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UN World Conference on Disaster Risk Reduction

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Japan understands threat of natural disasters

Masaaki Kameda
STAFF WRITER

An international conference on disaster prevention kicks off March 14 in the disaster-hit Tohoku region and it is aiming to adopt a new global framework to mitigate effects from natural disasters for the coming decade or so.

The Third UN World Conference on Disaster Risk Reduction through March 18 is expected to draw about 40,000 people from Japan and abroad, including top government officials, heads of international bodies and nongovernmental organizations, to Sendai and other locations in the region, which is recovering from the March 11, 2011, earthquake and tsunami.

The main objective of the conference at the Sendai International Center is to draw up a new guideline for disaster risk reduction to replace the 10-year Hyogo Framework of Action (HFA) adopted at the previous 2005 Kobe conference, Margareta Wahlstrom, special representative of the secretary-general for disaster risk reduction, told reporters in January at the Japan National Press Club.

"The purpose of the conference … is to update, on the basis of 10 years of experiences, (the) design of framework that will help guide countries' work to reduce disaster risk for the coming decade," she said.

The HFA, the implementation of which will be reviewed at the conference, provided guidelines for the international community to work toward mitigating the effects of disasters and strengthening resilience to natural hazards.

"(The post-Hyogo framework) builds on what we have experienced over the past 10 years, so it will include lessons learned from disasters such as the Great East Japan Earthquake (in 2011 and) all the major catastrophes we've seen, but also the increasing understanding of the relationship between poverty and vulnerability to disasters and how it impacts countries," Wahlstrom noted.

The disaster risk reduction conference will be the third for which Japan will serve a host, following the inaugural edition in Yokohama in 1994 and the Hyogo conference in 2005.

Some officials said Japan deserves to host such conferences, noting the country has long called for the importance of disaster preparedness and has put a lot of effort into responses to natural disasters.

"Japan has traditionally engaged in serious efforts for disaster prevention, but we also have experienced large-scale disasters, including the 2011 earthquake in Tohoku," Kenichi Suganuma, ambassador in charge of the 3rd UN World Conference on Disaster Risk Reduction, told The Japan Times.

Thus, the conference held in Japan will give opportunities "to share those experiences, Japan's past response to (disasters) and how the country will proceed with disaster risk reduction based on such experiences" with international participants, he said.

Moreover, the fact that the conference and related events will be held in Sendai and other municipalities in Tohoku adds significance, in light of the massive disaster four years ago.

"Having the conference in Sendai now is to give recognition to the tragedy of the Tohoku area being hit by the earthquake and tsunami, but also to give the population and opportunity to present their achievements in reconstruction and recovery," Wahlstrom stressed.

At the upcoming conference, the Japanese government plans to stress several critical points in addressing disaster prevention, Suganuma said.

"Firstly, we need to work on improving infrastructure and disaster risk resistance of urban development based on a long-term perspective," he stressed. "In addition, not only the national government, but also various players such as local municipalities, communities, private sectors and nongovernmental organizations should cooperate for disaster prevention."

Suganuma also said the government would promote the idea of "building back better," which features reconstruction efforts aiming to rebuild areas that are more resistant to natural hazards than before the disasters struck.

Japanese Minister of State for Disaster Management Eriko Yamatani will preside over the five-day conference organized in three segments, which are "Intergovernmental," "Multi-Stakeholder" sessions and "Public Forum."

The intergovernmental segment features five ministerial round tables, at which participating ministers and high-level representatives will discuss such topics as "International Cooperation in Support of a Post-2015 Framework for Disaster Risk Reduction," "Reconstructing After Disasters: Build Back Better" and "Public Investment Strategies for Disaster Risk Reduction."

The segment also has interactive discussion sessions called "High-Level Multi-Stakeholder Partnership Dialogues," which cover topics including "Mobilizing Women's Leadership in Disaster Risk Reduction."

Meanwhile, the multi-stakeholder segment has 33 working sessions with participants from the government, nongovernmental organizations and public sectors, featuring four main themes: "Progress on existing HFA priorities," "Emerging Risks," "Commitments to Implementation," and "Accelerating Implementation."

Wahlstrom stressed the presence of high-level government officials is necessary to "ensure that it gets the highest political level endorsement … and implementation of the outcome of the conference."

Ambassador Suganuma said high-level political involvement is essential to show that disaster prevention is a very important factor when crafting development assistance programs.

"There are cases that growth in developing countries facilitated by aid from donor nations or organizations was devastated overnight due to natural disasters," Suganuma said, pointing out international communities need to come up with development plans incorporating disaster risk reduction.

"We'd like to promote 'mainstreaming of disaster risk reduction' in the area of international cooperation," Suganuma said.

There will also be 25 study tours for conference participants, taking them to affected areas and sites in Sendai as well as Miyagi, Fukushima and Iwate prefectures, which include the Tokyo Electric Power Co.'s Fukushima No. 1 nuclear power plant and the Iwate city of Rikuzentakata, which was hard-hit by the tsunami.

"(They) will be very important for the conference participants to see the state of reconstruction, but also to meet community members," Wahlstrom said. "This brings the real issues around disasters very much to the fore for the conference participants."

The tours will provide valuable opportunities for international participants to observe firsthand the actual damage and the ongoing reconstruction efforts following the 2011 earthquake and tsunami, added Suganuma.

Another important component of the conference is the public forum, which features over 350 symposiums and seminars as well as more than 200 exhibitions and 100 poster sessions organized by various entities, including Japanese ministries, local governments and nongovernmental organizations.

Open to the general public, these events will be held at sites not only in Sendai, but also in Aomori, Iwate, Miyagi and Fukushima prefectures.

"The public forum is particularly important because it allows … the Japanese public to meet among themselves and their communities, but also to meet with all the participants in the international conference," Wahlstrom stressed. "These are opportunities for learning and creating new partnerships to bring together many different communities' experiences and learning."

The Japanese government is taking all possible anti-terrorism and anti-disaster measures in cooperation with relevant authorities to assure the safety of participants and visitors and the success of the conference, Suganuma said.

Top, Japanese and non-Japanese work together at the Multi-Language Support Center in Sendai to answer questions from foreign residents after the Great East Japan Earthquake. Bottom right, Quince is a rescue robot to be used to collect data in areas too dangerous for people. Bottom left, a photo taken at the Second UN World Conference on Disaster Reduction in Kobe, Hyogo Prefecture, in 2005. SENDAI CITY/HUMAN-ROBOT INFORMATICS LABORATORY/HYOGO PREFECTURE

An image created by "Particleworks" software shows a prediction of how flood waters will move. PROMETECH SOFTWARE INC./KOZO KEIKAKU ENGINEERING INC.

Quake, tsunami teach important lessons

Emiko Okuyama
SENDAI MAYOR

Over the next five days, the Third UN World Conference on Disaster Risk Reduction will take place in Sendai.

The city of Sendai is located in the center of the Tohoku region, and is the economic and political hub of the area, which is blessed with a beautiful natural environment.

During the Great East Japan Earthquake, 900 precious lives were lost in the huge tsunami that followed, the majority of which were near coastal areas. The total cost of the damage reached \1.4 trillion.

Through the disaster, we learned the vulnerability of our city, as essential utilities and fuel supplies were interrupted. We also learned the importance of people's power through local community ties and the importance of cooperating with several agents to put our efforts into disaster risk reduction. We discovered these problems and learned many lessons through the disaster. Four years have now passed and during this time we have been putting our efforts into a reconstruction project which, in addition to proceeding with the revival of the daily lives of disaster-affected people, sees us make our city stronger against disasters, based on the experiences and lessons learned from the 2011 disaster. The project has now entered its final stage.

During the conference beginning today, the results of the Hyogo Framework for Action (HFA), which was adopted at the last conference on this subject, will be examined. In addition to this, discussions will take place regarding a decision on a framework to follow moving forward. During the conference we will send out information to the world on the various experiences and lessons we learned from the disaster and on the efforts we have made based on them. We sincerely hope we can contribute to the development of disaster risk reduction around the world.

In addition to representative organizations from each country discussing global disaster risk reduction strategies at the conference, a public forum will also be held. At the forum, people will be able to participate in symposiums, seminars and exhibitions. It will see widespread participation from abroad in the form of government organizations, local governments, enterprises, universities, NGOs and local groups. The aforementioned will share information regarding disaster prevention, risk reduction, and recovery. The public forum alone will be a large-scale event, seeing approximately 400 symposiums and seminars held, in addition to over 300 booths and poster exhibitions. This will provide a valuable opportunity to learn and share information on disaster risk reduction from various perspectives.

The conference will not only involve representative groups from each country discussing global disaster risk reduction strategies, but is also a five-day period that will provide each and every one of us with an opportunity to learn and think about how to create a world strong against disasters. Thus, if your schedules permit, I sincerely hope that a great number of you will participate in the public forum.

At the time of the Great East Japan Earthquake, Sendai and the Tohoku region received great support from people around the world. Through this conference, the six prefectures of the Tohoku region have worked together and put their utmost efforts into preparation. We feel we must once more express our gratitude to those who supported us during that difficult time. We sincerely hope that, in addition to visiting each of Tohoku's prefectures and seeing the present recovery status, all those who visit the region during the conference will experience the charm of each area in the form of local food, nature and culture.

Sharing disaster risk reduction technology

Eriko Yamatani
MINISTER OF STATE FOR DISASTER MANAGEMENT

The Third UN World Conference on Disaster Risk Reduction will be held in Sendai for five days from today. The conference will draft a new framework to succeed the Hyogo Framework for Action (HFA), which was adopted at the second conference in Kobe, Hyogo Prefecture.

As the chairperson of the conference and the minister of state for disaster management in the host country, I will dedicate myself to conclude the conference with successful outcomes that will lead to further mainstreaming of disaster risk reduction.

The Great East Japan Earthquake four years ago devastated the coastal area of the Tohoku region, with massive tsunami following huge quakes, causing enormous damage. The conference will be held in Sendai, one of the cities hit by the earthquake.

This means that the conference offers a very important opportunity for Japan to share with the world the know-how and technologies on disaster risk reduction acquired through our experience with the Great East Japan Earthquake and other disasters, as well as to inform people in the world of the status of reconstruction from the earthquake and the reconstruction measures Japan is taking.

The conference is slated to have more than 5,000 participants, including political leaders, state ministers and representatives of international organizations from all over the world. Related side events to be held simultaneously are expected to attract many more people from Japan and the rest of the world.

