

# 1 Main Initiatives (4) Agriculture, Forestry and Fisheries

## Post-Disaster Conditions and Issues/Challenges

### <Agriculture>

Approximately 15,000 ha, or around 11% of the prefecture's agricultural land, was struck by the tsunami. In addition to the inundation of a huge amount of debris and mud, it was considered necessary to restore farmland as early as possible. Farmers also suffered a lot of damage to tools and machinery, as well as infrastructural production facilities, bringing concerns over serious delays in a resumption of their work.



Photo: Devastated farmland (Shichigahama Town)

With regard to the livestock industry, there was a devastating direct impact from both earthquake and tsunami with a number of collapsed barns and drowned animals, and, furthermore, a secondary impact caused by insufficient nutrition as the provision of food and water was suspended. Consequently, a large number of animals died.

At the same time, crops became polluted by the radiation leaks from Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant, and this spread extensively. As a result, the shipping of both agricultural and livestock products was temporarily suspended, causing a serious impact on all levels of production and markets in many areas.

### <Forestry>

Before the earthquake, the prefecture was producing approximately 20% of Japan's plywood in Ishinomaki City. In other areas, mainly along the coast, some of the foremost timber industry complexes in Japan were located, housing a variety of businesses, such as wood chip factories and large-sized lumber mills.



Photo: Salt water affected forest (Minamisanriku Town)

A huge part of this was seriously devastated due to the disaster. Factory buildings collapsed, facilities and equipment were flooded, and products and raw materials were washed out to the sea. As a result, there was no choice for the businesses but to suspend their operations. The tsunami also struck and seriously damaged coastal forests along a stretch of about 70 km, and an area of 1,753 ha, between the borders of Iwate to Fukushima prefectures. Due to the exposure to seawater, a large number of trees ended up dead.

Some major damage also occurred in other key areas including forestry roads that are essential to lumber production; erosion control facilities, such as seawalls; production facilities for non-timber forest products, such as mushrooms and mountain vegetables. Overall, there was approximately 89 billion yen of damage to the whole forestry industry in the prefecture.

Furthermore, the accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant brought about radioactive contamination, bringing damage to an extensive area, including bamboo forests and log cultivation sites for mushrooms.

### <Fisheries>

All 142 fishing ports in the prefecture were seriously hit by the earthquake and tsunami, suffering all kinds of damage, from ground sinkage to collapsed breakwaters and piers, at a cost of 438.6 billion yen. The tsunami also generated a huge amount of debris in the undertow, which blocked ports and routes and made it impossible to deliver relief supplies via the sea. Moreover, a number of fuel tanks were demolished, causing leakage of fuel oil and gasoline into the sea, and oil and gasoline that was covering the ocean surface caught fire and spread to the



Photo: Damaged Yuriage Port (Natori City)

land. There was also the problem of an oil smell that had adhered to fishery products.

The prefecture used to be Japan's second biggest producer in the area of aquafarming, but the losses through damage to both facilities and products came to 6.14 billion yen.

The damage to refrigerated warehousing in the coastal areas, including Ishinomaki City, also

generated a serious problem. As they were unable to refrigerate and freeze products, a great deal of the stock rotted away, giving out a very pungent odor.

Furthermore, following the accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant, highly contaminated water leaked into the ocean, generating serious concerns, along with many rumors, regarding radioactive substances.

### <Food Industry>

The food manufacturing industry had to face an extremely tough situation as a number of businesses fell victim to the catastrophe. Mainly in the coastal areas, workers in various areas, such as production, processing and distribution, lost not only their production base but also their livelihoods. Even when their factories and facilities were restored and ready to restart, some of them had already lost their market due to the temporary suspension of business, and had to find new markets for their products. There was also the problem of the many rumors that surfaced following the accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant, which left a considerably negative impact on the food industry. For these reasons, it was extremely difficult to secure and reenter markets, including those overseas.



Photo: Devastated fishery processing industry complexes (Kesenuma City)

The distribution and processing industries also experienced hardships. All the 10 fishing port markets in the prefecture suffered damage to their piers, freight handling facilities and market facilities, as well as essential apparatus for landing catches, such as fish sorting machines and forklifts.

In addition, the buildings, facilities and apparatus at around 400 fishery-processing factories were damaged. Many of the fishery processing industry complexes located behind ports experienced land sinkage, resulting in serious problems, such as flooded land and roads.

## Revitalizing Agricultural Industry and Villages with Attractive Features

In order to resume operations as early as possible, our first priority was placed on the restoration of the production base, through removal of the massive amount of debris and mud that had quickly piled up on farmlands, and the restoration of infrastructural facilities, such as irrigation and drainage pump stations.

We also conducted other activities, including salt removal and the testing of potential substitute crops, as well as technological developments to tackle the extensive salt-water damage, and promote the restart of operations for those local areas devastated by the tsunami.



Photo: First rice planting since the earthquake disaster (Higashimatsushima City)

We also provided support for disaster-affected farmers and breeders to acquire seeds, seedlings and livestock, to lease agricultural machines for shared use toward efficient restoration, operation and maintenance, and to procure materials and equipment.

