

**Strategy for Enhancing the Synergy  
between Climate Action and Disaster Risk Reduction  
in the Era of Climate Crisis:  
Shifting from Restoring the Status Quo to “Adaptive Recovery”  
(Joint message)**

Recently, the frequency and severity of climate-related disasters have intensified. We have entered an era that should be known as a “Climate Crisis,” where the impact of climate change has become a reality and unprecedented disasters frequently occur in various locations. Therefore, Cabinet Office's Disaster Management Bureau and the Ministry of the Environment have worked together to examine how best to implement disaster risk reduction (DRR) measures considering climate change risks. Based on this joint effort, in this message we lay out effective strategies for coordinated measures for climate change and DRR.

1. Climate action and DRR are cross-cutting challenges and should be addressed on all fronts. Going forward, in each policy area, we will strive to incorporate and mainstream climate action and DRR in the policymaking process.
2. All stakeholders will advance climate action and DRR on all fronts in an integrated manner. We will improve infrastructure and promote effective land use and national spatial planning by implementing both structural (hard) measures and non-structural (soft) measures, to deal with complex risks not only from climate-related disasters but also from other threats such as infectious diseases and heat stroke.

We will thus not be confined to the idea of restoring the affected area to the way it was before the disaster struck. Learning from historical wisdom to deal skillfully (*inasu*) with disasters by means of taking advantage of natural

traits, we will aim for a society that “deals skillfully (*inasu*) with disasters and recovers immediately” conveying the idea of “Adaptive Recovery” by implementing resilient measures including the control of land use where communities can ensure adaptation to climate change. To that end, in order to respond promptly after a disaster, we will look ahead and study and share a reconstruction image of society before a disaster strikes, and promote pre-disaster reconstruction efforts aiming to ultimately “build back better.”

3. In addition to disaster prevention efforts (public assistance (*ko-jo*)) by the government, we will raise awareness among citizens, businesses, and others, of the climate crisis and foster a sense of self-help (*ji-jo*), “protecting our own lives by ourselves” and mutual-assistance (*kyo-jo*), “everyone helping each other to survive” in preparation for disasters. We will also promote coordinated actions among various stakeholders including citizens, volunteers, businesses, and governments by raising awareness of disaster risks at local levels and ensuring implementation of proper disaster prevention and response actions such as evacuation whenever a disaster strikes that area.
4. Japan will lead globally in realizing a system or an arrangement of practical cooperation between the departments in charge of climate action and those of DRR and share that experience with other countries. Bringing together the three pillars of the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the Sustainable Development Goals (SDGs) and realizing the synergy between climate action and DRR, we aim to achieve them simultaneously. Through making full use of Japan’s disaster experience, and DRR and environmental technologies, we will further activate our engagement in DRR efforts in other countries and promote international cooperation by both public and private sectors.

Hereafter, by implementing this strategy, we will enhance Japan's resilience to disasters and at the same time, contribute to the international efforts on climate action and DRR. Our path is shifting from restoring the status quo to "Adaptive Recovery." Undaunted by the intensifying disasters in the era of the climate crisis, we commit to protect the lives, assets, and culture of everyone.

30 June, 2020

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## 1. Background

The world's carbon dioxide (CO<sub>2</sub>) concentration has increased 1.5 times from about 280 ppm before industrialization to about 410 ppm currently. Climate change has become a reality and has led to frequent climate-related disasters around the world. In Japan, the number of days of heavy rain with daily precipitation of 200 mm or more has increased about 1.7 times compared to the beginning of the 20th century, and the frequency and intensity of heavy rain have increased. Climate-related disasters have become more severe and frequent as observed in events such as the Heavy Rain Event of July 2017 in Northern Kyushu, the Heavy Rain Event of July 2018, and Typhoon Hagibis in October 2019. It is predicted that the frequency of heavy rain and floods will continue to increase due to climate change, and we need to recognize that we have entered an era in which unprecedented climate-related disasters will occur frequently all over Japan.