While the conference will concentrate on highly specialized subjects, the side events around the conference venue and in neighboring prefectures will offer a variety of symposiums and exhibitions on disaster risk reduction, held by a wide variety of organizations.

In one example of such an event, municipalities hit by the Great East Japan Earthquake will collaborate to create the "Tohoku Reconstruction and Disaster Risk Reduction Pavilion," which explains facts of the earthquake and the process of reconstruction to the world, at Sendai Mediatheque, in central Sendai.

Also, a "Disaster Risk Reduction Industry Exhibition in Sendai" will be held at Yume Messe Miyagi, displaying Japanese technologies and products on disaster risk reduction, which are useful not only in the event of disasters, but also in non-emergency situations in terms of comfort, economic efficiency and eco-friendliness.

I would like people to visit Sendai to directly learn lessons from the Great East Japan Earthquake and observe the reconstruction processes. For those who do not have time to do so, video streaming of discussions at the conference will be available on the Internet. I invite everyone to visit the conference website.

Additionally, we are planning various events for participants in the conference, such as study tours to disaster-hit areas and excursions to tourist venues in prefectures in the Tohoku region following the conference. I would like them to enjoy the food, cultural heritage and *onsen* hot springs in Sendai and the rest of Tohoku region, and return to Tohoku even after the conference is over.

While the conference ends in five days, the world needs to accelerate efforts to reduce disaster risks by complying with the agreement to be made at the conference. I would like everyone to take an interest in disaster risk reduction and cooperate in reducing disaster damage in the world.

UN World Conference on Disaster Risk Reduction

Sustainability begins in Sendai

Margareta Wahlstrom
SPECIAL REPRESENTATIVE OF THE SECRETARY-GENERAL FOR DISASTER RISK REDUCTION/HEAD OF THE UN OFFICE FOR DISASTER RISK REDUCTION

Sendai is a city that is synonymous with resilience to disasters for its remarkable recovery from the Great East Japan Earthquake and tsunami that struck on March 11, 2011.

It will be a living, breathing example of the meaning of the concept for the thousands of people who will descend on the city for five days of intense debate at the Third UN World Conference on Disaster Risk Reduction which takes place from March 14 to 18.

It is also recognized as a role model city for "promoting community-based disaster risk reduction and empowering people to act on disaster risk reduction" by the Making Cities Resilient Campaign of the United Nations Office for Disaster Risk Reduction. It is one of only 45 cities out of 2,400 participants in the campaign to be given role model status.

The essence of resilience is the ability to cope with disaster impacts and come back stronger than before. Sendai stood

out for its quick restoration of vital functions such as utilities, damaged roads, homes and also the clearance of debris in the aftermath of the tsunami. This early recovery phase was completed in 18 months.

The city formulated a Sendai City Earthquake Disaster Reconstruction Plan in November 2011, which Mayor Emiko Okuyama described as focusing on disaster reduction via wide-scale disaster prevention construction, new energy sources, flexible and stronger building guidelines and improvements to areas that were most exposed during the disaster.

It is a city which can clearly demonstrate that reducing disaster risk has many co-benefits in terms of improving the quality of life in the community by eliminating drivers of risk which leave citizens exposed and vulnerable to even minor disaster events.

When the UN Secretary-General announced his intention to travel to Sendai for the conference, he stated clearly that 'Sustainability begins in Sendai.'

What that means is that the conference has the opportunity to adopt a new framework for disaster risk reduction which will become the bedrock for other mutually supportive agreements that will be adopted during 2015, a year that has the potential to transform human development.

Natural hazards, particularly those that are climate related, are a constant threat to sustainable development. The impacts are growing year on year. Annual economic losses are in the region of $300 billion. Many lives continue to be lost. Millions of people live with the threat of injury, unemployment and short and long-term displacement because of disaster events.

Significant progress has been made in spreading a culture of disaster risk management across the world over the last ten years following the adoption of the Hyogo Framework for Action in Kobe, in January 2005, just weeks after the Indian Ocean Tsunami claimed over 227,000 lives.

Nonetheless, over the last three years of consultations across the world on how to replace, or update, the Hyogo Framework at the Sendai Conference, there is growing agreement that much more must be done to address the underlying drivers of risk such as climate change, poverty, risk governance, badly planned urbanization and land use, and the decline of protective ecosystems.

It is the case that many countries have chosen to focus their efforts on disaster management instead of disaster risk management and there is a crucial distinction.

We do indeed need to be better at managing disaster events when more and people are living in harm's way on hazard-exposed coastlines, in seismic zones and on flood plains.

In many ways Japan sets the gold standard for the rest of the world. Japan pioneered the early warning systems for tsunami alerts in the Pacific Ocean as far back as 1960 and was also crucial to the introduction of tsunami early warnings for the Indian Ocean over the last ten years, working closely with UNESCO and other partners.

Progress on early warnings, better disaster preparedness, strengthening institutions and legislation and introducing disaster risk reduction to the school curriculum has helped bring down mortality in weather-related disasters in many countries.

However, we also know that disaster risk is accumulating rapidly around the world and not enough is being invested in disaster risk management to tackle the underlying drivers of risk.

This is where the outcome of the Sendai Conference can now make a crucial difference. The current draft of the updated Hyogo Framework for Action has a very clear focus on reducing existing levels of risk and avoiding the creation of new risks by putting these challenges at the center of a massive global effort.

Disaster risk reduction is at a crossroads. It can continue to manage an increasing number of disasters, over 80 percent climate-related, or it can shift the focus to tackling key indicators of unsustainability such as climate change, poverty and vulnerability and rising exposure to hazards.

Sustainability begins in Sendai and is inseparable from other key processes, including agreement on development financing in July, the set of Sustainable Development Goals to be adopted in September and a new agreement on climate change in December.

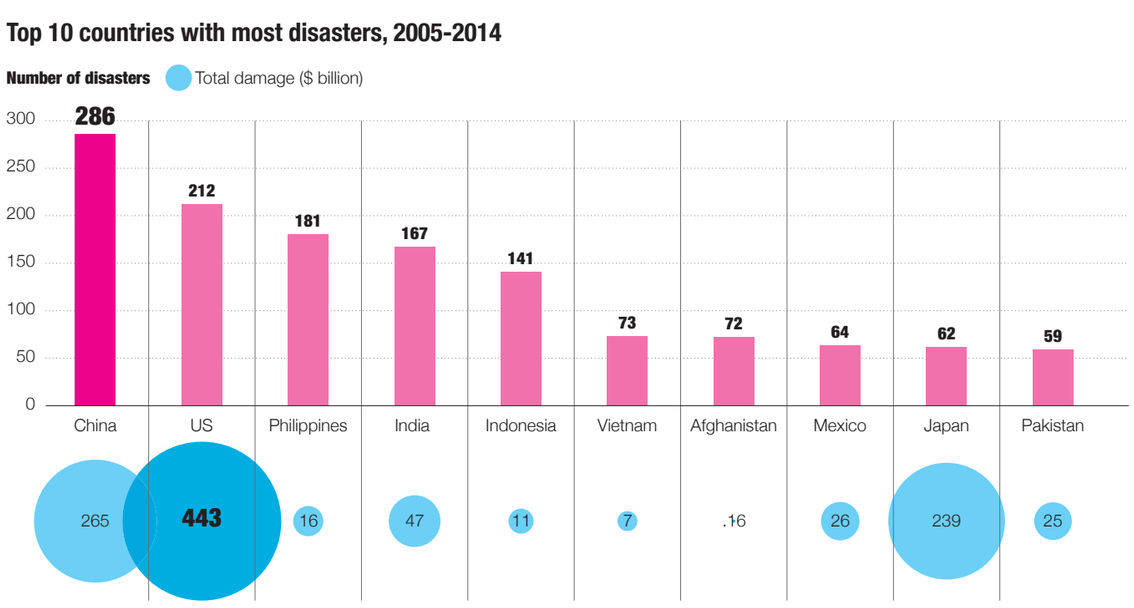
Disaster risk reduction needs to be weaved through all these processes. The reduction of poverty, sustainable economic growth and the health of the planet and its people, depend on the management of disaster risks in the day-to-day decisions of governments, companies, investors, civil society organizations, households and individuals.

Sendai will be one of the most inclusive gatherings of its kind. Not just because it will be disability-accessible but because it is taking an all-of-society approach to ensure that the new framework for disaster risk reduction is fully embraced and acted on for years to come.

Participants will include representatives from all areas of life, including government, local government, the private sector, science and academia, NGOs, trade unions, women's groups, farmers, indigenous people, those living with disabilities, women, children and youth.

Sendai will be providing the world with a big, all-inclusive tent! Once more Japan is playing a vital role in opening a new chapter in disaster risk management and for this we should all be grateful.

Top, professor Shinichi Takemura demonstrates his Tangible Earth, an interactive globe, with the head of UNISDR's risk knowledge section, Andrew Maskery. Left, the former Japanese politician and Japan Women's Network for Disaster Risk Reduction Akiko Domoto (left), who spoke on behalf of Women's Groups at the Preparatory Committee Meeting for the Third UN World Conference on Disaster Risk Reduction in Geneva, poses with Sam Johnson from New Zealand who spoke on behalf of Youth. UNISDR



China has the most disasters from 2005-2014 but the US has incurred the most damage, and while Japan is far behind in number of disasters, its economic loss is almost as big as that of China

UN World Conference on Disaster Risk Reduction

Major companies continue to support Tohoku region

Mami Maruko
STAFF WRITER

Right after the earthquake and tsunami hit northeastern Japan on March 11, 2011, volunteer individuals and groups rushed to provide assistance.

Many were one-off efforts and gradually, the number of volunteer activities decreased in the four years that followed, but enthusiastic volunteer efforts remain on various levels — be it by individuals, nonprofit organizations or firms.

Regarding firms, large amounts of donations were collected, and large domestic and foreign firms, as part of their corporate social responsibility, or CSR, plans, undertook volunteer activities.

Panasonic Corp., headquartered in Osaka, is one such firm that has continued its CSR efforts in Tohoku.

"As a company, we feel that CSR activities in the devastated areas should not be just temporary, but continuous. We want to make the right effort by listening to the demands of the people in the disaster-hit areas," said public relations officer Yayoi Watanabe.

"More recently, we have been putting a strong emphasis on supporting the next generation — the young," she said.

