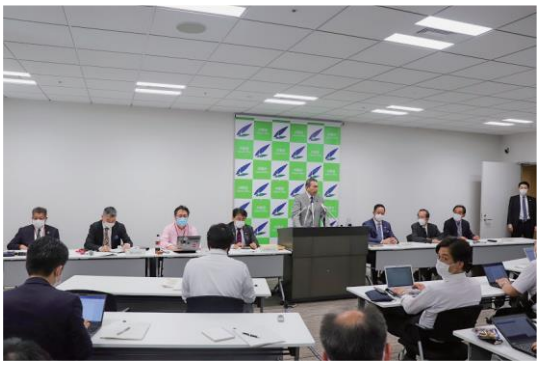
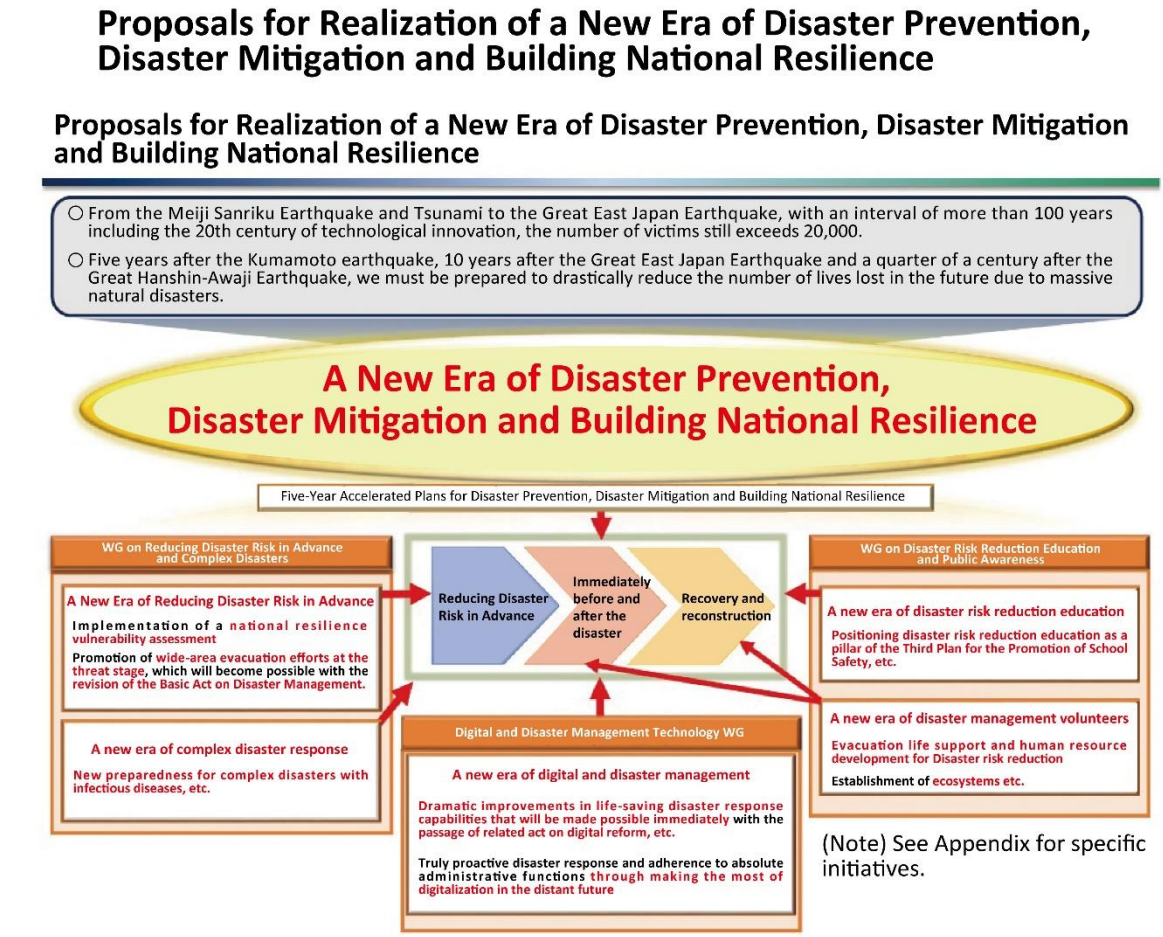
Section 4 Recommendation for Disaster Prevention, Mitigation and Realization of a New Era of National Resilience

In recent years, natural disasters have become more severe and frequent, and mega-disasters such as the Nankai Trough Earthquake and Tokyo Inland Earthquake are also imminent. The year 2021 is also a milestone year, marking five years since the 2016 Kumamoto Earthquake, ten years since the Great East Japan Earthquake and a quarter of a century since the Great Hanshin-Awaji Earthquake. Therefore, in December 2020, the Cabinet Office, with the participation of experts and related ministries and agencies, convened a working group under the private advisory body of the Minister of State for Disaster Management or the Advisory Committee on National Resilience (Disaster Prevention and Mitigation) to discuss new measures to drastically reduce the number of lives lost due to a major natural disaster in the three areas of: (1) digitalization and technologies for DRM, (2) reducing the disaster risk in advance and complex disasters, and (3) disaster risk reduction education and public awareness.

Based on the discussions of the working groups, each of them presented its recommendations to then Minister of State for Disaster Management Okonogi, on May 25, 2021.



Press Conference on Recommendation
for Disaster Prevention and Mitigation and Realization of a New Era of National Resilience
(Source: Cabinet Office Data)



Source: Cabinet Office data

4-1 Working Group on Digitalization and Technologies for DRM

Currently, much of the data that could be useful for reducing disaster risk in advance or for rescuing lives after a disaster is scattered and buried. It is necessary to support decision-making, which is worthwhile taking the initiative, with promoting the digitization of such data, and detecting and eliminating problems by analyzing the data.

The Cabinet Office has convened a “Digitalization and Disaster Management Technology Working Group” to study these issues. In this working group, two types of teams have been set up: one is called the "Future Vision Team,” which focuses on discussing the future concepts of digitalization and disaster management technology by assuming future technological innovations in the mid to long term (10 years or more) even if it is difficult to achieve with the current technology. The other is known as the "Social Implementation Team," which aims at figuring out the direction to improve and issues about technologies that are already being used from both perspectives of technology and institution by assuming implementation in the medium to short term period (within about 5 years). Based on the recommendations compiled by these two teams, it has been decided that relevant government ministries and agencies should take initiative through collaboration and consultation in various measures to

promote the digitalization of disaster management.