As a result of continuous improvement of DRR infrastructure up to now, Japan's DRR capacity has steadily improved and disaster damage has been reduced. However, we should not underestimate the existing disaster risks, and rather than being constrained by the scale of past disasters, we must remain alert to the possibility of even greater risks. Since existing infrastructure has been developed based on the scale of the past disasters, climate change may cause disasters that upend all conventional assumptions. People need to change their mindset to understand this reality and take appropriate actions to protect their own lives. We also need to be mindful that various social factors affect our preparedness for disasters. We have more people requiring assistance during disasters, while fewer people can lend their support due to declining population, declining birthrate, and increasingly aged population. Population concentration in cities is aggravating disaster risks in these cities. In addition, the COVID-19 pandemic has made us aware of the need to prepare for the combined risk of infectious diseases and natural disasters.

To manage disasters in such an era, we must put in place drastic DRR measures that take climate change risks into consideration. To fulfill the most fundamental mission assigned to governments and administrative bodies, which is to protect the lives, assets, and culture of the people, we hereby lay out our strategy for effectively promoting coordinated measures for climate change and DRR based on

projection and assessment of climate change and its impacts while comprehensively grasping various social issues, and envisioning the achievement of the SDGs.

## 2. Mainstreaming the synergy between climate action and disaster risk reduction

Climate action and DRR are cross-cutting challenges and need to be addressed on all fronts. In the same way that adaptation measures can improve disaster preparedness by anticipating climate change risks, minimizing the risk of climate change itself should be considered as an equally important DRR measure. Therefore, we must promote mitigation measures to reduce greenhouse gas emissions in parallel. Going forward, in each policy area, we will strive to incorporate and mainstream the synergy between climate action and DRR in the policymaking process.

Due to economic and population growth, people have found themselves living and undertaking economic activities even in areas at high risk of disasters. This has resulted in increased vulnerability to disasters and led to an over-reliance on structural (hard) measures to protect local communities. In addition, it is undeniable that we have been inconsistent in promoting efforts that stimulate energy consumption and CO<sub>2</sub> emissions, while simultaneously taking actions to mitigate those emissions. We must redesign these types of incoherent economic and social structures.

Therefore, we need to set goals for climate action and DRR in the policies and plans of all sectors, and take a holistic approach incorporating climate action and DRR in addressing local challenges through community development and management. In this way, we must build a highly disaster-resilient society that is “climate-proof,” while transitioning to a decarbonized society.

### 3. Promoting comprehensive measures for a decarbonized and highly disaster-resilient society

In an era in which unprecedented climate-related disasters occur frequently, all stakeholders must act on climate change and DRR on all fronts in an integrated manner deploying various approaches. We must not only manage climate-related disasters that are likely to increase due to future climate change, but we must also address various other threats, such as infectious diseases and heat stroke, which will bring about complex, multi-hazard risks. Therefore, it is necessary to promote national spatial planning, infrastructure improvement, appropriate land use, and social reform through enhancing and utilizing scientific knowledge on climate change impacts, deploying various structural (hard) and non-structural (soft) measures, and promoting climate change adaptation and mitigation measures.

#### <Distributed national spatial planning>

Historically, cities in Japan have been built alongside rivers and in coastal areas. Therefore, they tend to be vulnerable to flood risks caused by climate change. To reduce enormous national-scale risks of mega-flooding in major cities like Tokyo and Osaka, decentralization of the urban population and industry needs to be promoted. Together with encouraging businesses to relocate to other areas and establish multiple bases, more in-depth studies are needed on how to use national land that is vulnerable to disasters, in full consideration of projection and assessment of climate change and its impacts. The concept of “from concentration to decentralization” is also an essential aspect of transforming the country into a state more resilient to infectious diseases in light of the current COVID-19 crisis.

#### <Improvement of infrastructure and control of land use>

Infrastructure should be improved based on standards and plans that factor in climate change. Strategic withdrawal from areas vulnerable to disasters must be promoted through land-use control policies to avoid habitation and building structures in restricting development in high risk areas for flood and landslides, and encouraging plans to relocate existing houses to safer areas, based on the concept of “avoid living in high risk areas.” In doing so, we also need to consider the impacts of the declining population.