Regarding young people, ''Kitto waraeru 2021" (No doubt you can smile in 2021) is a program aimed at bringing smiles back to children's faces, through the loaning of audiovisual equipment from Panasonic, allowing the students to film two videos: "What they want to tell people now" and "A message for themselves 10 years on."

The program has been carried out in 19 elementary and junior high schools in Iwate, Fukushima, and Miyagi prefectures since September 2011, with volunteer staff from the company giving advice to students on the technical part of the filming process.

The Tokyo branch of U.S. securities company Morgan Stanley is another firm that has been supporting the people in Tohoku after the disaster, assisting with a wide range of volunteer programs.

Since June 2011, company employees have engaged in onsite recovery efforts to support communities in quake-hit areas.

Specifically, volunteer staff from the company spent several weekends right after the disaster, taking part in onsite recovery efforts in Ishinomaki, Miyagi Prefecture, removing debris from houses and gardens and clearing mud out of street gutters.

"We expanded our volunteer leave allowance to provide employees the opportunity to engage in earthquake-related volunteer activities. We allowed employees to take up to five days of leave until December 2012, instead of only one day, which was the original policy," said a Morgan Stanley spokesman.

Elementary school students film a video titled "My dream for the future" in September, 2011, as part of the "Kitto Waraeru 2012" program offered by Panasonic Corp. in Kuji, Iwate Prefecture. PANASONIC CORP.

Sixteen employees from Morgan Stanley helped build a playground in October, 2014, at Fukushima Lumbini Kindergarten, Fukushima Prefecture. MORGAN STANLEY

Additionally, in collaboration with Second Harvest Japan, a nonprofit organization specializing in sending food to those in need, including disaster-hit areas, nearly 100 employees volunteered to pack and send a total of five tons of food to the disaster-hit areas.

Employees also gathered to pack and send sewing materials to the nonprofit organization ''Arts for Hope," to help its doll-making therapy sessions held in evacuation centers for children and the elderly.

More recently, in October last year, a team of Morgan Stanley employees volunteered for a weekend playground-building event in Fukushima Prefecture.

Together with kindergarten staff, parents, the local Lions Club and staff from nonprofit organization Playground of Hope, they built a new playground for Fukushima Lumbini Kindergarten, a preschool in Fukushima.

The team of 60 moved 20 tons of dirt to create a solid foundation for a play structure with towers, a slide and vividly colored benches.

Money for the playground was collected through donations at the company's annual charity drive.

The company has also supported a reforestation project in Chiba with its joint venture partner, Mitsubishi UFJ Morgan Stanley Securities, participating in reforestation volunteer programs organized by nonprofit organization "Mori no Lifestyle Kenkyujo" (Forest Lifestyle Laboratory).

The project aims to restore the coastal forest, which had served to protect the local community from the impact of seaside winds and flooding, but was destroyed by the tsunami.

In April 2012, 60 employees and family members joined other volunteers to plant 6,000 saplings in the affected area. A total of over 220 employees and family members from both companies have made five visits to the same area in Chiba since then.

Supporting Tohoku's recovery

Giving back to society is very important to Philip Morris Japan (PMJ), the Japanese local subsidiary of leading global tobacco company Philip Morris International Inc. (PMI). In addition to its ongoing programs targeting domestic violence and child abuse, PMJ was quick to respond to the immediate needs of the affected area after the Great East Japan Earthquake. Four years later, PMJ continues to contribute to the region through programs that grow and develop to meet the changing needs of the affected area.

Immediately after the earthquake, PMJ quickly responded by donating ¥100 million for emergency aid and mid to long-term relief, in addition to matching employee donations and arranging on and off-site employee volunteers. As time passed and the restoration process continued, PMJ has been working together with NPOs to launch new projects aimed at supporting the ongoing restoration of the Tohoku Region.

Through this cooperation with NPOs, it was discovered that while there were various educational and financial support available mainly to elementary school children, there was little support available to high school students. This support is particularly important as the number of job openings has declined since the disaster, which can lead to an increased outflow of young people who have strong potential to play a major role in the continued revitalization.

To address this need, PMJ joined forces with The Nippon Foundation to launch the "Doorway to Smiles" program to support young adults in the affected area. The very first fruit to be borne from this project is the "Ishinomaki Cafe."

This cafe opened in November 2012 on the first floor of the Ishinomaki City Hall and is open on the weekends. Local high school students played a central role in planning the cafe, including creating menus, cooking and marketing activities. The goal is to create opportunities for youth to gain valuable experience and to learn the necessary skills and leadership, which can lead to revitalization.

The cafe continues to be an invaluable experience for the students by providing opportunities to learn new skills, gain confidence and foster a sense of hometown pride. According to one student, "Even if I leave town for university, I want to come back." Another student commented: "In the future, I want to connect Ishinomaki with other parts of the world. I am confident that the communication skills learned here will definitely come in handy."

Philip Morris Japan employees volunteer in the Ushiami area of Higashi-Matsushima, Miyagi Prefecture, on July 19, 2013. PHILIP MORRIS JAPAN

PMJ has also continued its on-site volunteer program. The company's volunteering started in the immediate aftermath in Ishinomaki and stretched out to other parts of Tohoku. Each time, a large group of volunteers worked to clear rubble and debris from damaged houses, factories and even from street gutters. As time passed, the needs in the affected area have shifted to the mental health care of the victims and rebuilding the towns and communities. PMJ conducts programs to fit the evolving needs. Since 2013, PMJ has been volunteering at a farm in Higashi-Matsushima to support a young farmer in his efforts to rebuild his hometown.

Many of the houses and much of the farmland were washed away. Rooted in the local people's strong will to rebuild, Kotaro Atsumi, a young farmer, established the agriculture corporation "Yotsuba Farm." The project aims to restore a 120-year-old historic residence and the surrounding farmland, and to rebuild the community through agriculture to provide a place for local residents and visitors to gather. To achieve this, he needed a large volunteer force, which was difficult to find.

PMJ employees visit the Ishinomaki Cafe on Sept. 8, 2012. The students' original menu is popular with customers. PHILIP MORRIS JAPAN

To meet these needs, PMJ has sent multiple volunteer teams of about 50 people over the last two years, for a total of more than 400 volunteers. The volunteers' hard work on restoration of farmland led the organization to harvest crops that are used at area restaurants. The employees who participate in this program come away with the feeling that continuous support is necessary and they should not forget about the disaster.

Four years have passed. Over these years, much progress has been made, but the Tohoku Region still has a long journey toward recovery. PMJ will continue to support Tohoku by continuing to find ways to meet the changing needs of the process.

UN World Conference on Disaster Risk Reduction

Promoting disaster risk reduction

Kozo Keikaku Engineering Inc. has the DNA to go global.

Makoto Hattori, who is the founder of the company, was introduced as a Japanese "man who sold software to the U.S." in a book published in 1972, "Nankan wo Toppashita Otokotachi:Kanbu Dokyumento" (Men who overcame difficulty: Document of Company Executives.)

"It's not a recent move that we go after the international market. We've been doing this for a long time," said Hideaki Araki, the senior executive officer of Kozo Keikaku Engineering or KKE, a company established in 1959 that specializes in the structural design of buildings.

KKE is now taking the lead in introducing Japan's technology to reduce disaster risk to the world. It is one of the 21 companies that founded the Japan Bosai Platform, or JBP, last June. "Bosai" is a Japanese word meaning a holistic approach to reduce disaster impact.

"Japan has many companies with excellent technology to prevent disasters and reduce damage from disasters. However, because there are so many, a single company doesn't have a strong presence in the global market," he said, explaining the need for an organization representing Japanese companies in the field. JBP's mission is to market the Japanese holistic approach to reduce disaster impact he said, adding that he would like to tell the world that much of the knowledge of Japan's disaster risk reduction methods comes from the country's unique situation of experiencing many natural disasters.

"Generally, Japanese are highly aware of the importance of disaster preparation and mitigation," he said.

Japan's culture of disaster risk reduction comes from a long history of experiencing disasters as well as their tendency to take time establishing solid systems, rather than hurriedly making weak systems, he said.

For instance, while it takes a long time to create a guideline, everybody reaches agreement on it and that leads to strict obedience of it, he said. After the Great Hanshin Earthquake in January 1995, which hit Hyogo Prefecture hardest, Japan set up investigative committees to research the causes of secondary disasters such as fire and structural collapse and discuss how to prevent them. The committees spent up to three years researching and proposing solid guidelines, which construction companies currently follow to build more stable structures, he said.

Hideaki Araki, senior executive officer of Kozo Keikaku Engineering SATOKO KAWASAKI

Also, Japanese have mentality of emphasizing unity of people in involved parties, he said. For example, when an unexpected problem arises at a construction site, everybody there becomes unified to solve it.

This is not easy to achieve outside Japan. In foreign countries, construction companies and their customers agree on potential problems in advance, and find it difficult to work together to solve unexpected problems, he opined.

"Japan can share with the world not only technology, but also the know-how, culture and process to develop the technology, which will be truly useful to counter disasters," he said.

Another of JBP's missions is to increase the number of Japanese companies experiencing success with their disaster risk reduction business outside of Japan. The JBP will help create opportunities by providing services and chances a single company can't do on its own. JBP will consult various countries and tackle issues facing them by putting together the wisdom of Japanese academia, governments and the private sector. To tackle those issues on disaster risk reduction, JBP sets up task forces consisting of experts of various sectors in Japan. Participants of JBP will share and exchange relevant information frequently to ensure these activities run smoothly.

Today, KKE provides various technologies to reduce risks of earthquakes, tsunami and other disasters. On the occasion of the 3rd U.N. World Conference of Disaster Risk Reduction, KKE introduces four such technologies.

3D seismic isolation system

Among many products, KKE's 3D seismic isolation system is something the company is justifiably proud of. In 2009, KKE installed the large 3D seismic isolation system equipment under a residential building in Asagaya, in Tokyo's Suginami Ward, and dubbed it the Asagaya Project. There have been some instances of similar equipment being installed under commercial buildings, such as nuclear power plants, but never have there been the case with a residential building until Asagaya Project.

The 3D seismic isolation system reduces both horizontal and vertical shaking using "Hyper Air Suspension" technology. Regular seismic isolators cushion only horizontal seismic motion, but local earthquakes with a shallow focus can also generate vertical seismic motion that cause severe damage to urban cities, creating the need for protection from those as well.

The system is quite large and burying it underground is troublesome and costly, reasons many building owners shun installing it. It is their next aim to minimize the instrument.