*Working Group on Digitalization and Technologies for DRM (Future Vision Team)

（Reference：https://www.bousai.go.jp/kaigirep/digitalWG.html）

*Working Group on Digitalization and Technologies for DRM (Social Implementation Team)

（Reference：https://www.bousai.go.jp/kaigirep/digitalWG2.html）

(1) Main Content of Recommendations

The Future Vision Team recommended setting goals that could be achieved by digitalization for the case of reducing disaster risk in advance and rescuing lives. The specific points are as follows.

・Making use of digital twin technology to simulate disaster and response to each case of disaster.

・Collecting and sharing information about spaces and infrastructures on real-time basis by using drones or sensors.

・Shifting administrative functions such as meetings and administrative procedures into the digital space so that those functions can be completed by online.

Other recommendations were given by the Social Implementation Team, focusing on the issues raised by digitalization in the disaster management field and the plans to make the current systems user-friendly or more advanced as follows.

・Standardizing information items and acquisition time required in the event of a disaster.

・Organizing the way for local governments to handle personal information related to disaster response.

・Developing networks that allow related organizations to collect, analyze, process and share necessary information without using the human resources.

※Recommendation by Working Group on Digitalization and Technologies for DRM (Future Vision Team)

(Reference：https://www.bousai.go.jp/kaigirep/teigen/pdf/teigen_03.pdf)

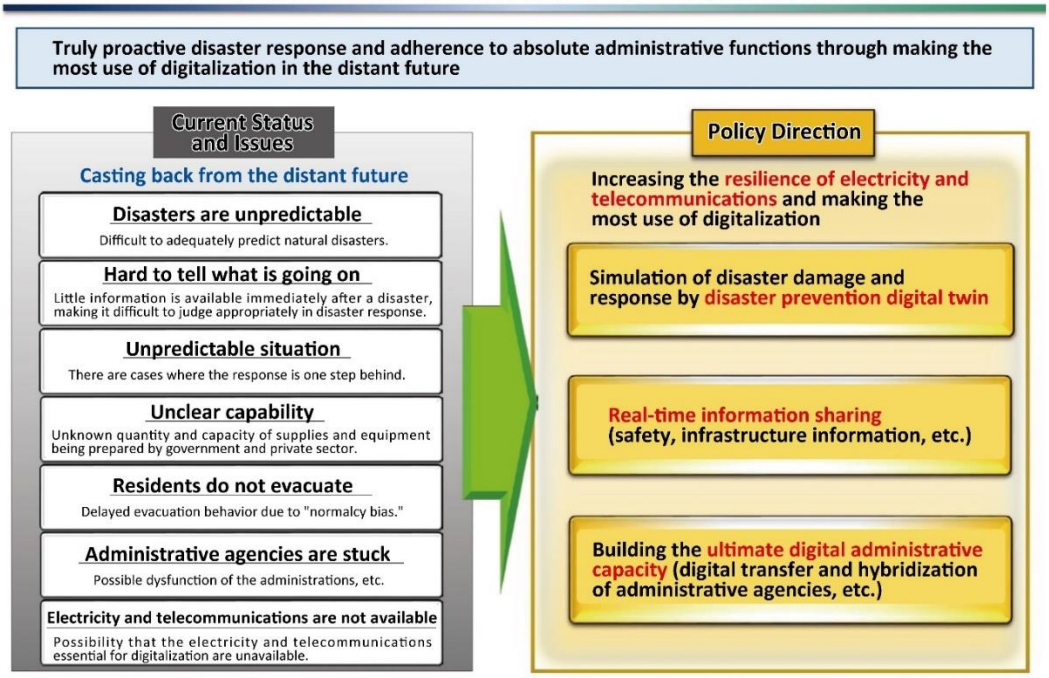
※Recommendation by Working Group on Digitalization and Technologies for DRM

(Social Implementation Team)

(Reference：https://www.bousai.go.jp/kaigirep/teigen/pdf/teigen_04.pdf)

Summary of Recommendations from Digital and Disaster Management Technology Working Group (Future Vision Team)

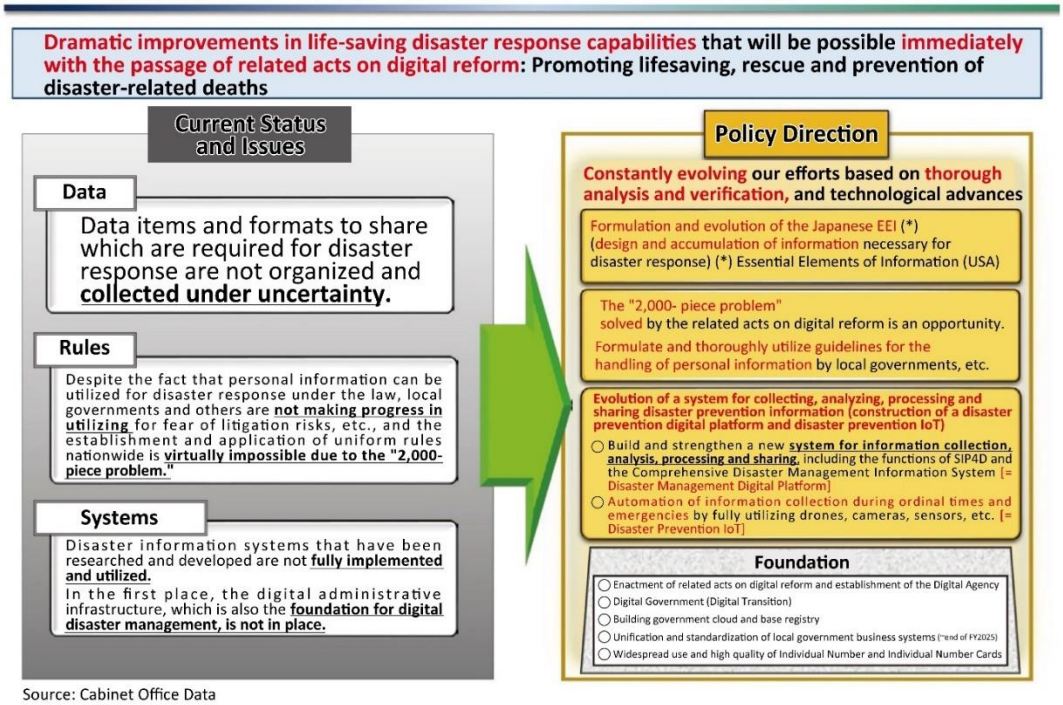
[New Era of Disaster Prevention, Disaster Mitigation and Building National Resilience] Recommendations on Digital and Disaster Management Technology Working Group (Future Vision Team)



