

Fukushima Prefecture, which suffered damage from the nuclear power plant accident, has developed "Hope Tourism," a program of learning trips that help participants gain personal growth by contemplating the lessons people have learned from the earthquake disaster and nuclear plant accident, as well as their efforts to rebuild their communities, and also by contemplating how they themselves can overcome adversities in their own lives by learning about Fukushima as it really is

(including the light and dark), which people cannot come to know through media coverage alone, and through conversations with the people of Fukushima who continue to take up the challenge of reconstruction despite the unprecedented difficulties they face (Case study 53-2).

Specifically, courses being developed include one-night/two-day and two-night/three-day trips for junior high and high school students, public officials, and corporate groups, which feature visits to areas that have been designated difficult-to-return zones due to the nuclear power plant accident, sites damaged in the tsunami, facilities that conduct research for decommissioning, and mega solar facilities that provide a new source of energy; conversations with people working to revive communities, start up new businesses, and revive agriculture and fishing industries under difficult conditions; as well as workshops held by participants.

- Personal exchanges with people from out of town through interactions with a diverse range of citizens serving as storytelling guides (Issues 1, 2)

Oraga-Otsuchi Yumehiroba, in the town of Otsuchi, Iwate Prefecture, is a community development organization established in November 2011 with the aim to revitalize its community through tourism. Storytelling guides, ranging in age from high school students to seniors, speak with tourists not only about how Otsuchi was damaged in the disaster, but also about the changes and growth the town's residents underwent through their experiences, deepening their exchanges with people from out of town.<sup>(5)</sup>

Marugoto Rikuzentakata in Rikuzentakata City, Iwate Prefecture, is working to attract educational tours for schools and learning tours for companies and university students in order to increase the number of people engaging in personal exchanges. One of its programs, the Reconstruction Frontline Tour, takes visitors on a tour of the city's disaster heritage sites, a giant seawall, and the construction site of the Takata Matsubara Restoration Project, giving them an overview of the past, present, and future of Rikuzentakata City.<sup>(6)</sup>

- Developing systems for promoting reconstruction tourism (Issues 1, 2)

In order to promote, as the pillars of Sanriku tourism, educational tours and corporate study tours centering on learning about the earthquake disaster, Iwate Prefecture established a platform in FY2013 to serve as a one-stop contact point for its disaster learning programs to strengthen and expand its system for taking in learners to these programs. At educational tour presentation meetings held in the Tokyo metropolitan and other areas, prefecture representatives communicate the significance of the disaster heritage sites in coastal areas and the importance of experiencing and learning on actual sites to school officials, and representatives from travel agents, companies and local authorities to attract more visitors.<sup>(7)</sup>

**[Lessons learned and know-how gained]**

- (1) To attract visitors, create programs that pique the interest of people who have not experienced the disaster to learn more about it.
  - Create programs that incorporate disaster legacy facilities and disaster heritage sites so that visitors can learn about the earthquake in the field.
  - Promote storytelling tours in cooperation with local tourism associations and volunteers.
  - Conduct guided tours of reconstruction in the field to show visitors the current conditions in the affected areas.
  
- (2) Develop a promotion system to attract visitors from outside the affected areas.
  - Develop a system to promote reconstruction tourism through collaboration between government agencies, travel and transportation operators, and other related organizations.
  - Promote the program to travel agencies, etc. to attract visitors from the Tokyo metropolitan area and other regions.

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## Part IV Collaboration and Posterity



## **54) Securing human resources such as volunteers and NPO staff, and collaborating with them from normal times** [emergency response phase, recovery phase]

**[Issues]** (1) How to coordinate the intake process for volunteers arriving at disaster areas.  
(2) How to address the needs of disaster victims during evacuation.  
(3) How to take advantage of international support and know-how.

### **[Situation and issues created by the Great East Japan Earthquake]**

In the Great East Japan Earthquake, victims that needed assistance were spread out over a large area. A variety of needs arose during evacuation, including securing supplies for evacuees living in shelters and those who evacuated to their homes, requiring the help of a large number of supporters. In the week from April 29 to May 5, the number of volunteers who worked through Disaster Relief Volunteer Centers set up by councils of social welfare in municipalities alone reached a total of 70,000.<sup>(1)</sup> As for the volunteers' motivations to engage in support activities, nearly 70% replied "Because I wanted to be of help to the affected areas."<sup>(2)</sup> While self-motivated actions based on a strong sense of mutual aid grew nationwide, a system was needed for taking in people who wanted to head to the affected areas as volunteers to provide assistance.

In addition, in response to this national disaster in Japan, governments and agencies of 163 countries and regions, as well as 43 international organizations offered to dispatch rescue teams, provide supplies, and donate money to the disaster-stricken areas.<sup>(3)</sup> Domestically, organizations with experience in providing refugee assistance and other forms of international assistance also provided a wide range of support making use of their know-how.<sup>(4)</sup>

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

#### • Opening disaster relief volunteer centers (Issue 1)

After the disaster hit, disaster relief volunteer centers were set up throughout the affected areas to take in and dispatch volunteers. In operating the center, staff were dispatched from councils of social welfare nationwide, and were also secured from among local community welfare volunteers, welfare organizations, NPOs, etc.<sup>(5)</sup> In addition, the "Disaster Volunteer Activity Support Project Council" dispatched "operations supporters" from across Japan to assist in setting up disaster relief volunteer center management systems and coordinating the centers' collaboration with administrative agencies, NPOs, etc. Meanwhile, pre-disaster preparations at some organizations fell short in terms of their volunteer intake process, such as in publishing information on disaster relief volunteer center installations in their municipal community disaster prevention plan, preparing manuals, and conducting drills, causing operational issues after volunteers were taken in.<sup>(6)</sup>

#### • Logistical support for disaster relief volunteer intake (Issue 1)

In 2007, nine municipalities, led by Tono City, Iwate Prefecture, had set up the Sanriku Region Earthquake Disaster Relief Base Facility Installation Promotion Council to provide a support system

to serve as a base for logistical support from normal times for coastal local authorities. Against this backdrop, the Tono Magokoro Net, a non-profit organization, was established very soon after the earthquake on March 28 mainly by Tono citizens, the Tono City social welfare council, and volunteer groups. This organization carried out disaster relief volunteer intake operations and the dispatching of these volunteers to affected areas.<sup>(7) (8)</sup> Specifically, after volunteers were registered at the Tono City office, it arranged for buses to transport them to different disaster areas and secured accommodations for them.<sup>(9)</sup> It also worked with local authorities of these affected areas to dispatch disaster relief volunteers to disaster areas.<sup>(10)</sup> By taking in disaster relief volunteers, Tono City helped to keep local authorities from being overloaded by floods of volunteers.

- Support for volunteer intake operations using the Internet (Issue 1)

Volunteer Info, a non-profit organization, provided support for the intake and dispatching of volunteers online. Specifically, teams would visit actual sites and interview victims at evacuation shelters and municipal governments to identify their need for volunteer support, and the volunteer information entry team at the office would post information on the number of volunteers needed, description of their activities, and activity locations on websites with large traffic (Yahoo Volunteer, Nifty, etc). From May 2011 to the end of fiscal 2012, the organization posted information on approximately 5,000 volunteer activities for three of the disaster-hit prefectures and is currently conducting educational activities alongside to promote volunteer activities.<sup>(11)</sup>

- Working with volunteer centers to address the daily needs of disaster victims (Issue 2)

The need to secure and distribute water, food, and other relief supplies to meet the needs of disaster victims rose during the emergency response phase. A non-profit organization, People, provided food items and ingredients that were either pre-cooked or could be used for cooking, serving more than 10,000 meals. Furthermore, based on information collected during soup kitchens, People collaborated with other NPOs, etc., to secure and distribute relief and support supplies. It also took part in setting up the disaster relief volunteer center in the Onahama district of Iwaki City, where it distributed relief supplies, helped clean up and put away household goods in tsunami-affected areas, removed tsunami sediment from ditches, and otherwise addressed the daily needs of disaster victims.<sup>(12)</sup>

International NGO Peace Boat established the Peace Boat Disaster Relief Volunteer Center (later renamed the Peace Boat Disaster Relief Center) and quickly organized a large number of volunteers to begin providing emergency assistance, mainly in Ishinomaki City and Onagawa Town in Miyagi Prefecture. Specifically, in addition to providing food support and distributing supplies, it dispatched a Mite Busters team to evacuation shelters to dry beddings, thoroughly clean evacuation shelters, and distribute beddings or replace beddings with new ones. Its support also included the providing of temporary public bathhouses.<sup>(13)</sup>

- Distributing supplies efficiently by surveying the needs for supplies in the affected areas (Issue 2)

Within three hours of the disaster, Japan Platform (JPF), an NGO with a history of providing emergency humanitarian assistance in Japan and abroad, made the decision to mobilize, and JPF member NGOs began providing emergency assistance. It took action to match offers of supplies and

services from 168 companies and organizations with the needs for supplies in the affected areas that were reported by NGOs, and distributed supplies to more than 200 matches that were made.<sup>(14)(15)</sup> Supplies were distributed to NGOs such as AAR Japan, which provides assistance for refugees, and ADRA Japan, which provides development assistance to developing countries. These were then sent to local NPOs and evacuation shelters based on demand survey results from each of the affected areas.

→ *Related item: 57) Intermediary support organizations and networks*

• Making use of international refugee assistance know-how in supporting disaster victims (Issue 3)

From 2011 to April 2013, the Japan Association for Refugees, an authorized NPO, responded to the diverse demands of disaster victims by providing support through community support programs and refugee volunteer dispatch programs. In terms of support for disaster victims in rebuilding their livelihoods, the association held information sessions for victims at evacuation shelters — with the participation of lawyers who it had worked with in previous activities — on matters concerning the Act on Support for Reconstructing Livelihoods of Disaster Victims, their inheritance, and mortgage loans. By March 2013, a cumulative total of 242 legal consultations and information sessions were held, attended by 3,011 people (Case study 54-1).

• Donations and dispatch of expert teams from abroad (Issue 3)

As of April 30, 2020, the amount of donations received by the Japanese Red Cross Society from governments and private sector from different countries totaled 383.8 billion yen, which was distributed to 14 prefectures, including Hokkaido, and prefectures in the Tohoku, Kanto, and Hokuriku regions.<sup>(16)</sup> Donations were sent to the municipalities through the metropolitan and prefectural governments and used to support the victims. As for support from other countries, countries and organizations provided specialized assistance, including medical teams from Israel and Jordan, a team of nuclear experts from the International Atomic Energy Agency (IAEA), and educational supplies from UNICEF.<sup>(3)</sup>

**[Lessons learned and know-how gained]**

- (1) Work with councils of social welfare and NPOs, etc., to coordinate the smooth intake of volunteers.
  - With respect to the functions of volunteer centers to be set up by councils of social welfare at times of disaster, prepare systems, manuals, and drills in advance.
  - Before volunteers arrive at the affected areas, groups made up of NPOs, etc., and citizens as well, coordinate the dispatch and intake of volunteers to reduce the workload of volunteer centers in the affected areas.
  - Use the Internet to call for volunteers, accept applications, and coordinate their dispatch.
- (2) All capable entities, including government agencies, businesses, and NPOs collaborate to provide support for securing and distributing relief supplies for disaster victims, and setting up living conditions in evacuation shelters.
  - Coordinate quickly to provide emergency supplies and soup kitchens for disaster victims.
  - Secure clothing and other daily commodities from companies and organizations, match them with the needs of each shelter, and ensure that shelters receive ongoing deliveries of these supplies.
  - Provide support in making improvements to evacuation shelter environments, such as cleaning the shelters and drying bedding to ensure a hygienic stay for disaster victims.
- (3) Utilize international expertise, such as providing multilingual information for foreign residents affected by the disaster and dispatching teams of experts from abroad.
  - NPOs, etc., with experience in international support activities provide multilingual information to foreign residents affected by the disaster, consultation on rebuilding their lives, and other forms of assistance to disaster victims.
  - Receive teams of medical, educational, and other experts from various countries and use their expertise in diverse fields to provide support.