Provisions were also made to support victims financially and encourage them to restart their operations. We activated the National Disaster Financing Act, offering no interest and collateral for special loans, and extended grace and repayment periods. In addition, in collaboration with municipalities, we established a fund for the implementation of disaster measures for the purpose of facilitating funding and a reduction in the victims' burden of repayment. The damaged rice and soybeans in storage in the coastal areas were disposed of by the prefecture under entrustment from the municipalities, and we provided support for the disposal costs of dead livestock to reduce the burden on breeders. In order to solidify the shipping and distribution operations of safe products produced in the prefecture, we strived to eliminate anxiety over food safety through the strengthening of checking systems for food quality, and providing information to residents as quickly as possible.

## Reconstructing a Vibrant Forestry Industry

The prefecture formulated the Miyagi Earthquake Disaster Recovery Plan for Forests and the Forestry Industry in October 2011, and promoted recovery of the forestry industry. The main focuses of this plan were the restoration of supply chains for forests, the forestry and lumber industries; reconstruction of devastated coastal disaster-prevention forests and promotion of land conservation in the prefecture; and establishment of a model for the multifaceted use of woody biomass.

Through the application of the national government's Wood Supply Project for Emergencies and Restoration Project for Wood Processing and Distribution Facilities, the prefecture had completed all the restoration work for plywood and lumber factories in the coastal areas, which deal with most of the prefecturally produced products, by the end of 2013. As a result, the product shipment value of the major 16 factories in the prefecture totaled 41.1 billion yen, reaching approximately 149% of that before the earthquake.

During the period of their client factories restoration, in order to avoid a suspension in lumber production and distribution, we provided support for the industry concerning the costs for retrieval of lumber washed away by the tsunami and the transferring of materials and wood chips to other areas in response to urgent demand.

As the coastal area was struck especially badly with regard to the decimation of coastal disaster-prevention forests and demolished seawalls, we applied schemes from the national government, such as Disaster Restoration Project for Erosion Control Facilities, in an effort to facilitate early recovery.

In addition to our efforts to find ways to utilize the huge amount of waste wood generated by the disaster in an effective way, we applied the national government's Renovation Project for Woody Biomass Facilities to promote use of woody biomass.



Photo: Restored lumber factory (Ishinomaki City)

## Creating a New Fishing Industry

For the purpose of early resumption of the fishing industry, we placed a priority on the removal of the enormous amount of disaster waste that had accrued in fishing ports and fishing grounds. As for the fishing grounds, we divided the coastal grounds into five blocks and worked in order of precedence, also providing assistance to fishery workers who were engaged in removal operations. As a result, we managed



Photo: Removal operation for the debris in the sea (Kesenuma City)

to remove approximately 270,000 m<sup>2</sup> of disaster waste in total. The waste was kept on a temporary basis in places, such as piers, until categorized and transferred to primary temporary scrap yards designated by municipalities. At some fishing ports, in addition to waste removal from fishing grounds, we

conducted emergency repair work, such as regrading of piers and port roads, in preparation for receiving relief supplies via the sea.

We worked on emergency restoration of all 142 damaged fishing ports in the prefecture, especially focusing on the early restoration of five main ports (Kesenuma, Shizugawa, Onagawa, Ishinomaki, and Shiogama) where a number of fishery-related industries are congregated. Our efforts, in this regard, were not only directed at developing functional fishing ports, but also on reinforcing disaster prevention measures.

The accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant seriously affected this industry too. As there were concerns over radioactive pollution of fishery products, we set up radioactivity checking devices to monitor this, and then immediately released the survey data to the public. In order to avoid a negative impact brought about by rumors, we actively promoted to consumers all over Japan the safety and security of the fishery products produced in the prefecture.

In collaboration with related organizations, we provided support to those engaged in the fishery business and affected by the disaster. We offered help in reconstructing their management bodies, as well as to seek other opportunities for partnerships, joint operation, and incorporating to stabilize their business.

With the aim of early recovery of the fishing industry from such devastating damage, we also looked into the relaxation of regulations, in order to utilize capital strength and the managerial expertise of private sectors. In line with this, the recovery promotion plan for the Momonoura region of Ishinomaki City was approved by the national government in April 2013, as a special fishery reconstruction zone, to allow private companies mainly operated by local fishermen to acquire demarcated fishery rights.



Photo: Radiation measurements of food

## Promoting a Food Industry That Leads Primary Industries

One of our earliest initiatives was the restoration of the wholesale markets and food manufacturing facilities, such as fish processing facilities, in most devastated coastal areas. This included developmental support for temporary facilities and financial assistance for the restoration of buildings and facilities by operators and organizations in the industry.

Some fish processing operators had to procure substitute raw materials from outside the prefecture, as many suppliers were affected by the disaster and unable to conduct normal business. In order to support them, we organized business conventions and conducted public relations activities to regain or expand markets.

We also made strong efforts to improve recognition of our prefecture's products, by holding food and product fairs all over Japan, mainly in metropolitan areas, and opening and promoting a satellite shop in Tokyo.



