Outline of the Guidelines for Assessment of Vulnerability to Large-scale Natural Disasters

1. Purport of the Guidelines for Vulnerability Assessment

- Vulnerability assessment is like a health checkup of nation, examining and assessing vulnerability for the purpose of building national resilience to large-scale natural disasters, etc. It is an indispensable process in promoting initiatives for building national resilience.
- The Guidelines specify matters necessary for properly conducting vulnerability assessment upon preparing a draft of the Fundamental Plan for National Resilience.

2. Matters Included in the Guidelines

A. Basic Matters

(1) Assessment Method and Time

(i) Assessment method

- Conduct assessment for each sector of measures concerning national resilience.
- Establish the worst events that should never happen and also conduct cross-sectoral assessment for measures therefor.
- Also conduct assessment of human resources to be input and other resources necessary to promote initiatives for building national resilience.
- Conduct assessment in a quantitative manner, to the extent possible, in order to ascertain progress of measures.

(ii) Assessment time: By around the end of March 2014

(2) Premises for Assessment

(i) Envisaged risks: Large-scale natural disasters

(ii) Sectors of measures: 12 individual sectors of measures and 3 cross-cutting sectors

Individual sectors of measures:
Administrative functions/Police and fire services; Housing and cities; Healthcare and welfare; Energy; Finance; Information and communications; Industrial structures; Transportation and logistics; Agriculture, forestry and fisheries; National land conservation; Environment; and Land use (national land use)

Cross-cutting sectors: Risk communication; Countermeasures for aging infrastructure; Research and development

(iii) Goals and the worst events that should never happen

Goals to be achieved in advance:
1) Protect human lives to the utmost extent; 2) Prompt rescue and first-aid activities and provision of medical care, etc.; 3) Secure indispensable administrative functions; 4) Secure indispensable information communication functions; 5) Prevent functional disturbance in economic activities, etc.

The worst events that should never happen: 45 events shown in the Attachment

B. Vulnerability Assessment Procedures

(1) Measures for avoiding the worst events that should never happen and establishment of indicators to show the progress thereof

(2) Analysis of vulnerability

(3) Comprehensive assessment of vulnerability and publication of the results

* To be conducted by the National Resilience Promotion Headquarters with the cooperation of relevant ministries and agencies

C. Future Challenges of Vulnerability Assessment

- Incorporation of efforts being made independently by local governments and the private sector, etc.
- Need to improve vulnerability assessment to a method based on elaborate risk scenarios

(Attachment)

List of the Worst Events that Should be Avoided by Programs

Fundamental Goals

I. Prevent human loss by any means.

II. Avoid fatal damage to important functions for maintaining administration as well as social and economic systems.

III. Mitigate damage to property and facilities and prevent expansion of damage.

IV. Achieve swift recovery and reconstruction.

Goals to be achieved in advance		The worst events that should be avoided by programs
1	Protect human lives to the utmost extent even in the event of a large-scale natural disaster.	1-1) Casualties due to large-scale and multiple collapse of buildings and transportation facilities in urban areas or fires in densely-populated areas
		1-2) Collapse of and fires at facilities used by the general public
		1-3) Extensive human loss due to a wide area large-scale tsunami, etc.
		1-4) Prolonged and wide-area flooding in urban areas due to abnormal weather, etc.
		1-5) A large number of casualties due to a large-scale volcanic eruption or sediment disaster (deep-seated landslide), etc., which may also increase vulnerability of national land over years to come
		1-6) A large number of casualties due to delay in evacuation caused by failure of information transmission, etc.
2	Ensure prompt rescue and first-aid activities and provision of medical care from immediately after a large-scale natural disaster (including responses required in the absence of such activities).	2-1) Prolonged suspension of supply of food, drinking water and other vital goods
		2-2) Concurrent occurrence of isolation of many villages for long periods
		2-3) Absolute lack of rescue and emergency activities due to damage to the self-defense forces, the police, fire services, the Japan Coast Guard, etc.
		2-4) Prolonged suspension of energy supply for rescue/emergency activities and medical services
		2-5) Shortage of food and drinking water, etc. caused by the number of people stranded due to a disaster and the length of time beyond expectations
		2-6) Paralysis of medical services due to damage to and/or severe lack of medical facilities and personnel, and disruption of routes for offering support
		2-7) Outbreak of plagues or infectious diseases on a large scale in disaster-affected areas
3	Secure indispensable administrative functions from immediately after a large-scale natural disaster.	3-1) A decline in public safety due to escape of inmates from correctional facilities and a significant deterioration of the functions of local police due to damage
		3-2) Frequent serious traffic accidents due to traffic light failures, etc.
		3-3) Dysfunction of the central government in the capital region
		3-4) Significant deterioration of the functions of local governments due to damage to personnel and facilities
4	Secure indispensable information communication functions from immediately after a large-scale natural disaster.	4-1) Paralysis and prolonged suspension of information transmission due to suspension of power supply, etc.
		4-2) Circumstances where various important mail is left undelivered due to prolonged suspension of postal services
		4-3) Circumstances where disaster information cannot be delivered to people who need it due to suspension of TV and radio broadcasting