Araki wants more structures to have 3D seismic isolation systems. For example, hospitals and municipal government buildings play an important role in protecting people's lives after major quakes, thus such buildings should be protected with the best technology, he said.

Tsunami and flood analysis

Predicting how water enters the first floor of a house or where it spreads after flowing across an intersection is very difficult. This has been a challenge for users of water hazard simulation software.

"Particleworks" was developed to address the issues as it allows to simulate more realistic fluid behavior much easily and efficiently. The software shows how mud advances on mountains and hills in heavy rain and how water moves on streets in urban areas.

Prometech Software Inc., a University of Tokyo-incubated venture company, in which KKE holds a 36.7 percent share, developed Particleworks.

Southeast Asian countries typically face challenges in tackling water hazards, and can use Particleworks to assess their countermeasures against floods, typhoons and other natural disasters.

Evacuation simulation

Disaster risk reduction measures have conventionally been reinforcement of infrastructure, such as building higher levees and using stronger materials to build structures.

But the lesson from the Great East Japan Earthquake, March 2011, is that reliance on infrastructure alone cannot protect people, who cannot react appropriately to unexpected situations.

KKE helps provide solutions through evacuation simulators, which show how people will react to disasters such as tsunami, with technology dubbed multiagent simulation.

It can also show, for example, how many people will be caught in tsunami if warnings are given five minutes before arrival; 10 minutes before and so on.

Using the information, municipal governments, which are typical customers, will know how soon tsunami warnings should be released. And if they know that, they will also find out how far off the coast they need to place tsunami sensors.

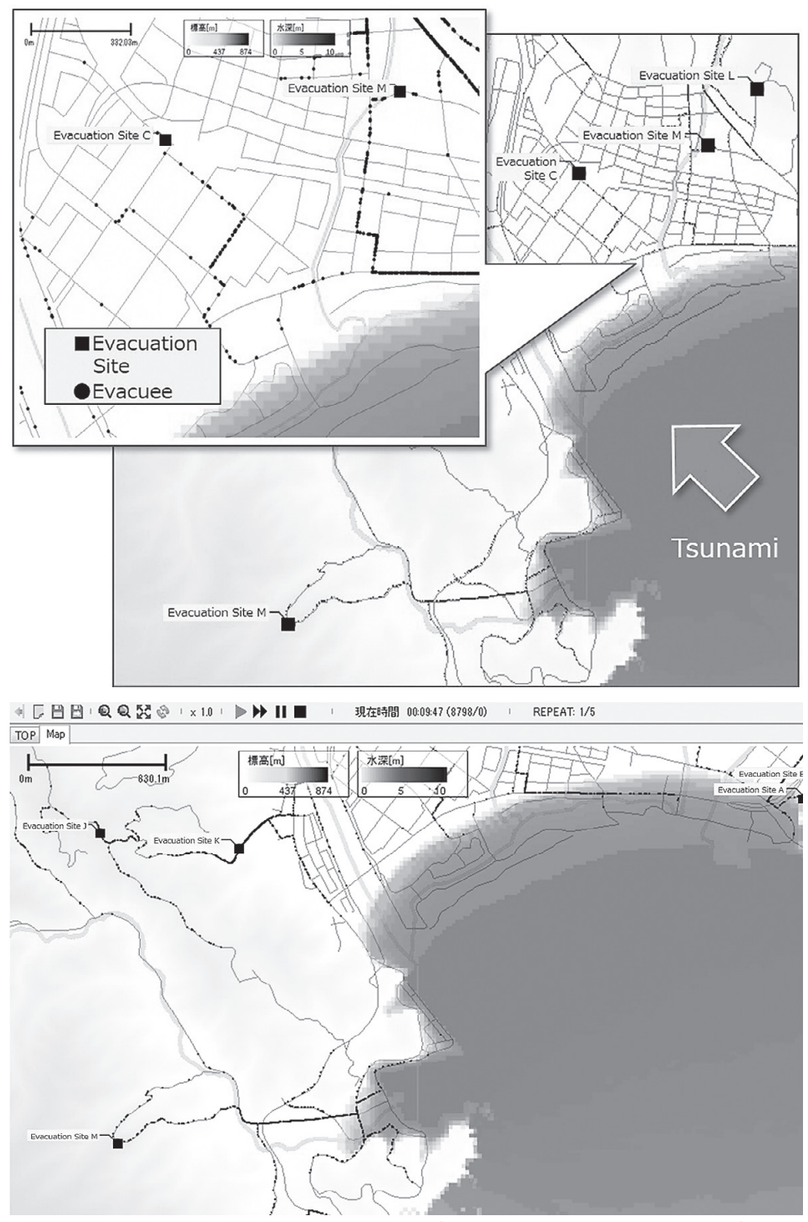
To provide this solution, KKE will input a large amount of data such as population, age, roads, road signs, how many people have cars and other information. In the simulations, each agent, which represents a person on a computer monitor, moves differently depending on age and other factors.

Damage estimation system

A damage estimation system provides manufacturers with the business continuity plan, or BCP, in case large earthquakes paralyze their supply chains.

The system enables users to assess damage to their factories and factories supplying components to them beforehand. The assessment results would help to come up with appropriate BCP measures and consider ways to minimize quake risks before they happen. Also after an earthquake occurrence, the system informs estimate damage in near-real time. Gathering information and responding in order of priority will help efforts to reduce damage and achieve early recovery.

KKE began in July providing consulting services and the system when the need to secure supply chains arose especially in the aftermath of the Great East Japan Earthquake, where people realized they could not take action without any information of off-site facilities.



An evacuation simulation shows the coming of a tsunami and the movement of people heading to various evacuation sites. KOZO KEIKAKU ENGINEERING INC.

Water-powered batteries, water purifier

You call a device that generates electric power using sunlight a solar battery. Then this revolutionary product should be called a "hydro battery." It generates electric power using any kind of liquid as long as it contains hydrogen oxide, or water as H2O is commonly known.

"NOPOPO," developed by Osaka-based Nakabayashi Co., Ltd., a maker of photo albums and office equipment, generates electric power out of tap water, rainwater, seawater, beer and fruit juice, or even out of spit or urine (But please don't call it a "urine battery.")

It is very easy to use. NOPOPO needs only 0.5 ml to 1 ml of water, and you insert the water using an attached dropper through a pinhole on the cathode side of the product. After about two minutes, chemical compounds inside the battery react to the water and generate 1.5 volts of power. The battery is renewable and when it runs out of power, you simply add water again to recharge it.

One NOPOPO is good to run a portable radio for about 48 hours and an LED flashlight for about five hours. It depends on how much water is in the liquid you use. The more water the liquid contains, the longer NOPOPO will produce power.

Containing no environmentally hazardous chemical products, NOPOPO, which stands for "NO POllution POwer," is disposable as incombustible garbage after use. Priced at just ¥600 ($5) (excluding tax) for a set of three, the unopened batteries can last about 20 years.

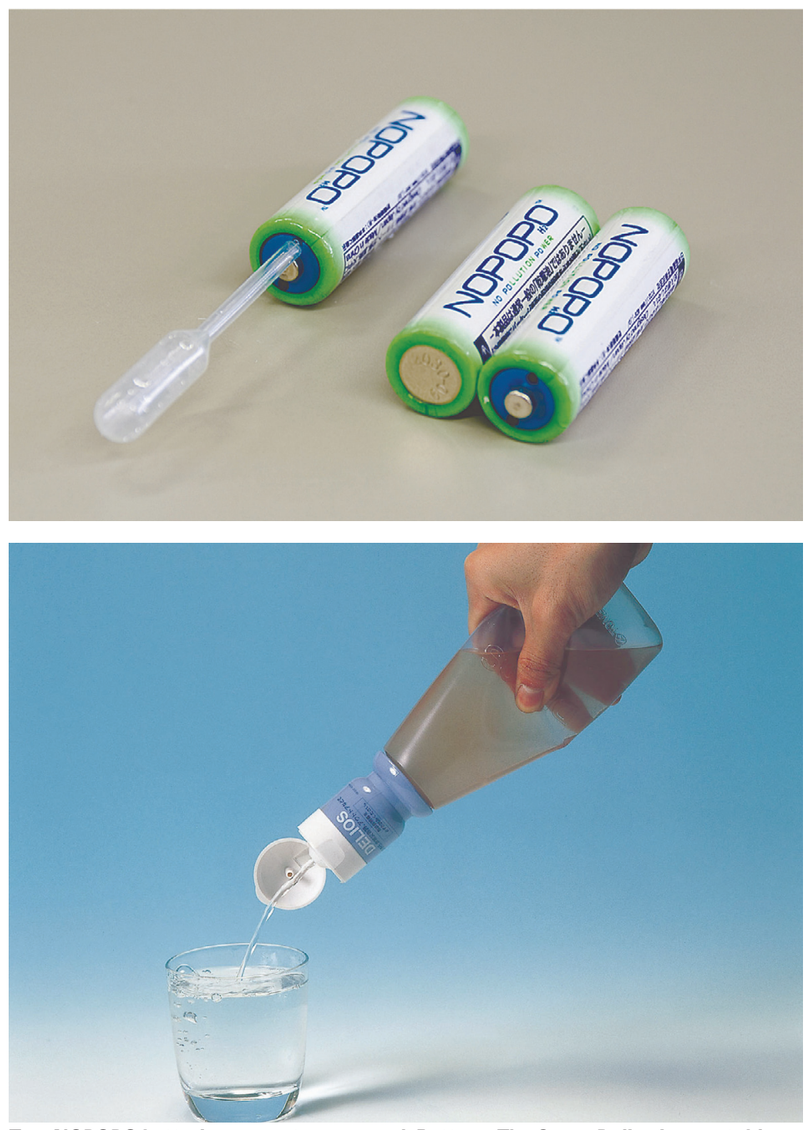
A flashlight and a portable radio are must-have items in disaster survival kits, but they are useless without batteries or nearly so with low batteries. When was the last time you checked the batteries for those items?

"Super Delios"

Along with a flashlight and a portable radio, a bottle of drinking water is a must-have item in an emergency kit. But, we don't know how many bottles are needed to survive an evacuation until rescue comes. Even if we do, will you carry all the bottles of water when you have to move after a disaster?

Securing drinking water is the first priority after an evacuation when water, gas and electricity may not be available. Bottled water and even soft drinks are gone from supermarket and convenience store shelves and vending machines are useless without power. Additionally, you don't even know where you will be when a natural disaster strikes.