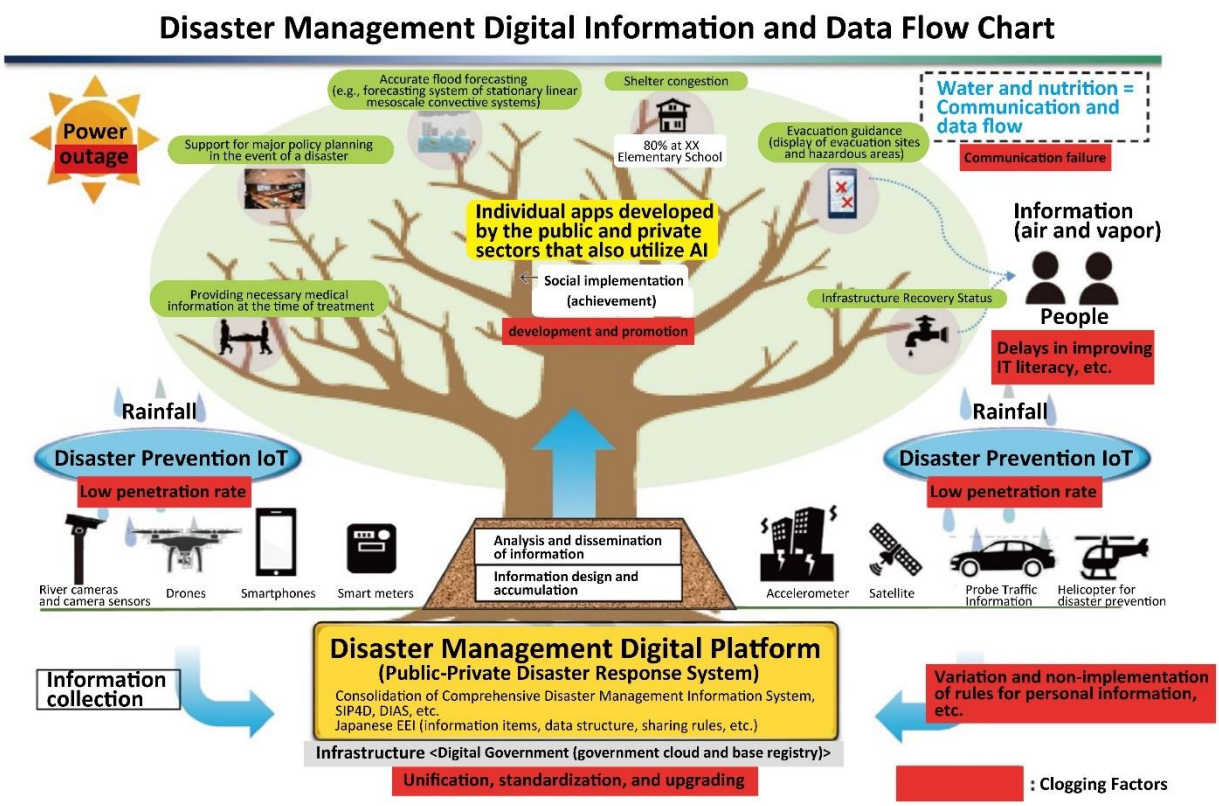
Source: Cabinet Office data

Summary of Recommendations from Digital and Disaster Management Technology Working Group (Social Implementation Team)

[New Era of Disaster Prevention, Disaster Mitigation and Building National Resilience] Recommendations from Digital and Disaster Management Technology Working Group (Social Implementation Team)



Source: Cabinet Office Data



Source: Cabinet Office data

(2) Actions based on Recommendation

1. Measures to Enhance Disaster Response with "Disaster Management IoT" data (e.g. drone cameras)

At disaster sites, the situation is confirmed with not only various types of cameras and disaster management helicopters, but also aerial photographs taken by drones. Investigations into the actual situation are being conducted to help with technical standardization for data formats and device norms to be used so that each disaster management-related organization, including affected municipalities, can appropriately acquire and share the vast and diverse data from IoT used at disaster sites as above.

2. Measures to Establish Guidelines for Handling Personal Information in the Field of Disaster Management

In the past, personal information protection ordinances in each municipality had different rules for handling personal information (the so-called "2,000-piece problem"), but the Related Acts on Digital Reform* will set up common rules, and a system to monitor and supervise the way to handle personal information will also be established in a centralized manner. Taking this opportunity, a study group of experts is currently in progress to establish guidelines for handling personal information by the end of FY2022. The guidelines stipulate the scope of use and points to keep in mind for local governments when they handle personal information during preparation in ordinary times as well as during disaster response.

*The "Basic Act on the Formation of a Digital Society" (Act No. 35 of 2021), the "Act on the Establishment of

the Digital Agency" (Act No. 36 of 2021), the "Act on the Arrangement of Related Laws for the Formation of a Digital Society" (Act No. 37 of 2021), the "Act on the Registration of Deposit and Savings Accounts for Prompt and Secure Implementation of Public Benefit Payment" (Act No. 38 of 2021), the "Act on Management of Deposit and Savings Accounts by Using Personal Numbers Based on the Will of Depositors" ((Act No.39 of 2021)), and the "Act on Standardization of Local Government Information Systems" ((Act No.40 of 2021)).