In addition, it is essential to change popular perceptions regarding land use by visualizing disaster risks using geographic information systems (GIS) for climate change risk information and deploying GIS and 3D imaging for disaster history information. Crucially, lifestyles must be transformed to adapt to disaster risks, while promoting a city planning system that allows DRR measures to be implemented locally, as well as strengthening the function of public facilities, such as schools, as disaster prevention and evacuation centers.

In the 201st ordinary session of the Diet, amendments were made to the City Planning Act, among others, to strengthen regulations on development. Continuous review and improvement of city planning and land use systems, from the perspective of strengthening DRR measures, are needed.

#### <Green infrastructure and Eco-DRR>

Developing infrastructure and controlling land use should be compatible with conservation of the natural environment. Japan has a long history of fighting floods, and has developed traditional techniques for making use of the traits of nature and local areas to control rivers such as utilizing the water retention capacity of forests, traditional flood controls (*kasumitei* open levees) that ensure integration between rivers and farmlands, and constructing reservoirs for strategic flood storage. For example, Takeda Shingen tried to manage the flood risks of the Kamanashi River, the so-called rampage river, by controlling the water force with natural objects and building discontinuous dikes in double and triple layers so that it became easier for water to flow back to the Kamanashi River, even if it flooded, thereby minimizing any damage. In addition, flood protection forests such as zelkova were installed to maintain the riverbanks. Kato Kiyomasa combined natural terrain and artificial excavation to prevent deposits of volcanic ash from the Aso volcano from accumulating, as this was the cause of flood of the Shirakawa River. These forests and water retention basins have been managed by taking advantage of natural traits and have also contributed to protecting habitats for wildlife in those areas.

Learning from historical wisdom to deal skillfully (*inasu*) with disasters by way of land use control and community development, we should

earnestly promote “green infrastructure”<sup>1</sup> and “Eco-DRR”<sup>2</sup> to reduce disaster risk by utilizing diverse ecosystem services. It is important to develop such approaches nationwide, starting from confirmed effective examples, and building on good practices within and outside Japan. For example, in urban areas, “rain gardens” whereby rainwater infiltrates into the ground, and urban greening that could alleviate the heat of cities can be options for deployment. In river basins, conservation/ restoration of wetlands that could function as reservoirs may be considered. In addition, as such infrastructure normally functions as local recreation sites and tourism resources, it can strengthen community ties through activities as well as vitalize local communities, foster awareness for mutual-assistance in times of disaster, and eventually contribute to the formation of attractive local communities.

#### < Digital transformation (DX) and response to complex risks >

In response to the COVID-19 crisis, there has been major progress in the digitalization of society (i.e. digital transformation (DX)) with the enhancement of various online services and an uptake in teleworking to reduce physical contact among people. This social change is also advantageous for DRR as it could lead to, for example, refraining from going out and switching to working at home when a disaster strikes. We also expect that DX will reduce energy consumption related to the movement of people, and therefore, it is important to maximize these positive effects. In addition, disasters have intensified recently in frequency and severity, and so one key way to manage these more effectively and efficiently is to make active use of new technologies, for example, in providing disaster risk and evacuation information, as well as assessing any damage.

In addition, in the event of a disaster, it is crucial to be mindful of the

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<sup>1</sup> An initiative to promote sustainable and attractive land, city, and community development by utilizing the diverse functions of the ecosystem services both in structural (hard) and non-structural (soft) measures in social capital development and land use planning.

<sup>2</sup> The idea focuses on the aspect of DRR in green infrastructure, aiming to avoid developing land that is vulnerable to natural hazards and reduce exposure of human lives and assets to dangerous natural phenomena (i.e. avoid exposure) and creating disaster-resilient areas by utilizing diverse functions of the ecosystems through sustainable management, conservation, and restoration of ecosystems (thus reducing vulnerability).

risks of infectious diseases and heat stroke at evacuation centers. To prevent the spread of infectious diseases, we will increase the number of evacuation centers, make use of hotels and accommodations, secure ventilation and enough space for each person at evacuation centers, set up facilities to ensure hygienic conditions, and promote measures to encourage hand washing and cough etiquette. To prevent heat stroke, we will also utilize the heat stroke warning alert system that will be fully introduced from next fiscal year.