Photo: Food and product fair held outside Miyagi (Nagoya City)

## Our Challenges and Efforts Toward the Reconstruction Stage

- Along with the effort toward early restoration of devastated farmland and agricultural facilities, it is essential to develop managerial bodies that are competitive, for example, in farmland consolidation and operational expansion. This is done from the viewpoint of fostering individuals who can play an important role in this area. Additionally, some of the main efforts should be focused on large-scale farmland consolidation projects and development of large-scale greenhouse farming.
- It is important to promote agribusiness through selected measures: the invitation of a variety of business operators, development of more sophisticated managerial bodies made up of certified farmers, community farming organizations, agricultural corporations, scale expansion, and industrialization of the "sixth sector of industry."
- It is essential to strengthen the supply system for timber produced in the prefecture, though certain measures, such as construction of public housing for disaster victims.
- In addition to the consistent work towards early restoration of facilities, especially those in fishing ports, it is important to promote initiatives toward the structuring of new-style managerial bodies in order to develop a competitive and attractive fishing industry. These initiatives include the securing and fostering of people from younger generations, industrialization of the "sixth sector of industry," and collaboration with other industries.
- To facilitate reconstruction of "Food Kingdom Miyagi," it is necessary to provide support for the development of products with higher added values and aggressive public relations activities of the prefecture's products.
- It is essential to conduct radiation-level surveys through solid checking systems to secure the safety of our products in agriculture, forestry and fisheries. In this regard, it is vital for us to urge the central government and TEPCO to solve the problems of disposal of radioactive pollutants and the leakage of radiation-tainted water.

# 1 Main Initiatives (5) Public Civil Engineering Facilities

## Post-Disaster Conditions and Issues/Challenges

### <Road>

The earthquake left cracks and uneven subsidence on road surfaces across the prefecture, and 275 locations on 110 prefecture-managed roads in the coastal area suffered traffic restrictions due to rubble accumulated by tsunami. Eight bridges fell down by tsunami or vessels crashed into the bridge girder. Under these circumstances, transport of goods and life-saving by land were difficult.

### <Port>

The earthquake hit breakwaters and other major facilities of Sendai-Shiogama Port and Ishinomaki Port, disrupting raw material and fuel supply chain of the industries, facilities of which were located in both waterfront areas behind the port and inland areas. This stagnated energy supply and manufacturing activities in major local industries—such as automobile, pulp and paper, and forage and manure crop—exerting a significant impact on the industrial and economic activities inside and outside of the prefecture.

The local fishery and other key industries were greatly affected as breakwaters and wharves of local ports were damaged, causing ground subsidence.

### <Airport>

The tsunami caused a massive influx of seawater into Sendai Airport, inflicting untold damage on the airport; the runway for the most part went under water, sediment, rubble and cars were scattered and emergency power generation facilities were submerged. The terminal building was also submerged up to the one and a half floor, but it was used as an evacuation center and accommodated a maximum of 1,695 evacuees, which include residents and office workers in the vicinity of the airport. The airport access railway was completely disabled because the underground tunnel in the airport premises was damaged by water and the transportation control office at the Airport Station was also flooded.

### <Waterfront>

63 coasts with coastal protection facilities out of all general coasts were damaged with levees sank by earthquake and collapsed by tsunami.

### <River>

278 places of 107 rivers among those under prefectural management were damaged: levees sank by earthquake or collapsed by tsunami, river channels were blocked by accumulated sediments and rubbles, and tide barriers were destroyed. 16 floodgates in the prefecture were severely damaged after closure and became inoperable.

### <Sand erosion control>

Strong seismic movement brought hillsides and cliffs down in a number of places in the prefecture. In the landslide prevention area of Midorigaoka, Taihaku Ward, Sendai City, it caused open cracks and uneven subsidence inside the housing complex. While in Sateyama, Aoba Ward, Sendai City, landslides occurred on a hillside slope and discharged mud into the Sate River, forming a landslide dam. In Kazuma, Ishinomaki City, rocks fallen from a slope by seismic movement destroyed apartments below a cliff, paralyzing an adjacent municipal road. In addition to the above, a lot of small-scale cliff failures occurred here and there.

### <Sewerage>

Tsunami inflicted enormous damage on three prefecture-managed basin sewerage treatment plants in the coastal area (Senen, Kennan and Ishinomaki East purification centers). Four basin sewerage treatment plants in the inland area (Kashimadai, Taiwa, Ishikoshi and Ishinomaki purification centers) were liquefied by the earthquake.

Municipality-managed sewerage facilities, such as sewerage treatment plants, pump stations and culvert facilities, were also devastated all over the prefecture.

Furthermore, radioactive substances released into the air and accumulated in the soil by the accident of Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant were mixed with rainwater and flowed in the sewerage.

### <Waterworks & industrial water supply>

Osaki wide-area water supply system was damaged in 95 places, mainly water pipes, and similarly Sennan-Senen wide-area water supply system was damaged in 55 places. More than half of the

damage was fall-off of pipes and disengagement of joints due to the seismic movement. Meanwhile, Sendai North industrial water supply system was damaged in 10 places, mainly water pipes, and Senen & Sendai area industrial water supply system was damaged in 123 places, mainly air valves.

### <City Park>

All five prefecture-managed city parks including tsunami-hit three green parks in the coastal area (Yamoto Seaside, Iwanuma Seaside and Sendai Port-Tagajo District Vegetated Buffer) were damaged, and four of them were forced to close. It is much the same for municipality-managed parks. Not a few parks in the coastal area were lost as part of city centers and settlements.