Under such circumstances, a "Super Delios," portable water purifier, makes water potable. The product, developed by Urban Tech in Gifu Prefecture, purifies underground water, well water, rainwater, water in rivers and lakes inhabitable by fish, and even water in a swimming pool.



Top, NOPOPO batteries are water powered. Bottom, The Super Delios is a portable water purifier. NAKABAYASHI CO./ URBAN TECH

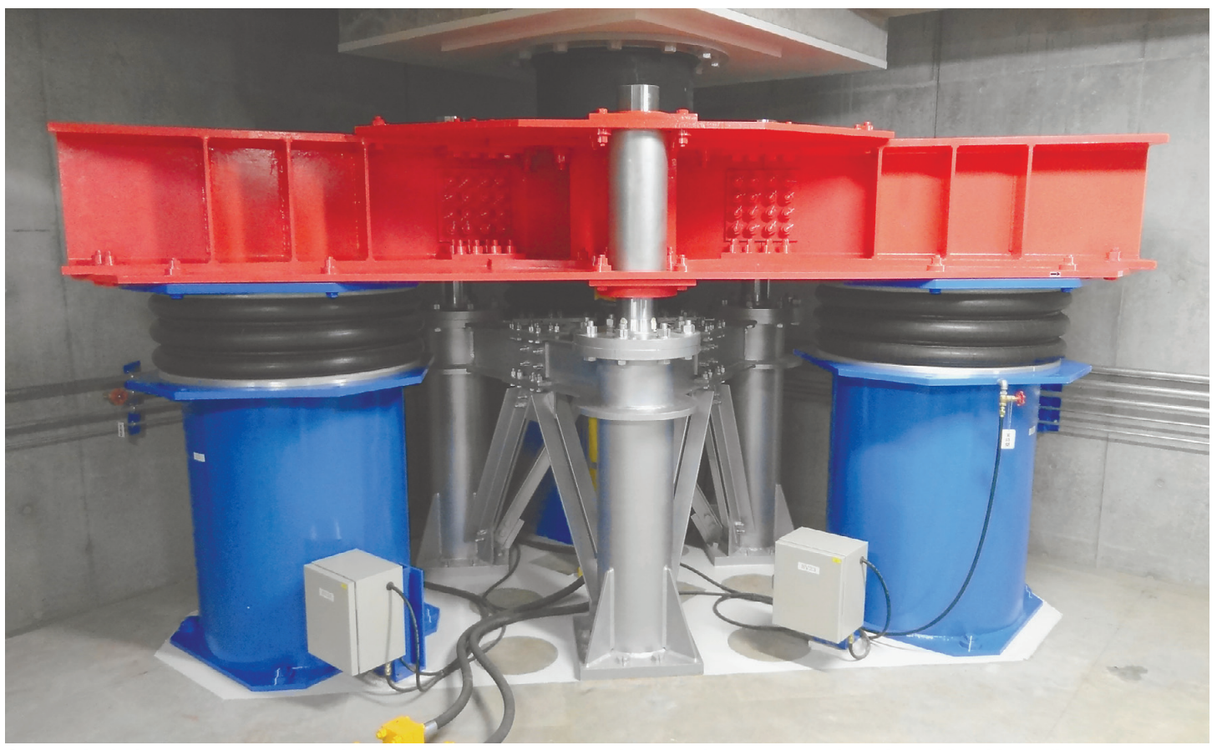
The patented dual filter structure — a combination of fibrous activated carbon and a 0.2 micron hollow fiber filter attached to the mouth of the plastic bottle-shaped container — removes harmful disease-causing bacteria, mold and protozoa from dirty water to produce clean and safe drinking water. The quality of the filtered water has been guaranteed in tests conducted by a Japanese government-related research center.

The product is unfortunately not able to produce clean water from water possibly contaminated by poison, viruses, organic solvents, heavy materials, toxic substances and runoff from homes and factories.

One 300 milliliter container is capable of producing about 200 liters of clean water and the filter is replaceable.

This ¥4,082 ($34) product may save your life in times of emergency.

UN World Conference on Disaster Risk Reduction



Seismic isolation systems are placed underneath structures to cushion earthquake ground motion with rubber, oil or other substances. KOZO KEIKAKU ENGINEERING INC.

Using technology to lessen disaster risk

Minoru Matsutani
STAFF WRITER

Technology and education are both necessary to reduce the risk of disasters.

Living on an earthquake-prone archipelago, Japanese have a very high awareness of disaster risk reduction. Japanese companies and academia are constantly working to develop technology and know-how, something that can be quite useful to foreign countries facing similar disaster risks.

The following are just a few examples of Japanese efforts to tackle disasters.

Seismic isolation

It is no exaggeration to say that Japan is the most technologically advanced country in the world when it comes to making structures earthquake resistant as the archipelago has a long history of seismic events.

Construction companies have to meet strict structural strength standards and the business of developing disaster-prevention technologies has flourished as foreign countries try to learn from Japan.

"Goju-no-to," which literally translates as "five-layered tower" and an architectural technique seen in traditional temples, is proof that Japanese quake resistance technology dates back to medieval times.

It has a thick central pillar that is not directly connected to the floors of each of the five stories. This means the pillar and the floors do not shake in the same direction, and the shaking of each element offsets each other, mitigating the amount of shaking.

Medieval Japanese came up with the technique at a time when wood was pretty much the only material available for building. Even though reinforced concrete and other stronger materials are now the norm, construction companies still use the lesson from medieval times — isolating quake vibration.

Reinforced concrete helps makes structures resistant to quakes, but it does not reduce shaking. Seismic isolation systems reduce shaking by placing rubber, oil or other substances between a structure and the ground, using it as a cushion to absorb tremor.

"Japan is by far the most advanced country in seismic isolation technology, because of people's awareness of earthquake risk," said Nakahide Kani, an advisor to the Japan Society of Seismic Isolation.

Japan has 7,600 buildings using seismic isolation systems, the most in the world, followed by China with about 3,600, he said. The third is either Italy or Russia with roughly 4,000 to 7,000, he said, adding that Japan is the only country with reliable statistics, but he is sure Japan has the highest number. If Italy or Russia has 400 to 700, they would have more than China.

Japan also has advanced technology in strengthening structural materials, he said. Reinforced concrete is strengthened with iron bars and Japanese companies have the know-how to create the best mix, he said.

New Zealand, another quake-prone archipelago, is the origin of quake resistance technology, and Japan learned seismic isolation from New Zealand during 1970s, Kani said. Japan then improved upon it and made Japan the leader in such technology, he said.

Of the 7,600 structures with seismic isolation systems in Japan, 100 were existing structures with systems added later. Installing the systems required lifting the buildings to place the equipment beneath them.

Such work takes specialized know-how and technology and Japanese companies have business opportunities of advising overseas construction companies on how to do the work, if building owners are willing to spend the money, he said, adding that those on the U.S. West Coast also have similar knowhow and technology.

Robot technology

Japan is also working on applying its advanced robot technology to disaster recovery.

Caterpillar-shaped rescue robot Quince was deployed into a heavily irradiated nuclear reactor building at the Fukushima No. 1 nuclear power plant between June and October 2011 to collect data. Quince, developed by the Chiba Institute of Technology, Tohoku University and the International Rescue System Institute, was very helpful as no human was able to enter the building due to the high radiation. Information gathered by Quince is critical to Tokyo Electric Power Co., the operator of the plant, as it plans the dismantling of the reactors.

Japan also has marine and airborne robots to collect data after disasters. After the quakes and tsunami on March 11, 2011, robots were deployed to search the ocean for bodies and other objects washed away by tsunami. Drones were deployed to search for survivors and bodies in areas of landslides and other disasters.

"In the Great Hanshin Earthquake in 1995 and the Great East Japan Earthquake, everybody said they didn't have enough information," said Satoshi Tadokoro, chief of the Human-Robot Informatics Laboratory at Tohoku University, who is also the chairman of the International Rescue System Institute. "That's where robots can help."

"I would say Japan is in the top three in the world in robot technology. Japan has a strong presence in the field," he said.

Realistically, though, robots are used more to collect data, than to save human lives.

It is widely known that the first 72 hours are critical to save lives after a disaster. In order for robots to, for example, get past debris-clogged roads to pinpoint survivors after earthquakes, the robots will have to be available soon after the disasters.

But it's not really the case in Japan, nor in the world, said Tohoku University professor Satoshi Tadokoro, who is also the chairman of the International Rescue System Institute.

"We do have the technology that may help save people's lives. The challenge is having the robots ready anywhere, anytime," Tadokoro said. "Users also have to be familiar with the robots."

Users would include paramedics, police and Self-Defense Forces officers. But robots are generally too expensive for many municipalities and users have to be trained to be ready for unexpected disasters.

Additionally, there is room for technological advancements to make robots better able to save lives.

"There are still many cases in which robots and drones cannot go where we want them to go to collect data. More lives may be saved if technology is more advanced," he said, hinting that researchers should keep developing technology to allow robots to better navigate piles of debris and fly in confined spaces. Technology to get clear visual data in rain, fog and other difficult conditions will also help, he added.

Tadokoro's lab is developing such technology. Besides Quince, it has developed the so-called Active Scope Camera, a fiber-optic scope that seeks out tiny cracks rescuers would be unable to explore. It was used when a building under construction collapsed due to an accident in the U.S.

Tadokoro urged the government to encourage communication between robot researchers and users so as to familiarize users with robots, subsidize rescue robot development and eliminate political restrictions hindering robot operations.

Miracle of Kamaishi

Technology alone cannot save human lives from disasters. Ongoing regular training can sometimes be the most important factor in survival.

In Kamaishi, Iwate Prefecture, hit by massive tsunami in the March 11, 2011, disaster, survival education saved the lives of almost 3,000 elementary and junior-high school students.

Of the nearly 1,000 victims in Kamaishi, only five were school-aged children, and they happened to be away from school on the day of one of the largest disasters in Japan's recent history.

On the day, students reacted swiftly in line with what they had learned in the city's disaster education program that had been running for several years.

They were organized in reacting to tsunami warnings and evacuated quickly. That led other people in the community following suit. Additionally, older students helped the younger ones as they moved to higher ground.

According to Toshitaka Katada, a civil engineering professor at Gunma University, who supervises the city's disaster education program, repeated drills in non-disaster times play a crucial part in enabling students to act orderly and quickly in case of emergency. Such education enabled them to help each other and others in the community.