3. Development of Comprehensive Disaster Management Information System

The Comprehensive Disaster Management Information System is a system designed to share disaster information as geospatial information and support prompt and accurate decision-making by the government in the event of a disaster. However, it is essential to further enhance its information collection and other functions. After reorganizing the role and ideal state of the systems such as SIP4D (Shared Information Platform for Disaster Management), which is operated by the National Research Institute for Earth Science and Disaster Resilience as part of its research and development activities, the next system is going to be operational in FY2024. Currently, the ideal form of this system is being studied by standardizing the information items and acquisition time required in the event of a disaster in conjunction with taking into account the opinions of local governments and other organizations involved in disaster response in order to realize and strengthen functions such as information collection, analysis, processing and sharing.

4-2 Working Group on Reducing Disaster Risk in Advance and Complex Disasters

A five-year acceleration plan has been developed for measures of disaster risk reduction, and national resilience. The measures are about to be accelerated and deepened. In order to discuss the future direction of those measures, the "Working Group on Reducing Disaster Risk in Advance and Complex Disasters" was convened under the Advisory Committee on National Resilience (Disaster Prevention and Mitigation) and the group considered the issues and the options to take for them.

Based on the recommendations compiled from a series of consideration results, the group decided to promote various initiatives related to reducing disaster risk in advance and complex disasters in cooperation and consultation with relevant government ministries and agencies.

（Reference：https://www.cas.go.jp/jp/seisaku/resilience/jizen_fukugou_wg/index.html)

(1) Main Contents of Recommendations

[Measures on Reducing Disaster Risk in Advance]

○ Promoting the Five-Year Acceleration Plan for Disaster Risk Reduction and National Resilience and implementing new vulnerability assessment

The measures on disaster prevention, disaster mitigation and national resilience are to be promoted by the

five-year acceleration plan, and the vulnerability assessment methods for each disaster type are to be considered according to local conditions.

○ Strongly promoting measures against storm surge in Tokyo Bay and against Trench-type Earthquakes in the Vicinity of the Japan and Chishima Trenches

The occurrence of a storm surge indicates that the scale of the disaster will be serious. Therefore, measures should be promoted in the same manner as major earthquake and flood measures. For the case of earthquakes along the Japan and Chishima Trenches, consideration of disaster prevention measures should be promoted by assuming the largest class of earthquake and the damage due to tsunami.

○ Promoting wide-area evacuation at the threat stage based on the Basic Act on Disaster Management

The National Disaster Management Headquarters should be allowed to set up at the threat stage in the near future. The specific studies for the smooth implementation of wide-area evacuation from floods should be promoted.

○ Accelerating river basin management measures through collaborative measures by all stakeholders

Strengthening cooperation between the national government and local governments, improving the rainwater storage function of agricultural land and guiding long-term land use can be raised as examples to achieve river basin management measures.

○ Promoting measures on reducing disaster risk in advance for large-scale earthquake disasters

The following measures have to be taken: (1) securing resources such as equipment and personnel for response to Nankai Trough Earthquake, and (2) promoting measures to prevent fire and elevator entrapment in the event of Tokyo Inland Earthquake.

[Measures on Complex Disasters]

○ Studying complex disaster scenarios such as post-earthquake flooding, and recovery and reconstruction scenarios in the event of a large-scale earthquake

The measures against complex disasters would be supported by disposing disaster debris, setting and providing temporary housing, planning town reconstruction and others.

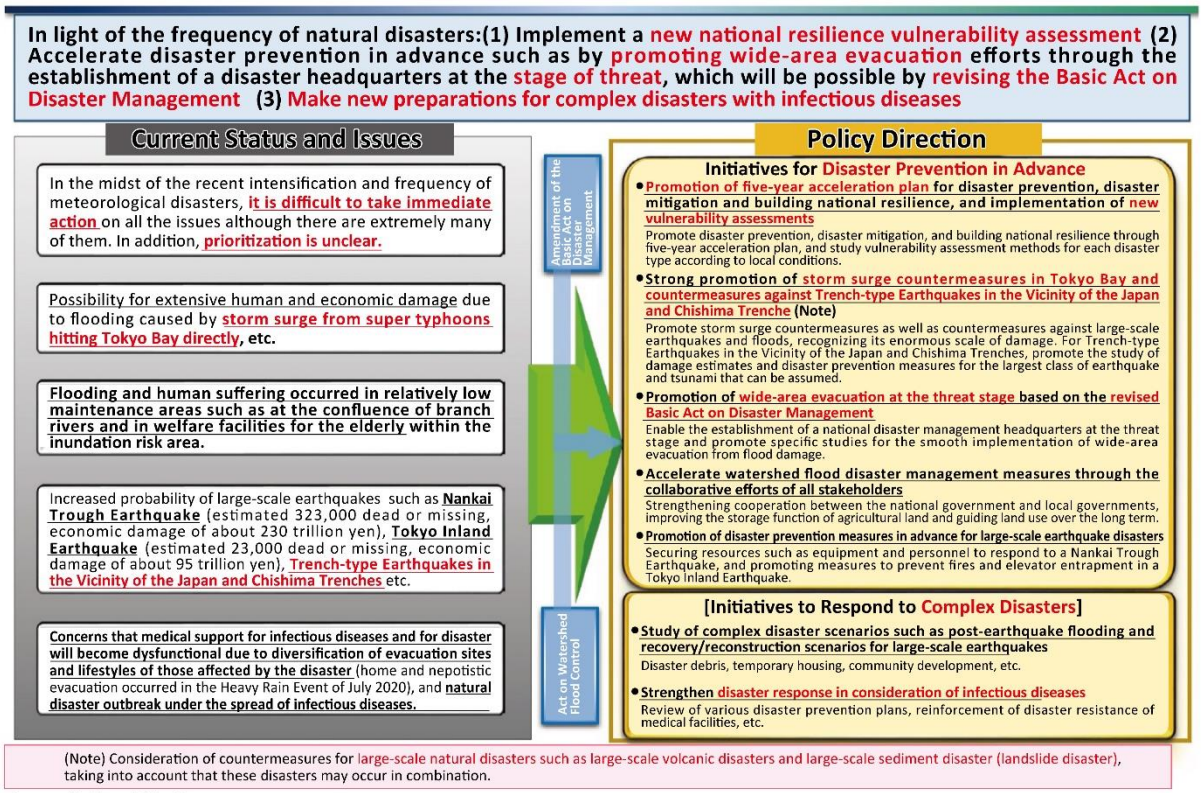
○ Strengthening disaster response in consideration of infectious diseases

The various plans on disaster risk reduction should be reviewed. Medical facilities need reinforcing for disaster resistance, and other measures should be carried out as well.