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## **55) Safeguarding the elderly and children and providing support for daily life activities through NPOs and other organizations** [recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to ensure and continue safeguarding for the elderly, etc.  
(2) How to provide support for the daily lives of the elderly, etc.  
(3) How to achieve support for children.

### **[Situation and issues created by the Great East Japan Earthquake]**

As victims moved from evacuation shelters to emergency temporary housing, and then to permanent housing, the challenges at each of these transitions were in how to provide support for the elderly, disabled, and other people with special needs, including safeguarding and assisting them with their daily needs such as hospital visits, grocery shopping, etc. For children, after-school learning support and creating places where they can spend their time after school became an issue. It is often difficult for government agencies alone to understand all the needs of these individuals with special needs in detail, so NPOs and other community-based organizations played an important role in connecting persons with special needs with government agencies, and supporting them.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Safeguarding through collaboration between NPOs and councils of social welfare, etc. (Issue 1)

Even before the earthquake, the NPO Sendai Listening Group had already been conducting activities to prevent suicide among the elderly by listening to problems and worries that they had, and easing their loneliness and anxiety. After the disaster hit, the group held listening sessions for disaster victims at evacuation shelters and emergency temporary housing. At the request of a council of social welfare in Miyagi Prefecture, it also provided a learning course where daily-life support counselors and others learned the listening know-how they would need for supporting the elderly who were staying in emergency temporary housing, etc.<sup>(1)</sup> Since then, the group has continued to expand its activities,<sup>(2)</sup> offering courses for 13 organizations in FY2019, including for councils of social welfare, with a total of 848 people taking the course.<sup>(3)</sup>

→ *Related item: 8) Safeguarding tenants in emergency temporary housing*

- Safeguarding for the elderly with private home delivery services (Issue 1)

Since November 2011, Miyagi Consumer's Cooperative Society had been providing dinner delivery services to elderly people living in emergency temporary housing who were having difficulty cooking on their own. In 2012, the co-op entered an agreement with Miyagi Prefecture and local authorities in the prefecture to watch over these residents. As a result, a system was created where, if a co-op delivery person were to notice something unusual about a user during their delivery, they would promptly inform the head of the Miyagi Co-op office, etc., and if the situation is deemed to be highly urgent, the Co-op office would inform the council of social welfare, and Community Comprehensive Support Center, etc.<sup>(4)</sup> As of July 2020, approximately 150,000 people use this home

delivery service.<sup>(5)</sup>

- Establishing bases of activity for promoting the health of elderly people (Issue 1)

The NPO Riku Cafe built RikuCafé to provide a place for personal interactions not only for local residents, but also for those who visit Rikuzentakata City as volunteers or for work. The cafe has a community space with Wi-Fi that can be used for meetings and events. Here, with the aim of promoting more personal interactions in the community, the cafe hosts an event that combines nutritional counseling by a dietitian with exercises, lectures, and lunch that help extend people's healthy life expectancy.<sup>(6)</sup>

- Mobility support for disaster victims who have no means of transportation (Issue 2)

Mobility Support Rera, a non-profit organization, has been providing transportation for disaster victims living in emergency temporary housing far from hospitals and commercial facilities, as well as for those who have relocated to homes that they built on higher ground, helping them get to and from grocery shopping, hospital visits, etc. In addition to providing transportation for a total of 158,965 people as of fiscal 2018, Rera also focuses on creating purposes for mobility that go beyond mobility support. It regularly organizes flower viewing and hot spring trips accompanied by personal helpers for people who require nursing care and have difficulty leaving their homes, and also organizes trips to farms for elderly people, who are unable to tend to their farm due to damage to their paddies or fields, to give them hands-on experience of farming again. In addition, since FY2016, it has been organizing forums to discuss issues related to mobility, which has been attended by a diverse range of actors, including government officials (related to transportation, welfare, and reconstruction), as well as representatives from businesses and universities (Case study 55-1).

- Daily-life support for the elderly with the expertise of NPOs (Issue 2)

Since July 2011, Ishinomaki City has been commissioning Fair Trade Tohoku, a non-profit organization, to visit each individual home of elderly evacuees. For those home evacuees deemed in need of support, the organization arranges visits by doctors, lawyers, clinical psychologists, mental health workers, nurses, etc., and also refers them to various city services including health, welfare, and nursing care.<sup>(7)</sup> The organization builds on the know-how it gained from its experience with shut-ins, and starts these visits to the homes of the elderly by distributing relief supplies to build a relationship of trust, and then assesses their needs and health status. The extent of support that individuals needed would then be determined based on their physical and psychological conditions.

- Supporting children's learning, and creating places where they can spend their time (Issue 3)

Authorized NPO Katariba set up Collaboration Schools in Onagawa Town, Miyagi Prefecture, and Otsuchi Town, Iwate Prefecture, as places where children studying in temporary housing and temporary school buildings could spend their time after school hours. These Collaboration Schools are primarily for students from elementary school through high school, and provide not only after-school tutoring but also a place where children can spend their time after school with peace of mind

and they are emotionally cared for. Since 2017, at Futaba Mirai Gakuen, which opened in Hirono Town, Fukushima Prefecture, NPO Katariba has been supporting activities that help junior and senior high school students deepen their understanding of the revitalization of their local communities, and of matters that interest them.

These projects in Onagawa Town, Miyagi Prefecture, and Otsuchi Town, Iwate Prefecture, have been receiving support from the Ministry of Education, Culture, Sports, Science and Technology under the Emergency School Counselor Dispatch Program since FY2011. Katariba's Collaboration School activities have spread to Mashiki Town in Kumamoto Prefecture, which suffered severe damage in the Kumamoto earthquake of 2016, and is using crowdfunding to raise funds and strengthen its revenue structure (Case study 55-2).

→ *Related items: 17) Mental health and physical care of children in disaster-affected areas*

*18) School attendance and learning support for children in disaster-affected areas*

### **[Lessons learned and know-how gained]**

- (1) Commission operations to NPOs, etc., with expertise, and utilize existing private-sector services to help safeguarding the elderly and maintain their health.
  - Assign daily-life support counselors to safeguard the elderly, provide daily-life counseling, and assist them in their daily lives.
  - To safeguard the elderly, partner with private businesses that provide services for the elderly.
  - To maintain the health of the elderly and prevent their isolation, NPOs, etc., create opportunities for personal interactions that are thoughtful of elderly people's health.
- (2) NPOs, etc., identify the support needs of individual elderly people and provide necessary support, such as mobility support.
  - Provide mobility support to the elderly and disabled to assist with hospital visits and grocery shopping.
  - Make Individual visits to understand what kind of support the elderly person needs, and if necessary, match them with professionals such as a physician or lawyer.
- (3) Government agencies and NPOs work together to support children's learning and provide mental health care.
  - To provide mental care and learning support for children, commission operations to NPOs, etc., with experience and know-how.
  - NPOs and NGOs make effective use of crowdfunding and other fundraising tools to continue their mental health care and learning support activities.

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## 56) Support from NPOs and other groups in revitalizing communities

[early and late reconstruction phases]

**[Issues]** (1) How to support the revitalization of local communities where people have strong connections with each other.  
(2) How to curb the loss of employment opportunities and population outflow.

### [Situation and issues created by the Great East Japan Earthquake]

In areas affected by the Great East Japan Earthquake, the strong communal characteristics of the affected areas, especially in farming, forestry, and fishing communities, combined with the inevitable exodus of population, have made the preservation and revitalization of personal and community relations an important theme for rebuilding.<sup>(1)</sup> To resolve these issues, NPOs, etc., in several regions are working to revitalize communities by leveraging local resources while connecting local entities and building consensus over various matters.

Meanwhile, many disaster victims have lost their jobs and permanent residences, causing an outflow of population from the affected areas. Young people are no exception to these developments, and have lost the opportunity to find work in their hometowns. Disabled persons and others with special needs are facing even more difficulties in finding employment to achieve self-reliance.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Collaborative strategies for community rebuilding by government agencies, residents, business owners, landowners, etc. (Issue 1)

Area management<sup>(2)</sup> that involved proactive efforts carried out by residents, business owners, landowners, and others proved to be effective in preserving and improving the good environment and value of an area. The disaster inspired initiatives for proactively creating communities where people can live comfortably.

Ofunato City in Iwate Prefecture developed Kyassen Ofunato (Case study 24-1) as a base for reconstruction from the tsunami damage. By "creating attractive attributes across public and private spaces," "place-making and town promotion in collaboration with surrounding districts," and "planning and implementing shopping district revitalization projects in collaboration with store owners," a community was formed here<sup>(3)</sup> that centered around a shopping district.

In Minami-Gamo, a rural community in eastern Sendai that suffered damaged from the tsunami, Urban Design Works, a non-profit organization, set out to redefine *igune* (privately owned and managed tree groves around houses) as valuable scenic and environmental resources of Sendai, the City of Trees, with the shared goal of restoring and passing them down as Igune for Everyone with the participation of diverse entities based on new values and mechanisms. For this purpose, the organization connected neighborhood associations with the city, and by reflecting in city development plans matters such as changes to be made to disaster risk areas, it carried out activities to revitalize communities that were made up of residents who have relocated, those who have rebuilt on their existing lot, and those who were seeking to relocate.<sup>(4)</sup>

→ *Related items: 24) Revitalization and management of city centers*

*43) Creating and revitalizing a lively atmosphere*

- Promoting relocation and supporting the entrepreneurship of young people (Issue 2)

Kesenuma City has been losing its population since after the earthquake, and Kesenuma City Relocation and Settling Support Center MINATO, operated by Maru-Office, a general incorporated association, is working to attract migrants to the city, and helping these migrants settle in. MINATO holds fairs that promote the charms of Kesenuma City and target people in the Tokyo metro and other areas who may be considering relocating to the region. It also works to attract people from outside the city and connect them with city residents who own vacant homes, which in turn helps solve the problem of vacant houses.<sup>(5)</sup>

Commissioned by Kesenuma City, Numa University, an entrepreneurship support program, provides entrepreneurship support for young people in their teens to 30s who want to startup a business in Kesenuma. Graduates of the program have established new businesses, such as a childcare café where childcare workers from disaster-affected areas gather for study sessions, and a *taiyaki* restaurant in the shape of a saury, a local specialty.<sup>(6)</sup>

→ *Related item: 11) Community building in the transition to permanent housing*

- Collaborating with companies to provide employment support for persons with disabilities (Issue 2)

Shinsei, a non-profit organization that supports the independence of people with disabilities, collaborated with Nisshin Flour Milling to provide employment support for people with disabilities by involving them in projects related to the production, packaging, and sale of a western confectionery product. Nisshin Flour Milling provided the organization with know-how on product development and quality consistency, and also supported their sales, such as by holding intracompany sales events. As a result, 15,000 boxes of the product sold over a three-year period from 2014 to 2016.<sup>(7)</sup>

- Creating jobs in social business by securing sources of funding (Issue 2)

The RCF Reconstruction Support Team (now RCF, a general incorporated association) is a social businesses coordinator that coordinates between companies, local authorities, and other related parties to implement social businesses based on diverse sources of funding, including revenues from its businesses' growth, commissions from government agencies, and investments from companies. Of these, the Model Project for Supporting the Dispatch of Specialized Human Resources between Businesses, a project commissioned by the Reconstruction Agency to support fishery and tourism businesses in three disaster-stricken prefectures, is being implemented by RCF in collaboration with Winwin Co., Ltd., and Pasona Tohoku Sousei Inc. Specifically, the company provides integrated services including assessing the business issues and human resource needs that hiring companies have, creating recruitment pages, managing applicants, and providing training for recruitment and retention in companies. The program was launched in 2017, and as of 2019, its third year, has provided support for the hiring of 61 employees at 39 companies.<sup>(8)</sup>

**[Lessons learned and know-how gained]**

- (1) NPOs, etc., connect various entities with each other to develop collaborative strategies for community revitalization.
  - Utilizing area management techniques, government agencies, residents, business owners, landowners, and others work together to revitalize their community.
  - Rebuild communities around existing local resources.
  - Promote community collaboration by involving residents in the process of city development.
  
