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DEWAN RAKYAT YANG KELIMA BELAS  
PENGAL KEDUA**



**PENYATA JAWATANKUASA PILIHAN KHAS  
INFRASTRUKTUR, PENGANGKUTAN DAN  
KOMUNIKASI**

**LAPORAN LAWATAN KERJA JAWATANKUASA PILIHAN  
KHAS INFRASTRUKTUR, PENGANGKUTAN DAN  
KOMUNIKASI KE NEGARA JEPUN**

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KHAS INFRASTRUKTUR, PENGANGKUTAN DAN  
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PADA 25 – 30 SEPTEMBER 2023**

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## **BAHAGIAN I**

### **PENGENALAN**

#### **LATAR BELAKANG**

Penyediaan laporan ini bertujuan untuk memaklumkan perjalanan sepanjang lawatan kerja Jawatankuasa Pilihan Khas (JKPK) Infrastruktur, Pengangkutan dan Komunikasi ke Negara Jepun bermula dari 25 September 2023 sehingga 30 September 2023. YB Tuan Haji Ir. Yusuf bin Abd Wahab, Ahli Parlimen Tanjong Manis selaku Pengerusi JKPK ini merupakan ketua delegasi lawatan kerja ke Jepun yang turut disertai oleh enam (6) orang Ahli Yang Berhormat dan dua (2) orang pegawai pengiring dari Parlimen Malaysia.

Lawatan kerja ini telah meliputi lawatan kerja ke beberapa lokasi terpilih di Jepun bagi meningkatkan pengetahuan dan mempelajari amalan terbaik yang dilaksanakan dalam meningkatkan keberkesanan pelaksanaan JKPK Dewan Rakyat. Jepun merupakan negara yang mengamalkan sistem *bicameral* dan negara ini dipilih berasaskan kepada keberkesanan pelaksanaan pembangunan infrastruktur yang sangat efisien dan bertindak sebagai sumber rujukan oleh Ahli-Ahli JKPK di dalam pelaksanaan penyelenggaraan infrastruktur setelah berlakunya bencana alam.

Lawatan kerja ini juga merupakan satu platform bagi mempelajari amalan terbaik (*best practices*) perjalanan atau sesi prosiding *select committees* di National Diet ke arah memantapkan peranan JKPK dalam melaksanakan fungsi semak dan imbang terhadap isu-isu infrastruktur dan seterusnya dapat memberi impak kepada keputusan pembangunan infrastruktur di Jepun.

## OBJEKTIF LAWATAN

Objektif utama lawatan adalah:

- i. Memahami dan mendalami pelbagai bentuk *select committees* terutamanya bagi pelaksanaan jawatankuasa berkaitan isu-isu infrastruktur di National Diet.
- ii. Memahami dan mendalami dengan terperinci mengenai fungsi dan tanggungjawab Pengerusi dan Ahli-ahli Jawatankuasa di National Diet agar dapat membantu meningkatkan kecekapan setiap ahli melaksanakan fungsi JKPK Parlimen Malaysia
- iii. Mempelajari amalan terbaik (*best practices*) perjalanan atau sesi prosiding *select committees* di National Diet ke arah memantapkan peranan JKPK IPK dalam melaksanakan fungsi semak dan imbang terhadap isu-isu infrastruktur dan seterusnya dapat memberi impak kepada keputusan pembangunan infrastruktur di Jepun.
- iv. Mendapat pendedahan secara komprehensif berkenaan pengurusan pengangkutan moden yang dilaksanakan di Jepun bagi diaplikasikan di Malaysia.
- v. Memahami secara terperinci mengenai pengurusan berkenaan pembinaan projek perumahan awam dilakukan di Jepun terutamanya di kawasan berkepadatan tinggi.
- vi. Mendalami mengenai pengurusan rangkaian komunikasi yang dilaksanakan di Jepun.

## **BAHAGIAN II**

### **LAPORAN PROGRAM**

Di sepanjang lawatan ini, delegasi telah mengadakan mesyuarat dan lawatan ke National Diet of Japan, Museum of Japan Parliamentary, Ministry of Land, Infrastructure, Transport and Tourism, Metropolitan Area Outer Underground Discharge Channel, Kasukabe, Saitama, Nippon Telegraph and Telephone (NTT) Docomo, East Nippon Expressway Co. Ltd. (NEXCO East). Pemerhatian utama daripada lawatan kerja yang dilakukan adalah seperti berikut:

**i. Lawatan Kunjungan Hormat terhadap Yang Berbahagia Dato' Shahril Effendi Abd Ghany, Duta Besar Malaysia ke Jepun**

Dato' Shahril Effendi Abd Ghany, Duta Besar Malaysia ke Jepun dalam ucapannya telah mengalu-alukan kedatangan rombongan delegasi JKPK ke Negara Jepun. Beliau memaklumkan bahawa rombongan ini adalah kedua dari Parlimen Malaysia selepas JKPK Sosiobudaya, Komunikasi dan Pendidikan (SKOP) dari Dewan Negara pada bulan Jun lepas.

Beliau memaklumkan bahawa seramai 20 orang pegawai dan kakitangan dari Malaysia dan 20 orang lagi yang terdiri dari rakyat Negara Jepun yang berkhidmat di Kedutaan Malaysia di Jepun.

Beliau juga menyatakan bahawa YAB Datuk Seri Anwar Ibrahim, Perdana Menteri Malaysia dijangka akan tiba di Tokyo pada akhir tahun ini bagi membincangkan hubungan perdagangan dua hala antara Malaysia dan Jepun.

Jepun merupakan rakan dagangan terbesar Malaysia pada ketika ini. Menurutnyanya, terdapat 2000 syarikat dari Jepun di Malaysia dan hasil kajian mendapati bahawa 90% dari syarikat ini masih berminat untuk kekal melabur di Malaysia. Bagaimanapun, syarikat-syarikat dari Jepun ini menyatakan bahawa semakin kurang tenaga pakar di Malaysia bagi membantu mereka berkembang di sini.

Namun, masih ada syarikat Jepun meletakkan kepercayaan dan terus meluaskan pelaburan. Contohnya, Syarikat ROHM-WAKO yang berpangkalan di Kawasan

Perindustrian Padang Tembak, Pengkalan Chepa, Kelantan yang sejak sekian lama bertapak di negeri ini dan terus menambah kapasiti pekerja di kilang mereka.

Selain itu, beliau juga menyatakan Kerajaan Jepun kkuatir dengan perkembangan teknologi di negara China sejak akhir-akhir ini berikutan mereka mampu menghasilkan sesebuah teknologi dengan kos yang lebih murah.

Mengikut statistik, anggaran seramai 8,000 orang rakyat Malaysia berdaftar yang bekerja di Jepun dan anggaran seramai 700 orang pelajar Malaysia melanjutkan pengajian tertiar di negara ini.

YB Pengerusi memaklumkan ramai di kalangan generasi muda berminat untuk menyambung pengajian di Jepun kerana kemajuan negara ini dalam bidang sains dan teknologi yang bertaraf dunia.

Dato' Shahril Effendi Abd Ghany memaklumkan bahawa Malaysia sudah tidak tersenarai dalam program bantuan khas pendidikan Japan International Cooperation Agency (JICA) kerana perkembangan kemajuan ekonomi yang dikecapi oleh Malaysia yang semakin pesat. Mengikut rekod, negeri yang paling berjaya menarik pelaburan dari Jepun ialah Selangor dan Sarawak.

Beliau menegaskan bahawa secara dasarnya, pelabur dari Jepun ikhlas dan jujur dalam meneliti pelaburan di Malaysia. Pelabur-pelabur Jepun lebih berminat dalam aspek keuntungan yang bakal diperolehi oleh mereka. Kelemahan dan kekurangan yang dihadapi oleh negara ini adalah masyarakat menua (*aging society*).

Sebagai penutup, Dato' Shahril melahirkan harapan objektif lawatan kerja JKPK tercapai di samping dapat mengeratkan hubungan diplomatik antara kedua-dua buah negara.





Para Ahli Jawatankuasa berdiri di lobi Kedutaan Besar Malaysia di Tokyo, Jepun.



Para Ahli Jawatankuasa mengadakan perbincangan dengan Ybhg. Dato' Shahril Effendi Abd Ghany, Duta Besar Malaysia ke Jepun.



Para Ahli Jawatankuasa diberi penerangan berkenaan  
Kedutaan Besar Malaysia di Jepun.

ii. **Kunjungan rasmi terhadap TYT Furuya Keiji, Pengerusi, Japan – Malaysia Parliamentary Friendship Association, Pengerusi, Japan-Malaysia Association (JMA) dan Ahli Parlimen Jepun.**

TYT Furuya Keiji mengucapkan penghargaan kepada JKPK kerana sudi melakukan kunjungan rasmi terhadapnya. Beliau mendedahkan bahawa Japan – Malaysia Parliamentary Friendship Association telah menderma sebanyak 1 juta buah pokok di Sabah dan Sarawak sebagai tanda persahabatan di antara dua negara.

Beliau juga menyatakan walaupun kerajaan kedua-dua buah negara telah bertukar kepimpinan, Malaysia dan Jepun masih kekal sahabat baik hasil dari Dasar Pandang ke Timur yang diilhamkan oleh Tun Dr. Mahathir Mohamad, bekas Perdana Menteri Malaysia.

TYT Furuya Keiji juga bermurah hati menyerahkan dokumen bertajuk *Building National Resilience Programme*. Dokumen ini adalah pelan jangka masa panjang bagi negara Jepun menghadapi bencana alam serta usaha pemulihan secara komprehensif.

Program ini diilhamkan oleh Shinzo Abe, bekas Perdana Menteri dan mendapat sokongan dari pelbagai pihak dalam negara.

Beliau juga menyatakan bahawa dokumen ini dikongsikan kepada negara seluruh dunia termasuk Malaysia bagi memastikan pendedahan dalam dokumen ini dapat dimanfaatkan bersama.

Beliau menyatakan Kerajaan Jepun sangat serius dalam usaha menghadapi bencana alam berikutan kedudukan negara itu yang sentiasa terdedah kepada siri bencana alam termasuk gempa bumi yang dijangka akan berlangsung dalam masa 30 tahun akan datang.

Beliau menyatakan syarikat-syarikat korporat seperti Tokyo Gas juga terlibat dalam kempen menghadapi bencana alam. Sebagai penutup, beliau juga menggesa JKPK IPK bertemu dengan pihak pentadbiran Kerajaan Jepun bagi mendapatkan sudut pandangan pembuat dan pelaksana dasar Kerajaan Jepun.

YB Pengerusi memaklumkan bahawa Kerajaan Malaysia boleh mengaplikasikan pelan bencana alam yang dirangka oleh Kerajaan Jepun sebagai persiapan.



Pertemuan Jawatankuasa dengan TYT Furuya Keiji, Ahli Parlimen  
Jepun di Parlimen Jepun.



YB Pengerusi memulakan perbincangan dengan menyatakan penghargaan kepada TYT Furuya Keiji.



Setiap Ahli Jawatankuasa mengambil kesempatan dalam bertukar-tukar fikiran dalam sesi perbincangan ini.

