

Chapter 3. Future Disaster Management

This Chapter presents the direction of future disaster management, based on the lessons learned from the Great Kanto Earthquake discussed in Chapter 1 and the changes in the environment surrounding Japan discussed in Chapter 2.

Section 1. Promotion of Measures against Imminent Large-Scale Earthquakes Such as a Tokyo Inland Earthquake

Past large-scale earthquakes, such as the Great Kanto Earthquake, the Great Hanshin-Awaji Earthquake, and the Great East Japan Earthquake, caused serious damage due to buildings collapsing, fires, and earthquake-triggered massive tsunamis.

First of all, in order to prevent buildings from collapsing due to earthquake tremors, it is important to promote the seismic reinforcement of buildings. In particular, many of the buildings built before 1981 have insufficient seismic resistance because they were built according to the old quake-resistance standards before they were strengthened in the Building Standards Act. The government set a goal of eliminating most of the houses that have insufficient seismic resistance by 2030, and it has been making efforts such as seismic diagnosis to grasp the seismic resistance situation, encouraging seismic retrofitting and reconstruction in the case of inadequate seismic resistance, and providing support to cover the costs associated with this. As a result, the seismic reinforcement rate of buildings in Japan is steadily increasing. Also, in the future, it is important for each building owner to recognize the importance of seismic reinforcement and work on countermeasures with the awareness that it is their own problem.

In the Great East Japan Earthquake, huge tsunamis caused devastating damage on the Pacific Ocean side of the Tohoku region. As a lesson from the Great East Japan Earthquake, it was widely recognized that disasters cannot be completely prevented by hardware measures alone and that evacuation is the most important measure to protect lives. Therefore, it is important to make efforts to raise disaster management awareness so that everyone, from children to the elderly, regards disasters as something that may affect them someday and is able to take appropriate disaster prevention actions under their own decision in the event of a disaster.

In the Great Kanto Earthquake, government buildings, such as those of the Home Ministry, were destroyed by fires, so the fact that the government itself was a victim caused a delay in the initial response. In preparation for a Tokyo inland earthquake that directly hits the capital, the government must strive to be able to maintain the central functions of the capital by establishing a rapid initial response system and ensuring emergency priority operations, based on the Business Continuity Plan of the Central Government. It is also important to clarify in advance the operation bases and entry routes of the police, firefighters, and Self-Defense Forces rescue units and to establish plans for specific emergency measures. Securing a base that can replace the Extreme Disaster Management Headquarters in the case of a Tokyo inland earthquake is also an important initiative. In addition, as the population concentration of the Tokyo metropolitan area increases, a Tokyo inland earthquake could paralyze road traffic, generate a huge number of evacuees and people stranded and unable to return home, and cause a serious shortage of relief supplies. Thus, it is necessary to secure stockpiles of food, drinking water, etc. at shelters, take measures for stranded persons, such as limiting the number of people returning home all at once, and secure supply chains.

Although the extent of damage caused by earthquakes in the future that are of concern, such as a Tokyo inland earthquake, a Nankai Trough earthquake, and a trench-type earthquakes in the vicinity of the Japan and Chishima Trenches, varies greatly depending on the preconditions, such as the period and time frame, it is likely to be devastating. On the other hand, it has been also pointed out that the damage caused by an earthquake can be minimized by thoroughly implementing disaster management and taking appropriate evacuation actions. Each and every one of us must recognize once again the importance of countermeasures and work on disaster management measures, such as seismic reinforcement of buildings, as well as appropriate evacuation actions, self-restraint in the use of automobiles and stockpiling water and food.

Section 2. Promotion of Storm and Flood Countermeasures in Response to Climate Change

Shortly after World War II, Japan suffered serious damage from frequent typhoons and torrential rains on its war-torn land. Since then, however, the government, prefectures, and municipalities, under their respective roles, have systematically implemented measures to improve embankments, dams, sewers, and ports, thereby dramatically improving the level of regional safety. As shown in the cases of Kano River (Shizuoka Prefecture) and Osaka Bay in Chapter 2, Section 2, there are regions where typhoon damage has significantly decreased compared with damage caused by previous typhoons of the same scale. This validates the damage mitigation effects of past storm and flood countermeasures.

However, it is obvious that the intensification and higher frequency of disasters caused by climate change and other factors are increasing not only human suffering but also economic impacts, such as housing damage, which are affecting economic activities and increasing social anxiety.

Storm and flood countermeasures have been taken based on the lessons and reflections of past disasters. However, typhoons and torrential rains that have occurred in various regions have been unprecedented in scale due to climate change and other factors and are expected to become more powerful in the future. Therefore, flood control plans have been revised from the previous plans based on past rainfall records to take into account increased rainfall due to climate change.