## Securing and Promoting Development of Transportation Infrastructure (Road, Port, Airport, etc.)

### <Road>

We lifted traffic restrictions on emergency transportation roads at an early stage and restored access roads to airport, port and other wide-area transportation hubs. Regarding open coastal highways which had not been affected by tsunami, we expedited improvement while further clarifying their position as priority emergency route. At the same time, prefectural recovery projects, such as the development of Miyagi North Expressway and Oshima Bridge that will strengthen regional ties, were launched.

Since the high embankment structure exemplified by Sendai-Tobu Road was proved effective for preventing/reducing flood damage caused by tsunami, arterial coastal roads were developed as disaster prevention roads with disaster damage prevention/reduction functions, e.g. turning available sections into a high embankment structure, in coordination with the community development project.

We also continued to promote renovation for aseismic structure of bridges since the ongoing aseismic retrofitting measures were proved effective.



▲Immediately after the earthquake ▲After the restoration  
Photo: Damaged road under restoration (Onagawa Town)

### <Port>

The prefecture rolled out PR activities on the recovery status of port facilities, mainly its major ports of Sendai-Shiogama and Ishinomaki, seeking reopening of their key sea routes and swift recovery of cargo handling volume.

Along with the restoration of existing coastal protection facilities, we started improvement of anti-tsunami facilities including seawalls to construct safe ports.

Our initiative to consolidate three ports of Sendai-Shiogama, Ishinomaki and Matsushima, which was launched in 2010, has a philosophy of increasing industrial competitiveness and protecting and developing the industry, economy, employment and livelihood of not only Miyagi but also the entire Tohoku region. After the earthquake, we have accelerated our efforts to realize this initiative as a "symbol of restoration."



▲Immediately after the earthquake ▲After the restoration  
Photo: Damaged Takasago Container Terminal, Sendai-Shiogama Port under restoration (Sendai City)

### <Airport>

To enable civilian flight operations at Sendai Airport as swiftly as possible, the prefecture pushed forward with its restoration and earthquake/tsunami-resistant retrofitting, such as anti-liquefaction work of taxiway and introduction of uninterruptible power supply system in cooperation with the national government. We were also readily informed of the national government's move toward the

reform of airport operation and examined the Sendai Airport privatization plan to further vitalize the airport. The Sendai Airport access railway, one of our important transportation infrastructure, resumed its operation promptly, and the prefecture provided assistance for its stable operation into the future.

## Conserving Prefectural Land Including Coasts and Rivers

### <Waterfront>

Damaged coastal protection facilities were restored by temporary emergency measures to protect areas which went through coastline changes due to tsunami, as well as coastal areas which had significant subsidence damage by crustal movements, from high/tidal waves. As a full-scale restoration commenced, structural forms of coastal protection facilities with a new concept were studied based on what we learned from the disaster experience and levees were reinforced by expanding the levee width while developing the tide prevention forest in the hinterland in parallel with the reconstruction of the coastal cities and towns.



Photo: Restored coastal levee (Shichigahama Town)

### <River>

Prior to the full-scale restoration, disaster waste and sediment that had blocked river mouths and channels were removed to secure a necessary cross-sectional area of flow. And to prevent secondary disaster due to flood or other factors, we promptly completed temporary restoration of destroyed riverbanks. We promoted a comprehensive flood countermeasures focused on the low-lying areas with an increasing risk of flooding posed by ground subsidence or other factors.

### <Sand erosion control>

Emergency measures to prevent the influx of rainwater, etc. were swiftly taken for the earthquake-stricken areas to prevent damage from expanding. Evacuation call/warning arrangements were also prepared. An emergency survey was conducted on the areas with a high risk of secondary disaster in order to develop a system that quickly takes emergency actions and issues evacuation calls.

## Restoring Public Utilities Including Waterworks/Sewerage

### <Sewerage>

Simplified treatment function of the three basin sewerage treatment plants (Senen, Kennan and Ishinomaki East purification centers), which had been at standstill, were promptly restored. Full-scale restoration work of all the facilities were completed in March 2014.



▲Immediately after the earthquake



▲After the restoration

Photo: Damaged sewerage treatment plant under restoration (Tagajo City)

### <Waterworks & industrial water supply>

With emergency work for early resumption of water supply positioned as the top priority, we launched a full-scale restoration for water supply facilities to work normally and provided support for early restoration of the devastated water facilities of the coastal cities and towns.

## Rebuilding Communities Including Coastal Cities and Towns



Photo: Tamaura-nishi Community Development Review Committee (Iwanuma City)

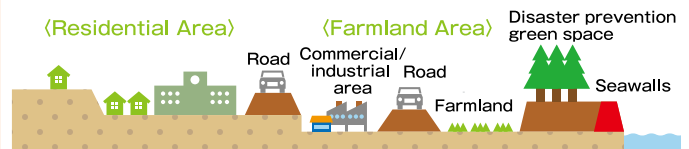
In the tsunami-flattened coastal cities and towns, community development projects tailored to each affected area were started taking the development of a disaster-resistant community, or the Miyagi model which incorporates the ideas of relocation to a higher ground, working and living in different places and multiple tsunami barriers, as a base with careful consideration given to consensus building among residents and ensuring of local communities, and also with a view to collective relocation and utilization of a new land readjustment system.