（Reference：https://www.bousai.go.jp/kaigirep/teigen/pdf/teigen_05.pdf）

Summary of Recommendations from Working Group on Reducing Disaster Risk in Advance and Complex Disasters

[New Era of Disaster Prevention, Disaster Mitigation and Building National Resilience]
Working Group on Reducing Disaster Risk in Advance and Complex Disasters



Source: Cabinet Office Data

(2) Actions based on recommendations

1. To implement a New Vulnerability Assessment

The current vulnerability assessment is conducted based on a flowchart analysis that assumes the worst-case scenario and on an evaluation of key performance indicators (KPIs) of National Resilience Measures. However, there are several issues with these assessment methods. For example, they do not define the level of importance of the flows or the lack of measures along with the differences in vulnerability by region. Thus, it is necessary to study about how to improve the current vulnerability assessment as much as possible before conducting one in the next term. The improvement involves comparing KPIs for resilience measures by region so as to analyze the progress of measures to cope with expected disasters in each region and quantitatively demonstrating the effects of disaster mitigation through the promotion of National Resilience Measures. As such, further study is being carried out for the implementation of the next vulnerability assessment.

2. Promotion of Wide-area Evacuation at the Threat Stage based on the Basic Act on Disaster Management

In May 2021, the "Basic Act on Disaster Management" was partially amended, and the provisions have been

stipulated including: (1) the establishment of National Disaster Management Headquarters at the stage when a disaster is likely to occur, (2) consultations on wide-area evacuation by mayors of municipalities and prefectural governors and (3) requests for transportation by prefectural governors. In June of the same year, following the outcome of the investigation by the "Study Group on Extensive Evacuation from Large-Scale Flood Disasters in Metropolitan Areas", a report titled the "Concept of Resident Evacuation in the Event of Large-Scale Flooding and Future Action Policies: Study Case of the Lower Arakawa River Area and Its Vicinity" was published. This report has manifested some directions in terms of: (1) the concept of evacuating residents in the event of a large-scale flood, (2) the establishment and operation of wide-area evacuation sites prepared by the administration, (3) securing evacuation means and guidance by the administration, (4) spreading awareness to the residents about the concept of evacuation in the event of a large-scale flood, (5) the concept of cost burden for wide-area evacuation, and (6) inter-agency collaboration and role sharing in the consideration of future wide-area evacuation.

（Reference: https://www.bousai.go.jp/fusuigai/suigaiworking/pdf/suigaiworking/dai6kai/shiryo.pdf)

3. Enhancement of Disaster Response in consideration of Infectious Diseases

Since the spring of 2020, Japan has been under a nationwide outbreak of COVID-19 as well as other countries, and has been forced to respond to natural disasters in such a situation. In order to facilitate such disaster response, the government has organized and publicized various guidelines and notices. Specifically, the "Guidelines for the Establishment and Management of Shelters with Consideration for COVID-19 Countermeasures (Third Edition)" (June 2021, the Cabinet Office, the Fire and Disaster Management Agency, the Ministry of Health, Labour and Welfare, and the Ministry of the Environment) provides local governments with specific procedures for managing shelters and promotes them to conduct drills, securing safety. In addition, in the Notice titled "Securing Shelters from the Stage of Threat of Disaster under COVID-19 (August 2021)" (the Cabinet Office, the Fire and Disaster Management Agency, the Ministry of Health, Labour and Welfare, and Japan Tourism Agency), it was announced and disseminated that the local governments likely to be affected by the disaster need to secure as many shelters as possible according to the circumstances. By this Notice, actions were taken for issues such as securing shelters from ordinary times, providing information on shelters and taking measures against infectious diseases at shelters. Further, in the Public Notice "Future Countermeasures against COVID-19 in Shelters Based on the Responses to the Heavy Rain Event in July and August of 2021 and the Current Situation of COVID-19" (September 2021) (the Cabinet Office, the Fire and Disaster Management Agency, and the Ministry of Health, Labour and Welfare), the experiences and know-how gained in affected areas in response to the heavy rainfall event, and actions have been shared. For example, the following actions have been taken to settle issues: confirming the latest status of COVID-19 countermeasures in shelters by experts, and implementing COVID-19 countermeasures in shelters and improving living environments in conjunction with responding to housebound patients in the event of a disaster.

*Guidelines for the Establishment and Management of Shelters with Consideration for COVID-19 Countermeasures

(Third edition)

(Reference: https://www.bousai.go.jp/taisaku/pdf/corona_hinanjo03.pdf)

*Securing Shelters from the Stage of "Threat of Disaster" under COVID-19 (Notice)

(Reference: https://www.bousai.go.jp/pdf/210803_corona_hinanjo.pdf)

*Future Measures against COVID-19 in Shelters Based on the Responses to the Heavy Rain Event in July and August of 2021 and the Current Situation of COVID-19 (Public Notice)

(Reference: https://www.bousai.go.jp/pdf/210927_corona_hinanjo.pdf)

4-3 Working Group on Disaster Risk Reduction Education and Public Awareness

In order for all citizens to protect their own lives from disasters, it is extremely important that each citizen is able to take appropriate actions in the event of a disaster. Therefore, in order for children to acquire the necessary disaster risk reduction knowledge and proactive disaster risk reduction behavior from childhood, it is necessary to develop practical disaster risk reduction education throughout the country. In addition, in order to ensure that lives saved from disasters are not lost as disaster-related deaths during post-disaster evacuation life and for affected people to live a dignified evacuation life, it is effective to raise awareness of mutual assistance among the public and organize an improved evacuation life environment by enhancing support from motivated disaster volunteers.

In order to study these issues, which are related to disaster risk reduction education and disaster volunteers, the Cabinet Office held a "Working Group on Disaster Risk Reduction Education and Public Awareness." In this working group, two teams were established: one is the "Disaster Risk Reduction Education Team" to study the contents to be developed and the effectiveness of disaster risk reduction education, and how to spread the educational contents. The other is the "Disaster Volunteer Team" to study a mechanism to motivate local disaster volunteers for improving their skills necessary for the support of evacuation life such as the management of local shelters so that evacuation life can be improved. Based on the recommendations compiled by each team, it was decided that measures related to disaster risk reduction education and disaster volunteerism would be promoted in cooperation and consultation with relevant government ministries and agencies.