### iii. Lawatan ke National Diet of Jepun (Parlimen Jepun) dan Muzium Parlimen.

#### a. Lawatan ke National Diet of Japan.

*National Diet of Japan* pertama kali ditubuhkan sebagai Diet Imperial pada tahun 1890 di bawah Perlembagaan Meiji, dan mula berfungsi semasa pada tahun 1947 selepas menerima pakai perlembagaan selepas perang. Kedua-dua Dewan beroperasi di Bangunan Diet Kebangsaan (Kokkai-gijidō) di Nagatachō, Chiyoda, Tokyo.

*House of Representatives* ialah dewan rendah National Diet of Japan manakala, *House of Councillors* ialah dewan tertinggi. Komposisi Dewan ditubuhkan oleh Perkara 41 dan Perkara 42 Perlembagaan Jepun. *House of Representatives* mempunyai 465 ahli yang dipilih untuk tempoh empat tahun. Daripada jumlah ini, 176 ahli dipilih daripada 11 kawasan pilihan raya berbilang ahli melalui sistem perwakilan berkadar senarai parti, dan 289 dipilih daripada kawasan pilihan raya tunggal. Di bawah Perlembagaan, sekurang-kurangnya satu sesi Diet mesti diadakan setiap tahun. Secara teknikalnya, hanya *House of Representative* dibubarkan sebelum pilihan raya. Tetapi, semasa dewan rendah sedang dibubarkan, *House of Councillors* biasanya "tertutup". Maharaja kedua-duanya memanggil Diet dan membubarkan *House of Representatives* tetapi untuk berbuat demikian perlu bertindak dengan mengambil kira nasihat dari Kabinet. Dalam keadaan darurat, Kabinet boleh memanggil Diet untuk sesi tergepar, dan sesi luar biasa boleh diminta oleh satu perempat daripada ahli mana-mana dewan. Pada permulaan setiap sidang parlimen, Maharaja membacakan ucapan khas dari takhtanya di *House of Councillors*.



Para Ahli Jawatankuasa bergambar di hadapan Bangunan Parlimen Jepun.



Para Ahli Jawatankuasa mendengar taklimat berkenaan perjalanan sidang Parlimen Jepun.

## **b. Lawatan ke Muzium Parlimen**

Muzium Parlimen telah ditubuhkan pada tahun 1970, sempena ulang tahun ke-80 Parlimen Jepun, untuk memberi pemahaman yang lebih baik kepada rakyat tentang demokrasi berparlimen. Muzium ini dibuka pada Mac 1972.

Muzium ini memperkenalkan organisasi dan pengurusan Diet melalui bahan dan video, mengumpul dan mempamerkan bahan-bahan yang berkaitan dengan sejarah kerajaan parlimen dan negarawan yang telah memberi sumbangan besar kepadanya.



Para Ahli Jawatankuasa melihat model Bangunan Parlimen Jepun dalam skala kecil.



Para Ahli Jawatankuasa tekun mendengar penerangan dari pegawai Muzium.

iv. **Kunjungan Hormat terhadap TYT Etoh Taku, Pengerusi, Jawatankuasa Pilihan Khas Bencana, Parlimen Jepun.**

TYT Etoh Taku dalam ucapan alu-aluannya menerangkan latar belakangnya yang merupakan anak kepada Menteri Pengangkutan dan pada masa sama, beliau bertugas menjadi setiausaha kepada ayahnya.

Jepun mengalami siri-siri bencana kerana kedudukan geografinya dan Kerajaan Jepun meletakkan usaha berterusan bagi menanganinya. Salah satunya adalah *Building National Resilience Programme (Rujuk Lampiran B)*. Sebanyak 50 trilion yen atau USD 100 bilion telah dibelanjakan bagi memastikan pelan ini berjalan lancar.

Selain itu, YB Zahir bin Hassan menanyakan bagaimana proses reformasi undang-undang dalam urusan ini dilakukan. TYT Etoh Taku memaklumkan bahawa ahli Parlimen dari pelbagai parti yang menganggotai Jawatankuasa ini terlibat secara aktif dan melakukan pelbagai usaha reformasi undang-undang. Setelah perbincangan dibuat di antara Jawatankuasa (termasuk dari wakil Menteri atau pejabat Perdana Menteri) dan perbahasan telah dibuat di Parlimen, setiap parti diminta oleh *whip* parti untuk menyokong segala reformasi yang dibentangkan di Parlimen ini. Beliau juga menyatakan sokongan untuk sebarang usaha perkongsian pengetahuan dengan menghantar pelajar Malaysia ke Jepun bagi mendalami teknologi pemulihan bencana. Sehingga kini, Jepun sudah mempunyai teknologi dan data yang bernilai jutaan bagi menjangka gempa bumi. Data itu kemudiannya disebar secara umum.

Memandangkan segala bencana umum tidak dapat dielakkan, usaha utama kerajaan Jepun adalah meminimumkan kerosakan yang timbul dari bencana alam selain menyelamatkan nyawa sebanyak mungkin. Pada waktu ini, segala amaran bencana awal telah dipetakan di seluruh negara Jepun dan pihak berkuasa tempatan akan memobilisasi segala usaha penyelamatan.





Pengerusi Jawatankuasa memulakan perbincangan dengan ucapan alu-aluan terhadap TYT Encik Etoh Taku.



Perbincangan ini dibantu oleh penterjemah yang membantu dalam menyampaikan ucapan kedua-dua belah pihak.



TYT Encik Etoh Taku menerangkan kepada para Ahli Jawatankuasa berkenaan *National Resilience Programme*.



YB Pengerusi menyampaikan cenderamata kepada TYT Etoh Taku.

**v. Kunjungan rasmi terhadap TYT Encik Konosuke Kokuba, State Minister of Land, Infrastructure, Transport and Tourism.**

TYT Konosuke Kokuba menyatakan penghargaan kepada rombongan delegasi yang sudi datang dan menyatakan hubungan erat Malaysia dan Jepun telah terjalin terutamanya pada zaman kepimpinan Tun Dr. Mahathir sebagai Perdana Menteri.

Beliau juga berkongsi masalah kos rumah yang melambung di Jepun. Beliau memaklumkan bahawa Kerajaan Jepun menggunakan konsep seimbang iaitu mengambil kira jumlah populasi penduduk di Jepun bersama dengan keluasan tanah sedia ada memandangkan jumlah kelahiran semakin berkurangan.

Beliau juga menyatakan sehingga kini, Jepun masih menggunakan teknologi lama dalam membina rumah kerana faktor kekangan peruntukan kewangan. Bagi menangani masalah penduduk yang berumur dan mati keseorangan dalam rumah, pihak berkuasa tempatan memantau keadaan kesihatan dari semasa ke semasa.

Datuk Wan Saiful bin Wan Jan memaklumkan bahawa di Malaysia, masih giat dibina perumahan mampu milik bagi membantu golongan berpendapatan sederhana dan rendah. Beliau juga bertanya bagaimanakah bentuk projek perumahan rakyat yang dibina oleh Kerajaan Jepun pada waktu ini. TYT Konosuke Kokuba memaklumkan pada masa ini, kerajaan Jepun hanya menumpukan projek perumahan kepada golongan miskin sahaja berikutan kos pembinaan rumah yang semakin meningkat.

Selain itu, beliau juga berkongsi kejayaan usaha kerajaan Jepun dalam menghasilkan keretapi laju atau Shinkansen yang tidak pernah mengakibatkan kemalangan sejak ia beroperasi puluhan tahun lepas. Pihak Jawatankuasa telah merancang untuk menggunakan perkhidmatan kereta laju ini bagi melihat sendiri sistem pengangkutan ini, namun tidak berjaya disebabkan kekangan masa.



TYT Konosuke Kokuba mendengar perbincangan yang sedang berlangsung



Para Ahli Jawatankuasa mengambil kesempatan memberi pandangan berkenaan isu yang diketengahkan dalam perbincangan.

**vi. Lawatan ke Metropolitan Area Outer Underground Discharge Channel, Kasukabe, Saitama**

Para Ahli Jawatankuasa diberi penerangan Ketua Jurutera Projek dan kemudiannya dibawa untuk melawat tempat tersebut.

Projek infrastruktur air bawah tanah di Kasukabe, Saitama, Jepun merupakan sebuah kemudahan pengaliran air banjir bawah tanah terbesar di dunia, dibina untuk mengurangkan limpahan air dan sungai utama di bandar ini semasa musim hujan dan taufan. Kemudahan pengaliran air banjir ini terletak di antara Showa dan Kasukabe di wilayah Saitama, di pinggir bandar Tokyo.

Kerja-kerja projek itu bermula pada tahun 1992 dan telah siap pada awal tahun 2006. Ia terdiri daripada lima silo (struktur silinder tinggi) pembendungan konkrit dengan ketinggian 65 meter (213 kaki) dan diameter 32 meter (105 kaki), yang disambungkan oleh 6.4 kilometer (4.0 mi) terowong, 50 meter (160 kaki) di bawah permukaan, serta tangki air besar dengan ketinggian 25.4 meter (83 kaki), dengan panjang 177 meter (581 kaki), dengan lebar 78 meter (256 kaki) dan dengan lima puluh sembilan tiang besar yang disambungkan kepada tujuh puluh lapan pam 10 MW (13,000 hp) yang boleh mengepam sehingga 200 tan metrik (200 tan panjang; 220 tan pendek) air ke dalam Sungai Edo dalam tempoh sesaat.

Projek itu termasuk lima silo besar, terowong penghubung sepanjang 6.5 km, tangki simpanan dan 78 pam. Lima silo pembendungan konkrit adalah 65 meter dalam dan 32 meter dalam diameter. Ia terletak dalam had tertentu dari sungai. Lima silo bertindak sebagai pengatur aliran.

Silo disambungkan ke terowong berdiameter 10.6 meter. Terowong itu dibina 50 meter di bawah tanah, melalui silo. Terowong menghantar air ke tangki simpanan apabila silo mencapai kapasitinya. Tangki simpanan air, yang dikenali sebagai Kuil

Bawah Tanah, adalah 25.4 meter tinggi dan 177 meter panjang. Tangki simpanan air ini disokong oleh 59 tiang yang setinggi 20 meter dan berat 500 tan.

Tangki itu disambungkan kepada turbin 14,000 hp (kuasa kuda) dan 78 pam. Turbin ini mampu mengepam 200 tan air sesaat dan mengalirkannya ke Sungai Edogawa. Terdapat bilik kawalan di dalam terowong dan tangki simpanan. Kemudahan ini kekal kering semasa musim kemarau dan berfungsi sebagai tempat pelancongan. Terowong ini boleh diakses melalui tangga yang dipasang pada silo.



Para Ahli Jawatankuasa berpeluang mendengar taklimat dan seterusnya masuk ke dalam tempat pelepasan banjir.



Para Ahli Jawatankuasa mendengar penerangan dari Ketua Jurutera berkenaan struktur tempat ini.



Ketua Jurutera menunjukkan pelan lokasi struktur ini dalam peta.