- (2) NPOs, etc., promote the relocation and settling in of potential migrants by communicating the region's charms, and provide employment support in cooperation with companies.
  - Promote the region's charms, connect people who own vacant houses with those who are considering relocating to the region, and help people settle in.
  - Support youth entrepreneurship and promote youth retention.
  - Work with entities that aim to make contributions to regional societies to support the employment of people with disabilities at welfare offices.
  - Take on the function of social business coordinator and collaborate with companies and other organizations that are actively contributing to society to resolve issues that arise in the wake of disasters.

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## **57) Intermediary support organizations and networks** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to intermediate support organizations coordinate the activities of NPOs, etc.  
(2) How to intermediate support organizations support the activities of NPOs, etc.

### **[Situation and issues created by the Great East Japan Earthquake]**

Due to the catastrophic damage caused in the Great East Japan Earthquake, a broad range of entities including NPOs, businesses, and other organizations from outside the affected areas engaged in activities in these areas. There were limitations to what councils of social welfare could do on their own with respect to taking in and coordinating this diverse range of entities. As such, the role of intermediary support organizations that provided support mediation, networking, and coordination for NPOs, etc., became critical.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Establishing intermediate support organizations at the prefectural (geographic) level (Issue 1)

In three affected prefectures, the Iwate Fukko Collaboration Center, Miyagi Cooperative Reconstruction Center, and Fukushima Cooperative Reconstruction Center were established as intermediary support organizations at the prefectural (geographic) level to consolidate and share information related to disaster victim support, and coordinate activities thereof between NPOs and government agencies. For example, the Iwate Fukko Collaboration Center worked to create opportunities for collaboration within and outside of the prefecture, and held meetings of cooperative reconstruction centers from the three prefectures to share information between these prefectures. In particular, at the Iwate Prefecture Coordination and Reconstruction Meetings which were held almost every week since immediately after the earthquake, the center and Iwate Prefecture shared information with each other regarding the details of the disaster victim support system and the center's consultations with disaster victims, and also held discussions on how to proceed with disaster victim support (Case study 57-1).

- Networking NPOs, etc. and government agencies (Issue 2)

At the end of March 2011, the Japan Civil Network for Disaster Relief in East Japan (JCN) was established by organizations engaged in disaster relief activities. The organization built a website to consolidate information on the intake of donations, supplies, and other support for disaster victims, and also created activity guidelines for supporters. From the month after its establishment, it held regular liaison meetings with NPOs, etc., as well as with government ministries and agencies to share information and collaborate with government agencies across sectors.<sup>(1)</sup>

During the emergency response phase in Miyagi Prefecture, 3.11 Mirai Support, a public interest incorporated association (formerly the Ishinomaki Disaster Recovery Support Council), regularly held various meetings to facilitate the activities of NPOs engaged in disaster victim support, and provided support for coordination and collaboration as a way of networking NPOs in the prefecture's

geographic area (Case study 57-2).

- City development through collaboration among diverse civic groups (Issue 2)

Sendai City had set up its Citizen Activity Support Center in the wake of the Great Hanshin-Awaji Earthquake (of 1995). The center was the first government-run NPO support center in the country, and at the time of the Great East Japan Earthquake, it collected information on civic activities and volunteer groups in the affected areas, disseminated information with flyers, posters, newsletters, etc., and provided financial assistance to NPOs, etc. It has now become a specialized organization for civic activities.<sup>(2)</sup>

- Support for organizational management and establishing a financial foundation (Issue 2)

On March 15, days after the disaster, the Central Community Chest of Japan established the Disaster Volunteer/NPO Activity Support Fund and provided a total of 4.2 billion yen in grants during the reconstruction phase for the operation of disaster relief volunteer centers and collaborative projects by NPOs, etc.<sup>(3)</sup>

The Japan NPO Center established the Great East Japan Earthquake Local NPO Support Fund for local NPOs in three affected prefectures who were assisting disaster victims rebuild their lives. Since March 2011, it has been providing grants for training NPOs and other staff, building a mechanism to increase the number of supporters, and building an information network.<sup>(4)</sup>

Japan Platform (JPF) established the Living Together Fund in April 2011 for the purpose of expeditious and effective implementation of support activities for the Great East Japan Earthquake, and provided not only financial grants but also advice on how to prepare activity plans and carry out project operation management.<sup>(5)</sup>

→ *Related item: 54) Securing human resources such as volunteers and NPO staff, and collaborating with them from normal times*

**[Lessons learned and know-how gained]**

- (1) Create opportunities for information sharing between NPOs, government agencies and supporting organizations.
  - Establish intermediary support organizations at the prefectural (geographic) level to share information among various NPOs and support organizations in the prefecture.
- (2) Build a network of NPOs, etc., and a cooperative system with government agencies to provide support for disaster victims effectively.
  - Support the formation of networks where intermediary support organizations act as coordinators to link NPOs, etc.
  - Create a mechanism for cross-sectoral information sharing and collaboration between NPOs, etc., and government agencies.
  - Support activities carried out, through self-reliance and collaboration, by a diverse range of civic groups including NPOs that continue to address regional reconstruction issues.
- (3) Support NPOs, etc., to strengthen their infrastructures and improve their sustainability.
  - To NPOs with inadequate organizational infrastructures, provide financial grants, and know-how on human resource development and organizational management.

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## **58) Cooperation and division of roles between public and private**

**sectors** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to establish a system of public-private partnerships in normal times.  
(2) How public and private sectors share roles and leverage their respective strengths.

### **[Situation and issues created by the Great East Japan Earthquake]**

In the aftermath of the Great East Japan Earthquake, local authorities also sustained severe damage, and faced various challenges such as in gathering information and securing staff for providing support to disaster victims. While there were cases where effective support was provided through cooperation and collaboration with NPOs, etc., what also became evident were regional differences in disaster response depending on the extent of such cooperation and collaboration during normal times.<sup>(1)</sup>

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Establishing a system of public-private partnerships from normal times (Issue 1)

Kitakami City, Iwate Prefecture, already had a foundation of collaboration between government agencies, NPOs, and local communities to promote community development since before the earthquake. When the disaster hit, the city of Kitakami, the Council of Social Welfare, and Council of Employment Measures built on these regular connections, and worked together to establish the Kitakami Reconstruction Support Collaborative. The city and NPOs, etc., worked together to decide on support measures and provide assistance to disaster victims (Case study 58-1).

- Efficient support for restoration based on the division of roles between public and private sectors (Issue 1)

A Four-Party Liaison Conference for Supporting Disaster Victims was held, consisting of the national government's local response headquarters, Miyagi Prefecture, Self-Defense Forces, and volunteer staff. Matters discussed included how information should be shared, the direction of volunteer activities and support measures, and how liaison meetings at cities and towns should be followed up on. In particular, the division of roles regarding soup kitchens and distribution of supplies was discussed, and administrative agencies and NPOs worked together to provide support to disaster victims (Case study 58-2).

Based on their own reflection that organizations in the network, such as NPOs (organizations participating in preparatory meetings, etc.) were unable to grasp the overall picture of support operations, activities in the field were extremely challenging, and the systems for coordinating with government, administrative agencies and businesses were limited because no coordination system had been in place prior to the earthquake, NPOs and other volunteers gathered in July 2013 to create a system for coordination and collaboration.<sup>(2)</sup> Later, based in large part on experience from the



Kumamoto earthquake that occurred on April 14, 2016, Japan Voluntary Organizations Active in Disaster (JVOAD), a non-profit organization, was formed in October 2016 with the aim to promote collaboration among related parties across regions, fields and sectors, and improve the support environment so that omissions, oversight, and duplication of support for victims in times of disaster can be avoided, and support activities that meet the needs in the field can be carried out effectively.<sup>(3)</sup>

• Solving rebuilding issues through public-private sector collaboration (Issue 2)

In FY2014, Iwate Prefecture established the Iwate Social Contribution and Reconstruction Activity Support Fund with its 300 million yen contribution, and provided subsidies to NPOs, etc., for reconstruction activities and efforts to solve regional issues, such as organizing experiential tours that convey the appeal of the fishing industry.<sup>(4)</sup> Furthermore, alongside its subsidizing of NPOs' activity expenses, it continues to provide support for the formulation of mid- to long-term plans, seminars to increase trust and sympathy for their activities, and exchange meetings to develop collaborative activities with businesses and other organizations.<sup>(4)</sup>

Commissioned by Rikuzentakata City to address the issue of population decline, declining birth rates, and a graying population, NPO Takata Kureha, a non-profit organization, provides seamless support to those who wish to relocate from the Tokyo metropolitan area and other urban centers, such as by providing a portal site with regional information on jobs and daily life, establishing a one-stop contact point, holding relocation promotional events and such to provide information, running a databank of vacant houses, conducting local tours, and organizing opportunities to interact with local residents after they relocate.<sup>(5)</sup>

**[Lessons learned and know-how gained]**

- (1) Establish a public-private partnership system from normal times and provide recovery support based on roles.
  - Establish a system of cooperation with NPOs and other intermediary support organizations from normal times, and make specific arrangements on how information should be shared and how to collaborate with each other.
  - When disaster strikes, hold meetings to exchange information between the public and private sectors, and maintain a system for continuously engaging in reconstruction issues as a collaborative body.
- (2) Tackle local issues by leveraging the respective strengths of the public and private sectors.
  - NPOs, etc., leverage their own experience, know-how, networks, etc., while government agencies commission NPOs, etc., for efficient problem-solving.

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## **59) Reconstruction support from the private sector** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How companies support the reconstruction process by putting their own unique characteristics to use.  
(2) How companies cooperate and collaborate with the national government, local authorities, and NPOs in supporting reconstruction.

### **[Situation and issues created by the Great East Japan Earthquake]**

When the Great East Japan Earthquake struck, numerous companies actively and vigorously provided reconstruction assistance by donating funds and offering their own products.<sup>(1)</sup> In addition to financial support, the main characteristics of support activities by companies, etc., in the aftermath of the Great East Japan Earthquake included: [1] diverse support activities that leveraged their strengths in their primary line of business; [2] speed of response and long-term commitment to support; and [3] collaboration and cooperation with the national government, local authorities, NPOs, etc.<sup>(2)</sup> Furthermore, the way that companies provide support has changed, including in how some dispatched their employees as volunteers as part of their employee training.