*Working Group on Disaster Risk Reduction Education and Public Awareness (Disaster Risk Reduction Education Team)

(Reference: https://www.bousai.go.jp/kaigirep/kyoikuWG.html)

*Working Group on Disaster Risk Reduction Education and Public Awareness (Disaster Volunteer Team)

(Reference: https://www.bousai.go.jp/kaigirep/wg/kyoikuWG_sgteam/kyoikuWG_sgteam.html)

(1) Disaster Risk Reduction Education Team

1. Outline of the Recommendation

Based on good practical examples as well as the present conditions and issues surrounding disaster risk reduction education at schools and communities, the following educational programs were listed to be achieved in the future in order for all children to acquire the capability to protect their lives from disasters:

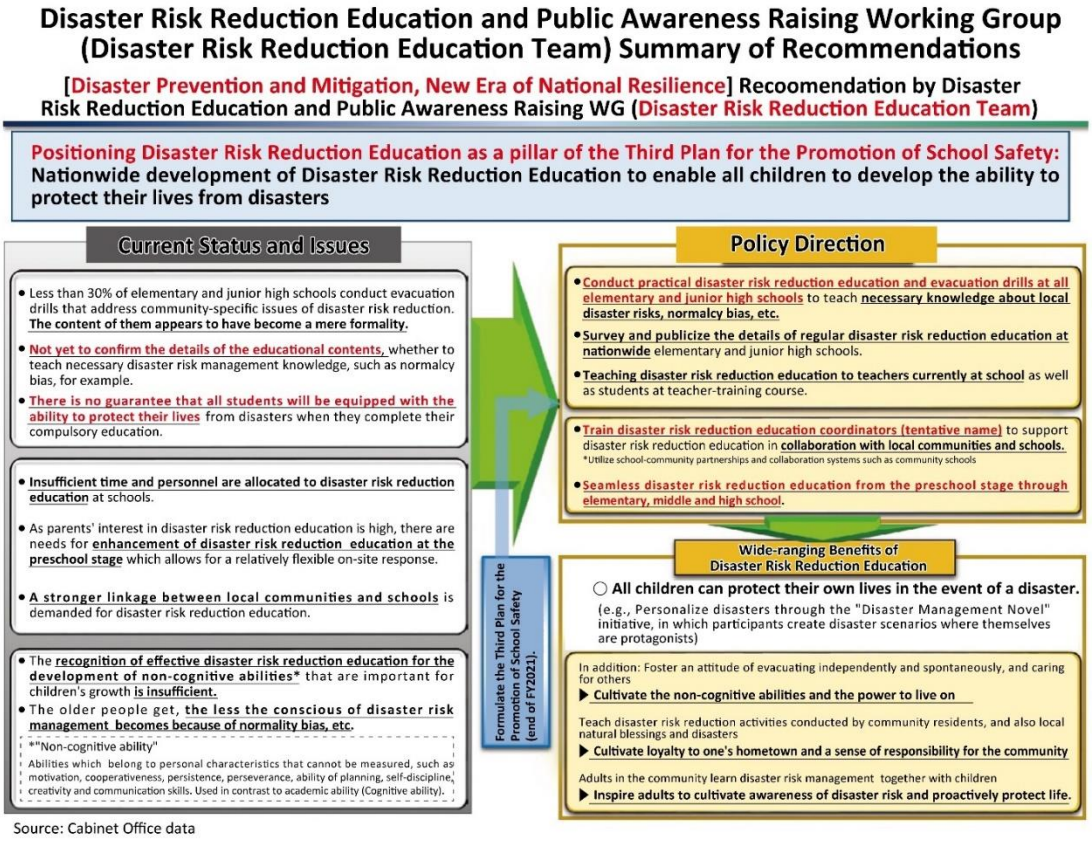
- Implementing practical disaster risk reduction education and evacuation drills in all elementary and junior high schools to teach necessary knowledge such as local disaster risks and normality bias.
- Conducting evacuation drills which place the highest priority on saving lives that lead people to respond to unexpected situations.
- Disaster risk reduction education to assume oneself concerned.
- Cultivating an attitude to evacuate independently and spontaneously, and a charity for others through disaster risk reduction education.

Also, in order to deliver the above programs, the following methods were listed:

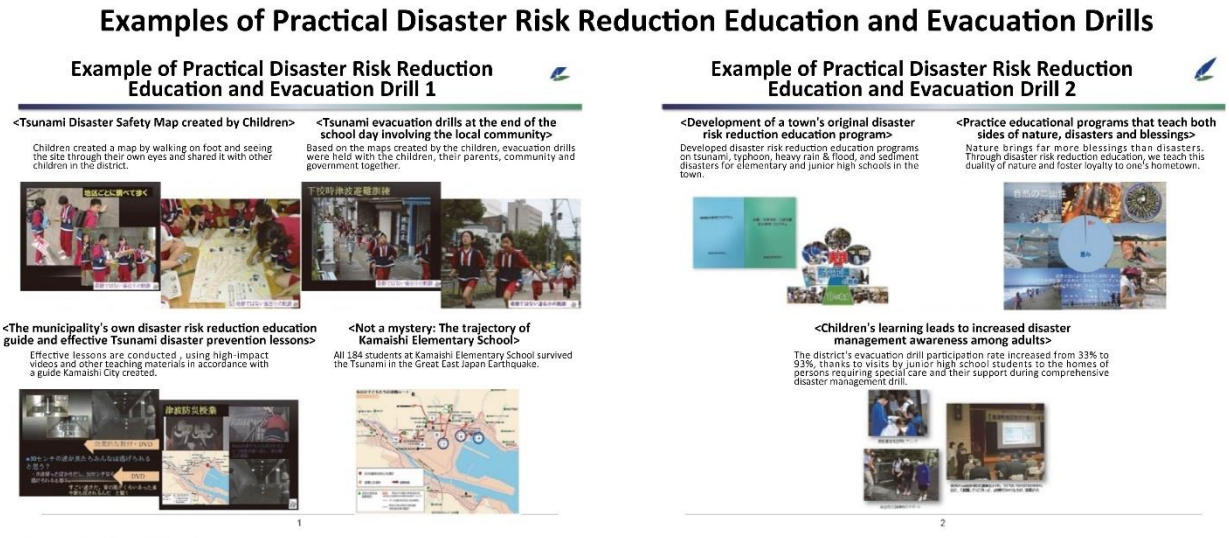
- Visualizing efforts through periodic surveys on the implementation status of disaster risk reduction education and evacuation drills.
- Preparing a guide on disaster risk reduction education and teaching materials with high-impact on various disasters for teachers and teacher-training programs.
- Promoting the implementation of disaster risk reduction education through collaboration between local communities and schools.
- Enhancing disaster risk reduction education at a preschool stage when parents are highly interested in it and comparatively flexible for on-site responses. Also, implementing disaster risk reduction education seamlessly at preschool, elementary school, junior high school and high school.