### ■Chart: Illustration of recovery community development

#### Illustration of relocation to a higher ground, and working and living in different places



#### Illustration of multiple tsunami barriers



Taking into account the progress status of restoration/recovery of daily lives and economic activities of the affected areas, we swiftly started post-disaster construction and damage repair work of city parks where early restoration would be possible. The tsunami-flattened Yamoto Seaside Green Park and Iwanuma Seaside Green Park are to be re-developed as disaster prevention park functioning as primary evacuation sites in the event of a possible tsunami attack. At the same time, the progress of disaster waste (rubble) disposal and the community development project are being assessed.

## Our Challenges and Efforts Toward the Reconstruction Stage

- As a wide-area road network that will effectively function in the event of a large-scale disaster, the vertical axis of coastal roads including Sanriku Expressway and horizontal axis connecting the coastal area and inland area, such as Miyagi North Expressway, need to be enhanced.
- Seawalls, which play a role of preventing/reducing disasters, should be improved to have a robust structure that can avoid devastation by major tsunami and maintain a certain level of facility functions.
- Regarding Sendai Airport, it is necessary to readily understand the national government's move toward the reform of airport operation and to promote the integration and commission of the airport operation to the private sector. Stimulating passenger and cargo demand and stepping up efforts to expand air routes are also required, along with the enhancement of airport functions and revitalization of peripheral areas.
- Toward the community development, further acceleration of collective relocation and land readjustment projects are required.

# 1 Main Initiatives (6) Education

## Post-Disaster Conditions and Issues/Challenges

The earthquake and tsunami damaged 91 prefectural schools, 671 municipal schools, and 252 private schools. In coastal areas, there were schools which resumed classes in temporary or rented buildings because the school building was washed away or damaged by the tsunami. At greatly damaged schools, teachers were dispatched from other prefectures in a situation where personnel had to be secured.

In addition, schools were used in various ways immediately after the disaster, with many gymnasiums and classrooms used as shelters, and some school gymnasiums were used as mortuaries. Teachers operated the shelters, even though they themselves were victims of the disaster.

Besides damaging school facilities such as buildings, the earthquake also significantly affected students' school attendance and their learning environment. More students found attendance difficult for economic reasons due to the disaster, and some students were confirmed to have mental health problems due to the psychological burden of the loss of family and close friends.



Photo: A school gymnasium that was used as a shelter (Onagawa Town)



Temporary emergency housing (prefabricated houses) on the grounds of Shizugawa High School (Minamisanriku Town)

There were also great changes in the environment for childcare and education in the family and the region, as family circumstances were changed by the earthquake and local communities were lost. A crime prevention system had to be developed due to the deterioration of the local environment, and it became necessary to create a system to watch over children not just at school, but throughout the region.

Since schoolyards and local playgrounds were used for temporary emergency housing (prefabricated houses), there were fewer opportunities for exercise, and lack of exercise and decline in the physical fitness of such students became a concern with the prolonged evacuation life.

Cultural assets of the prefecture were also severely damaged. More than 300 culturally precious properties were washed away,



Photo: Damaged stone wall at Sendai Castle ruins (Sendai City)

destroyed or damaged, including nationally or prefecturally designated cultural assets.

These include temples, shrines, Buddhist statues, ancient documents, historical sites, scenic spots and natural treasures that had all been carefully preserved and managed in the region.

Moreover, in seaside communities that were devastated by the tsunami, not only equipment for festivals and folk arts that had been preserved and passed on were damaged, but intangible folk cultural heritage was also severely damaged, including leaders who became victims.

## Ensuring Safe and Secure School Education

Setting the recovery of school functions that were lost due to the earthquake as a top priority, we promoted the early resumption of classes with measures such as temporary school buildings or renting another school's building, and worked to secure educational opportunities by rushing the restoration of school facilities which had been damaged.



Temporary school building of Kesenuma Koyo High School (Kesenuma City)

We promoted the creation of an environment where students can safely attend schools as they did before the earthquake, with expansion of the scholarship loan system to financially assist students for whom school attendance has become economically difficult due to effects of the earthquake, and securing transportation by school buses for students with problems in commuting.

The environment surrounding children was significantly changed by the earthquake, and each school was notified regarding safety management and safety education as of April 11, 2011, with consideration of safety going to and from school and at school, and the Basic Miyagi School Safety Guidelines were drawn up in October 2012.

The Disaster Science Department was opened in Tagajo High School in order to pass on the lessons learned in the Great East Japan Earthquake, and to develop human resources which can protect the life and livelihood of even one more person in a future disaster.

Table: Content of Consultations with School Counselors in 2011 (Students, Teachers, Parents)

Consulter	Number of consultations	Content of consultation												Number of consulters	
		Truancy	Maladjusted to school	Human relations Friendships	Behavior problems	Bullying	School life	Career and schoolwork	Family relationships Child rearing	Child abuse	Developmental disorder	Student support	Others		
Elementary and junior high school related	Students	17,876	1,044	1,770	2,633	254	149	3,246	1,127	1,649	16	193	130	5,665	19,290
	Teachers	12,786	1,290	1,024	529	427	42	817	296	868	59	682	4,843	1,909	15,065
	Parents	6,505	1,303	744	285	255	42	524	399	1,726	10	337	59	821	6,851
	Total	37,167	3,637	3,538	3,447	936	233	4,587	1,822	4,243	85	1,212	5,032	8,395	41,206

Mainly at the region which received profound tsunami damage, we responded with mental health care for individual students, including the dispatch of professionals such as school counselors, and strengthened the personnel system of schools in affected areas in particular, enhancing student guidance, career guidance and educational counseling.