## **vii. Mesyuarat bersama Nippon Telegraph and Telephone (NTT) Docomo**

Yang Berhormat Tuan Ir. Haji Yusuf bin Abd Wahab selaku ketua delegasi mengungkap setinggi-tinggi penghargaan kepada pihak Nippon Telegraph and Telephone (NTT) Docomo yang diwakili oleh Naib Presiden Kanannya, Encik Hikuma Akihiro kerana sudi meluangkan masa untuk berjumpa dengan delegasi. Tuan Ir. Haji Yusuf juga memperkenalkan setiap ahli delegasi serta menyatakan tujuan kunjungan rasmi.

Encik Hikuma Akihiro menyatakan bahawa syarikat mereka adalah pembekal talian telekomunikasi kepada 87 juta orang iaitu 70% dari populasi rakyat Jepun. Tiga segmen fokus syarikat mereka adalah perkhidmatan telekomunikasi kepada korporat, perkhidmatan pembayaran kewangan dan perkhidmatan telekomunikasi peruncitan.

Sebanyak 50% trafik telekomunikasi pada waktu ini adalah dalam bentuk jalur lebar 5G. Mereka memaklumkan kepesatan trafik sebanyak 20% dalam masa setahun. Usaha pembangunan 5G bermula pada tahun 2020. Pelan penggantian 4G kepada 5G pula dijangka selesai pada Mac 2024.

Kerajaan Jepun hanya menetapkan garis panduan sahaja kepada pembekal telekomunikasi. Sehingga kini, ada 4 pembekal syarikat telekomunikasi 5G di Jepun.

Sehingga kini, sebanyak 26,200 *base station* sedang dibina bagi usaha penggantian 3G/4G kepada 5G di seluruh negara. 3G dijangka akan ditamatkan perkhidmatan pada tahun 2026.



Para Ahli Jawatankuasa menyaksikan pembentangan dari wakil syarikat.

Pada waktu terdekat, syarikat ini juga sudah mengorak langkah bagi membuat kajian pembangunan perkhidmatan 6G. Namun, tiada tarikh khusus bagi tempoh perkhidmatan 6G akan digunakan.



Para Ahli Jawatankuasa juga diberi peluang untuk merasai kelajuan 5G dengan memakai kaca mata *Augmented Reality* bagi merasai dunia ilusi.

### viii. Mesyuarat bersama East Nippon Expressway Co. Ltd. (NEXCO East)

Yang Berhormat Tuan Ir. Haji Yusuf bin Abd Wahab selaku ketua delegasi menyatakan setinggi-tinggi penghargaan kepada pihak East Nippon Expressway Co. Ltd. (NEXCO East) yang diwakili oleh Pengarah Urusannya, Encik Yagi Shigeki kerana sudi meluangkan masa untuk berjumpa dengan delegasi. Tuan Ir. Haji Yusuf juga memperkenalkan setiap ahli delegasi serta menyatakan tujuan kunjungan rasmi.

Encik Yagi Shigeki menyatakan bahawa syarikat ini menggunakan *manual toll collection* dan *electric toll collection (ETC)*. Apa yang membezakan antara dua sistem ini adalah ETC merupakan sistem tanpa wayar di mana kad ETC telah berada sebagai sebahagian komponen kereta. Setiap pembayaran akan dihantar kepada *Control Station Data Processing System* yang berada di Pejabat Wilayah Serantau.

Setiap maklumat pembayaran akan diproses melalui *encryption system* bagi memastikan tiada serangan siber yang menggodam sistem ini.

Setiap fasiliti ETC ini diperiksa secara rutin setiap dua bulan dan sekali sebulan bagi mesin tol manual bagi memastikan keberkesanannya. Setiap data pengguna hanya boleh diakses oleh sebilangan kakitangan sahaja bagi mengelakkan kebocoran data. Bahkan, tempat mengakses data tersebut dijaga rapi.

Setiap plaza tol akan dilengkapi oleh kamera infra merah bersama alat pengesan pergerakan kenderaan bagi mengesan maklumat seperti nombor plat kereta dan jenis kereta. Namun, plaza tol tidak akan mampu mengesan kenderaan yang bergerak laju.

Tempoh konsesi bagi syarikat tol ini adalah selama 150 tahun, berbeza dengan syarikat tol di Malaysia yang mempunyai tempoh konsesi selama 40 tahun sahaja.

Eksekutif syarikat ini juga memaklumkan bahawa harga kadar tol akan dicadang oleh syarikat dari semasa ke semasa, namun akan dipertimbang oleh pihak kerajaan. Sehingga kini, caj tol adalah 24.6 yen bagi setiap kilometer. Mengikut rekod, jalan raya akan diperbaiki dan dipertingkatkan kualiti setiap 7-10 tahun.



Para Ahli Jawatankuasa mendengar taklimat berkenaan pengurusan tol oleh wakil syarikat.



Pengurusan tertinggi syarikat mendengar perkongsian pengalaman dari Ahli Jawatankuasa.



Wakil pengurusan syarikat menggunakan visual dalam memberi penerangan.



YB Pengerusi menghadahkan cenderamata kepada pengurusan syarikat sebagai tanda kenang-kenangan.

## **Penutup**

Secara keseluruhannya, lawatan kerja ke Negara Jepun oleh JKPK ini telah berlangsung dengan lancar dan baik. Hasil lawatan kerja ini telah memberikan manfaat kepada delegasi untuk memantapkan peranan JKPK dalam melaksanakan fungsi semak dan imbang terhadap isu-isu infrastruktur, pengangkutan serta komunikasi.

## BAHAGIAN III

### **PEMERHATIAN JAWATANKUASA**

Setelah mengkaji dan melawati tempat yang dirancang semasa lawatan kerja di Jepun, maka Jawatankuasa mengemukakan penemuan-penemuan seperti berikut:

1. Jawatankuasa mengambil maklum bahawa Jepun memiliki rangkaian jalan raya yang sangat baik dengan ratusan ribu kilometer jalan tol yang menghubungkan bandar-bandar besar di seluruh negara. Jalan-jalan ini dilengkapi dengan teknologi canggih seperti pembayaran tol automatik dan sistem panduan pemanduan yang berintegrasi.
2. Jawatankuasa mengambil maklum bahawa kereta api sangat penting di Jepun dan dikenali dengan kelajuan tinggi, tepat waktu, dan kecekapan. *Shinkansen* (kereta api laju) adalah ikon sistem kereta api Jepun yang menghubungkan bandar-bandar besar di seluruh negara dengan kelajuan sehingga 320 km/jam.
3. Jawatankuasa mengambil maklum bahawa Jepun mempunyai sistem pengangkutan awam yang sangat cekap, termasuk kereta bawah tanah, bas, dan trem. Sistem yang digunakan ini sangat teratur, tepat waktu, dan mudah digunakan oleh penduduk tempatan dan pelancong.
4. Jawatankuasa mengambil maklum bahawa Jepun mempunyai infrastruktur telekomunikasi yang sangat maju. Internet berkelajuan tinggi dan telefon pintar sangat umum. Negara ini juga mempunyai perkembangan pesat dalam teknologi 5G dan berpotensi meneroka teknologi 6G lebih awal.
5. Jawatankuasa mengambil maklum bahawa Jepun menggunakan teknologi canggih seperti sistem amaran gempa bumi dan sistem amaran tsunami untuk memberikan amaran awal kepada penduduk. Hal ini membolehkan mereka mengambil tindakan segera.
6. Jawatankuasa mengambil maklum bahawa Jepun terlibat aktif dalam kerjasama antarabangsa dalam bidang pengurusan bencana. Mereka berkongsi pengalaman dan sumber dengan negara lain dan mengambil bahagian dalam usaha memberi bantuan apabila bencana melanda di luar negara.

7. Jawatankuasa mengambil maklum Jepun membangunkan terusan dan saluran air yang dirancang dengan baik untuk mengawal aliran air dan mengurangkan banjir. Ini termasuk struktur pembendung air yang boleh dikawal seperti di Kasukabe.



## **SYOR-SYOR DARI JAWATANKUASA**

Oleh itu, Jawatankuasa mengemukakan syor-syor seperti berikut:

1. Malaysia perlu memperbaiki sistem amaran awal di seluruh negara untuk bencana seperti banjir dan gempa bumi. Kesedaran awam perlu ditingkatkan melalui pendidikan dan latihan berkala tentang tindakan yang perlu diambil dalam situasi bencana.
2. Malaysia perlu mempertingkatkan pengurusan jalan raya dan pengangkutan awam yang cekap seperti yang dilakukan oleh Jepun. Hal ini termasuk penggunaan teknologi untuk pembayaran tol yang lebih mesra dan pengurusan lalu lintas yang sistematik, serta sistem kereta api yang berkualiti tinggi di seluruh negara.
3. Malaysia boleh mengambil contoh daripada Jepun dalam pembangunan infrastruktur telekomunikasi yang maju, termasuk kemajuan dalam teknologi 5G dan perancangan terhadap 6G. Usaha ini akan meningkatkan akses internet berkualiti tinggi dan komunikasi yang lebih baik.
4. Malaysia perlu menyediakan dasar-dasar (dan insentif jika perlu) untuk menggalakkan sektor swasta untuk memulakan kajian terhadap penggunaan teknologi 6G dan ke atas sebagai persediaan bagi membolehkan Malaysia mengambil manfaat penuh apabila sampai masanya.
5. Malaysia boleh mempelajari pengurusan bencana yang komprehensif dari Jepun. Ini termasuk sistem amaran bencana, perancangan operasi penyelamat yang teliti, penyediaan peralatan operasi penyelamat yang berkualiti, dan kerjasama antarabangsa dalam pengurusan bencana.
6. Malaysia boleh mempelajari pendekatan Jepun dalam usaha penyelenggaraan bangunan dan infrastruktur yang tahan bencana, termasuk penggunaan teknologi untuk meningkatkan kekuatan dan keselamatan bangunan bagi persediaan terhadap bencana alam yang tidak menentu.
7. Malaysia perlu meneruskan usaha dalam pendidikan kesedaran awam mengenai bencana kepada rakyat pada setiap masa. Program-program pendidikan dan latihan berkala akan membantu meningkatkan kesedaran dan persediaan masyarakat terhadap bencana.

8. Jepun mempunyai sistem kerjasama yang baik dengan komuniti tempatan dalam pengurusan bencana. Malaysia boleh mempelajari bagaimana membina hubungan yang kuat antara pihak berkuasa tempatan, agensi kerajaan, dan komuniti tempatan untuk meningkatkan tindakan bersama dalam operasi menyelamatkan setiap kali berlakunya bencana.
9. Malaysia boleh terus meningkatkan kerjasama dengan negara-negara lain dalam perkara berkaitan bencana. Perkara ini termasuklah pertukaran maklumat, latihan bersama, dan bantuan apabila bencana melanda.

