

Guidelines for Conducting Assessment of Vulnerability to Natural Disasters

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Liaison Conference of Relevant Ministries and Agencies
for Building National Resilience

1. Purport

(1) Risk Management for Building Resilience

In order to promote initiatives for building national resilience (disaster reduction and mitigation), it is necessary to follow the following cycle:

- 1) Identify targeted risks and clarify goals to be aimed at for building resilience against those risks.
- 2) Analyze risk scenarios and influence in each sector and assess current vulnerability in light of the established goals.
- 3) Analyze causes of the vulnerability and discuss problems and measures to be taken for overcoming the vulnerability.
- 4) Review policies necessary for solving problems, and at the same time, select and prioritize the measures and implement them in a planned manner.
- 5) Properly evaluate the results of the measures.

In order to carry out these procedures, it is necessary to clarify concrete risks and goals as mentioned in 1) above, and conducting analysis and assessment as mentioned 2) above in detail requires a considerable period of time.

It is preferable to clarify goals for building resilience through a national debate and in the process of establishing a government plan on a legal basis. Furthermore, ascertaining the current status and conducting preparatory examinations is indispensable for establishing vulnerability assessment guidelines.

(2) Immediate Measures

Considering these, full-scale measures including 1) and 2) above should be taken in and after the middle of this year, and the following are to be implemented immediately:

- i) Attachment 1 shows the goals to be achieved in advance for securing the national resilience of Japan's social and economic systems in the event of a low-frequency large-scale disaster, out of all types of natural disasters.
- ii) In light of these goals, the government comprehensively analyzes the gap between the current status and the goals based on reports from ministries and agencies as to the extent of

contribution of the current measures and programs to the achievement of the goals in each sector.

- iii) Additionally, in light of these goals, the government examines the awareness of local governments, etc. concerning their current status, and assesses the current vulnerability based on the results thereof and the comprehensive analysis mentioned in ii) above.

It should be noted that these are for ascertaining the current status and are merely preparatory examinations as mentioned in (1) above, not for conducting policy evaluation for the respective measures or programs taken by each ministry and agency, nor for clarifying risks (such as the possibility of sustaining significant damage in the event of a disaster) of specific regions.

2. Tasks for Relevant Ministries and Agencies

- (1) List up envisaged events as a result of dangerous risks (that should be avoided) in light of each of the goals.

- * Events pointed out by members of the Advisory Committee on National Resilience (Disaster Reduction and Mitigation) (Attachment 2) should also be taken into consideration.
- * With regard to Goal 3 “Secure indispensable administrative functions” in Attachment 1, concrete functions that each ministry or agency considers indispensable should also be indicated by citing the existing BCP, etc.

- (2) Compile to the extent possible, in the matrix for each of the goals and targeted sectors, what measures and programs are currently implemented for achieving goals and responding to the abovementioned events, what disasters are envisaged and what goals (how relevant measures or programs work to prevent the occurrence of the events, etc.(*)) are set up for each of the measures and programs, and how those goals are achieved (to what extent the plan has been implemented, etc.).

- * If there remain any risks even after implementing relevant measures and programs, indicate the envisaged spatial and temporal expansion of such risks (whether long-term influence is expected to remain, etc.) as clearly as possible.

- (3) With regard to each matrix, compile problems in improving the current status to achieve goals (including reduction of part of the risks) and what measures to be taken they recognize as necessary to introduce in the future. Also compile reports on collaboration with other entities (other ministries and agencies, private business operators, local governments, etc.) or on problems of initiatives by other entities.

- (4) If there are any measures or programs that cannot be included in any of the matrices but are recognized as helpful for securing resilience from other viewpoints, also report such measures or programs with their goals and effects.
- (5) In addition to the above, compile initiatives currently implemented and future directions pertaining to the following:
 - 1) Initiatives for the maintenance and renovation (including countermeasures against aging) of facilities in the sectors under the jurisdiction (including initiatives other than those against low-frequency large-scale disasters) (including whether such initiatives are implemented systematically and strategically by selecting and prioritizing significant ones), and related technological development
 - 2) Understanding of problems in own organization and related organizations under the jurisdiction in terms of the structure, human resources and operation, which is significant from the perspective of maintaining indispensable functions pertaining to people's lives and national economy even in the event of a low-frequency large-scale disaster
 - 3) Establishment of mid- to long-term cross-sectoral strategies, plans, and grand design, etc. pertaining to resilience

3. What Should be Requested to Local Governments

- (1) In light of the respective goals, report the results of any past analyses or reviews concerning the vulnerability of each region, from the local point of view.
- (2) In light of the matrix for each of the goals and targeted sectors, report what initiatives are implemented locally, what national measures and programs need to be implemented in the future from the local point of view, and what is recognized as problematic at present (collaboration between the national government and local governments, collaboration among local governments, problems of the current systems, etc.)
- (3) Report any national measures or programs that cannot be included in any of the matrices but are recognized as helpful for securing resilience from other viewpoints.
- (4) Also report anything that cannot be included in any of the matrices but is recognized as worrying from the local point of view or any matters that the national government should pay attention to in the future.