In addition, we led the nation in establishing disaster prevention chiefs and placing disaster prevention chiefs in all public schools in the prefecture to enhance disaster prevention education in schools, and actively promoted efforts to improve disaster prevention functions in schools.

Based on the lessons of the earthquake, we created the Miyagi Disaster Prevention Education Supplementary Reader in 2013 to nurture the students' ability to respond to disaster and contribute to society.



Photo: Miyagi Disaster Prevention Education Supplementary Reader

region, and have made initiatives to launch organizations such as promotion councils in municipalities, place coordinators who connect people and local resources in the organizations, and provide support for home education, regional activities and school education.

## Enhancing Lifelong Learning, Cultural and Sporting Activities

Prefectural and municipal social education facilities and cultural facilities which were damaged by the earthquake numbered 653. In addition, many facilities such as community centers were utilized as shelters.

We have quickly rescued damaged cultural assets, expanded rescue activities to protect cultural assets, performed emergency treatments such as cleaning, and assisted in repair and restoration.

Table: Damage and Restoration Status of Prefectural Social Education and Athletic Facilities

	Number of damaged facilities	Number of restored facilities
Social education facilities	11	9
Social athletic facilities	5	5

Future recovery prospects: 1 facility in 2014 and 1 facility in 2015

We also promoted the restoration of affected museums and archives, and supported the repair and organization of documents and securing of storage locations.

Many organizations designated intangible cultural assets and their parent communities suffered losses, with equipment washed away or damaged, and many organizations found it difficult to continue activities. We assisted efforts to resume activity.

Books and magazines on the earthquake were collected in order to convey the disaster to future generations, and a Great East Japan Earthquake library was established in the Miyagi Prefectural Library in July 2012. We also began to digitize earthquake-related documents and constructing a system to publish them on the Web, with the aim of opening a Miyagi Earthquake Archive (tentative name) by the end of 2014.



Photo: Cultural asset rescue activities (Ishinomaki City)

## Rebuilding Educational Skills at Home and in the Region

The earthquake damaged homes, the region and schools, significantly impairing the environment for raising children.

Therefore, households, the region and schools are cooperating in strong collaboration with mutual support, actively promoting mechanisms for raising children, improving the educational skills at home and in the region, and promoting the development of a system for educating children in the entire region.



Photo: Collaborative education

We hold workshops for human resources development in order to promote collaboration and cooperation among households, the region and schools, and make efforts to certify individuals and companies which support children's education as the Miyagi Education Support Group.

In addition, we promote the utilization of community social education facilities and communal areas as study and recreation places for lifelong learning, and are promoting the development of a local community through study. We are expanding the Collaborative Education Platform Project to promote an environment for nurturing children across the



Photo: Poster of the Miyagi Education Support Group

## Our Challenges and Efforts Toward the Reconstruction Stage

- For the realization of recovery, it is necessary to secure an education environment for learning in security and for all children to have dreams and aspirations, based on the cooperation of home, region and school, given that human resources for the future are needed more than anything else.
- We must strive to secure safe and secure school education and rebuild the educational skills at home and in the region, and it is necessary to continue efforts to enhance lifelong learning, cultural and sports activities.
- Further enhancement of mental health care for students is needed, with prevention and rapid response to problems such as bullying. In addition, we must strive to understand the background and causes of the trend in the number of truant students, and seek to firmly respond in cooperation with the parties concerned.
- Due to concern about effects on academic ability, physical strength and athletic ability from various environmental changes after the earthquake, we must strive to improve academics and enhance school physical education and athletic club activities, and it is necessary to continue to promote the establishment of a fundamental lifestyle in order to maintain health, increase physical fitness, and improve energy, motivation and concentration.
- It is necessary to advance the efforts of disaster prevention education that is distinctive of the prefecture, including the ongoing placement of disaster prevention chiefs at all public schools and the establishment of the Disaster Science Department at Tagajo High School.

# 1 Main Initiatives (7) Disaster Prevention, Safety and Security

## Post-Disaster Conditions and Issues/Challenges

In this devastating disaster, the tsunami that hit went far beyond the level of expectations, depriving a number of people of their lives, with many buildings and other properties in low-lying areas on the coast washed out to the sea.

Municipal governments in the coastal areas also suffered greatly, as whole office buildings were demolished and a number of the staff became casualties, causing a loss of administrative functions for some period of time.

Inland areas also experienced extensive damage, especially a number of wooden structures that had little or no earthquake-resistance.

It took a fair amount of time to understand the full extent of the damage to both coastal and inland areas, as some regions experienced temporary stoppages to their information infrastructure due to power outages and other reasons.

With regard to the emergency services, many buildings, facilities and vehicles were struck by the tsunami in the coastal areas, and a number of firefighters who were assisting in the evacuations lost their lives. Moreover, hospitals and other medical institutions were damaged, as well as schools and other public locations designated as evacuation centers or disaster prevention bases.