## RUMUSAN

Berdasarkan pemerhatian dan penelitian Jawatankuasa Pilihan Khas Infrastruktur, Pengangkutan dan Komunikasi dalam lawatan kerja ke Jepun, Jawatankuasa bersetuju mengemukakan syor-syor yang terkandung dalam laporan ini:-

1. Jawatankuasa mengesyorkan supaya Malaysia perlu memperbaiki sistem amaran awal di seluruh negara untuk bencana seperti banjir dan gempa bumi. Kesedaran awam perlu ditingkatkan melalui pendidikan dan latihan berkala tentang tindakan yang perlu diambil dalam situasi bencana.
2. Jawatankuasa mengesyorkan supaya Malaysia perlu mempertingkatkan pengurusan jalan raya dan pengangkutan awam yang cekap seperti yang dilakukan oleh Jepun. Ini termasuk penggunaan teknologi untuk pembayaran tol yang lebih mesra dan pengurusan lalu lintas yang sistematik, serta sistem kereta api yang berkualiti tinggi di seluruh negara.
3. Jawatankuasa mengesyorkan supaya Malaysia boleh mengambil contoh daripada Jepun dalam pembangunan infrastruktur telekomunikasi yang maju, termasuk kemajuan dalam teknologi 5G dan perancangan terhadap 6G. Usaha ini akan meningkatkan akses internet berkualiti tinggi dan komunikasi yang lebih baik.
4. Jawatankuasa mengesyorkan supaya Malaysia perlu menyediakan dasar-dasar (dan insentif jika perlu) untuk menggalakkan sektor swasta untuk memulakan kajian terhadap penggunaan teknologi 6G dan ke atas sebagai persediaan bagi membolehkan Malaysia mengambil manfaat penuh apabila sampai masanya.
5. Jawatankuasa mengesyorkan supaya Malaysia mempelajari pengurusan bencana yang komprehensif dari Jepun. Ini termasuklah sistem amaran bencana, perancangan operasi penyelamat yang teliti, penyediaan peralatan operasi penyelamat yang berkualiti, dan kerjasama antarabangsa dalam pengurusan bencana.
6. Jawatankuasa mengesyorkan supaya Malaysia mempelajari pendekatan Jepun dalam usaha penyelenggaraan bangunan dan infrastruktur yang tahan bencana, termasuk penggunaan teknologi untuk meningkatkan kekuatan dan keselamatan bangunan bagi persediaan terhadap bencana alam yang tidak menentu.

7. Jawatankuasa mengesyorkan supaya Malaysia perlu meneruskan usaha dalam pendidikan demi mewujudkan kesedaran awam mengenai bencana kepada rakyat pada setiap masa. Program-program pendidikan dan latihan berkala akan membantu meningkatkan kesedaran dan persediaan masyarakat terhadap bencana.
8. Jawatankuasa mengesyorkan supaya Malaysia mempelajari bagaimana membina hubungan yang kuat antara pihak berkuasa tempatan, agensi kerajaan, dan komuniti tempatan untuk meningkatkan tindakan bersama dalam operasi menyelamatkan setiap kali berlakunya bencana.
9. Jawatankuasa mengesyorkan supaya Malaysia terus meningkatkan kerjasama dengan negara-negara lain dalam perkara berkaitan dengan pengurusan bencana. Ini termasuk pertukaran maklumat, latihan bersama, dan bantuan apabila bencana melanda.
10. Jawatankuasa mengesyorkan supaya tindakan sewajarnya diambil terhadap kesemua syor yang telah dikemukakan.

## LAMPIRAN A

### SENARAI DELEGASI

1. Yang Berhormat Tuan Ir. Haji Yusuf bin Abd Wahab  
Ahli Parlimen Tanjong Manis (Pengerusi)
2. Yang Berhormat Datuk Seri Ir. Dr. Wee Ka Siong  
Ahli Parlimen Ayer Hitam
3. Yang Berhormat Datuk Wan Saifulruddin bin Wan Jan  
Ahli Parlimen Tasek Gelugor
4. Yang Berhormat Tuan Ts. Zahir bin Hassan  
Ahli Parlimen Wangsa Maju
5. Yang Berhormat Ir. Ts. Hj. Khairil Nizam bin Khirudin  
Ahli Parlimen Jerantut
6. Yang Berhormat Tuan Ganabatirau a/l Veraman  
Ahli Parlimen Klang
7. Yang Berhormat Datuk Matbali bin Musah  
Ahli Parlimen Sipitang
8. Encik Ahmad Khairul Ridhwan bin Mohamed Hanif  
Pegawai Penyelidik, Seksyen Jawatankuasa Pilihan Khas
9. Encik Muhammad Zydil Iman bin Zulkefli  
Setiausaha Delegasi

**B u i l d i n g**  
**N a t i o n a l**  
**R e s i l i e n c e**

**– Creating a Strong and Flexible Country –**

**National Resilience Promotion Office, Cabinet Secretariat**

# Why Build National Resilience?

## Lessons Learned from Large-scale Disasters

Japan has suffered a variety of damage due to repeated large-scale disasters, and countermeasures against disasters have been strengthened based on lessons we learned.

The Isewan Typhoon in 1959 caused the largest ever typhoon damage since the Meiji era, with a total of 5,098 people being killed or lost. This disaster triggered the enactment of the Basic Act on Disaster Control Measures, which has served as the basis of Japan's disaster prevention measures.

The Great Hanshin-Awaji Earthquake in 1995 was the first inland earthquake on record with the maximum intensity of 7 on the Japanese scale to directly hit large city areas. Nearly 80% of the victims were killed due to building collapse and the disaster caused tremendous human and property losses, including large-scale fires in densely-populated city centers and collapse of viaducts of highway.

Having learned lessons from this experience, the government started to promote the improvement of earthquake resistance of houses and buildings and strengthen measures for urban centers where many wooden houses are concentrated. Seismic strengthening works for the infrastructure were also commenced.

Furthermore, as many people trapped under collapsed houses were rescued by their neighbors, the significance of self-help efforts and mutual assistance was widely recognized.

The Great East Japan Earthquake in 2011 was a magnitude nine earthquake, the largest on record, accompanying a large-scale tsunami with the maximum running height exceeding 40m. Coastal levees were effective to some extent in delaying the arrival of the tsunami but failed to completely block it, and many people were killed or lost.

Immediately after the disaster, a large number of people were unable to return home due to traffic interruption, and a short supply of gasoline was also a serious problem. On the other hand, there were cases like the one known as "Miracle in Kamaishi" in which residents could evacuate and survive successfully thanks to disaster prevention education having been provided on a regular basis.

The Great East Japan Earthquake revealed the limits of conventional disaster prevention measures, which have mainly focused on infrastructure development from the perspective of protection against disasters.



**Damage by the Isewan Typhoon**  
(photo provided by Aichi Prefectural Government)



**Destructed viaduct of the Hanshin Expressway**  
(photo provided by Kobe City)

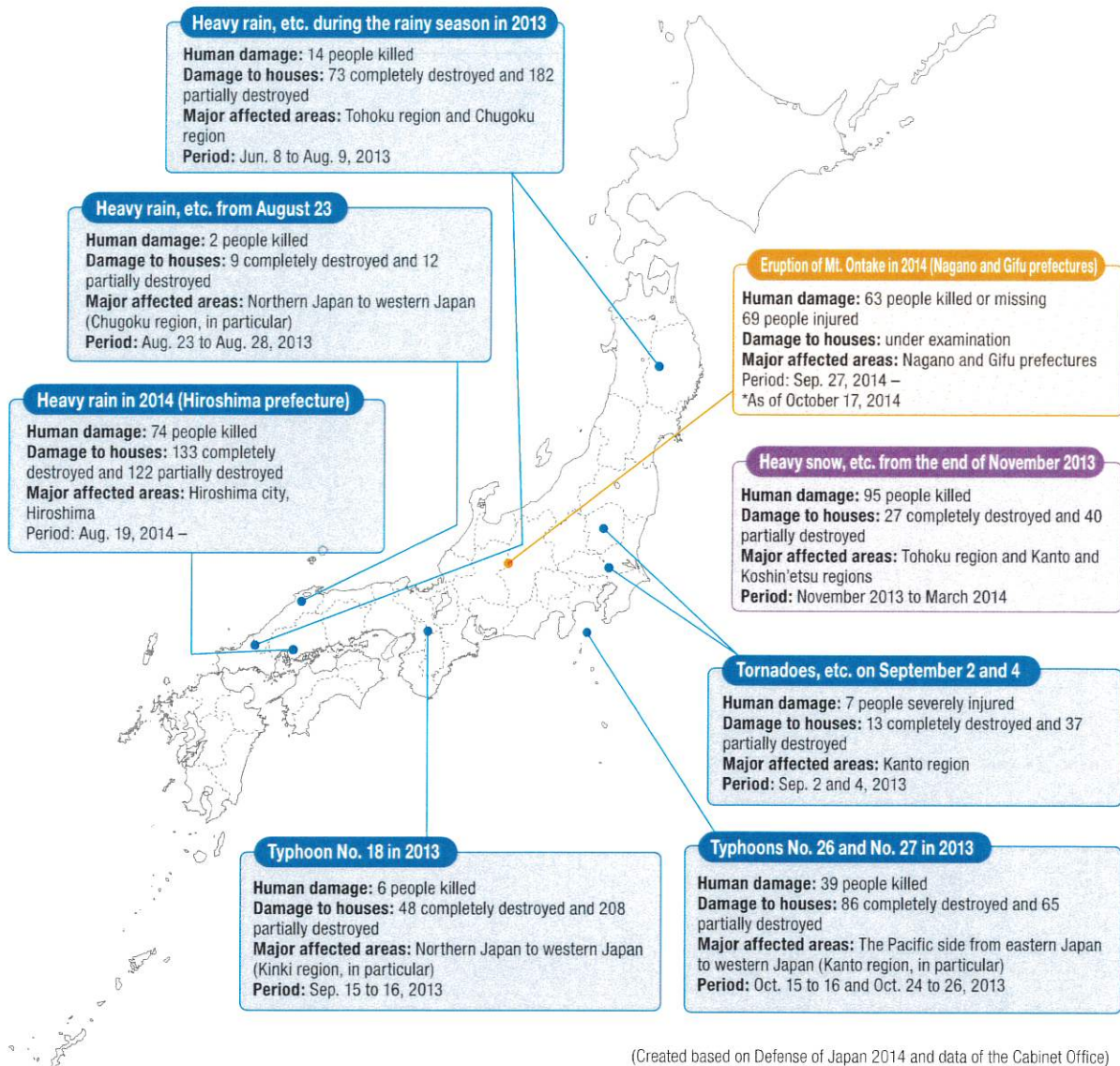


**Firefighters' and volunteer  
firefighters' efforts to find missing people**  
(photo provided by Sendai City)

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**Looking back on these unexpected large-scale disasters, we have repeated efforts for recovery and reconstruction over years after suffering significant damage, in spite of having taken various measures. In order to avoid such cycle, it is important to make ongoing efforts from the perspective of regularly securing the resistance and flexibility of national land and social and economic systems to prevent human loss by any means and avoid fatal damage to and ensure prompt recovery of society and economy.**

# Major Disasters that Occurred in 2013 Onward



(Created based on Defense of Japan 2014 and data of the Cabinet Office)