Goals to be Achieved in Advance for Securing National Resilience

Basic Principles	Goals	
<p>I. Prevent human loss.</p> <p>II. Avoid fatal damage to important functions for maintaining administration as well as social and economic systems.</p> <p>III. Mitigate damage to property and facilities and prevent expansion of damage.</p> <p>IV. Achieve swift recovery and reconstruction.</p>	1	Protect all human lives even in the event of a large-scale disaster.
	2	Ensure prompt rescue and first-aid activities and provision of medical care (including responses required in the absence of such activities).
	3	Secure indispensable administrative functions from immediately after a large-scale disaster.
	4	Secure indispensable information communication functions from immediately after a large-scale disaster.
	5	Prevent functional disturbance in economic activities (including supply chains) even after the occurrence of a large-scale disaster.
	6	Secure minimum networks for electricity, gas, water and sewerage, fuel and transport required for people's lives and economic activities even after the occurrence of a large-scale disaster, and seek early recovery of these networks.
	7	Prevent any uncontrollable second disaster.
	8	Develop conditions that enable swift recovery and reconstruction of local society and economy even after the occurrence of a large-scale disaster.

Events Pointed out by Members of the Advisory Committee on National Resilience (Disaster Reduction and Mitigation)

(i) Tremendous influence on industry

- Difficulty in reconstructing the domestic manufacturing bases of Japanese companies (especially manufacturing companies) (shift of functions to overseas manufacturing bases, loss of human resources due to closure of SMEs, etc.)
- Loss of competitiveness and trust in globalized society, outflow of customers
- Dysfunction of financial services (banks, securities market, insurance market and other financial markets)
- Suspension of energy supply and delay in recovery
- Stagnation of stable supply of food, including production of agricultural and fisheries products and food
- Disruption of supply chains
- Interruption of information communication (including mail) and broadcasting
- Significant increase in unemployed people

(ii) Administrative functions

- Deterioration and suspension of functions of government (including local governments and legislature) and accompanying suspension of functions for supporting rescue and recovery activities, delay in recovery and reconstruction (due to loss of human resources, damage to facilities, breakdown of information and command systems, etc.)

(iii) Simultaneous complex disasters, etc.

- A large number of evacuees due to simultaneous disasters affecting broad areas
- Prolonged flooding due to ground subsidence
- Natural dam failures
- Isolation of communities due to disruption of transport networks
- Large-scale fires, fires at sea, spread of fires on land, etc.
- Leak of dangerous gas or materials (such as from fumigation warehouses or storage tanks, etc.)
- Large-scale damage to dikes, dams, reservoirs, etc. due to an earthquake, etc.

(iv) Shutdown of transportation

- Prolonged paralysis of rescue functions due to damage to quay walls reinforced against earthquakes
- Damage to airports (paralysis of rescue functions due to damage to airports in neighboring prefectures)
- Disruption of arteries (Shinkansen lines and expressways) in the Pacific Belt Zone

- Disruption of road networks (hindrance to rescue activities and recovery and reconstruction work) and prolonged shutdown of aged bridges (closure)
 - Confusion due to random traffic flows (cars, pedestrians, train passengers) after an earthquake
 - Influence of collapsed buildings along railroads and roads
- (v) Tremendous influence on people's lives and health, etc.
- Massive human damage due to collapse of houses and buildings
 - Significant lack of rescue and first-aid activities and medical care activities in the case where the fire department, police and self-defense forces have suffered severe damage or where a disaster has generated a considerable number of injured people
 - Difficulty in providing food, drinking water and other vital goods
 - Spread of infectious diseases
 - Occurrence of a security problem
 - Prolonged suspension of water supply and sewerage services
- (vi) Others
- Tremendous human damage and increased need for rescue due to increase in people in need of help
 - Delay in consensus building concerning reconstruction from the disaster
 - Spread of people's despair and pessimism

* These events include second disasters.