<Integrated promotion of adaptation and mitigation measures>

To minimize the impact of climate change, it is indispensable to promote transition to a decarbonized society through mitigation measures (i.e. reducing greenhouse gas emissions) while simultaneously implementing adaptation actions. Zero Carbon Cities, which aim for net zero carbon emissions by 2050, are increasing in number, and we must further support this effort. From this viewpoint, Installation of renewable energy systems that make use of local resources must be accelerated. Co-benefits of mitigation and adaptation are possible by accelerating efforts to install renewable energy facilities at public facilities, buildings, and houses that can be used as evacuation centers and disaster prevention bases, and in certain blocks. Such co-benefits may also come from developing or renovating solid waste treatment facilities that can be used as energy centers supplying energy to the communities in the event of disasters, and introducing electric mobility that can be used as a storage battery during such occasions.

<Towards a society that “deals skillfully (*inasu*) with disasters and recovers immediately”>

By implementing the comprehensive measures described above, we will aim for a society that can minimize any damage caused by disasters, given that they are unavoidable, while being resilient, safe, secure and sustainable with the ability to become even more resilient and attractive after recovering from disasters; that is, a society that “deals skillfully (*inasu*) with disasters and recovers immediately.”

When recovering from a disaster, we must not be confined to simply restoring the affected area to the way it was before the disaster struck; rather, we must respond to disasters conveying the idea of “Adaptive Recovery” by implementing resilient measures including the control of land use where communities can ensure adaptation to climate change. We will act before the disaster occurs, looking ahead with local

stakeholders, to study and share a reconstruction image of society and the places we live in before a disaster strikes. In doing so, it is important to give full consideration to climate change, social changes such as demographic change, and good practices such as green infrastructure. Through such efforts, we aim to “build back better” and bring hope for the future to any disaster-struck areas.

#### 4. Transforming awareness, facilitating behavior change and preparedness for emergencies, and promoting collaboration among citizens, businesses, and communities

<Promotion of self-help (*ji-jo*) and mutual-assistance (*kyo-jo*)>

To create a society that “deals skillfully (*inasu*) with disasters and recovers immediately,” citizens and businesses must break free from an attitude of “I’ll be safe” and be always prepared for disasters. Each one of us should recognize that climate change could cause unexpected and overwhelming climate-related disasters. We must take actions for transforming awareness of the population towards DRR so that everyone has a sense of self-help (*ji-jo*), “protecting our own lives by ourselves” and mutual-assistance (*kyo-jo*), “everyone helping each other to survive.” All of us must start checking local hazard maps during normal times to know the disaster risks at home, in the workplace, and in our local community, so as to gain a proper understanding of what appropriate disaster prevention actions to take, such as evacuation, when a disaster occurs. Furthermore, to connect citizens' awareness of disaster prevention to appropriate actions such as evacuation, we will examine new measures for facilitating behavior change based on behavioral science.

Sharing DRR knowledge and actions in communities and workplaces is needed to enhance their resilience against disasters, always keeping in mind that climate-related disasters could occur in an unprecedented scale and character. For effective DRR, each community should develop a community disaster management plan as well as preparing tailored plans for individuals who need special assistance for evacuation during a disaster. Meanwhile, businesses should make a business continuity plan (hereinafter referred to as “BCP”). To facilitate formulation of community disaster management plans, human resources at local governments should be secured, and a system should be developed for assisting local planning efforts by volunteer groups working on disaster prevention and other community management organizations. For individual plans, coordination with welfare professionals is vital, whereas for corporate BCP, it will be crucial to gain support from industry groups, which support each company, and local communities.

Furthermore, we must recognize that appropriate actions on disaster prevention and evacuation cannot be taken without knowledge on

disaster prevention under the actual local conditions. We must create an environment in which all generations, from children to the elderly, can learn and understand climate change and disaster prevention at the community level. This can be achieved by providing opportunities for hands-on activities such as engagement in formulation of community disaster management plans and local climate change adaptation plans. We will also utilize the National Conference on Promoting Disaster Risk Reduction to promote public awareness of climate action and DRR.