Furthermore, the Environmental Radioactivity Research Institute of Miyagi, which monitors and measures levels of radiation and radioactivity in the area surrounding the Onagawa Nuclear Power Station of the Tohoku Electric Power, was seriously damaged, and lost vital equipment.

Therefore, it was extremely urgent to build emergency management facilities for monitoring and disaster prevention, and also to deal with the accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant.

Actually in the coastal areas, people had already been advised to immediately evacuate to higher ground when an earthquake occurred, and had undergone some drill sessions for this purpose. While some people were able to escape to safety because of this, the evacuation operation was not executed thoroughly enough, and a number of casualties still occurred in the aftermath.

After the disaster, local residents organized volunteer groups, such as neighborhood community groups and associations, quite effectively to provide support in serving warm meals and distributing relief supplies at evacuation centers. This made us realize the importance of self-help and mutual help among residents, especially at the time of a large-scale disaster.

The ability of the police to function was also severely tested, with 214 locations including police stations, police boxes and satellite offices seriously affected, as well as essential equipment, such as emergency vehicles. Among the most badly hit were 2 of the stations and 25 boxes and offices in Kesenuma and Minamisanriku as they were washed out to the sea and destroyed. The prefectural driving license center was damaged too, and forced to suspend its operations temporarily.

Due to the power outages, with the exception of those equipped with an auxiliary power supply, 3,312 traffic lights were temporarily put out of commission, and 518 collapsed in coastal areas. In response to this, interprefectural emergency rescue units were dispatched on the day following the disaster to conduct traffic control manually.



Photo: Damaged prefectural government office building (Minamisanriku Town)



Photo: Traffic control using hand signals (Ishinomaki City)

## Restructuring Disaster Management Functions

The prefecture provided comprehensive support toward early recovery of the administrative functions of devastated municipalities with the assistance of local governments throughout the country. This included the dispatching of staff and the undertaking of clerical work.

■ Table: Staff dispatched from other prefectures (As of March 1, 2014)

	Clerical worker	Technological worker							Total	
		Civil engineering	Construction	Electricity	Machinery	Agricultural engineering	Doctors/public health nurses	Cultural properties		Others
Miyagi Prefecture	51	80	16	4	2	61	4	24	14	256
Municipalities	423	370	78	10	7	17	12	10	27	954
Total	474	450	94	14	9	78	16	34	41	1,210

In an effort to reorganize local disaster prevention systems, we strived to support the restoration of the emergency facilities damaged by the disaster.

For the purpose of securing reliable information communications in times of disaster, we promoted the establishment of a communications network combined with cutting-edge technology, including satellite communications.

We also restored radioactivity measurement devices and installed further 45 monitoring posts across the prefecture. This was mainly to ensure the safety and security of the area surrounding the Onagawa Nuclear Power Station of the Tohoku Electric Power Company and to deal with the problems caused by the accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant.

The Environmental Radioactivity Research Institute of Miyagi, which was seriously hit by the tsunami, was transferred to the site of the former firefighting academy in January 2012, and its radioactivity monitoring system was restored.

In response to the accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant, we established the Earthquake Disaster Headquarters in the prefectural government building, and set up the Miyagi Citizens' Committee, consisting of those people related to industries, local governments and other organizations in the prefecture. These efforts were a major step toward a comprehensive coordination and information sharing system for accident management.

We also promoted distribution of measurement devices to municipalities to measure levels of radioactive substances in both the atmosphere and food. In addition, a website, called Radiation Information Site Miyagi, was created to provide accurate and timely information for citizens regarding the safety and security of their living environment.



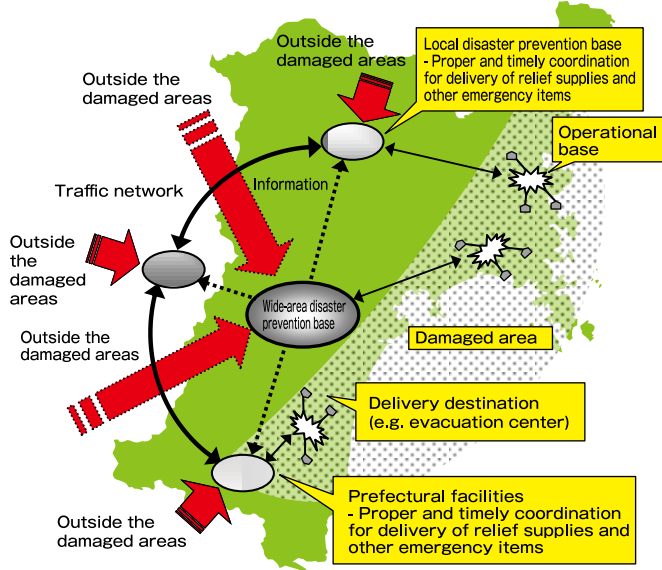
Photo: Home page of Radiation Information Site Miyagi

In fiscal year 2013, we revised our Regional Plan for Disaster Prevention (Nuclear Emergency Preparedness Edition), following the revision of the national government's Nuclear Emergency Preparedness and Response Guidelines, and in January 2014 we conducted a nuclear emergency drill.