We need to recognize the threat of ever more powerful storms and flood disasters and confront these crises as a society acting as a whole, without being bound by conventional thinking. To achieve this, it is necessary for the entire nation to work together for disaster management and form a society in which all stakeholders are aware of and act on disaster management and mitigation as a matter of course and as the main pillar of society.

Section 3. Promotion of National Resilience

In addition to the increasingly intense and frequent meteorological disasters due to climate change and other factors, the occurrence of large-scale earthquakes, such as a Nankai Trough earthquake or a Tokyo inland earthquake, is also imminent. Moreover, the infrastructure that was intensively developed during the period of rapid economic growth is aging all at once, and if appropriate measures are not taken, the socioeconomic system could fall into dysfunction. In order to overcome this crisis, protect the lives, property, and livelihood of the people, and create a nation that will not succumb to disasters, the entire nation must strengthen its efforts for disaster management and mitigation and national resilience and steadily promote the Five-Year Acceleration Plan for

Disaster Prevention, Disaster Mitigation, and Building Land Resilience (Cabinet decision of December 11, 2020).

In order to promote these efforts more effectively and efficiently, the national government and local governments must correctly analyze the risks of natural disasters that they face in their respective regions and systematically work on building regional resilience. It is also important to build national resilience by making use of the vitality of the private sector, such as by creating a mechanism that encourages private sector investments through collaborations between the government and private actors. Furthermore, it is also necessary to efficiently improve disaster response capabilities, by, for example, utilizing digital technology, such as the latest technology and innovations in the field of disaster management.

Building national resilience requires not only national and local governments but also private companies, individuals, and all other stakeholders to cooperate and work together. Ten years after the Basic Act for National Resilience was enacted, efforts by the national and local governments are in progress, but it is also necessary for private companies, local communities, households, and individuals to deepen their understanding of the necessity and effectiveness of national resilience, and to pursue it in their respective regions and positions.

Section 4. Enhancement of an Affected People Support System

Immediately after the Great Kanto Earthquake, it is said that an estimated one million people, about 40% of the then 2.48 million population of Tokyo City, evacuated.¹³ As explained in Section 2, the earthquake resistance of buildings has greatly improved since the Great Kanto Earthquake. However, there are concerns about the collapse of houses and the spread of fire in urban areas with a high density of wooden houses—areas created during the subsequent rapid urbanization process. There are also concerns that damage to lifelines, such as water and power supplies, could make it difficult for many affected people to take shelter in their homes even if the damage to their homes is not serious.

At the time of the Great Kanto Earthquake, the severity of the damage and the lack of disaster preparedness prevented the administrative agencies from taking prompt emergency measures, which delayed support to the affected people and expanded the damage. As measures against a possible Tokyo inland earthquake, a Nankai Trough earthquake, and a trench-type earthquake in the vicinity of the Japan and Chishima Trenches, the government has formulated a basic plan to prepare for emergency responses and is working to improve the plan to enhance its effectiveness through various drills and training.

In addition, new issues have arisen that differ from those at the time of the Great Kanto Earthquake due to changes in the environment, such as the aging of the population and the increase in the number of foreign residents. Furthermore, it is necessary to promote countermeasures based on the needs of each affected individual, including women, children and the disabled. Therefore, it is necessary to promote detailed measures for affected people, including persons requiring special care in times of disaster—measures such as the prevention of disaster-related deaths through the provision of information, evacuation guidance, and the improvement of living conditions in shelters—in coordination with welfare and other relevant measures.

Furthermore, as disasters are expected to become more intense and frequent in the future, the government's public support alone will not be able to provide sufficient support for affected people. Therefore, it is necessary to raise each citizen's awareness of self-help. And in order to promote mutual support, it is necessary to build a system for supporting affected people in which various entities cooperate with one another while taking into account

¹³ National Disaster Management Council (2009), "Great Kanto Earthquake Report, Part 2," p. 6 (authored by Ai Sekizawa and Yukio Nishida)

gender equality and involving various private organizations, such as NPOs and volunteers. Coordination for receiving support from overseas, as was received after the Great East Japan Earthquake and the Great Kanto Earthquake, also needs to be strengthened.

Section 5. Multilingualization in Information Dissemination

At the time of the Great Kanto Earthquake, the proportion of foreigners in Japan's population was only about 1 in 1,000, but today, it has increased significantly to about 1 in 45. In addition to the number of foreigners residing in Japan, the number of foreigners temporarily staying in Japan for travel or work has also increased dramatically over the past 100 years.

If a disaster were to occur under these circumstances, many foreigners residing or temporarily staying in Japan would become victims.

In such a case, a situation in which foreigners are unable to take a prompt evacuation action or receive adequate support at shelters due to Japanese language barrier must be avoided. Thus, relevant ministries and agencies are currently working together to ensure the dissemination of information in multiple languages, and it is important to continue to ensure that foreigners can easily obtain necessary information.