Katada also makes sure children do not rely on hazard maps based on past disasters because nature's power can never be overestimated. He also encourages children to be the first ones to evacuate in the event of an emergency so that they can be role models for the community, a theory that proved to be effective in saving many lives in Kamaishi.

The Active Scope Camera is a fiber-optic scope that seeks out tiny cracks rescuers would be unable to explore. HUMAN-ROBOT INFORMATICS LABORATORY

'Implant Structure' transforms global construction methods

Four years have passed since the Great East Japan Earthquake, which killed thousands of people and damaged many properties. Japanese, as well as people around the world, vividly remember the deadly natural disaster, with some of the destroyed areas in the Tohoku region still unrestored.

While municipalities in Japan are working on projects to reduce disaster risks in preparation for possible huge earthquakes and tsunami, the "Implant Structure," which Giken Ltd. promotes and practices, is garnering attention.

An Implant Structure is a resilient infrastructure in which preformed structural components, each of which is very sturdy, are pressed deep into the ground on site by various Silent Pilers. The structure is effectively integrated with the earth, and carries horizontal and vertical loads, using the "size of section" and "depth of penetration." As a result, it is highly resistant to ground displacement caused by the motion of earthquakes, tsunami and other external forces, serving as a resilient disaster-prevention infrastructure.

An Implant Levee is one of applications. It has rigid backbones in the levee body filled by soil. Backbones are usually tubular pile walls or double sheet pile walls that are liquefaction-resistant. Even if the embankment collapses and subsidence is caused by liquefaction, the backbones withstand ground movement and double pile walls won't allow soil to flow out. Thus the required height of levee can be maintained. When tsunami strike, they are resilient enough for both anaseism and backwash to remain standing. Consequently, the tops of Implant Levees can be used as emergency transportation routes and bases for pumping water out of submerged cities for prompt recovery.

Pile walls are constructed with the Press-in Method that utilizes reaction force derived from pre-installed piles to hydraulically push piles into the ground silently and vibration-free. As all necessary press-in machinery systematically works on the top of pile walls, it minimizes working space and eliminates the need for a temporary platform even on slopes, unlevel ground or above water.

An Implant Levee under construction in Kanagawa Prefecture GIKEN LTD.

The Press-in Method reduces the amount of work and enables rapid construction of tough and strong levees even in ground that consists of hard layers and concrete foundations. Its construction work always fulfills the Five Construction Principles, namely environmental protection, safety, speed, economy and aesthetics even under difficult site restrictions.

Implant Levees are increasingly being adopted for levees across Japan, especially for restoration work on coastal levees that were destroyed by the March 11, 2011 tsunami. They are also being used in reinforcement work of coastal levees in western Japan in preparation for possible huge earthquakes in the Nankai Trough, in the Pacific Ocean off the Tokai, Kinki and Shikoku regions.

The Implant Structure technology is also used for retaining walls to mitigate landslides and block falling landslide debris. For example, Implant Retaining Walls were built in restoration work in the wake of the large-scale sediment disaster on Izu-Oshima Island in October 2013. The walls are so-called training walls, which control the direction of landslides.

It is very clear that Implant Structures, which integrate structures with the earth, are highly resilient because there were many examples of similar structures surviving the Great East Japan Earthquake.

However, Giken will continue to refine the original technology. The company has developed a tsunami simulator, with which it can conduct tsunami experiments, and placed it in the Kochi head office. Giken will further expand facilities to conduct experiments, promote technological innovation on disaster prevention by using the toughness and tenaciousness of Implant Structures and spread Implant Structures as must-have technology with scientifically proven effectiveness.

UN World Conference on Disaster Risk Reduction

Helping cities brace for disaster

The UN Office for Disaster Risk Reduction (UNISDR) launched its "Making Cities Resilient: My City is Getting Ready!" campaign in May 2010, encouraging local governments to take countermeasures against natural disasters.

The campaign addresses issues of local governance and urban risk. With the support and recommendation of many partners and participants, and a Mayors' Statement made during the 2011 Global Platform for Disaster Risk Reduction, in which municipal leaders pledged to work on disaster risk reduction, the campaign will continue beyond 2015.

The campaign advocates widespread commitment by local governments to build disaster resilience and increased support from national governments for cities to strengthen their capacities for coping with disasters.

Some 2,500 cities and regions have joined the campaign, of which 44 were selected as model examples. In Japan, Sendai and Hyogo Prefecture have been designated as models.

Below are the summaries of the assessment points of the various disaster prevention activities of Sendai and Hyogo Prefecture, which the UNISDR took into account in their designation.

Sendai

The Sendai city government established the Sendai City Regional Disaster Prevention Plan, which specifies the roles of the municipal government, the Miyagi Prefectural Government, private businesses, local associations and others in disaster preparedness and calls for all parties involved to share the same understanding and cooperate in their implementation.

To strengthen its disaster prevention system, the city created the position of Crisis Management and Disaster Prevention Director, who is responsible for crisis management and assists the mayor. Sendai has also established sections and bureaus to handle various activities, including coordinating reconstruction measures after the earthquake, helping those affected rebuild their lives, undertaking the mass relocation of people from areas hit by the disaster and rebuilding housing.

Since cooperation with related organizations is important, liaison officers are sent from the headquarters of the Miyagi Prefectural Police Department and the Self Defense Forces, and efforts are being made to tie this into an effective operation.

The city has also established ways to strengthen cooperation with various citizens' groups to maximize the community's disaster prevention efforts.

On budgeting, Sendai has secured a budget for undertaking activities related to not only facilities and equipment, but also for training and disaster awareness education. These activities include developing urban infrastructure; implementing disaster prevention measures related to utilities, such as water, gas, and public transportation; and raising disaster prevention awareness.

Sendai has created a system of subsidies to promote various efforts, including retrofitting old wooden houses, which may lack the strength to withstand earthquakes and removing concrete-block walls, which may collapse in a large earthquake.

On development of infrastructure, Sendai has examined comprehensive flood control measures in cooperation with the national and prefectural governments, moved forward with creating a city sewerage system that can handle once-in-a-decade torrential rains, and worked to reduce damage from such incidents.

The city has built storm drains and installed pumping stations, which has increased the wastewater pumping abilities of Sendai eight fold compared to 1986, the year the city was hit with torrential rains. Efforts are being made to create a city that is resistant to rain from various perspectives, and these efforts include controlling rainwater by storing it and allowing it to soak into the ground and installing pumps and sandbags in areas at risk of flooding.

Hyogo Prefectural Government disaster countermeasures office HYOGO PREFECTURE

Sendai has also worked to minimize damage to water facilities and city gas supply facilities.

The city has also reinforced school buildings. It completed seismic retrofitting on 100 percent of its schools by fiscal 2011, compared to the national average of 73 percent before the 2011 Great East Japan Earthquake, according to a survey by the Ministry of Education, Culture, Sports, Science and Technology.

For facilities such as medical facilities managed by the city, Sendai has made progress in making them more earthquake resistant, and various measures have been systematically implemented, including seismically retrofitting buildings and attaching shatter-resistant window film. When the earthquake hit, all hospitals continued to function.

Sendai also implemented strict standards on the sturdiness of buildings and locations of houses to better ensure safety. Disaster prevention training at elementary schools, a system of sending warnings on tsunami, bad weather and other disasters to mobile phones and other ways of alerting residents have also been implemented.

Hyogo Prefecture

Hyogo Prefecture established the Superintendent of Emergency Management post to be the chief officer in assisting the governor in risk management. The department he oversees includes the Disaster Management and Planning Bureau and Disaster Response Bureau comprising approximately 80 personnel engaged in disaster preparedness enhancement, disaster response, restoration and reconstruction and other activities.

The respective roles of each bureau are clearly stated in the local disaster management plan, which was drawn up based on the Disaster Countermeasure Basic Act.

In enhancing partnerships with citizens' groups, Hyogo Prefecture has established the Hyogo Safety Day Promotion Committee inviting Hyogo-based groups from all areas of society to join in.

The prefecture has secured funds for construction and programs such as developing rivers and coastal areas, maintaining the disaster management information system as well as the disaster-relief system. Subsidies are granted to those citizens wishing to upgrade the earthquake resistance of their homes and to activities to raise citizens' awareness toward disaster preparedness, including disaster drills.

It has also reinforced its infrastructure to deal with floods and other natural disasters.

Additionally, the prefecture periodically checks the up-to-date earthquake resistance against current schools and medical facilities, and is carefully following a plan to boost their earthquake resistance.

Hyogo Prefecture was also praised for its strict building standards. Buildings are inspected to ensure compliance with the Building Standards Act. While at the same time, the prefecture coordinates with municipalities on municipal urban planning, and disaster management measures. Additionally, by developing public housing systematically, it provides safety for citizens' homes, including those of low-income households.

Volunteers in a disaster prevention community group direct people in a disaster drill. SENDAI CITY

More than once a year, evacuation drills are held with the assumption of earthquake or fire disaster occurrences at all elementary and junior high schools in the prefecture. At schools, supplementary disaster management materials compiled by the Hyogo Board of Education are used in disaster preparedness classes as part of school curriculums.

In local communities, voluntary disaster response organizations play an integral role in emergency drills, including information collection and communication, fire fighting, rescue activities, evacuation, meal and water provision and other activities.

The prefecture undertakes flood control measures by improving rivers with the assumption of heavy rains that could occur once every one to five decades.

The prefecture is constantly improving the rivers' overall conditions, through such efforts as making rivers safe, maintaining rivers so that people can feel the abundance of nature, developing rivers that incorporate characteristics of basins and the culture that revolves around water and fully bringing out the attractions and comfortableness of riversides.

The prefecture is taking measures against storm surges by developing coastal areas that can withstand the highest sea levels seen in the past.

The prefecture has also introduced an emergency earthquake alert system. In addition, the Hyogo Disaster Net is a service to send information to Hyogo citizens concerning earthquake, tsunami, weather bulletin, evacuation advisory and orders via cell phone email.

Another system, the Phoenix Disaster Management System is in operation to collect disaster information from terminals installed at disaster management agencies, predict earthquake damage using information from seismometers installed throughout the prefecture and estimate demand and supply of people and goods required for initial emergency response.

The reconstruction after the Great Hanshin Earthquake in January 1995 was well planned and executed. The prefecture considered the opinions of the disaster victims, who were concerned about their future.