Meanwhile, the wide-ranging effects of disaster risk reduction education are being investigated such as non-cognitive abilities including humanity and the power to live on, the loyalty for one's hometown and the sense of responsibility for the community, all of which can be fostered through disaster risk reduction education. Also, the significance and necessity of disaster risk reduction education are currently reviewed and summarized.

(Reference: https://www.bousai.go.jp/kaigirep/teigen/pdf/teigen_06.pdf)



Source: Cabinet Office data



Source: Cabinet Office data

2. Actions based on Recommendation

The contents of the recommendation above were reflected on the "Third Plan for the Promotion of School Safety," which was approved by the cabinet decision in March 2022. The government has started working on the preparation of the guidelines so that the practical disaster risk reduction education and evacuation drills can be implemented to teach the necessary knowledge such as local disaster risks and normality bias. Some guidelines are going to be provided to teachers who are approaching future goals in disaster risk reduction education, and

other guidelines will cover the contents to promote disaster risk reduction education in cooperation between local communities and schools.

(2) Disaster Volunteer Team

1. Outline of the Recommendation

In recent years, natural disasters have become more severe and more frequent, and disaster-related deaths accounted for 80% of the deaths in the 2016 Kumamoto Earthquake. Thus, improving the evacuation living environment is an urgent issue in our super-aged society.

Under these circumstances, disaster volunteers and NPOs with excellent skills of disaster relief are increasing little by little to assist affected people. They usually rush to the affected areas to provide support on evacuation life and play a major role in improving the functions of shelters and living environments. However, the number of such NPOs in Japan is still small, and their activities are not necessarily well known. In addition, local governments and local residents do not fully understand such NPOs or other organizations.

In the event of a large-scale disaster, municipalities that are responsible for setting up and operating shelters face a variety of tasks, which makes it difficult to secure sufficient human resources to support evacuation life. And some members of staff with limited experience in disaster response do not always possess sufficient skills to support evacuation life. Furthermore, in the event of a large-scale disaster, it is difficult to gather disaster volunteers from wide areas, and it is also anticipated that there would be difficulty in accepting disaster volunteers from outside the affected area due to infectious diseases or other factors.

Based on the current situations, in order to enhance support for evacuation life and improve the evacuation living environment, it is important to build a system to collaborate and cooperate with capable disaster volunteers and NPOs that can appropriately support evacuation life as municipalities encourage evacuees (residents) to manage shelters on their initiative. To achieve this, it is necessary to increase the number of disaster volunteers in each region who are highly skilled in assisting evacuation life.

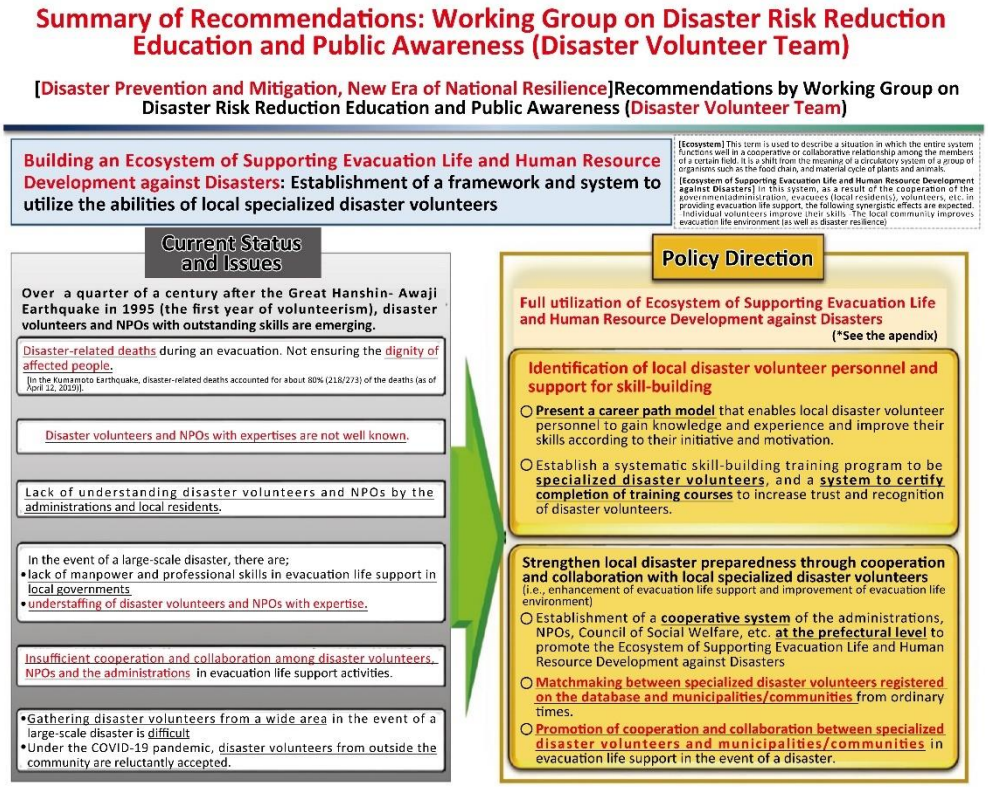
Considering the above, it was suggested that an "Ecosystem of Supporting Evacuation Life and Human Resource Development against Disasters" with the following pillars be buiilt:

- Introducing a systematic skill-building training system to identify human resources for local disaster volunteers, and enhance trust and recognition of disaster volunteerism.
- Identifying where volunteer disaster personnel with certain skills are and matching them with local municipalities in order to set the occasion for volunteer activities.
- Improving community disaster resilience through collaboration and cooperation among local skilled disaster volunteers, municipalities and local residents.