Section 6. Use of Digital Technology in Disaster Management

In 1923, when the Great Kanto Earthquake occurred, radio broadcasting had yet to begin. In addition, since the earthquake severely damaged transportation, telephones, and other lifelines, the circulation of information was disrupted, preventing newspapers from being published for a while after the disaster.

However, in order for the government to take appropriate actions after a disaster occurs, including emergency activities such as lifesaving and support for people living in shelters, it is first necessary to quickly and accurately grasp the extent of damage caused by the disaster.

During the last 100 years, information and communication technology has advanced dramatically. The main means of information transmission has changed from radios to televisions. Today, with the advancement of digital technology, the use of the Internet and SNS has become commonplace in the daily lives of people. The government's promotion of the digitization of data that can be useful in disaster response and making use of it will greatly contribute to understanding the extent of damage caused by disasters, and is also indispensable when disseminating information to the public.

The government is working on collecting and sharing information using digital technology. Since digital technology is constantly evolving, it is necessary to continue efforts to make further use of it.

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Dissemination of Disaster Management and Meteorological Information to Foreigners

Based on the “Comprehensive Measures for the Acceptance and Coexistence of Foreign Human Resources” (decided in a ministerial meeting on the acceptance and coexistence of foreign human resources on June 14, 2022), the Cabinet Office, together with related ministries and agencies, is promoting multilingualization so that foreign nationals can easily obtain necessary information in case of a disaster.

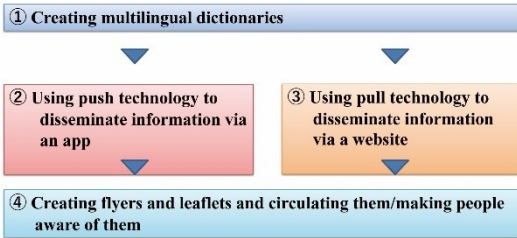
Specifically, leaflets using 15 languages* that summarize information on applications and websites useful in time of disaster, as well as posters using “easy Japanese” that are easily understood by foreigners, are being prepared and distributed through a variety of opportunities.

In addition, materials on “Dissemination of Disaster Management and Meteorological Information to Foreigners” are prepared in 15 languages* and provided to relevant organizations for use when they implement disaster management drills and training for foreigners.

* 15 languages: Japanese, English, Chinese (traditional and simplified), Korean, Spanish, Portuguese, Vietnamese, Thai, Indonesian, Tagalog, Nepali, Khmer, Burmese, Mongolian

Project overview

- It is vital that foreign nationals staying in Japan can easily access the information they need to quickly take evacuation action in the event of a disaster.
- Thus, we are working together with relevant national institutions on a project to create an environment in which disaster-prevention and meteorological information can be disseminated in multiple languages.



Creating flyers and leaflets

- We are creating flyers and leaflets relating to disaster-prevention, which include this information and are available on the Cabinet Office website.
- Four types of flyer have been created, and these are also available in 15 languages.

① Disaster Mitigation Points for Foreign Nationals (Available in "yassashi nihongo" (plain Japanese))

② Helpful Apps and Websites in the Event of Disaster

③ Evacuation Essentials Under COVID-19 Crisis

④ Evacuation Information (Revised Version)

Written in plain Japanese and available in 15 languages
Poster created with QR code

Posters created in 15 languages*

Posters created in 15 languages

Available in 15 languages
Poster created with QR code

*Japanese, English, Chinese (simplified/traditional), Korean, Spanish, Portuguese, Vietnamese, Thai, Indonesian, Tagalog, Nepali, Khmer, Burmese, Mongolian

Source : Cabinet Office website, " Disseminating disaster information to foreign nationals.
(Reference : <https://www.bousai.go.jp/kyoiku/gaikoku/index.html>)



[Column]

Promotion of Activities to Help One Another (“Connected Mutual Support”) through SNS

With the rapid spread of communication tools such as SNS in recent years, there is an increasing possibility that mutual support using these tools will exert great power in the event of a disaster. For this reason, FUKKO DESIGN, a general incorporated association that has been disseminating information useful for supporting affected areas, has collaborated with the Japan Voluntary Organizations Active in Disaster (JVOAD) to propose the concept of “connected mutual support” and is disseminating information.

Specifically, FUKKO DESIGN has created easy-to-understand educational materials on how to use SNS and other tools for exchanging information among friends, soliciting and applying for supplies and financial support, and soliciting and applying for help for recovery work. The materials also include information on what to keep in mind to protect privacy. The information is being disseminated via SNS and the association’s website.