In addition, since the Great East Japan Earthquake affected a wide area, and recovery and reconstruction took a long time, a major issue was how companies could support the reconstruction of the affected areas and how they could continue to provide long-term support. Meanwhile, against the backdrop of increasing corporate willingness to contribute to society, their efforts to support reconstruction in cooperation and collaboration with the national government, local authorities, NPOs, etc., attracted much attention.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

• Consolidation and dissemination of information by the Japan Business Federation (Keidanren), Japan Association of Corporate Executives (Keizai Doyukai), etc. (Issue 1)

Immediately after the Great East Japan Earthquake, Keidanren set up the Great East Japan Earthquake Response Headquarters and, through the 1% Club established in 1990 to promote social contribution activities by corporations, etc., and on the Keidanren website and the 1% Club News, it called for aid funds, provision of equipment and supplies for setting up disaster relief volunteer centers, and the planning and implementation of corporate volunteer programs, etc. In addition, with the cooperation of the Japan Civil Network for Disaster Relief in East Japan (JCN), it aggregated information on the affected areas and the needs of disaster victims and provided this information widely to companies.<sup>(2)</sup> At the 3rd United Nations World Conference on Disaster Reduction held in March 2015, it presented disaster prevention and mitigation technologies, etc. held by corporations to an international audience.<sup>(3)</sup>

In April 2012, Keizai Doyukai implemented the Tohoku Future Creation Initiative, a program for developing human resources to lead reconstruction efforts. Under this program, employees of Doyukai member companies were dispatched to local authorities and companies in Kamaishi City, Ofunato City, and other disaster-hit areas. This was positioned as an opportunity for employees to

grow by engaging in rebuilding efforts working alongside and mutually learning from other staff in the field.<sup>(4)</sup>

→ *Related Item: 41) Securing human resources for industry*

- Businesses providing diverse support by leveraging their primary line of business (Issue 1)

Shiseido Co., Ltd. carried out Beauty Support Activities, which provided skincare and other beauty services to disaster victims, and a Reconstruction Support Marché, which featured a collection of products from the Kesen area for intracompany sales. Since the Hanatsubaki (camellia) is the company's emblem, it conducted camellia tree-planting activities as a social contribution activity in Ofunato City, Iwate Prefecture, camellia being the city flower of Ofunato. Also, as part of its primary line of business, the company developed and sold perfume and dressing products to raise awareness of the region's "Kesen Camellia" (Case study 59-1).

Google, a foreign corporation, has a permanent crisis response team in place to respond to disasters. Immediately after the Great East Japan Earthquake struck, Google provided a Japanese language version of Person Finder, a safety confirmation service that was used in the Haiti earthquake and other disasters.<sup>(5)</sup> Specifically, photos of safety information posted at evacuation shelters were uploaded to the Internet, and the names of victims in evacuation shelters were entered into the Person Finder based on these photos. By March 29, there were 5,000 volunteers entering information, and the number of entries topped 140,000, leading to the quick provision of safety confirmation information.<sup>(6)</sup>

- Long-term support (Issue 1)

In April 2011, Mitsubishi Corporation established the Great East Japan Earthquake Recovery Fund totaling 10 billion yen to support various relief activities, including the provision of donations and relief supplies, and scholarships, as well as grants to NPOs. In March 2012, the Mitsubishi Corporation Disaster Relief Foundation was established to provide more flexible and continuous support. In addition to existing scholarships and grants to NPOs, etc., the foundation has decided to support initiatives for industrial recovery and job creation, and is providing support for projects such as the Fukushima Winery Project in Koriyama City, Fukushima Prefecture.<sup>(7)</sup>

Since immediately after the disaster, the Yamato Group had been making a 10-yen donation to the Yamato Welfare Foundation for every parcel it delivered, and established the Great East Japan Earthquake Livelihood and Industrial Infrastructure Recovery and Revitalization Fund totaling 14.2 billion yen. Through 2017, the fund supported 31 projects in the areas of fisheries, agriculture, commerce, and livelihood in three of the affected prefectures (Case study 59-2).

- Cooperation and collaboration between the national government, local authorities, and NPOs (Issues 1, 2)

Takeda Pharmaceutical Co., Ltd., launched the "Energize Japan. Support Reconstruction" project and has provided approximately 4.3 billion yen to 13 programs over 10 years. One of these programs, Takeda Life and Livelihood Revitalization Program is a collaborative project with the Japan NPO Center, which provides welfare and health support in the affected areas, support for the development of livelihood infrastructure that leads to job creation, support for resident-led community formation

as residents move from emergency temporary housing to disaster-recovery public housing, and support for NPO leadership development. In addition, the company is engaged in a wide range of reconstruction support activities that go beyond goods and money, such as supporting employees who wish to volunteer, and holding intracompany in-house *marché* to sell specialty products from the affected areas (Case study 59-3).

In October 2011, in order to resolve issues around health and nutrition, Ajinomoto Co., Inc., in collaboration with government agencies, dietitians associations, NPOs, etc., launched its Health and Nutrition Seminars (later known as the Fureai Red Apron Project) that provide residents of emergency temporary housing with opportunities to cook, dine together, and talk.<sup>(8)</sup>

The UBS Group implemented the Kamaishi Community Reconstruction Support Project to support local community revitalization and resident-led initiatives, primarily in Kamaishi City, Iwate Prefecture. Specifically, resident specialists from partner organization RCF, and UBS employee volunteers provided manpower and expertise, and worked with NEXT KAMAISHI, a network of local businesses run by young people, to provide reconstruction assistance tailored to local needs through collaboration between government agencies, businesses, and non-profit organizations. Their activities included reviving the Kamaishi Yoisa summer festival, creating evacuation routes that can be climbed on wheelchairs or buggies, and publishing a record book on community memories of the earthquake based on interviews with local residents.<sup>(9)</sup>

#### **[Lessons learned and know-how gained]**

- (1) Provide and continue to provide quick support that builds on companies' strengths in their primary line of business and inter-company cooperation.
  - Consolidate information on the affected areas and disseminate it widely to businesses and other entities.
  - Companies provide support in the form of monetary donations and/or relief supplies, depending on the size of the company.
  - Leverage companies' technological capabilities to provide disaster victim assistance that cannot be handled by government agencies or NPOs.
  - Begin engaging in social contribution activities from normal times and build on this experience.
  - Support employees' self-motivated volunteering activities.
- (2) Activate corporate support through collaboration and cooperation with the national government, local authorities, NPOs, etc.
  - Provide financial support for initiatives that are not adequately supported by government agencies.
  - Provide financial support and implement collaborative projects for the diverse range of initiatives being carried out by NPOs, etc.
  - Utilize corporate expertise to provide support for disaster victims and community reconstruction, etc., in cooperation with government agencies, NPOs, etc.

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## **60) Securing support staff, and other associated tasks (Initiatives by local authorities receiving support)** [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How disaster-affected local authorities secure support staff.  
(2) How to set up staff intake processes.

### **[Situation and issues created by the Great East Japan Earthquake]**

The Great East Japan Earthquake caused extensive damage to coastal municipalities and paralyzed their administrative functions, making it an urgent imperative to secure support staff from local authorities in other regions to handle tasks such as operating evacuation shelters, securing emergency temporary housing and other support for disaster victims, early restoration of local industries, and reconstruction city planning.

Meanwhile, some local authorities that took in support staff had not clearly defined the operations that were in need of support or divisions that support staff were to work in, and did not have a centralized contact point for processing support staff intake, resulting in problems such as confusion during staff intake, lack of coordination among competent departments, and lack of a consistent chain of command.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Securing support staff through mutual disaster support agreements (Issue 1)

Since before the earthquake, Tagajo City, Miyagi Prefecture, had mutual disaster support agreements with all municipalities in the prefecture, as well as with cities such as Tendo City in Yamagata Prefecture. It also had Friendship City Agreements with two cities: Dazaifu City, Fukuoka Prefecture, and Nara City, Nara Prefecture. At the time of the disaster, Tendo City dispatched a total of 131 people, mainly technical staff to support the restoration of sewerage facilities and cultural properties, Nara City dispatched a total of 155 people including technical staff, and Dazaifu City also dispatched staff for the restoration of cultural properties (Case study 60-1).

Kamaishi City, Iwate Prefecture had mutual disaster support agreements with municipalities in the prefecture as well as with Tokai City in Aichi Prefecture since before the earthquake, and had been deepening its ties with these municipalities through joint disaster drills and other exchanges. Based on its agreement, Tokai City dispatched an advance team on March 12 to assess the damage, and on a weekly basis from March 13, dispatched support staff to deliver supplies and assist in the operation of evacuation shelters. Since October of that year, the city sent technical staff, such as public health nurses and civil engineers, on a 3-month to 1-year basis, for a total of 43 staff dispatched as of the end of March 2015 (Case study 60-2).

- Securing support staff through nationwide systems (Issue 1)

Since agreements among the affected local authorities alone were not enough to secure sufficient staff, nationwide systems were also utilized.

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Immediately after the disaster, the Ministry of Internal Affairs and Communications (MIC), with the cooperation of the Japan Association of City Mayors, and National Association of Towns and Villages, established a system for providing personnel support from municipalities across Japan. As a result, a cumulative total of 97,000 support staff have been dispatched to the affected municipalities as of March 31, 2020.

In addition, the Reconstruction Agency has also established its Reconstruction Agency Scheme (2013 to present), under which employees (part-time national public servants) recruited from the general public are dispatched to disaster-affected municipalities to support their reconstruction work. As of April 2020, 82 such employees have been engaged in the assistance of affected municipalities.

→ *Related items: 61) Dispatching support staff (initiatives by supportive local authorities*

*62) Continuation of long-term dispatching of staff*

- Developing disaster relief intake plans (Issue 2)

In March 2014, Iwate Prefecture formulated the Iwate Prefecture Disaster Relief Intake Plan based on its experience of confusions that occurred while coordinating between organizations that were sending staff and the divisions to which these staff were to be assigned due to the fact that sections responsible for support staff intake and support staff assignments had not been clearly defined. The plan calls for a relief intake team to be formed under the Disaster Response Headquarters. This team will be responsible for requesting for and receiving support staff, and coordinating with different departments. The plan also defines the tasks that support staff will be supporting and the divisions to which they will be assigned. In addition, it also provides a support plan describing procedures for dispatching staff in and out of the prefecture (Case study 60-3).

In April 2020, the Cabinet Office prepared a Guidance for Municipalities in Preparing Intake Plans for Receiving Human Resources Support to assist municipalities formulate intake plans for receiving support staff in the event of a disaster.<sup>(2)</sup>

- Support from the lead prefecture within a wide-area block for coordinating support intake (Issue 2)

After the disaster struck, support staff were dispatched from several local authorities to Miyagi Prefecture, but an adequate system was not in place for receiving and coordinating staff sent from multiple supporting prefectures, forcing officials to handle the situation in an ad-hoc manner. To address this issue, Yamagata Prefecture, which was the lead prefecture in the mutual support agreement (block agreement) between eight prefectures including Hokkaido and the Tohoku prefectures, proposed setting up a forum for coordinating with supporting prefectures, and this enabled Miyagi Prefecture to take in support from numerous local authorities.<sup>(5)</sup> Subsequently, the agreement was revised in October 2014, and it was decided that the chair prefecture where the wide-area support headquarters would be located, would coordinate the intake of support personnel to affected prefectures.<sup>(6)</sup>



**[Lessons learned and know-how gained]**

- (1) For example, enter disaster support agreements with multiple local authorities and conduct joint disaster drills with them to establish cooperative relationships with them from normal times to avoid connected agencies being incapacitated concurrently from disaster damage.
  - Enter disaster support agreements with local authorities with which Friendship City Agreements are already in place.
  - To ensure appropriate support in the event of a disaster, enter agreements with multiple local authorities, including those in distant locations.
- (2) Formulate an intake plan for receiving support staff to ensure a smooth intake process.
  - Set up an organization responsible for support staff intake at Disaster Response Headquarters to smoothly coordinate with local authorities who are sending their staff and departments to which these staff will be assigned.
  - To ensure the smooth continuation of operations, assign a person in command of directing operations and several persons in charge of support intake.
- (3) In the block agreement, designate a prefecture in advance that will coordinate support intake on behalf of the affected prefectures.
  - In the wide-area block agreement between prefectures, designate a number of prefectures in advance to perform support intake coordination tasks on behalf of affected prefectures, such as in receiving support staff.

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## 61) Dispatching support staff (Initiatives by supportive local authorities) [emergency response phase, recovery phase]

**[Issues]** (1) How supportive local authorities develop and utilize their dispatch scheme.  
 (2) How supportive local authorities select their support staff.