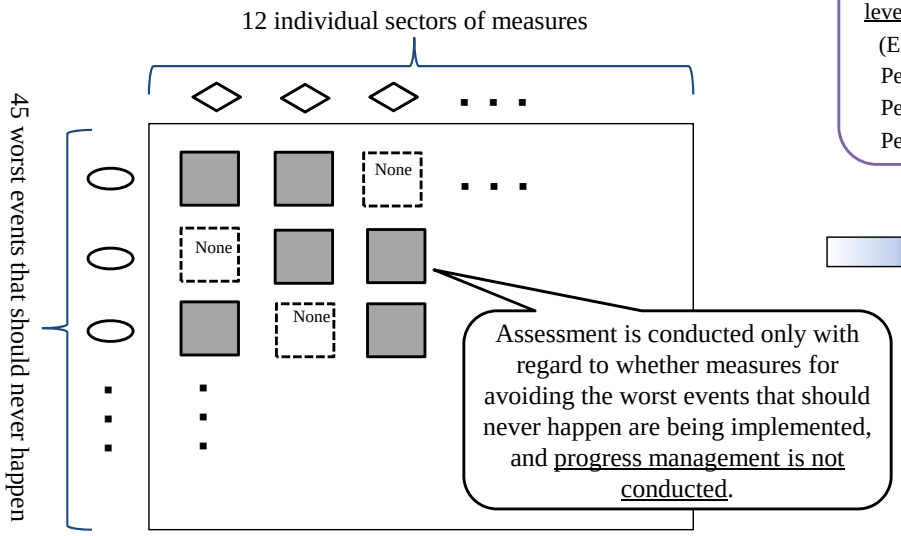
Goals to be achieved in advance		The worst events that should be avoided by programs
5	Prevent functional disturbance in economic activities (including supply chains) even after the occurrence of a large-scale natural disaster.	5-1) Loss of international competitiveness due to a decline in companies' productivity caused by disruption of supply chains, etc.
		5-2) Suspension of energy supply necessary for social economic activities and the maintenance of supply chains
		5-3) Damage to and fires or explosions, etc. at complexes and other important industrial facilities
		5-4) Significant influence on overseas trade due to suspension of maritime transport functions
		5-5) Dysfunction of the core road/marine transport networks, such as disruption of arteries in the Pacific Belt Zone
		5-6) Concurrent damage to multiple airports
		5-7) Circumstances where dysfunction of financial services exerts tremendous influence on commercial transactions
		5-8) Stagnation of stable supply of food, etc.
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 natural disaster, and seek early recovery of these networks.	6-1) Suspension of functions of power supply networks (power generating/transforming stations, transmission/distribution equipment) and oil/LP gas supply chains
		6-2) Prolonged suspension of water supply, etc.
		6-3) Prolonged suspension of functions of sewage treatment facilities, etc.
		6-4) Circumstances where local transport networks are disrupted
		6-5) Disruption of supply of water for specific uses due to drought, etc.
7	Prevent any uncontrollable second disaster.	7-1) Outbreak of large-scale fires in urban areas
		7-2) Occurrence of an extensive complex disaster on the sea or in coastal areas
		7-3) Direct damage and traffic paralysis due to collapse of buildings along railroads and roads
		7-4) Occurrence of a secondary disaster due to damage to and functional failure of reservoirs, dams, disaster prevention facilities, natural dams, etc.
		7-5) Large-scale spread and leakage of hazardous materials
		7-6) Expansion of damage due to devastation of farmland and forests
		7-7) Tremendous influence on the national economy, etc. due to harmful rumors
8	Develop conditions that enable swift recovery and reconstruction of local society and economy even after the occurrence of a large-scale natural disaster.	8-1) Circumstances where recovery and reconstruction are delayed significantly due to delay in treatment of a large amount of disaster waste
		8-2) Circumstances where recovery and reconstruction are delayed significantly due to shortage of personnel in charge of opening of access routes or other recovery/reconstruction-related activities (experts, coordinators, workers, engineers well versed in respective regions, etc.)
		8-3) Circumstances where recovery and reconstruction are delayed significantly due to collapse of local communities and a decline in public safety
		8-4) Circumstances where recovery and reconstruction are delayed significantly due to damage to the Shinkansen and other core infrastructure
		8-5) Circumstances where recovery and reconstruction are delayed significantly due to extensive and prolonged flooding due to ground subsidence in broad areas