Hyogo Prefecture also promoted the Urban Redevelopment Support Project to dispatch advisors and consultants to such groups and to support urban redevelopment activities of them.

Compiled from UNISDR website

Many disaster-related meetings, exhibitions to be held

While dozens of conferences will be held at the Third UN World Conference on Disaster Risk Reduction, held by the UN Office for Disaster Risk Reduction at the Sendai International Center, in the center of Sendai, many other side events will be held in other facilities in Sendai, other cities in Miyagi Prefecture, and other prefectures in the Tohoku region.

The side events, dubbed Public Forums, are more than 350 conferences, exhibitions and other events, organized by national and municipal governments, nongovernment organizations, nonprofit organizations, universities and other groups from Japan and the world.

Public Forums are divided into four categories — Comprehensive Forums on the Great East Japan Earthquake, Symposium/Seminar, Theme Pavilions and Exhibitions.

In the first category, various government organizations as well as the Sendai Committee for the UN World Conference on Disaster Risk Reduction will hold 10 symposiums on disaster risk reduction at Tohoku University's Kawauchi Hagi Hall in Sendai.

The Cabinet Office, the Fire and Disaster Management Agency, the Sendai city government, Japan International Cooperation Agency and other organizations will hold various symposiums, including "Spreading Public Awareness of Disaster Risk Reduction via Education for Sustainable Development" organized jointly by the Ministry of Education, Culture, Sports, Science and Technology, UNESCO and the Miyagi University of Education.

In the Symposium/Seminar category, symposiums will be held by more than 350 Japanese and foreign organizations at 54 venues in 11 facilities in Sendai, as well as two other cities in Miyagi Prefecture, two cities in both Iwate and Fukushima prefectures and one in Aomori Prefecture.

Symposium organizers include Disaster Recovery Institute Japan, Hosei University, the Japan Committee for UNICEF, Save the Children Japan and the World Bank Global Facility for Disaster Reduction and Recovery.

In the Theme Pavilion category, symposiums, workshops and exhibitions will see participation of local residents. Such events with the theme of "disaster risk reduction with residents' participation" will be held mainly at the Sendai City Support Center and those themed "women and disaster risk reduction" will be held at the Sendai Gender Equal Opportunity Promotion Center.

The Sendai International Center is the main venue of the UN World Conference on Disaster Risk Reduction. SENDAI CITY

In the Exhibition category, various exhibitions and presentations, showing recovery progress from the Great East Japan Earthquake and other topics related to disaster risk reduction, will be held at 17 venues in Sendai, including Sendai Mediatheque.

Plan Japan seminars

International NPO Plan Japan, one of the oldest and largest children's development organizations, will host two public forums at the UN World Conference on Disaster Risk Reduction in Sendai.

Plan International Head of Disaster Response Unni Krishnan will make a keynote speech, followed by a discussion by Plan Japan Manager of Communications Mie Kashiwade and other experts, in a symposium, titled "Introduction to Psychosocial Support in Emergency — With a Case Study from Tohoku Disaster," at Tokyo Electron Hall in Sendai, Miyagi Prefecture, from 1:30 p.m. to 5 p.m. on Sunday.

Krishnan and other speakers will discuss importance of psychosocial support for the recovery of individuals and communities after disasters.

Krishnan will also participate in a symposium, titled "Adolescent Girls and Disaster — Girls Disaster Risk Reduction Conference," at L Park Sendai from 1 p.m. to 4 p.m. on Tuesday.

Moderated by Asako Osaki, a board member of Plan Japan, the symposium will touch on the increasing recognition that adolescent girls need special attention in disaster risk reduction.

UN World Conference on Disaster Risk Reduction

Monuments hint at glory of Hiraizumi's golden age

In the town of Hiraizumi, Iwate Prefecture, in the Tohoku region, one can still visit the remains of a brief blossoming of culture and architecture that is said to have rivaled the capital of Kyoto in its time.

The historic monuments and sites of Hiraizumi, comprising five sites associated with Japanese Pure Land Buddhism, were granted UNESCO World Heritage site status in June of 2011. Their history begins with a man named Fujiwara no Kiyohira, who founded a unique dynasty that would last a century.

The rise and fall of the Fujiwara

Kiyohira lived in the late Heian Period, a time long before the unification of Japan under the Tokugawa Shogunate in 1603 that began the Edo Period. The Heian is known as a high point in art, poetry and literature, but its end was marked by political intrigue and struggles for power.

Kiyohira's father descended from a branch of the influential Fujiwara clan that was the seat of de facto power for much of the Heian Period, while his mother was an Emishi, a group of people in northern Honshu who had a unique culture, but were gradually conquered by the Japanese. Kiyohira emerged the victor of a bloody power struggle between his step and half brothers in the Later Three Years' War and established a new home in Hiraizumi between 1089 and 1100.

Although he survived, Kiyohira lost his immediate family to the violence. Based on his belief in Pure Land Buddhism, he commissioned Chusonji Temple, the cornerstone of the five UNESCO-designated sites, to memorialize all living things, including birds and insects that died in Tohoku during the preceding tumult.

Kiyohira's son, Fujiwara no Motohira, commissioned Motsuji Temple at Hiraizumi's southern entrance, and oversaw the laying of the city's groundwork. Kiyohira's grandson, Fujiwara no Hidehira, oversaw the final stages of construction on Motsuji Temple and had another temple, Muryokoin, built. Under his stewardship Hiraizumi reached its zenith as an economic and cultural hub.

Fujiwara no Yasuhira, the fourth and last hereditary leader of Hiraizumi, became embroiled in a power struggle that ended his dynasty. Compelled by his father's dying wish to shelter the legendary Gen. Minamoto no Yoshitsune (who appears in Murasaki Shikubu's "The Tale of Genji," a proto-novel that ranks among Japan's most famous literary achievements), Yasuhira at first obliged.

Yoshitsune had a feud with his brother, Minamoto no Yoritomo, who repeatedly demanded his release from Hiraizumi. Under pressure of war, Yasuhira disobeyed his father, turning on Yoshitsune in an attempt to appease Yoritomo's wrath. The move was too little too late; Yoritomo successfully led an army from the Kanto region against Yasuhira, who set fire to Hiraizumi and was later killed by one of his own men. Yoritomo went on to found the Kamakura Shogunate, and the curtain fell on the Heian period, the Northern Fujiwara and Hiraizumi's golden age.

Many of the town's famous sites fell into disrepair and succumbed to fire over the centuries. Its state was captured in a haiku when the poet Matsuo Basho visited exactly 500 years after Yasuhira's defeat:

Summer grass
All that remains
Of warriors' dreams

Fans of Basho will find no shortage of statues and monuments to the lonely traveler throughout modern-day Hiraizumi.

Hiraizumi today

The monuments and sites that form the UNESCO-recognized area have undergone massive restoration and rebuilding in the post-war period, and Hiraizumi is now a fantastic destination for history buffs and appreciators of beautiful architecture and landscape.

Chusonji Temple

Chusonji Temple sits atop Mount Kanzan and is the oldest of the Hiraizumi sites. Its Konjikido or "Golden Hall" is a mausoleum that contains the remains of all four leaders of the Northern Fujiwara. It escaped a fire in 1337, and was painstakingly restored by an expert team from 1962 to 1968. The Golden Hall is encased in a protective glass enclosure, but its ornate structure, decorated with gold leaf and mother-of-pearl, is not to be missed.

Motsuji Temple

Built by Motohira, the second lord of Hiraizumi, Motsuji Temple had 40 halls and 500 monk residences by the end of the 12th century. Enryuji Temple, which was lost to fire in 1226, was considered "peerless" in beauty and contained a statue of Yakushi, the "healing Buddha," made by a sculptor from Kyoto.

Today, Buddhist Pure Land ceremonies from the 12th century are still conducted in the site's Jogyodo building, which was built in 1732. In front of the place where Enryuji Temple once stood is a pond preserved much as it was when it was made. The scene contains elements in miniature such as a river, peninsula, shoreline, and island that make it a microcosm of the natural world. The adjacent garden, which has been maintained according to a landscaping textbook from the 11th century, is truly something to behold.

Kanjizaio-in Ato

Originally built by the wife of Motohira, the temple complex that stood here has been long since lost to fire. What remains is the garden and pond, preserved much as it was. The peaceful scenery is meant to represent the Pure Land of Amitabha Buddha, and is connected by a stream to nearby Motsuji Temple. The Kanjizaio-in Ato grounds are open to the public.

Muryoko-in Ato

Now a site of ongoing archaeological research, this Pure Land garden and pond was once the home of Muryokoin, a temple built by Hidehira that was based on the Phoenix Hall of Kyoto's Byodoin. Although the original temple buildings were burned and never rebuilt, the remains indicate that their placement took into account the peak of nearby Mount Kinkeisan and the path of the sun, so that twice a year, if facing the western hall from the east, the sun would set behind both the hall and the mountain in a sublime homage to the Buddhist paradise of Pure Land believers.

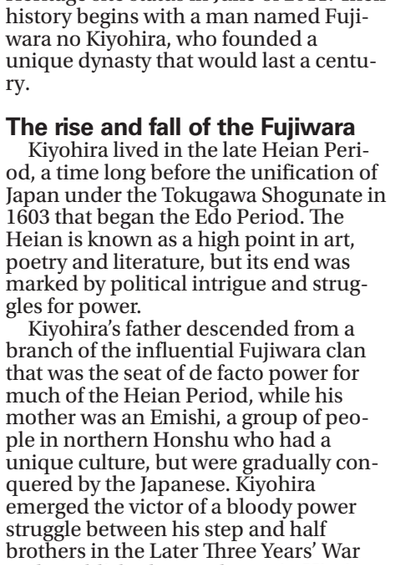
Mt. Kinkei

This modest mountain was highly significant to the original builders of Hiraizumi's Pure Land sites, many of which were built in relation to its peak. The mountaintop is also the site of multiple sutra mounds, where important religious texts were buried in special containers to protect them during times of crisis.