# Large-scale Earthquakes that May Occur in the Future

**Nankai Trough Giant Earthquake: Predicted Damage** (epicenter on the land side)

- Number of houses that may be destroyed by earthquake or fire: **Approx. 2.4 million at the most**
- Number of deaths: **Approx. 323 thousand people at the most**
- Economic damage: **Approx. 214 trillion yen**  
 Direct damage such as loss of assets: Approx. 169 trillion yen  
 Damage due to deterioration of production and services: Approx. 45 trillion yen

Distribution of intensity levels, case of epicenter on the land side

(Source: Second Report by the Working Group Examining Measures for a Nankai Trough Giant Earthquake (Cabinet Office))

**Inland Earthquake in Tokyo: Predicted Damage** (epicenter in the southern part of Tokyo (M7.3))

- Number of houses that may be destroyed by earthquake or fire: **Approx. 0.61 million at the most**
- Number of deaths: **Approx. 23 thousand people at the most**
- Economic damage: **Approx. 95 trillion yen**  
 Direct damage such as loss of assets: Approx. 47 trillion yen  
 Damage due to deterioration of production and services: Approx. 48 trillion yen

Distribution of intensity levels in the event of an inland earthquake in Tokyo (M7.3)

(Source: Final Report by the Working Group Examining Measures for an Inland Earthquake at the National Capital (Cabinet Office))



# Building National Resilience

## What is resilience?

**Resilience means to be strong and flexible. For example...**

- Having a resilient body means that a person has a healthy body resistant to a cold or flu and does not suffer a serious symptom even if being infected and can get well soon.
- Under a resilient natural environment, wetlands hold resilience to maintain the eco-system against abnormal climate and other significant environmental changes and are not affected significantly by floods or droughts, if any, and can recover promptly.
- Ichiro, a professional baseball player, has acquired a resilient body and mental power, as well as excellent batting techniques, through his ongoing efforts and has continued to be active on the front lines throughout his career both in Japan and the United States.

**The antonym of “resilience” is “vulnerability.” For example...**

- A vulnerable eco-system is easily affected by environmental factors, such as global warming.
- Vulnerability in the field of information security means that there are weak points or errors that may lead to the divulging of information, which could damage the security of the system, networks, applications or related protocols.
- Plate movements in waters close to Japan strongly distort the archipelago and form a volcanically-active region that is the most prone to earthquakes in the world. Also with the uplifting of the earth's crust, the Japanese archipelago is located on very vulnerable ground.

## What does it mean to achieve resilient national land and social and economic systems?

**Achieving resilient national land and social and economic systems means to have our national land, economy and social life acquire the strength to avoid fatal damage due to disasters or accidents and the flexibility to make a swift recovery.**

### Basic Principles of Building National Resilience

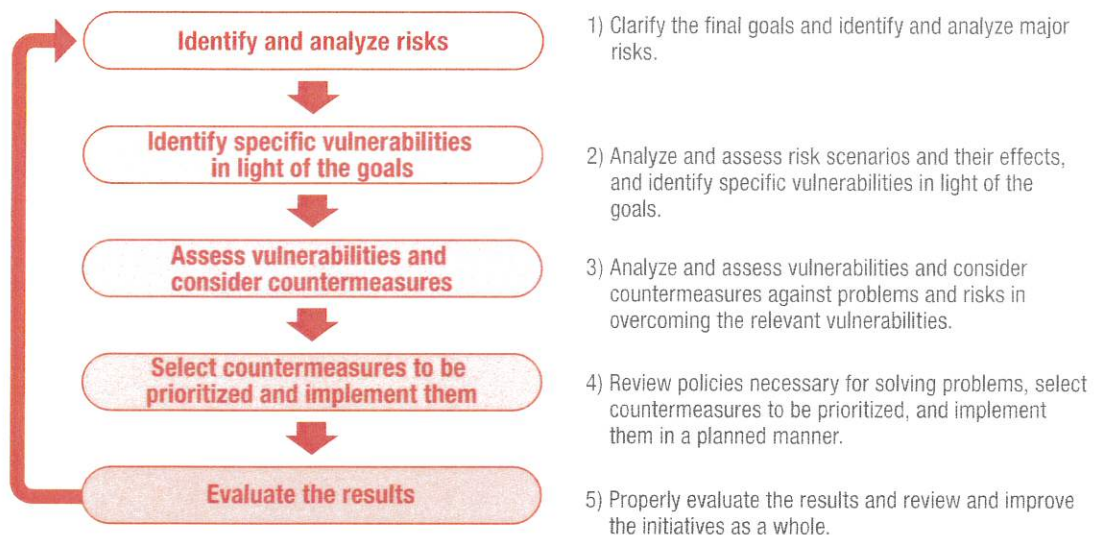
1. Prevent human loss by any means.
2. Avoid fatal damage to important functions for maintaining administration as well as social and economic systems.
3. Mitigate damage to property and facilities and prevent expansion of damage.
4. Achieve swift recovery and reconstruction.

# How to Build National Resilience?

## To create a strong and flexible country

– Evaluate the vulnerability and make efforts in a planned manner –

In order to build safe national land, regions, and economy and society with strength and flexibility, the government will continuously review and implement the PDCA cycle to check the soundness of the national land and promote initiatives to build national resilience.



### Topic

### Initiatives in other countries

In England, flooding in 2007 caused 13 deaths and submerged 55,000 buildings. The suspension of water supply and sewerage services for 17 days at the longest affected 350,000 people and the 24-hour blackout affected 42,000 people. Due to the interruption of motorways and train traffic, many people were forced to stay overnight on the road or in train cars. After suffering such huge damage, the UK government established a critical infrastructure resilience program.

In the United States, Hurricane Katrina in 2005 caused tremendous damage—approximately 1,200 deaths and 160,000 submerged buildings—in New Orleans, totaling as much as 125 billion dollars. The U.S. government reviewed the National Infrastructure Protection Plan and has taken various measures.



**Damage caused by Hurricane Katrina**

(Source: Website of the Federal Emergency Management Agency)

## Prioritization of Measures

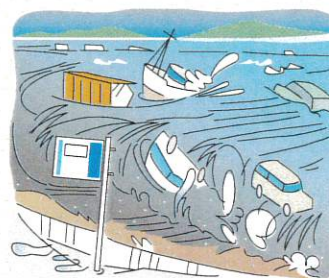
The government tries to select measures to be prioritized in consideration of changes in people's demand due to population decrease, etc. and the aging of social capital, from the perspective of ensuring implementation of relevant measures on an ongoing basis through effective use of financial funds. 15 programs to be prioritized (see below) have been selected from among the worst events that should never happen and should be avoided through implementing programs, in light of the significance of the national government's role and the seriousness of the influence and degree of urgency, and intensive efforts have been made.

As these programs relate to various sectors, cross-sectoral government-wide efforts are to be promoted also in cooperation with local governments and the private sector.

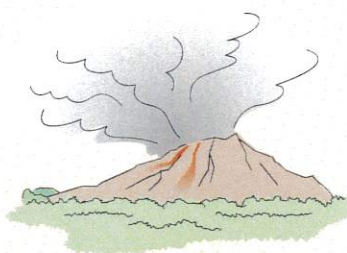
### The worst events that should never happen



- Casualties due to multiple and large-scale collapse, etc. of buildings and transportation facilities in large cities and fires in densely-populated areas



- Extensive human loss due to a large-scale tsunami, etc. affecting wide areas



- A large number of casualties due to a large-scale volcanic eruption or sediment disaster (deep-seated landslide), which may also increase vulnerability of national land into the future



- Extensive and prolonged flooding in urban areas due to abnormal weather, etc.

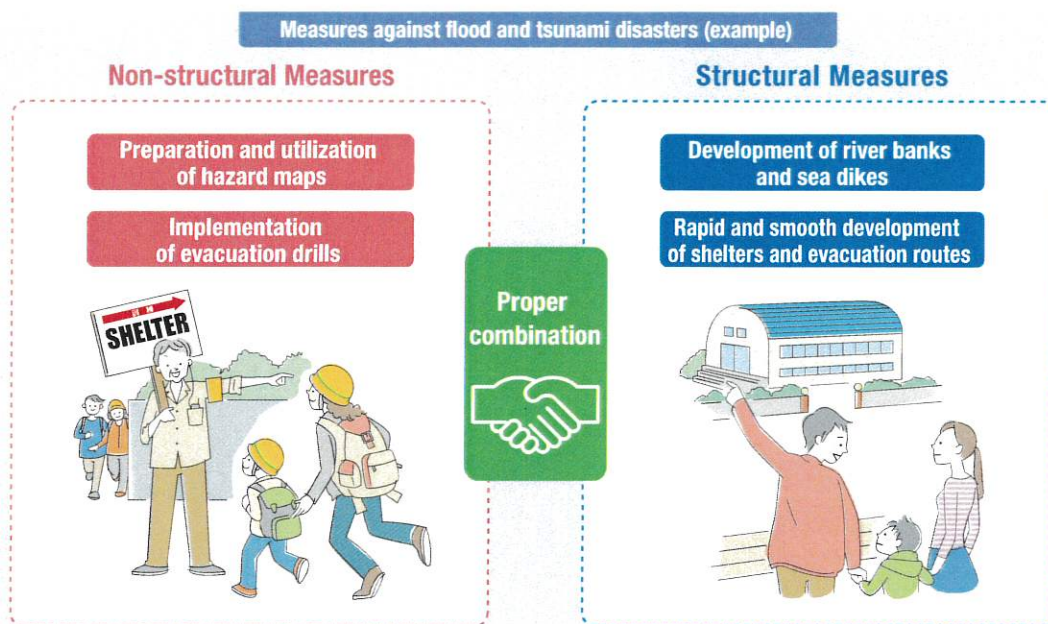
- A large number of casualties due to delay in evacuation caused by failure of information transmission, etc.
- Prolonged suspension of supply of food, drinking water and other vital materials in affected areas
- Absolute lack of rescue and emergency activities due to damage to the self-defense forces, the police, fire services, the Japan Coast Guard, etc.
- Malfunction of the central government in the capital region
- Paralysis and prolonged suspension of information transmission due to suspension of power supply, etc.
- Decline of companies' international competitiveness due to deterioration in production capacity caused by disruption of supply chains, etc.
- Suspension of energy supply necessary for social economic activities and for maintaining supply chains
- Malfunction of the core road/marine transport networks, such as disruption of arteries in the Pacific Belt Zone
- Stagnation of stable supply of food, etc.
- Suspension of functions of power supply networks (power station and substation, and power transmission/distribution equipment) and oil/LP gas supply chains
- Expansion of damage due to devastation of farmland and forests

# What are Included in Concrete Measures?

## Combination of non-structural and structural measures

– Further prioritizing non-structural measures –

Non-structural measures need to be prioritized more than ever in building national resilience. The government will implement measures effectively by properly combining non-structural and structural measures depending on disaster risks and characteristics of the regions.



### Topic Various types of emergency drills

Relevant organizations must cooperate with each other in carrying out emergency drills for large-scale natural disasters. In order to make these drills more practical and effective, it is important to contrive a means to incorporate practical exercises by combining drills to manage people and goods and map-based training to have participants make judgments on their own based on given conditions.