Citizens and businesses should also make efforts to prepare for disasters in normal times, such as securing evacuation sites, and preparing for rehabilitation of their livelihoods from a disaster through arranging insurance or mutual aid programs.

< Promotion of cooperation among stakeholders >

To enhance effectiveness of DRR efforts and disaster responses, awareness of mutual-assistance among all stakeholders must be fostered along with appropriate actions. Taking flood control as an example, not only river managers but also residents, and people working in that area should work together. A local business may contribute to DRR by providing evacuation sites to the residents. Public-private partnership in the support of affected people among local governments, private businesses, support-groups such as NPOs, and volunteers could be effective in disaster responses. Efforts like this can enhance the community capacity for DRR, so we should promote these activities further.

For instance, Nagano Prefecture sustained damage from Typhoon Hagibis in 2019, and many people, including citizens, volunteers, support groups, local governments, the Ministry of the Environment, the Self-Defense Forces, private businesses, and other stakeholders in the public and private sectors collaborated under the slogan of “One NAGANO.” The campaign provided effective support for affected people including collection and transportation of disaster waste. Such collaborative efforts should be rolled out nationwide.

In relation to disaster waste disposal, we will not only support the formulation of disaster waste disposal plans by local governments, but also encourage training for collaboration among stakeholders during normal times so that an effective framework for public-private

cooperation such as the one formed under “One NAGANO” will be developed smoothly in the aftermath of a disaster. Furthermore, based on last year’s experience, the Ministry of the Environment and the Ministry of Defense will strengthen their partnership even in normal times so that they can smoothly take initial actions based on the cooperation manual currently being prepared by the Ministry of the Environment and the Ministry of Defense with the Self-Defense Forces.

The synergy between climate action and DRR will be more effective if practical collaboration is ensured among the departments in charge of DRR, city planning, and the like and the departments for climate action at municipality and prefecture levels by breaking down the siloed approach. Therefore, cross-sectoral communication is essential. To facilitate such cooperation, leadership from the heads of local governments and departments of planning and coordination is very much expected.

## 5. Promoting international cooperation

Climate action and DRR are global challenges and closely linked with other key issues such as poverty, food, and national security. The SDGs cannot be achieved without addressing climate change and DRR. Japan is a country with advanced DRR measures and a long history of DRR efforts to deal with many disasters, as well as making significant contributions to international DRR efforts. In 2015, Japan hosted the UN World Conference on Disaster Risk Reduction and took the lead in the adoption of the Sendai Framework for DRR. Furthermore, since the adoption of the Kyoto Protocol in 1997, Japan has been playing a key role in promoting global climate actions, including international cooperation in the Asia Pacific region.

To promote DRR as climate action in line with SDG policies, what the world really needs is a system or an arrangement of practical cooperation between departments in charge of climate action and those in charge of DRR. Japan should take the global lead in realizing such a system and share that experience with others. Bringing together the three pillars of the Paris Agreement, the Sendai Framework for Disaster Risk Reduction, and the SDGs through the synergy between climate action and DRR, the Ministry of the Environment and Cabinet Office's Disaster Management Bureau aim to achieve them simultaneously in collaboration with other relevant Ministries and international agencies such as the UNFCCC Secretariat and the UNDRR.

The world's intensifying disaster risk should be viewed as an opportunity for Japan to share its DRR technologies and practices to enhance DRR capacities in other countries. We should revitalize the Japan International Public-Private Association for Disaster Risk Reduction (JIPAD) with the support of the Asian Disaster Reduction Center which has a strong network in the region on DRR. Furthermore, we will enhance international adaptation efforts through the Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT) as well as promoting collaboration among such platforms.

We will lead the world in mainstreaming the synergy between climate action and DRR, while promoting pre-disaster investments in DRR and taking actions for emergency responses and restoration. We will also promote international cooperation for developing countries on

DRR infrastructure and capacity building, aiming at instilling a “Build Back Better” policy cycle in these countries.