Spiral-up of the Guidelines for Vulnerability Assessment

➢ **More detailed assessment can be attained by newly ascertaining performance levels of measures and conducting progress management.**

	Guidelines established in April 2013	Guidelines established in December 2013
Risks	General natural disasters / Scales and locations are not specified.	Same as on the left
Risk scenarios	45 worst events that should never happen	Same as on the left
Assessment targets	Assessment is conducted based on whether relevant ministries and agencies are implementing measures or not.	Assessment is conducted based on whether relevant ministries and agencies are implementing measures or not and on the performance levels of those measures.
Progress management	No progress management	**[Management of each of the individual measures] (Individual indicators)** • Set up indicators for each of the individual measures in a program, and ascertain performance levels of individual measures, thereby conducting progress management. **[Management of each program] (Representative indicators, etc.)** • Extract a representative indicator from among individual indicators for each program, and ascertain the whole picture of the progress of each program, thereby conducting progress management. **[Management of the entirety] (Program performance indicators, etc.)** • Create a performance indicator for each program by merging all of the individual indicators included in the relevant program, and manage the progress of the entirety of the program based thereon.
Characteristics	The entirety of the measures being implemented nationwide can be overviewed and missing parts can be identified, but progress management cannot be conducted.	The entirety of the measures being implemented nationwide can be overviewed and missing parts can be identified, and additionally, through setting indicators, etc., the current performance levels can be ascertained and progress management by each of the individual measures and by each program becomes possible.

Progress Management through the Use of Indicators



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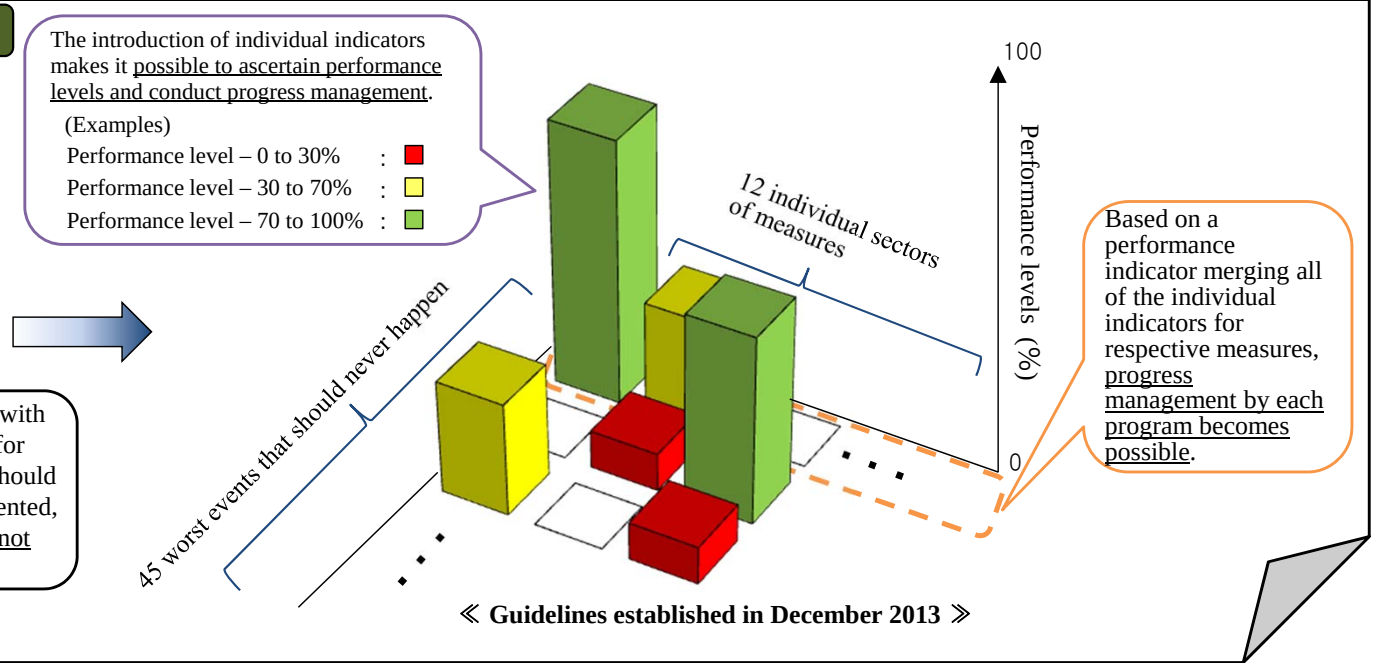

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