The government will promote various types of emergency drills, such as the comprehensive emergency drill preparing for an earthquake that directly hits the metropolitan area on National Disaster Prevention Day (September 1), tsunami prevention drills with the participation of local residents organized at seven locations nationwide centered on Tsunami Disaster Prevention Day (November 5), drills operated by emergency response headquarters in respective areas, and volcanic eruption disaster prevention drills.

Furthermore, extensive medical evacuation drills are also conducted with the aim of ensuring prompt transfer of severely injured people to medical institutions outside the affected areas for treatment.



**Comprehensive emergency drill on National Disaster Prevention Day**

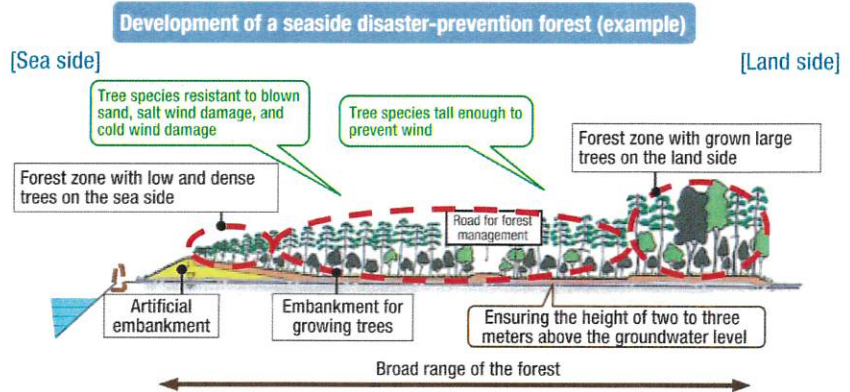


**Extensive medical evacuation drill**

(Source: Cabinet Office)

# Device to Effectively Utilize Disaster Prevention Measures at Normal Times

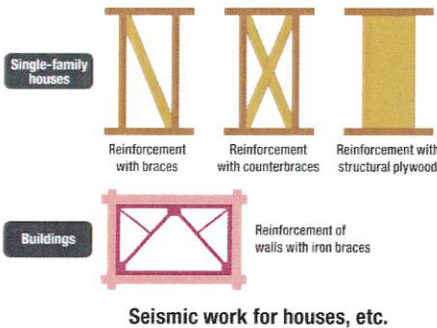
When taking any disaster prevention measures, it is important not only to ensure their effectiveness such as disaster reduction and mitigation in the event of a disaster but also to give due consideration to the scenery and devise a means to utilize them locally even at normal times.



## Cooperation with local residents and private companies

Principles of self-help efforts, mutual assistance and public help should be properly combined and the national and local governments must cooperate and share roles with local residents and private companies.

### Seismic work for houses and buildings (example)



Volunteers securing furniture to a wall at an elderly person's house  
(Source: Wagayanet)

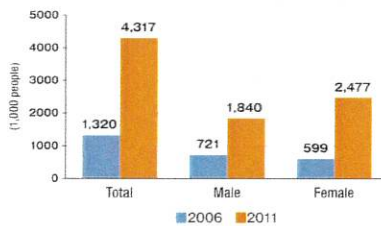


Seismic work for public facilities

## Topic Changes in people's awareness

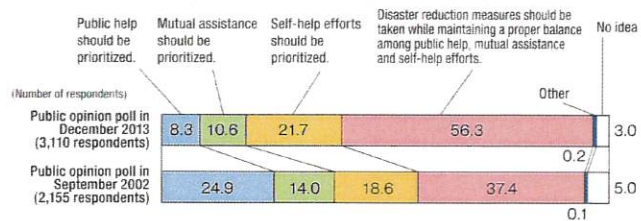
The Great East Japan Earthquake raised people's awareness of disaster prevention and strengthened bonds among people. The number of people willing to participate in volunteer activities upon a disaster increased significantly.

Comparison of the Public Opinion Polls on Disaster Prevention conducted in September 2002 and December 2013 revealed changes in the answers, i.e., a decrease in the percentage of people considering that public help should be prioritized in disaster prevention measures, and an increase in the percentage of people considering that disaster prevention measures should be taken while maintaining a proper balance among public help, mutual assistance and self-help efforts.



Number of participants in volunteer activities upon a disaster

(Source: Prepared based on the "2011 Sociological Research about Fundamental Aspects of Social Life" (Statistics Bureau, Ministry of Internal Affairs and Communications))



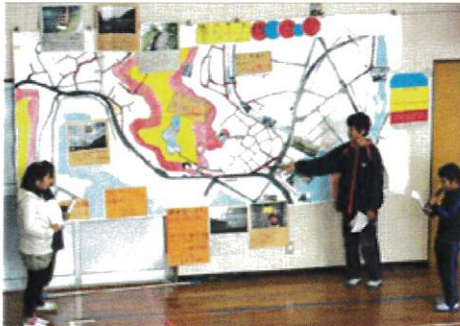
Disaster prevention measures to be prioritized (self-help efforts, mutual assistance, and public help)

(Source: Prepared based on the "Public Opinion Poll on Disaster Prevention (December 2013)" (Cabinet Office))

## For Correct Understanding and Actions

It is indispensable to improve risk communication through providing education for disaster prevention and taking other measures to develop the resilience of individuals, including children and local residents, so that each one of us can understand the situation correctly in the event of a disaster and can evacuate or take other proper actions for survival.

### Education for disaster prevention (example)



**Upper left:**  
Preparation of a disaster prevention map

(Source: "FY2012 White Paper on Education, Culture, Sports, Science and Technology"\*\*)1)

**Upper right:**  
Joint evacuation drill with participation of local residents

(Source: "Development of Disaster Prevention Education to Develop Survival Skills"\*\*)1)

**Lower left:**  
Students participating in a local emergency drill

(Source: "Project to Improve Disaster Preparedness of School Facilities"\*\*)1)

(\*\*1 Ministry of Education, Culture, Sports, Science and Technology)

### Topic

## Measures for people unable to return home in the event of a disaster

Based on the lessons from the Great East Japan Earthquake, public-private efforts are being promoted as measures for people who may become unable to return home in the event of an inland earthquake in Tokyo.



**A drill for dealing with people unable to return home (a railway company)**

(Source: "Guidelines for Protecting Users at Large Facilities and Stations. etc."\*\*)2)

**Facilities for temporary stay that the Tokyo Metropolitan Government has secured (Tokyo metropolitan facilities)** (Apr. 1, 2014)

**Number of facilities: 200 / Capacity: Approx. 70,000 people**



**A drill for opening a facility for temporary stay (a private facility)**

(Source: "Guidelines for Securing and Operating Facilities for Temporary Stay"\*\*)2)

(\*\*2 Council for Measures for People Unable to Return Home in the Event of an Inland Earthquake at the National Capital)

# Basic Act for National Resilience Contributing to Preventing and Mitigating Disasters for Developing Resilience in the Lives of the Citizenry

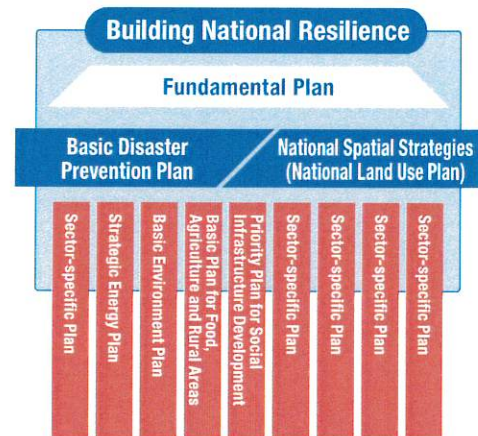
## □ Purpose and Basic Principles

- Promote initiatives aiming to achieve the goal of making the entirety of the national land more resilient to large-scale natural disasters
- Establish necessary measures under clear goals through such means as assessing the current status and incorporate such measures into the national plans (The Fundamental Plan for National Resilience will serve as the guidelines therefor.)

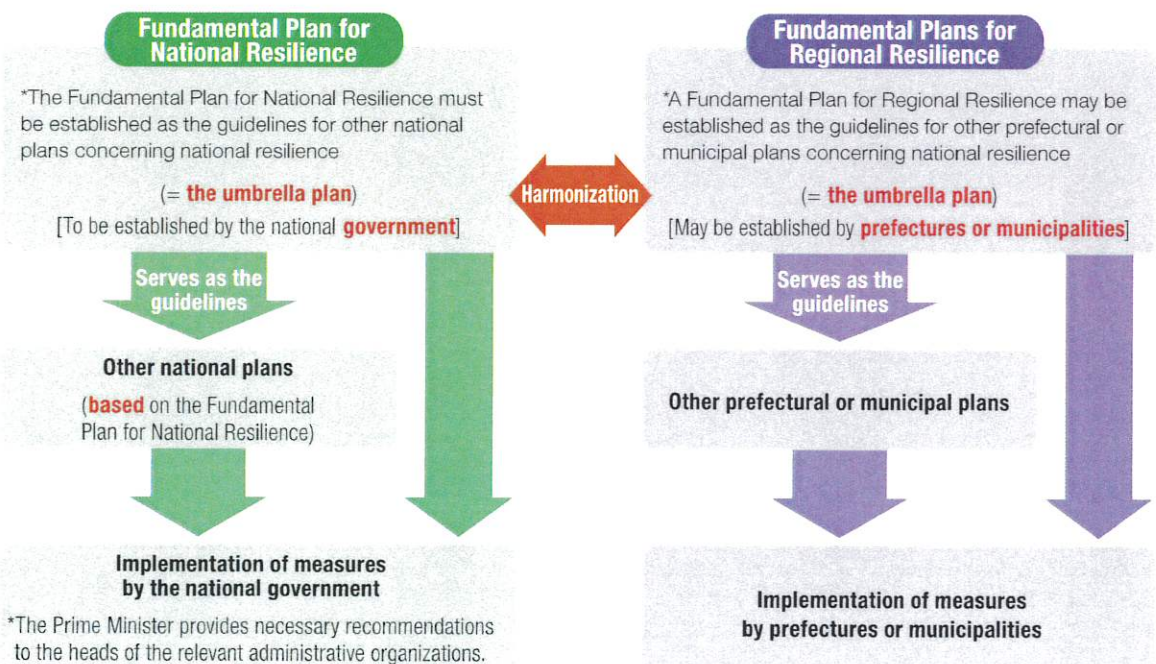
## □ Basic Policies

1. Ensure the protection of human lives to the extent possible.
2. Avoid fatal damage to important functions of the nation and society and ensure that such functions are maintained.
3. Minimize damage to the property of the citizenry and public facilities.
4. Contribute to swift recovery and reconstruction.
5. Develop a system for the purpose of promoting initiatives for building national resilience by combining measures for non-structural and structural measures.
6. Make efforts for disaster prevention and mitigation based on an appropriate combination of self-help efforts, mutual assistance and public help, with the national government playing a central role in particularly serious or urgent situations.
7. Select and implement measures intensively in consideration of changes in people's demand and the aging of social capital

## Whole picture of the umbrella plan



## Relationship between the Fundamental Plan for National Resilience and Fundamental Plans for Regional Resilience



# Major Points of Fundamental Plan for National Resilience, Action Plan, and Guidelines for Establishing Fundamental Plans for Regional Resilience

## Fundamental Plan for National Resilience

- Statutory plan; Cabinet decision; To be reviewed once around every five years
- Contains promotion policies for each sector of measures and for each program for avoiding the worst events
- To be reflected in the review of other national plans and in promoting concrete measures

### ● Basic Concept concerning National Resilience (Chapter 1)

**[Principles]** (i) Protect human lives (ii) Avoid fatal damage and maintain important functions of the nation and the society  
(iii) Minimize damage to the property of the citizenry and public facilities (iv) Swift recovery and reconstruction

**[Basic Policies, etc.]** ○ Management by repeating the PDCA cycle, etc.

**[Matters Requiring Particular Consideration]** ○ Measures for the coming Olympic and Paralympic Games, etc.

### ● Policies for Promoting Initiatives for Building National Resilience (Chapter 3)

#### - Promotion Policies for Each Sector of Measures -

- (Example) **[Housing and cities]** · Measures against fires in densely-populated areas  
**[Energy]** · Strengthening of capacity for mutual accommodation of energy among regions  
**[Information and communications]** · Early implementation of measures against long-term suspension of power supply  
**[Industrial structures]** · Promotion of the preparation of BCP/BCM for enterprise partnerships  
**[Transportation and logistics]** · Enhancement of disaster resilience of transportation and logistics facilities

### ● Promotion and Constant Review of the Plan (Chapter 4)

- The content of the plan shall be reviewed once around every five years, and required amendments are to be made within five years, if necessary.
- The National Resilience Promotion Headquarters establishes a plan for promoting programs for avoiding the worst events that should never happen as an action plan for building national resilience for every fiscal year.
- 15 programs to be prioritized are to be promoted intensively.