## 6. Conclusion

Acknowledging the pressing need to strengthen DRR measures considering climate change risks, we have convened three successive dialogues with experts under the collaboration of the Disaster Management Bureau of the Cabinet Office and the Ministry of the Environment since February 2020 to discuss policies on the synergy between climate action and DRR. Through this process, we intended to clarify the direction of efforts on enhancing drastic DRR and climate actions, and show what kind of DRR measures adaptive to climate change should be put in place, while ensuring people have a heightened sense of crisis on climate change and DRR. Key conclusions of the dialogues include: promoting a paradigm shift to “deal skillfully (*inasu*) with disasters” given that they are unavoidable; applying an inclusive approach in which all stakeholders will collaborate; changing the mindsets of the people towards climate change and DRR; and responding to disasters from an international perspective.

For this message (strategy), we have listed measures, even some that could be seen as unconventional, and tried to connect them to our future efforts on climate action and DRR. Hereafter, we will use this message (strategy) as the basis to promote efforts, including making a budget request for FY2021, and thereby enhance Japan’s resilience to disasters as well as contribute to international efforts on climate action and DRR. Our path is shifting from restoring the status quo to “Adaptive Recovery.” Undaunted by the intensifying and frequently-occurring disasters in the era of the climate crisis, we commit to protect the lives, assets, and culture of the people.

Finally, we very much appreciate all the experts who have provided the latest information and fresh viewpoints on climate change and DRR.

<Reference>

Overview of the dialogues with the experts on the synergy between climate action and disaster risk reduction.

<1st meeting>

Date: 21 February 2020

Venue: Office of Minister Takeda

Experts: Dr. Toshio Koike

Director, International Centre for Water Hazard and Risk Management under the auspices of UNESCO (ICHARM), Public Works Research Institute (PWRI)

Dr. Takaaki Kato

Professor of Institute of Industrial Science, the University of Tokyo

Main points of the discussions:

- Current status of frequent severe flood and landslide disasters
- Building resilient and sustainable society under climate change (e.g. scientific, technical, socio-economic approaches, etc.)
- Social issues/challenges (e.g. aging, depopulation, etc.), self-help, mutual-assistance, and public assistance
- DRR as “another” approach for town (city) development
- Measures in living spaces for climate change adaptation (such as adaptation to deal skillfully with disasters)

<2nd meeting>

Date: 24 March 2020

Venue: Office of Minister Koizumi

Expert: Ms. Mami Mizutori

Special Representative of the Secretary-General for Disaster Risk Reduction and Head of UNDRR

Dr. Seita Emori

Deputy Director, Center for Global Environmental Research, National Institute for Environmental Studies

Mr. Naohiro Nishiguchi

CEO, Japan Innovation Network

President, Japan Bosai Platform

Main points of the discussions:

- Trend of the international discussion (e.g. the synergy between climate action, DRR and the SDGs)
- Examples in other countries to realize the synergy
- Japan's efforts as seen from the world
- Scientific knowledge on climate change
- Importance of mitigation measures, co-benefit approach for adaptation and mitigation (e.g. locally distributed power generators, etc.)

- Transition to a growth model for achieving the SDGs and the necessity of the innovation for that purpose
- Necessity to upgrade the social operating system

<3rd meeting>

Date: 3 June 2020

Venue: Office of Minister Koizumi

Expert: Mr. Shuichi Abe

Governor of Nagano Prefecture

Dr. Shiro Wakui

Professor, Tokyo City University

Dr. Futoshi Nakamura

Professor, Hokkaido University

Dr. Toshitaka Katada,

Project Professor, the University of Tokyo

Main points of the discussions:

- Efforts on “Climate Crisis Breakthrough Policy” and “Declaration of Zero Fail/Delay to Escape” in Nagano Prefecture
- Effectiveness of green infrastructure as a response to vulnerability to climate-related disasters
- Historical wisdom based on the idea of "deal skillfully (*inasu*)" with nature
- Necessity of local capabilities and education of DRR
- Necessity of the path shifting from restoring status quo to the “recovering with more flexible approach to disasters”, including the measures like land use control.