### [Situation and issues created by the Great East Japan Earthquake]

In the aftermath of the Great East Japan Earthquake, affected local authorities were faced with an enormous amount of restoration and reconstruction work, making it an urgent imperative to secure staff. Local authorities across Japan actively provided support for this disaster, and as of April 1, 2018, support staff have been dispatched from 45 prefectures, 19 designated cities, and 272 municipalities. In doing so, the challenge was to quickly and accurately ascertain the number of staff members that needed to be dispatched and the support tasks they were expected to perform. Supportive local authorities also had to quickly select the staff to dispatch.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Support tailored to local needs (Issues 1, 2)

Immediately after the disaster, the Tokyo Metropolitan Government (TMG) sent an advance team to Iwate and Miyagi prefectures to directly assess the damage and determine where to dispatch their staff to provide support. In April, the TMG opened local offices in three Tohoku prefectures as its general points of contact, serving as base offices for identifying staff dispatch needs, coordinating various activities with affected local authorities, and from which dispatched TMG staff would carry out their support activities.<sup>(1)</sup> Excluding firefighters and police personnel, through April 1, 2020, TMG dispatched approximately 2,400 employees to the three prefectures to support medical and nursing care, and approximately 4,300 employees from various departments to support recovery and reconstruction work.<sup>(2)</sup>

As for the selection of staff to dispatch, starting in FY2012, applicants were invited from the public and chosen after document screening and interviews. By inviting people from the public, the TMG was able to select motivated reconstruction personnel to meet the mid- to long-term needs of the affected populations.<sup>(3)</sup>

→ *Related item: 62) Continuation of long-term dispatching of staff*

- Whole administrative support — dispatching multiple departments *en bloc* (Issue 1)

In March 2011, the City of Nagoya established a Headquarters for Supporting Affected Areas, headed by the mayor, to gather information and dispatch support staff to the affected areas. The city sent advance teams on three occasions to the coastal areas of Iwate Prefecture that were particularly hard hit by the tsunami, and the decision was made to provide full support to Rikuzentakata City, whose administrative functions suffered catastrophic damage in the disaster.

Instead of dispatching staff to individual departments, Nagoya City provided whole administrative

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support, dispatching several departments *en bloc*, including contact desk operations, civil engineering, and finance. In FY2011, the city dispatched a total of 144 staff members to provide health guidance, survey damaged houses, and formulate reconstruction plans. From FY2012 onward, the city sent staff members to work in zoning adjustments, collective relocations for disaster prevention, and other city reconstruction tasks, for a total of 96 staff members dispatched from the emergency response phase through the reconstruction phase.<sup>(4)</sup>

→ *Related item: 63) Ongoing support for administrative functions*

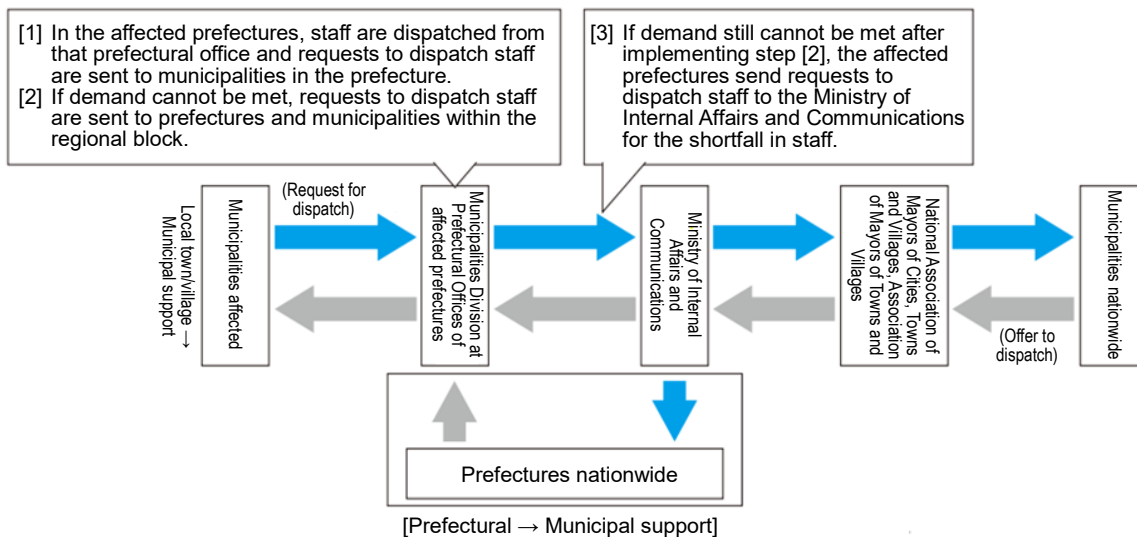
- Dispatch of staff by the National Governor's Association, etc. (Issue 1)

The National Governor's Association had an existing system for personnel and material support between wide-area blocks based on the Agreement on Wide-Area Support for Prefectures Nationwide in the Event of Disaster, which was approved in July 1996. In the aftermath of the Great East Japan Earthquake, it set up an Emergency Wide-Area Disaster Response Headquarters where it received requests for assistance directly from affected prefectures, and dispatched staff and provided supplies to these affected prefectures without going through the block system. As a result, 632 employees of different prefectural governments were dispatched in this scheme in the roughly one-month period following the disaster.<sup>(5)</sup> In October 2011, the Mayors Association of Designated Cities decided to assign specific designated cities to provide support to specific affected municipalities.<sup>(6)</sup> As of March 2019, a total of 16,190 employees have been dispatched from different designated cities.<sup>(7)</sup>

- Scheme for dispatching staff by the Ministry of Internal Affairs and Communications (MIC) working with the Japan Association of City Mayors, and the National Association of Towns and Villages (Issue 1)

The MIC, with the cooperation of the National Association of City Mayors and the National Association of Towns and Villages, developed a new nationwide mechanism for dispatching staff. Under this scheme, the affected prefectures compile the number and type of support staff that are needed at affected municipalities, and sends their requests for support staff to the MIC. The MIC then sends out requests for support staff, working with the Japan Association of City Mayors and National Association of Towns and Villages. This scheme was able to facilitate the coordination of staff dispatching even in cases where coordination between individual local authorities had not led to securing support staff. As a result, three of the affected prefectures and municipalities in these prefectures were able to secure a cumulative total of approximately 97,000 support staff by March 31, 2020 through this and other schemes.<sup>(7)</sup>

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(Fig: Scheme for dispatching staff by the Ministry of Internal Affairs and Communications (MIC) working with the Japan Association of City Mayors and the National Association of Towns and Villages. Source: "Rebuilding from the Great East Japan Earthquake and Tsunami — Proposals from Iwate Prefecture," p. 149)

- Prompt dispatch based on the counterpart method (Issues 1, 2)

On March 13, immediately after the earthquake, the Union of Kansai Governments issued an emergency statement and decided to provide support in the form of a counterpart system in which constituent organizations are assigned to one of three affected prefectures. Osaka and Wakayama Prefectures dispatched staff to Iwate Prefecture; Hyogo, Tottori, and Tokushima Prefectures to Miyagi Prefecture; and Shiga and Kyoto Prefectures to Fukushima Prefecture. The organization also asked municipalities in the constituent prefectures to cooperate in the dispatching of staff. Under this method, the prefectures responsible for support are in charge of a specific affected prefecture, and this allows supportive local authorities to coordinate their support systems, and enables ongoing support.

An advance team was dispatched before sending staff to assess the situation at the affected local authorities and determine the staff to be dispatched. Subsequently, local liaison offices were set up in three prefectures in Tohoku to investigate the needs of the affected areas. Since the affected local authorities were so busy responding to the disaster that they did not have the capacity to ascertain the number of personnel needed, a push-type support was implemented, in which the supporting side ascertained the demand in the affected areas and dispatched personnel to ensure a chain of command. Regarding the selection of staff, all local authorities, etc., had a pre-prepared list of staff indicating their experience and skills, and this enabled them to quickly select who to dispatch (Case study 61-1).

- Introducing an Emergency Response Staff Dispatch System (Issue 1)

Later, based on experience from the Kumamoto earthquake, the MIC developed the Emergency Response Staff Dispatch System in 2018. Under this system, [1] prefectures and designated cities are assigned to disaster-stricken municipalities on a one-to-one counterpart basis to provide support for disaster response operations such as operating evacuation shelters and issuing disaster victim



## 62) Continuation of long-term dispatching of staff [early and late reconstruction phases]

**[Issues]** (1) How supportive local authorities secure support staff for the reconstruction phase.  
 (2) How to reduce the burden on staff dispatched long-term.

### [Situation and issues created by the Great East Japan Earthquake]

As post-earthquake operations transitioned from the recovery to the reconstruction phase, and the emphasis shifted towards securing land for business activities, and designing, ordering, and managing architectural and civil engineering projects for reconstruction city development, the need for employees with an engineering background increased at affected local authorities. However, municipalities across Japan are facing a serious shortage of civil engineers and other technical staff due to the retirement of employees in the mass-hire generation, a decrease in public works projects and other factors. This has had repercussions for disaster-affected local authorities as well where half of the needs for dispatched technical staff to work on restoration and reconstruction projects have not been met.<sup>(1)</sup> In addition, local governments were faced with the need to provide physical and mental care for staff who were being dispatched for the mid- to long-term, and to secure accommodations for these staff.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Securing staff by hiring fixed-term employees (Issue 1)

In response to the shortage of technical staff in the affected areas, the Tokyo Metropolitan Government introduced and implemented a new scheme under a fixed-term employee program in which the Tokyo Metropolitan Government (TMG), in addition to dispatching active TMG employees, recruits people with experience in government administrative agencies or the private sector as general fixed-term employees, and dispatches them to the affected municipalities in accordance with the Local Autonomy Law. These employees, all of whom were civil engineering and construction workers, worked in affected municipalities in three prefectures in Tohoku, placing orders, designing, estimating, and supervising construction work related to civil engineering and construction projects. Their terms were one year (up to five years) and renewed annually, and a cumulative total of 182 employees have been dispatched through August 2017 (Case study 62-1).

- Strengthen systems for mid- to long-term dispatch (Issue 1)

In FY2020, the Ministry of Internal Affairs and Communications (MIC) established the System for Dispatching Technical Staff to Support Restoration and Reconstruction to have prefectural agencies increase the number of their technical staff to support municipalities that lack technical staff in normal times, and to provide local tax grant measures to cover the personnel costs of such technical staff who are secured to serve in mid- to long-term dispatches in preparation for large-scale disasters.<sup>(2)(3)</sup>

- Recruiting part-time national government employees under the Reconstruction Agency scheme

### (Issue 1)

In order to secure staff in the affected municipalities, the Reconstruction Agency has been implementing the Reconstruction Agency Scheme since 2013, in which national public officials are recruited from the public (part-time employees) and dispatched to the affected municipalities to directly support reconstruction work.

No age restrictions were placed on recruitment, and people from various backgrounds, including those from the private sector and former civil servants, were hired. The work included formulating reconstruction plans and policies for municipalities, and providing operational support in civil engineering, agriculture, construction, land acquisition, health, and specialized fields.<sup>(4)</sup> As of April 2020, 82 people were assisting the affected municipalities.

→ *Related item: 60) Securing support staff, and other associated tasks (initiatives by local authorities receiving support)*

- Securing staff to substitute for specialized technical personnel who are dispatched (Issue 1)

A prerequisite for dispatching staff for long periods of time is that systems for executing operations can continue to run smoothly at the department from which staff are dispatched. In many cases, especially when active technical staff are dispatched, suitable replacement staff cannot be found even by recruiting staff from the public. To this end, Aichi Prefecture has traditionally had a system in place where those who wish to be temporarily assigned to specialized technical positions can register in advance, and these registered individuals are matched with positions that need to be filled. In addition, with the cooperation of a mutual aid organization of former Aichi Prefecture employees, former employees (approximately 4,000) receive information on employment opportunities at local authorities in disaster areas in newsletters that they receive. This information is also posted on the mutual aid organization's website.<sup>(5)</sup>

- Thoughtfulness towards dispatched staff on the part of organizations from which they are dispatched and their destination organizations (Issue 2)

In Kesenuma City, Miyagi Prefecture, vacant temporary housing in the city was provided as places to stay for dispatched workers due to a shortage of nearby accommodations that were occupied by construction workers, etc.