## Action Plan for National Resilience 2014

- Decision by the National Resilience Promotion Headquarters (established for every fiscal year)
- To be utilized for managing the progress of programs and considering measures for every fiscal year
- Contains plans for promoting each of the programs for avoiding the worst events (promotion policies and Key Performance Indicators (KPI)) and major measures therefor

### ● Plans for Promoting Programs (Example)

Examples of the Worst Events that Should Never Happen	Example of Promotion Plans	Example of Key Performance Indicators (KPI)
Extensive human loss due to a large-scale tsunami, etc.	Steady promotion of structural measures combined with non-structural measures	<b>[MLIT*/MAFF**]</b> Completion ratio of the development of coastal dikes, etc. (construction of coastal dikes, etc. up to the planned height and seismic reinforcement work) in areas with a high possibility of being hit by a large-scale earthquake, such as a Tokai, Tonankai or Nankai earthquake: Approx. 31% (2012) → Approx. 66% (2016) <b>[MLIT/MAFF]</b> Percentage of municipalities that have prepared and publicized hazard maps for largest-scale tsunamis and have conducted emergency drills: 14% (2012) → 100% (2016)
Decline of companies' international competitiveness caused by disruption of supply chains, etc.	Preparation of BCPs for each enterprise and for enterprise partnerships for the purpose of securing supply chains	<b>[Cabinet Office]</b> Percentage of large enterprises and medium-sized enterprises that have prepared BCPs: <b>Large enterprises:</b> 45.8% (2011) → Almost 100% (2020) <b>Medium-sized enterprises:</b> 20.8% (2011) → 50% (2020)

\*MLIT: Ministry of Land, Infrastructure, Transport and Tourism

\*\*MAFF: Ministry of Agriculture, Forestry and Fisheries

## Guidelines for Establishing Fundamental Plans for Regional Resilience

- Prepared as guidelines to help the smooth establishment of Fundamental Plans for Regional Resilience by prefectures and municipalities
- It is explained that local governments shall also establish regional plans in line with the process of establishing the national Fundamental Plan, by clarifying goals, identifying risks, assessing vulnerability, considering countermeasures and selecting and prioritizing measures to be implemented intensively, and shall promote measures for building national resilience efficiently and effectively while undertaking the PDCA cycle.



## Outline of the Action Plan for National Resilience 2014

### Action Plan for National Resilience 2014

- For the purpose of steadily promoting the Fundamental Plan by evaluating the progress of measures **every fiscal year** and **compiling** policies to be followed based thereon **as an action plan**
- For managing the progress of programs, **concrete numerical goals such as KPIs shall be set** to evaluate the progress of measures as quantitatively as possible.
- The action plan consists of the results of vulnerability assessment of each program, **promotion plans for the respective programs** (promotion policies + KPI goals) based on assessment results, and **major measures**.

### ● Plans for Promoting Programs (Excerpt)

Examples of the Worst Events that Should Never Happen	Example of Promotion Plans	Example of Key Performance Indicators (KPI)
Casualties due to large-scale and multiple collapse of buildings and transportation facilities in urban areas or fires in densely-populated areas	<ul style="list-style-type: none"> <li>• Seismic reinforcement work of houses and buildings</li> <li>• Promotion of anti-seismic measures for non-structural members, such as suspended ceilings</li> </ul>	[MLIT] Proportion of houses and buildings with seismic resistance Houses: <b>Approx. 79% (2008) → 95% (2020)</b> Buildings: <b>Approx. 80% (2008) → 90% (2015)</b>
Extensive human loss due to a wide area large-scale tsunami, etc.	<ul style="list-style-type: none"> <li>• Steady promotion of structural measures combined with non-structural measures</li> </ul>	[MLIT/MAFF] Completion ratio of the development of coastal dikes, etc. (construction of coastal dikes, etc. up to the planned height and seismic reinforcement work) in areas with a high possibility of being hit by a large-scale earthquake, such as a Tokai, Tonankai or Nankai earthquake <b>Approx. 31% (2012) → Approx. 66% (2016)</b> [MLIT/MAFF] Municipalities that have prepared and publicized hazard maps for largest scale tsunamis and have conducted emergency drills <b>14% (2012) → 100% (2016)</b>
Prolonged and wide-area flooding in urban areas due to abnormal weather, etc.	<ul style="list-style-type: none"> <li>• Promotion of excavation of river channels, construction of dikes, development and strengthening of functions of flood control facilities, and development of drainage facilities</li> <li>• Support for disaster mitigation measures coupled with effective land use and preparation of flood hazard maps and inner water hazard maps</li> </ul>	[MLIT] Completion ratio of the development of rivers against mid-term goals in areas where people and assets are concentrated <b>Approx. 74% (2012) → Approx. 76% (2016)</b> [MLIT] Municipalities that have prepared and publicized inland flood hazard maps and have conducted emergency drills <b>31% (2012) → 100% (2016)</b>
Loss of international competitiveness due to a decline in companies' productivity caused by disruption of supply chains, etc.	<ul style="list-style-type: none"> <li>• Preparation of BCPs for each enterprise and for enterprise partnerships for the purpose of securing supply chains</li> </ul>	[Cabinet Office] Large enterprises and medium-sized enterprises that have prepared BCPs Large enterprises: <b>45.8% (2011) → Almost 100% (2020)</b> Medium-sized enterprises: <b>20.8% (2011) → 50% (2020)</b>
Suspension of energy supply necessary for social economic activities and the maintenance of supply chains	<ul style="list-style-type: none"> <li>• Review of collaborative plans on oil supply in an emergency and BCPs by each oil refinery company and oil wholesaler</li> </ul>	[METI] BCPs prepared by incorporating backup systems by oil refinery companies and oil wholesalers <b>0% (2012) → 100% (2014)</b>
Dysfunction of the core road/marine transport networks, such as disruption of arteries in the Pacific Belt Zone	<ul style="list-style-type: none"> <li>• Promotion of measures to strengthen the disaster response capacity of transportation facilities</li> </ul>	[MLIT] Development of road networks for ensuring redundancy <b>Approx. 47% (2011) → Approx. 50% (2016)</b> [MLIT] Ports for which BCPs were decided on for international strategic ports, international hub ports or major ports <b>3% (2012) → 100% (2016)</b>
Stagnation of stable supply of food, etc.	<ul style="list-style-type: none"> <li>• Building of a system for collaboration and cooperation in an emergency among business operators constituting food supply chains</li> </ul>	[MAFF] Establishment of systems for collaboration and cooperation by food business operators, etc. <b>24% (2012) → 50% (2017)</b>

### ● Major Measures for Promoting Programs (Omitted)

# Assessment of Vulnerability to Large-scale Natural Disasters (Outline)

Vulnerability assessment is like a health checkup of the nation, examining and assessing Japan's vulnerability to large-scale natural disasters, and is an indispensable process for building national resilience in an efficient and effective manner.

Matters contained in the Guidelines for Assessment of Vulnerability to Large-scale Natural Disasters (Decision by the National Resilience Promotion Headquarters in December 2013)

## (1) Methodology for Assessment

- Assess each sector of measures concerning national resilience
- Envisage “the worst events that should never happen” and cross-sectorally assess respective countermeasures
- Also assess the required resources to be input, including human resources, that are indispensable for building national resilience
- Conduct quantitative assessment as much as possible in order to monitor the progress of measures

## (2) Premises for Assessment

### (i) Envisaged risks: Large scale natural disasters

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

Individual sectors:

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; 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;
- 3) Secure indispensable administrative functions; 4) Secure indispensable information communication functions;
- 5) Prevent functional disturbance in economic activities; 6) Secure minimum networks for electricity, gas, water and sewerage; 7) Prevent secondary disaster; 8) Swift recovery and reconstruction

The worst events that should never happen: 45 events

\* Program: A group of measures for avoiding each of the worst events that should never happen (or partially reducing the risks)

# Major Points of the Results of the Vulnerability Assessment

## 1. Prioritization of measures and an appropriate combination of structural and non-structural measures are required

Many of the measures for building national resilience that will contribute to disaster prevention and mitigation are only half done. Having experienced disasters beyond our assumptions and considering the fact that there are limits to the capacity and funds of implementation entities, we need to prioritize certain measures and appropriately combine structural and non-structural measures in order to raise the level of security of Japan as early as possible in light of their goals (protect human lives; minimize the damage, avoid fatal damage to important facilities, and achieve swift recovery and reconstruction).

Representative programs: 1-3), 1-4), 1-5), 7-6)      Representative sectors: Housing and cities; National land conservation

## 2. Ensuring redundancy is necessary

Even if the resistance against earthquakes of each facility is enhanced, that is not enough for responding to all types of disasters that may occur. In such sectors as administration, energy, finance, information and communications, and transportation and logistics, in particular, system shutdown will cause significant damage, exerting significant influence. Therefore, substitutability and redundancy need to be ensured through developing backup facilities and systems.

Representative programs: 3-3), 4-1), 5-5), 6-1)      Representative sectors: Administrative functions, Energy, Finance, Information and communications, Transportation and logistics

## 3. Collaboration with local governments and the public sector is necessary

Each of the measures is to be implemented by various entities, including local governments, private business operators, NPOs, and the general public, not only by the national government. In order to have these entities implement measures efficiently and effectively, it is indispensable for the national government to offer proper assistance to municipalities and strengthen the organization of local governments in efforts for fostering personnel in charge of strengthening resilience and to ensure collaboration among entities for thorough provision and sharing of information.