In this disaster, public schools were used as evacuation centers and disaster prevention bases. With the assumption that they would play an important role as a primary evacuation site in a future large-scale disaster, we conducted training sessions for public school teachers to learn about awareness of initial reactions and other important points. Furthermore, in accordance with Miyagi Prefecture's School Development Project as a Disaster Prevention Base, we selected Shizugawa High School as a model school, and equipped it with a warehouse for disaster supplies and disaster response equipment such as power generators.

As for the emergency services in the aftermath, we were unable to efficiently conduct smooth collection and delivery of relief supplies, and coordinate the deployment of the fire department, the police, and the Self-Defense Forces, as well as medical teams, in cooperation with the national government and local governments. In response to this, in February 2014, we formulated a basic plan to establish a wide-area disaster prevention base to play a more central role at the time of a large-scale disaster.

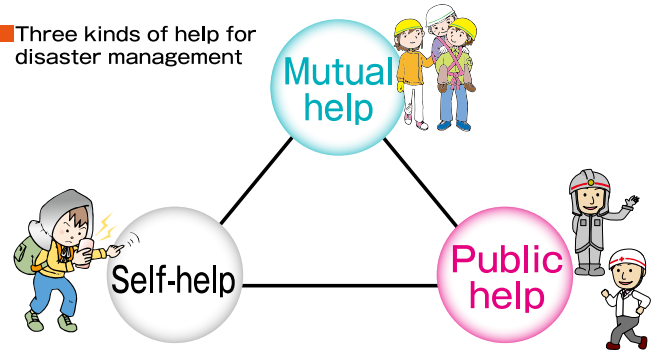
■ Chart: Miyagi Prefecture's network of wide-area disaster prevention bases and local disaster prevention bases



## Strengthening Disaster Prevention System at the Citizen Level Through Self-Help and Mutual Help

Through this disaster, we have learned it is necessary to encourage self-help, mutual help and involvement among citizens to tackle the situation, as it is impossible for public disaster prevention organizations to deal with everything in the case of large-scale disasters. Under the belief of "protecting our area by ourselves," we reacknowledged the significance of activities conducted by volunteer groups consisting of local residents of neighborhood community groups and associations. Therefore, we provided opportunities to the citizens to pass on their stories and lessons of the catastrophic disaster with the aim of raising their awareness toward disaster prevention. We also provided support to enhance the situation of various activities; for example, the establishment of disaster-related systems and the fostering of local leaders, in collaboration with municipal governments.

■ Three kinds of help for disaster management



## Preparing for a Large-Scale Tsunami Disaster

In this disaster, the tsunami hit far beyond the level of expectations, depriving over 10,000 people of their lives, and causing a huge amount of damage to land, the environment and properties.

In answer to this, we included the concept of "disaster risk reduction" in the revised Miyagi Regional Plan for Disaster Prevention in February 2013, as it is impossible to prepare for such disasters just by developing physical infrastructure alone.

Thereafter, we formulated the Tsunami Guidelines in January 2014 to outline details of how people should act in such situations, based on the issues we faced in this disaster and the experience we had accumulated from previous disasters. These guidelines indicate that people should, in principle, evacuate on foot rather than use cars. Only in cases where there is no choice but to evacuate by car, for example, for those who have difficulty in walking, and those who cannot find anywhere to evacuate to within walking distance, should it be possible to consider evacuation by car in accordance with the local situation. The guidelines also specify smooth evacuation procedures for when a tsunami occurs, and other measures, including raising awareness of disaster prevention and implementation of emergency drills.

In March 2013, we established an ordinance designating March 11 every year as Miyagi Memorial Day, to express our sorrow for the victims and to pass on stories of the disaster from generation to generation.

## Establishing a Safe and Secure Local Society

Along with the restoration and strengthening of disaster-affected police facilities, we promoted the development of facilities for traffic safety with improved disaster management functions.

We also made efforts to establish a safe and secure local society that emphasizes anti-crime measures and safer and more efficient traffic environment. In these efforts, we provided anti-crime information to those affected by the disaster, enforced patrol activities, mainly in the damaged areas, and improved local anti-crime systems through schemes including the cultivation of local volunteer groups.



Photo: Patrol in a temporary housing area (Ishinomaki City)



Photo: Temporary building for Minamisanriku Police Station

## Our Challenges and Efforts Toward the Reconstruction Stage

- It is desirable to promote the development of wide-area disaster prevention bases that can function as operational bases to conduct quick and precise emergency activities at the time of large-scale disasters and to protect citizens from danger and damage.
- It is necessary to compile disaster records and provide disaster education in a structured and effective manner, to keep the memory of the disaster alive and promote further awareness of disaster prevention.
- It is also important to provide traffic safety education and promote traffic enforcement as the number of traffic accidents is expected to increase due to the increased volume of traffic brought about by the number of recovery projects in progress.
- It is necessary to promote certain measures in line with changes in the security situation related to disaster recovery, for example, controlling crimes that see people seeking to take advantage of the situation.
- The accident at Tokyo Electric Power's Fukushima Daiichi Nuclear Power Plant had an immediate and negative impact on business in a variety of ways. Therefore, it is important to remove people's anxiety and respond to inaccurate rumors, as well as to provide business operators with the support necessary to obtain compensation.