Tokai City, which dispatched staff to Kamaishi City, secured accommodations by renting a hotel because there were few apartment vacancies in Kamaishi City, and temporary housing was far from the city center (Case study 60-2).

Mitaka City in Tokyo and Shimabara City in Nagasaki Prefecture provided mental and physical care for dispatched employees by setting up a consultation service for them, and arranging a return day once a month to have interviews with them to discuss their work and life at their assigned locations.<sup>(5)</sup>

Fuchu City in Hiroshima Prefecture paired two employees from the same workplace and dispatched them to the same department in the same local authorities. This helped to reduce their workload and psychological anxiety at their assigned locations.<sup>(5)</sup>

The town of Tawaramoto in Nara Prefecture exempted employees, who returned to their original

workplaces and were under emotional stress after witnessing the devastation in the affected areas, from their obligation to devote themselves to their duties.<sup>(6)</sup>

In Yamada Town, Iwate Prefecture, thoughtful consideration was given to the mental state of employees that it had dispatched. It provided an annual stress check for all dispatched employees and counseling sessions with a clinical psychologist twice a month as an opportunity for casual consultation.<sup>(6)</sup>

→ *Related item: 27) Building maintenance for construction-type emergency housing*

### **[Lessons learned and know-how gained]**

- (1) Supportive local authorities dispatch support staff over the mid- to long-term by hiring fixed-term employees and reappointing former employees.
  - Hire support staff as fixed-term employees and dispatch them on a mid- to long-term basis.
  - If staff will be dispatched long-term, work with networks of former employees to find substitutes who can serve as temporarily appointed staff to ensure that operations at the dispatching organization can be maintained.
  
- (2) To reduce the burdens on dispatched staff members, supportive local authorities coordinate with affected local authorities to give thoughtful consideration to the living environment, and mental and physical care of dispatched staff members.
  - To care for dispatched personnel, provide opportunities for dispatched staff to have interviews at local bases of operation or other location.
  - Reduce employees' workloads and mental strain, such as by dispatching staff from the same workplace in pairs.
  - If staff are to be dispatched for the mid- to long-term, local authorities affected by the disaster secure accommodations for staff they take in.

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### **63) Ongoing support for administrative functions** [emergency response phase, recovery phase]

**[Issue]** (1) How local authorities whose government buildings have been damaged continue to perform their administrative functions.

#### **[Situation and issues created by the Great East Japan Earthquake]**

In the Great East Japan Earthquake, the tsunami claimed the lives of many employees of local authorities in the coastal areas of the Sanriku region and caused catastrophic damage to government buildings. In particular, the city and town hall buildings of Rikuzentakata City and Otsuchi Town, respectively, both in Iwate Prefecture, were completely destroyed. In Rikuzentakata City, 68 of its 298 employees were killed or are missing, and in Otsuchi Town, 33 of its 136 employees, including the mayor and seven division directors, were killed, paralyzing its administrative functions.<sup>(1)</sup>

Local authorities whose government buildings were damaged in the disaster faced the urgent task of securing temporary government buildings to carry out near-term disaster response measures, and securing bases of operation and staff to continue carrying out their administrative functions.

#### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Constructing new government buildings as bases of operation for recovery and reconstruction (Issue 1)

In Otsuchi Town, the main government building was completely destroyed, so town hall functions were moved for the near-term to the Central Community Center. On April 25, a two-story temporary building was set up on the Otsuchi Elementary School playground. The Otsuchi Elementary School building was also used as a town hall building. Subsequently, this building was renovated into a town hall using the Emergency Restoration Subsidy for Municipal Administrative Functions established by the Ministry of Internal Affairs and Communications (MIC), and construction was completed in August 2012.

- Securing human resources for continuing operations (Issue 1)

Iwate Prefecture dispatched officials to Otsuchi Town and Rikuzentakata City on March 18 and 20, respectively, to assess the damage and support needs in these municipalities. The prefectural government dispatched three staff members to Rikuzentakata (from March 22 to May 11, for a total of 129 persons) and two to Otsuchi (from March 20 to April 30, for a total of 96 persons) to provide emergency support. They provided advice on these municipalities' decision-making process and assisted in the liaison and coordination with the prefectural government and related organizations. In addition, they assisted in recovering Basic Resident Ledger data.<sup>(2)</sup>

Otsuchi Town and Rikuzentakata City requested the dispatch of support staff through the Prefectural Association of City Mayors, and the Prefectural Association of Towns and Villages in order to secure the necessary personnel to continue their operations, and municipalities offered their support in April.

## 2. Mutual Cooperation Between Administrative Agencies

In addition, at the end of March, Nagoya City offered Rikuzentakata City that it was prepared to provide whole administrative support. With the earthquake serving as a catalyst, the two cities signed a friendship city agreement on October 28, 2014.<sup>(3)</sup>

→ *Related item: 61) Dispatching support staff (initiatives by supportive local authorities)*

- Rebuilding organizations with the support of human resources from the national and prefectural governments (Issue 1)

Otsuchi Town lost seven of its 11 managers in the disaster, and the remaining four were to retire by March 2012. This meant that all of the managers active at the time of the earthquake were no longer active. In October 2011, the town bolstered its system to support town officials who were inexperienced as managers by assigning six of the nine department head positions to seconded staff from the national and prefectural governments. Furthermore, in addition to a deputy mayor who had previously been a town hall employee, employees of the national and prefectural governments were appointed deputy mayors to rebuild the organization. This arrangement with three deputy mayors was unusual for a town hall of 140 employees.<sup>(4)</sup>

- Support for securing the administrative functions of relocating local authorities at their destination (Issue 1)

Futaba Town in Fukushima Prefecture closed its town hall at 14:00 on March 11, and relocated its town hall functions to Kawamata Town. Later, on April 1, it established the "Futaba Town Saitama Branch Office" by relocating town hall functions to the former Saitama Prefectural Kisai High School in Kazo City, Saitama Prefecture, to which many town residents had evacuated.

Since Saitama Prefecture was taking in disaster victims from Futaba Town, as well as all of its administrative functions, it provided facilities and equipment such as temporary baths and laundry facilities, as well as food, bedding, and other items for the victims. In March 2011, Kazo City established the Kazo City Futaba Town Support Task Force to provide evacuation support with the cooperation of citizens and related organizations. Subsequently, in November 2016, Kazo City and Futaba Town signed a friendship city pact.

While Futaba Town opened the Futaba Town Iwaki Office in Iwaki City, Fukushima Prefecture, in June 2013 and relocated its town hall functions there from the former Kisai High School, the City of Kazo continues to provide its own consultation and information services, in addition to special administrative services such as certification of long-term care need based on the Special Law for Evacuees from the Nuclear Power Plant, and also provides support such as door-to-door visits in cooperation with Fukushima Prefecture and Futaba Town reconstruction support staff<sup>(5)</sup> (Case study 63-1)

→ *Related items: 2) Understanding information on wide-area evacuees and livelihood/lifestyle support (initiatives by local authorities to where they evacuated)*

3) *Maintaining connections between wide-area evacuees and disaster-affected areas (initiatives by local authorities from where they evacuated)*

**[Lessons learned and know-how gained]**

- (1) Secure a temporary administrative building as soon as possible.
  - Affected local authorities secure temporary administrative buildings that are needed for moving forward with recovery and reconstruction work.
- (2) Prefectural governments support the restoration of administrative functions at affected local authorities.
  - Prefectural governments support the restoration of administrative functions of affected municipalities that have lost their administrative functions by providing temporary government buildings, dispatching staff, and restoring data such as Basic Resident Registers data.
- (3) Support the relocation of administrative functions of affected local authorities with the cooperation of the out-of-prefecture local authorities to where they will be relocating.
  - Local authorities to where administrative functions will be relocated provide temporary government buildings to enable the affected local authorities to conduct operations, as well as support for evacuees.

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## 64) Preservation of earthquake records and dissemination of lessons learned [emergency response phase, recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to collect and preserve records of the disaster.  
 (2) How to communicate lessons learned from the disaster and the reconstruction process.

### [Situation and issues created by the Great East Japan Earthquake]

Principle 1 of the Seven Principles for Reconstruction listed at the beginning of "Towards Reconstruction -- Hope beyond the Disaster--" that was compiled in June 2011 by the Reconstruction Design Council in response to the Great East Japan Earthquake clearly states, "Records of the disaster are to be preserved for perpetuity, analyzed scientifically by a wide range of academic experts, and lessons learned are to be passed on to the next generation and disseminated domestically and internationally."<sup>(1)</sup> In July of the same year, the Great East Japan Earthquake Reconstruction Response Headquarters decided on the "Basic Guidelines for Reconstructing from the Great East Japan Earthquake," which also called for the collection and preservation of disaster records and lessons learned, a digitized system that would make these accessible to everyone, and the dissemination of information both domestically and abroad. It also stated that the building of facilities that symbolize the repose of departed souls and reconstruction efforts, based on the initiative of local communities, should be considered.<sup>(2)</sup>

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Creating Hinagiku, the National Diet Library Great East Japan Earthquake Archive (Issues 1, 2)

The National Diet Library, in cooperation with the Ministry of Internal Affairs and Communications (MIC), has developed the National Diet Library Great East Japan Earthquake Archive (nicknamed Hinagiku), a portal site for collecting, preserving, and releasing records of the Great East Japan Earthquake nationwide. This has been available since March 2013. Hinagiku not only contains content collected by the National Diet Library, but is also linked with archives independently built by local authorities, libraries, universities, research institutes, and private organizations, allowing users to search and browse a total of approximately 4.45 million data files including documents, websites, photos, audio, and videos, etc. In addition, users can also search for material on earthquakes other than the Great East Japan Earthquake including the Great Hanshin-Awaji Earthquake and the Kumamoto Earthquake. Furthermore, steps are in place to take over records, etc., of archives compiled by other organizations in the event that any of these organizations find it difficult to continue their archiving activities (Case study 64-1).