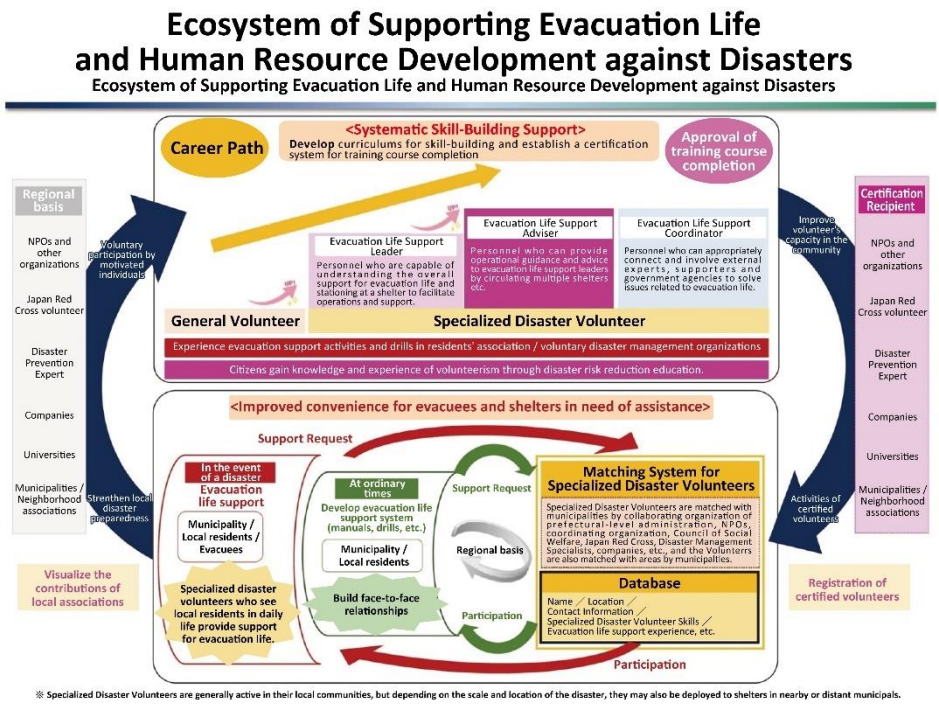
By introducing these above, it is expected that the government, evacuees (local residents), volunteers and others involved will collaborate in providing support for evacuation life. This will lead a synergistic effect where

individual personnel improve their skills, and local communities improve the evacuation living environment and community disaster resilience.

(Reference: https://www.bousai.go.jp/kaigirep/teigen/pdf/teigen_07.pdf)



Source: Cabinet Office Data



Source: Cabinet Office data

2. Actions based on Recommendation

In October 2021, in order to buildt an "Ecosystem of Supporting Evacuation Life and Human Resource Development against Disasters," a study group was established to give concrete form to this recommendation. The group is working to develop a training curriculum and other materials through interviewing NPOs, experts, local governments, related organizations and others who are familiar with evacuation support. The group is also discussing the possibility of implementing model training programs for motivated prefectures during FY2022. Through the concretization of this recommendation, the skill of local volunteer human resources and community disaster resilience will improve to make the living environment in shelters and other such facilities better.

【Column】

Recommendation of the Women's Association for Disaster Management

Regarding disaster response from gender perspectives, women have been involved in the management of shelters and the provision of relief supplies according to woman's needs, and the national government has also strengthened measures to support such efforts. However, the current situation about caring for women in the affected area is not enough, and the national and local governments have very few female officials in disaster management. In order to improve this situation, the "Women's Association for Disaster Management" was formed in the Cabinet Office in December 2020 by female employees from Disaster Management Bureau and the Gender Equality Bureau.

The Women's Association for Disaster Management collected materials, interviewed local government officials and NPOs and conducted a survey with the staff at the Cabinet Office's Disaster Management Bureau. Through these efforts, the Women's Association for Disaster Management made a recommendation to implement disaster management from women's perspectives and brought it up to the former Minister of State for Disaster Management Okonogi in May 2021.

The recommendation is composed of two chapters. In Chapter 1, to enhance support for affected people from women's perspectives, it points out important measures in "Women's Perspective for Strengthening Disaster Response Capabilities - Guidelines for disaster preparedness and reconstruction from the perspective of gender equality -" by the Cabinet Office's Gender Equality Bureau such as prevention of sexual violence and domestic violence at shelters along with active engagement of female members in making Disaster Management Plans in the National and Local Disaster Management Councils. It also requests to amend the "Shelter Management Guidelines" written about the services in shelter management. Chapter 2, to enhance the disaster management system so as to incorporate gender perspectives, emphasizes the importance of: (1) encouragement for improving the work environment of disaster management officials, (2) increasing the percentage of female officials responsible for disaster management in the national and local governments, (3) helping all disaster management officials including males to deepen understanding of disaster management from gender perspectives, (4) urging cooperation and coordination of the departments of the Disaster Management and Gender Equality, and (5) making a stronger network among disaster management human resources in various organizations.

Reflecting the recommendation, the national government added the item of prevention of sexual violence and domestic violence at shelters along with the item of increasing the proportions of women in Local Disaster Management Councils to the Basic Disaster Management Plan (National Disaster Management Council Resolution, May 25, 2021). Also, the proportions of women was raised to 33% (three out of nine members) and female expert ratio to 56% (five out of nine members) in the National Disaster Management Council and Disaster Management Implementation Committee (except for ministerial members) respectively. Furthermore, in June 2021, the Minister of State for Disaster Management and Minister of State for Gender Equality delivered a joint message about

promoting disaster management and mitigation from gender perspectives to local governments nationwide.
（Reference： https://www.bousai.go.jp/kyoiku/joshi/index.html
https://www.bousai.go.jp/r30611message.html)