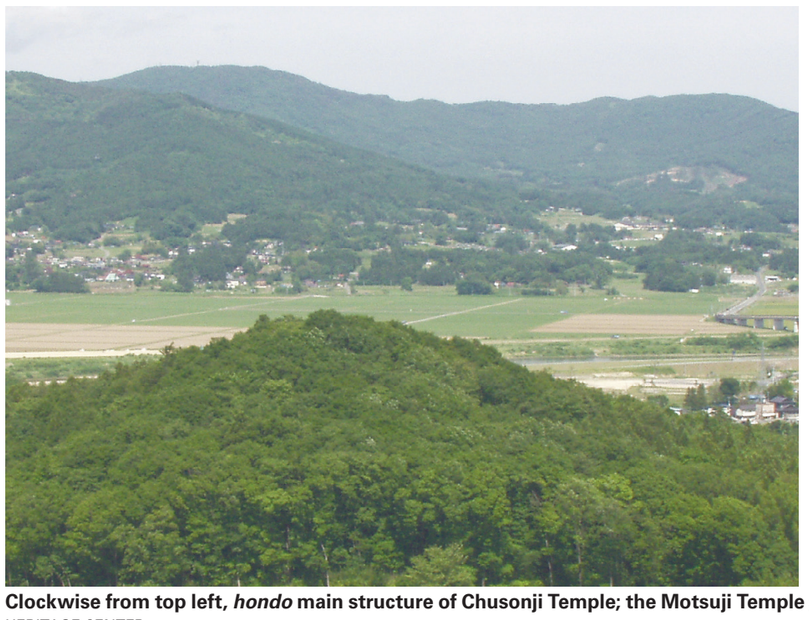
Tranquil sites

When Irina Bokova, director general of UNESCO, presented the Certificate of World Heritage at the Hiraizumi Cultural Heritage Centre in 2012, she said, "The serenity of the temples and gardens of Hiraizumi stands in poignant contrast with the deep wounds of a region hit hard by the earthquake of March 11, 2011." That the sites have maintained their tranquility through the disaster in 2011, as well as through more than 900 years of history, makes Hiraizumi a destination well worth the time.

Hiraizumi is accessible from Sendai and Tokyo on the Tohoku Shinkansen by stopping at Ichinoseki, which is only 10 minutes away from Hiraizumi Station on the Tohoku Line.



Sunset over Mt. Kinkei, viewed from Muryoko-in Ato HIRAIZUMI CULTURAL HERITAGE CENTER



Clockwise from top left, *hondo* main structure of Chusonji Temple; the Motsuji Temple garden; Kanjizaio-in Ato; Mt. Kinkei CHUSONJI TEMPLE/MOTSUJI TEMPLE/HIRAIZUMI CULTURAL HERITAGE CENTER

Shirakami Sanchi: A forest outside of time

Japan is undoubtedly a land of abundant natural beauty. Its long island chain spans a huge diversity of environments that famously enjoy four distinct seasons. While the Japanese people are great lovers of nature, thousands of years of life on the archipelago have made swathes of untouched splendor somewhat hard to find.

Yet Shirakami Sanchi, a 169.7 sq. kilometer expanse of virgin forest in the north of Honshu, is just such a place. Inscribed as a UNESCO World Heritage site in 1993, it touches both Akita and Aomori prefectures and is a sanctuary for the buna (Japanese beech) tree, just about any mammal found in other parts of Honshu and a few rare ones for good measure.

Whereas the biodiversity of many of Earth's primeval beech forests was decimated by continental glaciation about 2 million years ago, the forests of northern Japan escaped that fate, making them living time capsules of a kind. Japanese beech trees, being extremely supple, are uniquely resistant to heavy snowfalls of the type that regularly assault Honshu's inland sea coast, and although not particularly desirable as lumber, their numbers have nonetheless dwindled as humans cleared space for more profitable trees.

Back to the essence

The area's chief draw is therefore its natural beauty, of interest to a gamut of scientists as well as hikers, climbers and photographers. The terrain of Shirakami Sanchi is rugged; its mountains are everywhere creased by ancient streams and punctuated by waterfalls. According to UNESCO, more than 50 percent of the area consists of "deep valleys with steep slopes." Recommended visiting times are late spring and early summer, when the waterways are flush with melted snow and then rain, and autumn, when the blanket of foliage changes color in a spectacle reminiscent of slow-motion fireworks.

Clockwise from top, Kurokuma Falls; Kikuzaki ichirinso flowers in early spring; a large tree stretches skyward in early summer SHIRAKAMI-SANCHI VISITOR CENTER

Although the section of forest that was inscribed by UNESCO is relatively small, the Shirakami Sanchi commonly referred to in Japan is a much larger 1,300 sq. kilometer tract of nature. To enter the World Heritage area requires special permission and procedures, which can be applied for in advance by mail or at the Aomori office of the Tohoku Regional Forest Office. Although the level of preservation is highest within the World Heritage area, the larger forest holds a wealth of beauty for the average hiker or climber and requires no special permission to enter.

Places to be

One such place is Mount Shirakami. The highest point in Shirakami Sanchi at 1,232 meters, this mountain can be accessed by anyone with the right equipment, stamina, and experience. The summit has limited washroom and shelter facilities, but the views along the way (especially of the sea) are said to be breathtaking.

Another must-see is Anmon Falls, on Shirakami Sanchi's northeastern side. Located an easy 90-minute hike from the trailhead, this remarkable natural feature has three sections: the final drop, which visitors see first, is 26 meters. The next is a 37-meter drop, topped only by the final spectacular 42-meter drop at the apex. The Japanese word fushigi, which indicates a mix of wonder, mystery and strangeness, could accurately describe this place.

Other worthwhile destinations include the scenic Nihon Canyon, which is connected by walking trails to Juniko, a series of small lakes. Aoike, perhaps the most notable of these, has a luminous, dreamlike blue hue. Tanashiro Swamp, Dairakyo Gorge, and mounts Futatsumori and Komaga are all worth visiting as well. Taken together, there is enough exploring to fill several days or more.

Wildlife in and around the preserve is bountiful and includes more than 500 species of plant and 87 species of bird, including the golden eagle and black woodpecker. Japanese serow and black bear can be seen and nine amphibians and seven reptile species have been recorded. Entomologists are in for a treat, as the area is home to at least 2,212 insect species.

Living in balance

Of particular interest are the Matagi, a group of people that still hunt, cut wood, and conduct religious activities in Shirakami Sanchi in accordance with their ancient tradition. The Matagi's activities are limited and conducted only for direct subsistence, which stands in stark contrast to commercial logging and other human practices that have permanently altered ecosystems for the worse around the world.

The people who now live in the Shirakami mountain area generally continue a culture that can be traced back to the early Jomon people, including distinct styles of woodcutting, storage of vegetables in the ground, and the use of burned beechwood ash to remove the bitterness from horse chestnuts and acorns for human consumption.

There are several worthwhile visitor centers. In Fujisato, Akita Prefecture, the World Heritage Conservation Center features a museum dedicated to the forest. The Shirakami Sanchi Visitor Center boasts 3-D models of the fauna and ecosystem, and an IMAX screen shows a 30-minute film about the area five times a day.

Natural beauty growing scarce

In Japan, beautiful scenery is never too far from the bustling cities, but all too often it has been shaped, cleared, or paved by people. While hikes to temples and shrines are a great chance to exercise and relax, virgin forests like Shirakami Sanchi are truly rare, not-to-be-missed opportunities to commune with nature that is all but unadulterated by human influence. Given the pace of human population growth and the attendant rush for resources, sites like this are likely to become even more rare. The breathless beauty of this woodland is well worth the time and likely to remain memorable for a lifetime.

Access: Shirakami Sanchi has several access points, including Odate-Noshiro Airport, which has daily flights from Tokyo and Osaka. By train from Tokyo, take the Tohoku Shinkansen to Shin-Aomori station and transfer to a local line to get to Hirosaki station for optimum access. Noshiro, Akita Prefecture, is another access point. Rental cars are recommended for getting around the vast Shirakami area. Large sections of Shirakami Sanchi are inaccessible during the winter, so be sure to plan your trip in advance.

Beautiful fall foliage will take your breath away. SHIRAKAMI-SANCHI VISITOR CENTER

UN World Conference on Disaster Risk Reduction

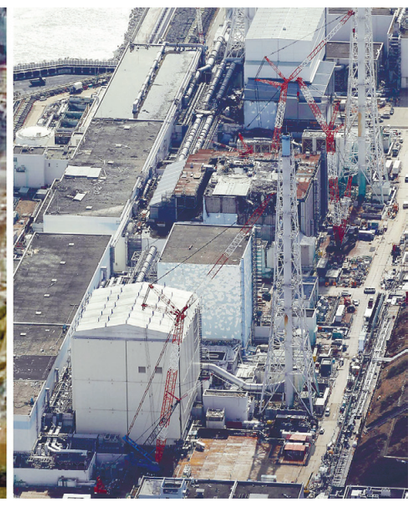





The top three photos (left to right) show a fish market in Ofunato, Iwate Prefecture; a strawberry farm in Yamamoto, Miyagi Prefecture; and JR Shishiori Karakuwa Station in Kesennuma, Miyagi Prefecture, shortly after the March 11, 2011, Great East Japan Earthquake and tsunami. The bottom three photos (left to right) show the same areas earlier this month. Today, a bus runs where the train once did. OFUNATO CITY/KYODO

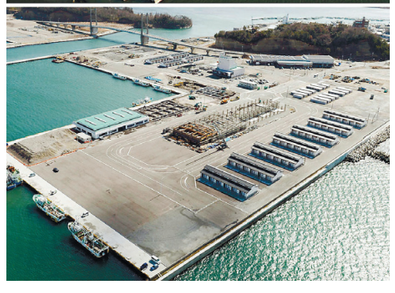













Directly above (from top), an aerial view of Onagawa, Miyagi Prefecture, on March 11, 2011 (left) and this February (right); Fukushima No. 1 nuclear power plant on April 26, 2011 (left) and this February (right). A debris collecting site in Tomioka, Fukushima Prefecture, in May 2011 is being turned into a debris processing facility. Clockwise from top left, about 2,000 candles are lit at a park in Iwaki, Fukushima Prefecture, with a Japanese phrase meaning "Iwaki–flame of hope," Sunday; part of the Joban Expressway, from the Joban Tomioka Interchange to the Namie Interchange, both in Fukushima Prefecture, reopened on March 1, the first time since the 2011 disaster; Matsukawaura Lake, Soma, Fukushima Prefecture, on March 13, 2011, and this March; children hold kites with messages for children in the Gaza Strip, in Kamaishi, Iwate Prefecture, on Sunday; a charity concert, "Pray from Kobe 3.11," is held in Kobe, Hyogo Prefecture, on Sunday; and a woman offers flowers to support revitalization of the tsunami-hit Tohoku region, at a hotel in Shanghai on Sunday. KYODO