(Reference) “Connected Mutual Support”

つながる共助
災害時の助け合い
災害時にはみんなで助け合おう

防災アクションガイド

地域や友人だけでなく、多くの人と繋がって助け合うことを、私たちは「つながる共助」と呼んでいます。SNSやコミュニケーションツールでの繋がりを有効活用して、助け合いましょう。

つながる共助

地域・友人関係が中心だった共助。近年はSNSなどを通じて様々な人と繋がって助け合う「つながる共助」が有効です。「つながる」ことで復旧や支援を相互に進めましょう。

情報の共有 復旧作業 モノやお金の支援

被災した人 支援する人

被 **支**

つながる共助では、被災した人と支援する人、それぞれの目録で有効な内容にマークをつけています。

SNSやLINEなどを有効活用しよう

SNSやLINEなどのコミュニケーションツールは多くの人と気軽に繋がれる一方でプライバシーの心配もあります。それぞれの特徴を踏まえて、自分に合った方法を選びましょう

つながり	方法	長所	短所
信頼できる人	LINE、Facebookなどでの限定グループ	プライバシーが守られる	支援者が広がらない
うすい知りあい	LINE、Facebookなどでのグループや公開範囲を友人にした投稿	プライバシーを守りやすい	それほど支援者が広がらない
知らない人	Twitter、Instagram、FacebookなどSNSでの公開投稿	投稿が拡散されることで、支援者が大きく広がる可能性がある	不特定多数が目にするため、プライバシーに十分注意が必要

プライバシーを守るには

広く支援を受けるには情報を拡散する必要がありますが、一方でトラブルの原因になる可能性も。公開する情報を十分に検討してから発信しましょう。

個人情報やプライバシーのチェックリスト

- 氏名・住所・電話番号などを含む個人情報
- 投稿や写真での位置情報の設定
- 自分や家族や被災者のプライバシー（家族構成・職業など）
- SNSでのDMの受付範囲の設定

FUKKO DESIGN JVOAD 協力：栗木健太郎（豪研究者）、佐々木晶二（元内閣府防災専門官）

(Reference) https://note.com/fukko_design/n/n8e0e33ce414a



Section 7. Conclusion

This year's white paper looked back on the Great Kanto Earthquake that occurred 100 years ago, and discussed the direction of future disaster management, based on the lessons learned from the earthquake and the subsequent changes in socio-economic conditions.

Physicist Torahiko Terada, who personally experienced the Great Kanto Earthquake and was deeply involved in the establishment of the Earthquake Research Institute afterward, critically discussed in his book *Natural Disasters and National Defense* in 1934 the inadequacy of natural disaster management measures taken by the government of the time compared with its national defense measures against enemy nations that were threatening national security. Reflecting on this, Japan has since made considerable progress in disaster management measures through the enactment of the Basic Act on Disaster Management and the expansion of measures based on the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake.

On the other hand, Terada also stated in his book the following:

"However, there is one important thing to be considered here, and it is often forgotten. It is the fact that the more civilization advances, the more devastating the disasters caused by the forces of nature."¹⁴

Terada argued that as civilization progresses, and when people think they have contained nature's violent forces by building structures that resist them, nature suddenly goes on a rampage, toppling buildings and embankments, thereby causing great damage to human lives and property. He also stated that as civilization progresses, the internal mechanisms of the state and its people become significantly differentiated, and if a part of them is damaged, the entire system is likely to suffer a serious impact.

In Japan, the frequency of disasters that cause a large number of deaths has decreased due to investment in disaster risk prevention, including the development of disaster management and mitigation infrastructure. On the other hand, as Terada warned, before the Great Hanshin-Awaji Earthquake, the public's disaster management awareness remained low, and preparations for unexpected mega-disasters, such as the Great East Japan Earthquake, are still inadequate.

The concentration in the Tokyo metropolitan area of both a large population and various functions has also increased the risk of ripple effects should a disaster occur there. The same can be said for the impact of disasters overseas in Japan amid the growing interdependence in the world due to globalization.

As this year marks the 100th anniversary of the Great Kanto Earthquake, we must not forget the lessons learned from it and pass them on to the next 100 years. In addition, we need to address the ever-increasing risk of disasters from a comprehensive perspective, including national land and industrial policies, while taking into account the principle of national resilience and aim to build a disaster-resistant nation, regions, and economic society. On top of that, from the perspective of disaster management, we must not neglect preparations for large-scale disasters that we may face, and we must invest in disaster risk reduction, including the development of disaster management and mitigation infrastructure, prepare disaster response measures, improve support for affected people, and engage in international cooperation. It is also necessary to promote the awareness and efforts by each citizen through disaster risk reduction education and other means to reduce the damage caused by disasters to the extent that is possible.

¹⁴ From "Natural Disasters and National Defense" (1934) by Torahiko Terada