- Promoting the collection and utilization of earthquake disaster materials through participatory archiving (Issues 1, 2)

The Edwin O. Reischauer Institute of Japanese Studies at Harvard University began collecting

materials related to the Great East Japan Earthquake in March 2011 and has built the Japan Disasters Digital Archive (JDA). JDA collects a wide range of materials from Japan and abroad related to disasters in Japan, especially the Great East Japan Earthquake, and makes them available in English and Japanese. In addition, JDA is a participatory archive on which users themselves can contribute and share data files they have collected, including websites, images, text, video, audio, and other data files, as well as share testimonies and stories of the thoughts and memories of those who experienced the disaster.<sup>(3)</sup>

- Archives created by universities (Issues 1, 2)

Since September 2011, the International Research Institute of Disaster Science at Tohoku University has been working on a project called Michinoku Shinrokuden, an archive project of the Great East Japan Earthquake, in collaboration with related organizations in industry, government, and academia. The Michinoku Shinrokuden collects and organizes all memories, records, cases, and findings related to the earthquake from an academic perspective in various formats, including video, images, audio, and text, and as of January 2019 contains approximately 120,000 items of material. In addition to its collaboration with the Disaster Prevention and Tourism Archive, which provides information related to disaster prevention and tourism in Miyagi Prefecture in four languages, it also collaborates with corporate archive programs, including newspaper articles and photos from the Kahoku Shimpō newspaper, videos posted by citizens, and aerial photos taken by Kokusai Kogyo in the aftermath of the earthquake.<sup>(4)</sup>

- Dissemination of records of the disaster and lessons learned by affected local authorities (Issue 2)

In February 2012, Iwate Prefecture published the "Investigative Report on the Response to the Great East Japan Earthquake and Tsunami Disaster" and later, in January 2015, issued "Iwate Prefecture's Proposals for Disaster Prevention and Recovery Based on the Lessons Learned from the Great East Japan Earthquake and Tsunami." Furthermore, in March 2020, the prefecture published "Recovery from the Great East Japan Earthquake and Tsunami: Proposals from Iwate" that contained proposals based on rebuilding efforts and lessons learned.<sup>(5)</sup>

Since FY2011, Miyagi Prefecture has been compiling, in various record journals and video recordings, overviews of the Great East Japan Earthquake, disaster response at the time of the disaster, issues identified, and lessons learned. Starting with "Great East Japan Earthquake - Miyagi Prefecture's Disaster Response during the Six Months Following the Disaster and Reviews thereof" released in March 2012, the prefecture went on to release "Great East Japan Earthquake (Sequel) - Miyagi Prefecture's Disaster Response during the Six Months Following the Disaster and Reviews thereof" and documentary video "Great East Japan Earthquake - Record of Miyagi Prefecture" in March 2013, and "Great East Japan Earthquake - A Record of Miyagi Prefecture's Disaster Response during the One Year Period after the Disaster and Reviews thereof-" in March 2015. In addition, the prefecture plans to compile a comprehensive review of the 10 years of recovery and reconstruction efforts following the Great East Japan Earthquake.<sup>(6)(7)</sup>

Fukushima Prefecture has been regularly publishing its "Fukushima's History of Recovery" since

October 2012, and in addition to this, it published the "Records of the Great East Japan Earthquake and Progress toward Recovery" in March 2013, and "Great East Japan Earthquake Documentary Photo Book - Our 1827-Day Journey Since 'That Day'" was published in March 2016, documenting and communicating the process of recovery and reconstruction from the disaster.<sup>(8)</sup>

All municipalities have published numerous record journals and investigative reports on the Great East Japan Earthquake. The town of Otsuchi, Iwate Prefecture, published the "Great East Japan Earthquake Record Journal 'Living Testimony'" in August 2019. The town conducted a survey of 35 town hall employees who survived the disaster specifically for the purpose of compiling the record journal, which includes detailed descriptions of the situation at the time of the tsunami and subsequent reconstruction efforts, in most cases publishing the real names of those interviewed.<sup>(9)</sup>

In addition, Aomori, Iwate, Miyagi, and Fukushima prefectures have been holding the Four Tohoku Prefectures, Great East Japan Earthquake Recovery Forum annually in Tokyo since 2014, with Tokyo participating in the event since 2015. The forum provides a general overview of the shifting conditions and challenges of reconstruction in the affected areas. It also serves as a forum for all affected regions to bring their minds together to form a vision for their future, as well as an opportunity to keep the disaster from fading from peoples' memories, and to call for ongoing nationwide support for their reconstruction.<sup>(10)</sup>

- Disseminating lessons learned from the earthquake and information on the state of reconstruction overseas (Issue 2)

Sendai City, Miyagi Prefecture, hosted the 3rd United Nations World Conference on Disaster Reduction in March 2015, where the Sendai Framework for Disaster Reduction 2015-2030 was adopted.<sup>(11)</sup> In conjunction with the conference, Miyagi Prefecture widely disseminated experiences and lessons learned from the Great East Japan Earthquake by holding symposiums and exhibitions on disaster prevention and reconstruction, and study tours to the affected areas.<sup>(12)</sup> In addition, the World BOSAI Forum has been held every other year since 2017, calling on the world to promote the Sendai Framework for Disaster Reduction 2015-2030 and to make BOSAI mainstream.<sup>(13)</sup>

Between FY2013 and FY2015, an Iwate Prefecture delegation toured the U.S., Europe, and Taiwan, all of which provided significant assistance in their recovery process, and held recovery briefing sessions to express gratitude for their assistance in recovery and report on the progress of recovery efforts. These efforts deepened the ties between the affected local authorities and other countries that were fostered through reconstruction, and led to public relations activities that will lead to ongoing support for the recovery of the affected areas.<sup>(14)</sup>

**[Lessons learned and know-how gained]**

- (1) The national government, local authorities, universities, private companies, etc., work together to widely collect and preserve earthquake-related materials and promote their utilization for disaster prevention and mitigation.
  - The national government, local governments, universities, and the private sector collect and preserve earthquake-related materials recorded in various forms, such as documents, photographs, and videos, to prevent them from being scattered and lost.
  - Continuously collect and preserve documents, photographs, videos, and other records not only of the actual damage and emergency response, but also of the processes of emergency response, recovery, and reconstruction.
  - The public and private sectors work together to consolidate earthquake-related materials into archives, and promote their use for passing on the legacy of the disaster, as well as for the advancement of disaster prevention measures and disaster research.
  
- (2) Contribute to strengthening disaster prevention and recovery measures around the world by disseminating both domestically and internationally information on the status of reconstruction, and lessons learned and know-how gained from the earthquake, and tie these efforts to ongoing support for reconstruction efforts in the affected areas.
  - Affected local authorities continuously disseminate information on the status of recovery by holding forums, etc., and summarize and share lessons learned and know-how gained from efforts related to recovering and rebuilding from the earthquake.
  - Communicate the state of reconstruction in affected areas and lessons learned from the disaster to the international community by inviting international conferences to the affected areas, and providing opportunities to report on the state of recovery internationally.

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## **65) Preservation of disaster heritage sites and development of disaster legacy centers** [recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to build consensus on the preservation of earthquake-damaged sites.  
(2) How to set up, maintain, and manage bases for passing on the legacy of the earthquake disaster.

### **[Situation and issues created by the Great East Japan Earthquake]**

Since tsunamis are highly recurrent disasters that can occur repeatedly in the same area, damaged buildings and facilities are an important medium for passing down memories of the tsunami. However, they also become reminders of painful memories for victims. In the aftermath of the Great East Japan Earthquake, many buildings and structures became the subject of debate over whether they should be preserved as disaster heritage sites or demolished. Issues include how to build consensus, and secure financial resources for their preservation and maintenance. In addition, since facilities such as reconstruction memorial parks, disaster heritage sites, and memorial museums are scattered across a wide range of the affected areas, it was necessary to ensure that each facility attracts visitors and to establish a system for utilizing these facilities effectively so that visitors are able to learn about the experiences and lessons from the earthquake in an effective manner.

### **[Initiatives in the aftermath of the Great East Japan Earthquake]**

- Creating time to deliberate on these issues by temporarily transferring ownership of disaster heritage sites to prefectural governments (issues 1, 2)

Based on results from the November 2013 meeting of 15 mayors of coastal cities and towns regarding the preservation of disaster remnants, Miyagi Prefecture established the Miyagi Prefecture Expert Council on Disaster Heritage Sites comprised of private-sector experts, etc., to assess the significance of preserving these disaster remnants and the value of candidate sites in the prefecture. For example, in September 2012, the town council of Minamisanriku Town, Miyagi Prefecture, decided to carry out an “early demolition” of its Disaster Prevention Countermeasures Office Building, but in a report issued in January 2015 by the Expert Council, the building was assessed as being “a valuable disaster heritage site that should certainly be preserved.”<sup>(1)</sup> Based on this report, Miyagi Prefecture proposed to Minamisanriku Town that ownership of the Disaster Prevention Countermeasures Office Building be transferred to the prefecture, and that a decision on whether or not to preserve the building be made after a given period of time. Minamisanriku Town deliberated on this proposal of prefectural ownership and preservation in their discussions at special committee meetings. As a result, an agreement on the temporary preservation of the former Minamisanriku Town Disaster Prevention Countermeasures Office Building was signed in September 2015, and it was decided that the prefecture would assume responsibility for its maintenance and management until March 2031, 20 years after the earthquake.<sup>(2)(3)(4)</sup>



- Creating forums for local residents to participate in deliberations on the preservation or demolition of earthquake remnants (Issues 1, 2)

Ishinomaki City, Miyagi Prefecture, established the Ishinomaki City Disaster Heritage Sites Coordinating Council (June-December 2015 ) to deliberate on issues, repair costs, and maintenance costs that would arise if the Kadonowaki Elementary School building and Okawa Elementary School building that were damaged in the disaster were to be preserved as disaster heritage sites. In addition, a questionnaire was conducted for city residents, views were exchanged with two councils that had submitted requests, and public hearings were held on the matter of disaster remnant sites, after which the decision was made in March 2016 to partially preserve the Kadonowaki Elementary School building and preserve the Okawa Elementary School building in its entirety. Subsequently, in order to reflect the wide range of opinions on the development of both sites, the Disaster Heritage Site Study Council (former Kadonowaki Elementary School building) and Disaster Heritage Site Study Council (former Okawa Elementary School building) consisting of experts, local residents, NPOs, and administrative agencies were established (July 2016 - March 2017). Five meetings were held in all to hear a variety of opinions and formulate a maintenance policy (Case study 65-1).

- Preservation and maintenance of disaster heritage sites using government grants, donations, etc. (Issue 2)

The Reconstruction Agency provided support for initial costs needed for preservation through its reconstruction grant. Projects where the following could be verified were eligible for support: 1) relevance to reconstruction city development, 2) appropriate allocation of costs, including for maintenance and management, and 3) agreement among residents and other relevant parties.<sup>(5)</sup>

- Integrated development of Reconstruction Memorial Parks, disaster heritage sites, and memorial museums through cooperation among related parties (Issue 2)

Development of reconstruction memorial parks is underway in Iwate, Miyagi, and Fukushima Prefectures. When local authority-developed reconstruction memorial parks are built, the national government, in cooperation with local authorities, develops national government-managed facilities for memorial and prayer in the form of installing hills, plazas, etc., that serve as core facilities of these parks.

The Miracle Pine Tree in Rikuzentakata City, Iwate Prefecture, is well known to people in and outside of the disaster areas as a symbol of recovery that withstood the massive tsunami. The city established the Miracle Pine Tree Preservation Aid Fund to preserve this solitary pine tree, and in July 2013 reached its goal of 150 million yen. Preservation of the pine tree was completed by the end of the fiscal year.<sup>(6)</sup> In Rikuzentakata City, the Former Roadside Station Tapic 45 and Miracle Pine Tree, both of which are disaster heritage sites, have been integrated into the Takata Matsubara Tsunami Reconstruction Memorial Park, alongside the Great East Japan Earthquake Tsunami Memorial Museum and Roadside Station Takata Matsubara. The park partially opened to the public in September 2019.<sup>(7)</sup> In addition, the Great East Japan Earthquake and Nuclear Disaster Museum was developed adjacent to the Reconstruction Memorial Park in the Nakano district of Futaba-machi,

Fukushima Prefecture. It opened in September 2020 to serve as a base for passing on to future generations the various records, experiences, and lessons learned from the complex of disasters and information on the progress of reconstruction.<sup>(8)</sup>

• Networking disaster memorial groups and facilities via the 3.11 Densho Road (Issue 2)

The 3.11 Densho Road (Disaster Memorial Road) Promotion Organization,<sup>(9)</sup> in cooperation with the Disaster Memorial Network Council,<sup>(10)</sup> is promoting various initiatives associated with the "3.11 Densho Road" which is a network of disaster memorial facilities. Disaster memorial facilities are grouped into three categories from 1 to 3, according to their ease of visiting and ease of understanding the information being provided at the facilities. Facilities that have taken care to promote understanding among visitors by assigning guides, providing storytelling activities, etc., are allowed to use common pictograms for facility signage, etc., and are widely publicized as memorial facilities under a unified concept. Connecting individual facilities as a "network" in this way rather than as "points" leads to effective disaster education (Case study 65-2).

→ *Related item: 53) Promoting reconstruction tourism*

#### **[Lessons learned and know-how gained]**

- (1) With respect to the preservation of disaster remnant sites, allocate a sufficient period of time to gather and consider diverse opinions.
  - With respect to the preservation of earthquake disaster sites, establish a forum for dialogue consisting of diverse entities, including government agencies; businesses in commerce, industry, and tourism; residents; and experts.
  - Give careful consideration to the timing and duration of dialogue as public opinion may shift over time.
- (2) Public and private sectors collaborate and cooperate in the development and maintenance of disaster memorial facilities.
  - Attract visitors by developing locations with convenient transportation, and by integrating disaster memorial facilities with tourist facilities and facilities for having personal interactions.
  - Secure funds for maintenance and management through a variety of methods, including donations and fundraising, as well as public funds.
  - Form a network of disaster memorial facilities, etc., and carry out activities to pass on lessons learned from the disaster that are consistent throughout all affected areas.

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## 66) Passing down memories, records and experiences from disasters

[recovery phase, early and late reconstruction phases]

**[Issues]** (1) How to create programs that make use of experiences from the earthquake.  
(2) How to foster the next generation of leaders who will be passing on the legacy.

### [Situation and issues created by the Great East Japan Earthquake]

A variety of disaster memorial facilities and programs have been established in the affected areas to pass on the legacy of the disaster. However, the audience for many of these programs has been declining every year since peaking in 2012-2013.<sup>(1)</sup> As memories of the disaster fade with the passage of time, there is a need for programs that encourage more people to visit the affected areas and pass on their experiences from the disaster and the events that it caused in easy-to-understand ways so that this tragedy is not repeated. Furthermore, in anticipation of the aging of guides and storytellers, it is necessary to foster the next generation of leaders and continue activities for passing on the legacy.

### [Initiatives in the aftermath of the Great East Japan Earthquake]

- Programs to pass on the legacy of the disaster that combine disaster heritage sites and storytelling, etc. (Issue 1)

Opened in March 2019, the Great East Japan Earthquake Kesenuma City Disaster Heritage Site and Memorial Museum, located in Kesenuma City, Miyagi Prefecture, is a facility for passing on the legacy of the earthquake, and includes a memorial museum with exhibitions and a training venue built beside the former Kesenuma Koyo High School, a disaster heritage site. In March 2018, the Hashikami Area Development Council in Kesenuma City established a subcommittee of storytellers who also work as storytelling guides at the memorial museum. In addition, students from Hashikami Junior High School have been guiding visitors through the memorial museum since October 2019, highlighting how the entire community is involved in passing on the legacy of the earthquake.<sup>(2)(3)</sup>

- Integrated development of memorial facilities and commemorative facilities, facilities for having personal interactions, and online guides (Issue 1)

Unosumai Tomosu, located just outside of Unosumai Station in Kamaishi City, Iwate Prefecture, is an integrated destination consisting of the Tsunami Memorial Hall, a facility that passes on the legacy of the disaster and promotes learning about earthquake disaster prevention; the Kamaishi Memorial Park, a memorial facility; and the Unosato Visitor Center, a central facility where tourists can enjoy personal interactions. At the Tsunami Memorial Hall, visitors can experience and actually take part in programs such as a disaster prevention workshop where they can learn what to pack in their disaster readiness backpacks, and a program that traces the path that elementary and junior high school students took to escape the tsunami immediately after the Great East Japan Earthquake,

while listening to stories about their experiences at that time. For those who are unable to visit, the hall offers online storytelling by staff who have experienced the disaster, and online guided tours of the hall's exhibits and facilities as part of their work to spread their experience and lessons learned from the disaster. By clustering earthquake-themed facilities in a convenient location just outside of a train station, people can gather and interact with each other, and this leads to sustainable activities to pass on the legacy of the disaster.<sup>(4)</sup>

- Installing tsunami inundation signboards to indicate zones of tsunami inundation and tsunami wave heights (Issue 1)

Since FY2011, Miyagi Prefecture has been promoting the installation of tsunami inundation signboards using existing hardware such as road information sign posts to promote residents' evacuation preparedness and disaster prevention awareness. These signboards, etc., indicate inundation zones and tsunami wave heights that were recorded in the Great East Japan Earthquake and tsunami, essentially creating life-sized hazard maps. In June 2013, the 3.11 Legacy and Disaster Mitigation Project: Basic Plan for Tsunami Inundation Signboards certified individuals and businesses that installed these tsunami inundation signboards on their building or other structure as Legacy Supporters in order to promote the spread of these boards. As of the end of October 2018, 203 individuals and businesses have been certified as Legacy Supporters, with tsunami inundation signboards now installed at various locations including post offices, neighborhood association meeting places, and elementary schools to encourage ongoing disaster awareness.<sup>(5)</sup>



Tsunami inundation signboards  
(Miyagi Prefecture's 3.11 Legacy and Disaster Mitigation Project)

- Proactive activities to pass on the legacy by young people who will be leading the next generation (issues 1, 2)

At Onagawa Junior High School in Onagawa Town, Miyagi Prefecture, first-year students inspired by a social studies class started the Onagawa Stone Monuments for Life Project in April 2011. They collected donations to erect stone monuments at elevations higher than tsunami wave heights at all of the town's 21 beaches. Parents, local residents, and volunteers from all over Japan and abroad joined in this project to erect the Onagawa Stone Monuments for Life. After graduating from junior high school, these students established the Onagawa Association for Saving Lives a Millennium from Now and continued to communicate their experiences from the earthquake by erecting stone monuments, conducting disaster prevention activities in various parts of Japan, and creating the "Onagawa Textbook of Life" (Case study 66-1).

In response to a project proposed by high school students local to Otsuchi Town, Iwate Prefecture, the Wooden Monuments Project was carried out with the cooperation of local residents and others. In this project, the monuments were purposefully made out of wood. The aim of the project was to encourage ongoing activities by people living in the community since wood will decay over time and

the monuments will have to be rebuilt at some point.<sup>(6)</sup>

→ *Related item: 16) School management and education in the aftermath of a disaster*

- Training people who will be taking charge of activities to pass on the legacy (Issue 2)

The 3.11 Memorial Network is a wide-area organization that passes on the legacy of the disaster. It is active in the three prefectures of Iwate, Miyagi, and Fukushima, and is involved in supporting regional legacy activities. The Youth Talk program, which has been held since March 2018, is a place where young people can disseminate information, as well as take part as speakers and listeners to share their experiences of the disaster, and exchange opinions on how the disaster should be passed on to the next generation. In a series of four lectures held in 2020, the 3.11 Course for Upgrading Skills in Passing on the Legacy provided an opportunity for learning the skills needed to carry on the legacy activities. In addition, the 3.11 Memorial Network Fund, which is funded by corporate and individual donations, provides grants to organizations that plan and implement excellent projects for passing on the legacy, thereby supporting the continuation of legacy activities. (Case study 66-2).

- Creating a forum for sharing issues related to activities to pass on the legacy of the earthquake disaster and disseminate this information nationwide (Issue 2)

Since March 2016, the National Symposium on Storytelling in Disaster Areas has been held annually in Minamisanriku Town, Miyagi Prefecture, and elsewhere to introduce and exchange opinions on various efforts to prevent the disaster from fading and to pass it on to future generations.<sup>(7)</sup>

In FY2016, the Reconstruction Agency established the "New Tohoku" Reconstruction and Creation Award with the aim of widely disseminating information on the activities of individuals and organizations that contribute to the creation of a "New Tohoku" and promoting their spread and development both within and outside the disaster-affected areas. Initiatives related to passing on the legacy of the earthquake disaster and disaster prevention activities have also been honored.<sup>(8)</sup>

**[Lessons learned and know-how gained]**

- (1) Develop programs that pass on the legacy of the earthquake in which people can learn about the earthquake in an effective way to prevent a repetition of the tragedy.
  - Create programs that enable people to effectively relive their experiences of the disaster, such as storytelling by disaster survivors, tours of disaster heritage sites, and experiential learning.
  - The sustainability and usefulness of activities can be enhanced through collaboration and cooperation among government agencies, local residents, NPOs, and schools in passing on the legacy of the earthquake, and in addition to these activities to pass on the legacy, by combining tourism and industry.
  
- (2) Support the creation of opportunities for people to involve themselves in activities for passing on the legacy of the earthquake and disaster education and support the continuation of these activities.
  - Provide opportunities for younger generations to involve themselves in activities to pass on the legacy of the disaster and disaster prevention activities in schools and communities so that they can learn about the importance of communicating their experiences of the disaster and also learn how they can carry out such activities.
  - Provide learning opportunities where people can acquire knowledge and skills necessary to pass on the legacy of the earthquake disaster, and also provide grants to support the planning and continuation of such activities.
  - Government agencies, etc., share the conditions and issues associated with activities being carried out in different regions for passing on the legacy of the earthquake, and provide forums for disseminating this information nationwide to connect these to the spread and expansion of these activities.

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<https://www.hashikami-machikyo.jp/%E3%83%96%E3%83%AD%E3%82%B0-1/%E9%9A%8E%E4%B8%8A%E8%AA%9E%E3%82%8A%E9%83%A8%E9%83%A8%E4%BC%9A/>
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## Expert Meetings and Working Groups Meetings

## 1. Expert Meetings

Two expert meetings were held with the following committee members in attendance to advise on the structure and content of the collection of lessons learned and know-how gained.

- 1st meeting: August 24, 2020; 2nd meeting: January 14, 2021.

Name	Affiliation	Position
Takashi Mikuriya (Chair)	Hyogo Earthquake Memorial 21st Century Research Institute	Vice president / Director, Research Strategy Center
Yoshiaki Kawada (Deputy chair)	Hyogo Earthquake Memorial 21st Century Research Institute	Vice president / Director, Disaster Reduction and Human Renovation Institution
Hiroshi Kato	Hyogo Earthquake Memorial 21st Century Research Institute	Director / Director, Mental Health Care Center
Jun Osaka	Tohoku Children's Welfare College	Vice president
Yoshiteru Murosaki	Graduate School of Disaster Resilience and Governance, University of Hyogo	Professor / Dean of Graduate School
Keiji Kitahara	Regional Social Research Course, Hirosaki University	Professor / Dean of Graduate School
Makoto Okumura	International Research Institute of Disaster Science, Tohoku University	Professor
Kunihiro Fukudome	Research Center for Regional Disaster Management, Iwate University	Professor
Masaya Yanai	Faculty of Liberal Arts, Tohoku Gakuin University	Professor
Junichi Hirota	Faculty of Agriculture, Iwate University	Professor emeritus
Fumihiko Imamura	International Research Institute of Disaster Science, Tohoku University	Professor / Director
Masayuki Fukusako	Faculty of Economics and Management, Higashi Nippon International University	Professor / Dean / Vice President
Makoto Iokibe (Advisor)	Hyogo Earthquake Memorial 21st Century Research Institute	President

## 2. Working Group Meetings

Five working group meetings were held with the following committee members in attendance to deliberate on the structure and content of the collection of lessons learned and know-how gained.

- 1st meeting: August 11; 2nd meeting: September 10; 3rd meeting: October 4; 4th meeting: November 6; 5th meeting: December 6, 2020



Name	Affiliation	Position
Yoshiaki Kawada (General manager)	Hyogo Earthquake Memorial 21st Century Research Institute	Vice president / Director, Disaster Reduction and Human Renovation Institution
Reou Kimura	School of Human Science and Environment, University of Hyogo	Professor
Norio Maki	Disaster Prevention Research Institute, Kyoto University	Professor
Shingo Nagamatsu	Faculty of Societal Safety Sciences, Kansai University	Professor
Keiko Tamura	Crisis Management Office, Crisis Management Division, Niigata University	Professor

### 3. Creating the casebook

A number of cases mentioned in the body text were compiled in a separate casebook based on inquiries on case details made with parties concerned.

### 4. Secretariat

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