Representative programs: 1-1), 1-6), 2-1), 3-4), 4-1), 5-1), 5-2), 5-7), 5-8)      Sectors: of measures: All sectors

# Outline of the Basic Act for National Resilience Contributing to Preventing and Mitigating Disasters for Developing Resilience in the Lives of the Citizenry

## Basic Principles

When promoting measures concerning National Resilience, it is important to implement measures that will contribute to disaster prevention and mitigation as required and to swift recovery and reconstruction from disasters in a comprehensive and systematic manner, based on the lessons learned from the Great East Japan Earthquake, and with the aim of enhancing Japan's international competitiveness, relevant measures must be established appropriately under clear goals through such means as assessing the current status in terms of ensuring the safety and health and protecting the property of the citizens against large-scale natural disasters and of minimizing the influence of large-scale natural disasters on the lives of the citizenry and the national economy, and such measures must be incorporated into the national plan, etc.

## Basic Policies

- Ensure the protection of human lives to the extent possible.
- Avoid fatal damage to important functions of the nation and the society and to ensure that such functions are maintained, thereby enabling the political, economic and social activities of Japan to remain sustainable.
- Minimize damage to the property of the citizenry and public facilities.
- Contribute to swift recovery and reconstruction.
- Immediately develop a system for the purpose of promoting initiatives for building national resilience by combining measures relating to the development of facilities, etc. with those do not.
- Make efforts for disaster prevention and mitigation based on an appropriate combination of self-help efforts, mutual assistance and public help, with the national government playing a central role in particularly serious or urgent situations.
- Select and implement measures intensively, while giving due consideration to ensuring implementation of relevant measures on an ongoing basis through effective use of financial funds.

## Policies for Establishing and Implementing Measures

- Try to reduce cost through effective use of the existing social capital, etc.
- Contribute to efficient and effective maintenance and management of facilities and equipment.
- Give due consideration to symbiosis with nature and harmony with the environment in accordance with the characteristics of each region.
- Try to actively utilize private sector funding.
- Conduct assessment of vulnerability to large-scale natural disasters.
- Promote reasonable use of land from the viewpoint of protecting human lives.
- Promote research and development based on scientific knowledge and try to disseminate the outcomes thereof.

## Establishment of Fundamental Plan for National Resilience

- \* **The Fundamental Plan for National Resilience shall be established as the guidelines for other national plans concerning national resilience.**
- **Procedures for establishment**
  - ◆ **Preparation of a draft (National Resilience Promotion Headquarters)**
    - \* The Headquarters hears the opinions of prefectures, municipalities, etc.
    - \* The Headquarters decides the order of priority for measures to be implemented intensively in light of the public need, objectivity, fairness and reasonableness, while ensuring the transparency of the process of preparing the draft.
  - ◆ **Cabinet decision**
- **Matters to be stated**
  - Covered sectors of measures
  - Basic guidelines for establishing measures
  - Other matters necessary for promoting measures in a comprehensive and systematic manner

Establishment of the plan based on the assessment results  
Verification of the vulnerability assessment results

## Implementation of Vulnerability Assessment

- \* **The Headquarters conducts vulnerability assessment upon preparing a draft of the Fundamental Plan for National Resilience**
  - The Headquarters establishes the guidelines.
  - Vulnerability assessment shall be conducted in a comprehensive and objective manner, while envisaging the worst events
  - Vulnerability assessment shall be conducted with the cooperation of the relevant administrative organs.

## Establishment of Fundamental Plan for Regional Resilience

- \* **A Fundamental Plan for Regional Resilience may be established as the guidelines for other prefectural or municipal plans concerning national resilience.**  
[Prefectures or municipalities may establish such plan.]

Harmony

Serves as the guidelines

## Other national plans

(Based on the Fundamental Plan for National Resilience)

Serves as the guidelines

## Other prefectural or municipal plans

## Implementation of measures by the national government

- \* The Prime Minister provides necessary recommendations to the heads of the relevant administrative organs.

## Implementation of measures by prefectures or municipalities

## Establishment of the National Resilience Promotion Headquarters

- \* In order to promote measures concerning National Resilience in a comprehensive and systematic manner, the National Resilience Promotion Headquarters shall be established in the Cabinet Office.  
[Director-General] Prime Minister [Vice Directors-General] Chief Cabinet Secretary, Minister in charge of Building National Resilience and Minister of Land, Infrastructure, Transport and Tourism [Members] Other Ministers of State
- \* The Headquarters may demand submission of materials and other required cooperation from the heads of the relevant administrative organs, etc.

## Others

- Consideration concerning appropriate state of organizations in charge of promoting initiatives for building national resilience
- Enhancement of understanding of citizens and other countries

## Fundamental Plan for National Resilience

- Guidelines such as other national plans concerning national resilience (umbrella plans) from the plan based on Article 10 of the Basic Act for National Resilience Contributing to Preventing and Mitigating Disasters for Developing Resilience in the Lives of the Citizenry (Act No.95 of 2013)
- The Fundamental Plan provides for promotion policies for each sector of measures and for each program based on the results of the vulnerability assessment.

### ● Basic Concept concerning National Resilience (Chapter 1)

#### [Principles]

- Basic principles of national resilience
  - (i) Prevent loss of human life 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 of the citizenry and public facilities
  - (iv) Achieve swift recovery and reconstruction
- Secure social and economic systems that will never become dysfunctional even in the event of a disaster, thereby playing a part in Japan's economic growth

#### [Basic Policies, etc.]

- Depart from the still progressing overconcentration in the Tokyo Metropolitan area and **urge** to create national land that is autonomous, decentralized and coordinated
- Prioritization of measures based on **weather changes, etc. from climate change, etc.**
- Appropriate combination of structural and non-structural measures is necessary
- Reduce cost through effective use of the existing social capital
- Actively utilize private funding through PPP and PFI
- Manage through repeating the PDCA cycle

#### [Matters Requiring Particular Consideration]

- **Environment improvement to activate promotion of public-private collaboration and citizen-led efforts**
- **Innovation for national resilience**
- **Implementation of measures for disaster management and better reconstruction, etc. from the Sendai Framework for Disaster Risk Reduction**
- Measures based on the lessons learnt from the disaster occurred after June 2018

### ● Vulnerability Assessment (Chapter 2) 12 individual sectors of measures and 5 cross-cutting sectors

#### ● Policies for Promoting Initiatives for Building National Resilience (Chapter 3)

##### – Promoting initiatives for each sector of measures –

#### [Administrative functions/Police and fire services / Sectors such as disaster management education, etc.]

- Promotion of measures based on the government-wide business continuity plan, implementation of constant review enabling evacuation actions based on one's own judgment with the awareness that one should protect one's own life, etc.

#### [Housing and cities]

- Disaster management locations, enhance earthquake resistance of residences, schools, etc., **enhance earthquake resistance of cultural assets, correct excess concentration in the Tokyo metropolitan area due to inflow of the "compact + network" concept, etc.**

#### [Healthcare and welfare]

- **Systematic development of DMAT plans that consider the number of necessary personnel based on damage estimates, etc., promotion of designation of welfare evacuation centers, etc.**

#### [Energy]

- Construction of disaster-resistant energy supply systems such as enhancing **resiliency of electricity infrastructure, strengthening of capacity to mutually accommodate energy between regions, introduction of an independent distributed model of energy, etc.**

#### [Finance]

- Securing of backup functions of financial systems and implementation of joint drills in a cross-sectoral manner among financial institutions

#### [Information and communications]

- Ensure various collection measures from the national government and citizens, and ensure diverse means of provision of information considering **travelers, elderly people, people with disabilities, foreign people, etc.**

#### [Industrial structures]

- **Strengthen support for disaster management and disaster reduction measures undertaken by SMEs, etc.**

#### [Transportation and logistics]

- Enhancement of disaster resilience of transportation and logistics facilities, **improving snow removal system in terms of both soft and hard aspects, etc.**

#### [Agriculture, forestry and fisheries]

- Implementation of structural measures for production infrastructure, etc. and non-structural measures such as the preparation of BCP/BCM at the distribution and processing stages pertaining to the agriculture, forestry and fisheries industry, **local community maintenance and activation through exchange, etc. between cities and farm villages, etc.**

#### [National land conservation]

- Comprehensive measures combining structural measures such as improvement of disaster management facilities, etc. and non-structural measures such as development of easy-to-understand disaster management information, etc. and flood control measures based on climate change effects, etc.

#### [Environment]

- **Strengthen the resiliency of the waste disposal system through building a wide-area collaboration system for disaster waste disposal, etc.**

#### [Land use (national land use)]

- **Decentralize risks through mitigating population concentration in disaster-prone areas, measures to land with unknown owners, preparation for reconstructive community building, etc.**

#### [Risk communication]

- **Promote plan formulation regarding voluntary disaster management activities by citizens, etc., improving disaster response capacity through local community strengthening, education, training, etc.,**

#### [Human Resources Development]

- **Training of disaster experts, engineers, and area leaders, etc.**

#### [Public-Private Collaboration]

- **Promote utilization of skills, know-how, facilities, improvement, etc. of the private sector, etc.**

#### [Countermeasures for aging infrastructure]

- **Promote formulation of plans for long-lasting infrastructure, building of maintenance cycles, etc.**

#### [Research and development]

- **Research, development and promotion of the spread and societal implementation of new technologies, etc. on disaster management and reduction, and countermeasures for aging infrastructure**

### ● Promotion and Constant Review of the Plan (Chapter 4)

- The plan shall be promoted, while conducting reviews as necessary concerning other national plans pertaining to national resilience.
- The content of the plan shall be reviewed once around every five years and necessary amendments are to be made within five years, if necessary.
- The National Resilience Promotion Headquarters establishes **annual plans** for promoting programs for avoiding the worst events that should never happen. In doing so, implement all of the measures and review the promotion plan of the programs based on an understanding of the progress of the measures every fiscal year, etc.
- Rearrange the 15 programs that should be prioritized based on the progress of the measures, changes in social conditions, etc.
- Introduce a structure that considers realization of effective measures regarding important problems
- Decide on and quickly implement 3-year emergency measures regarding measures that should be implemented particularly urgently from among the prioritized programs, etc.

# Creating a disaster-resilient nation, to protect the lives and livelihoods of you and your family

~What is meant by building national resilience?~



National Resilience Promotion Office,  
Cabinet Secretariat

# Examples of disasters that have occurred in Japan

Japan is a disaster-prone country.

## What kind of disasters occur in Japan?

### Earthquakes

Earthquakes seismic intensity 5 and over

**18.6** times/year\*1

Storm and flood damage

Hourly rainfall of 50 mm or more

**334** times/year\*2

Volcanic eruptions

Number of active volcanoes\*3

**111**



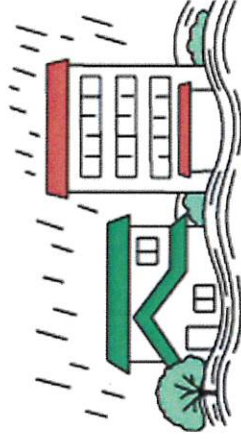
It's scary to think things like this can happen. But how can we prevent it ...

## What happens when a disaster occurs?

Many people die in earthquakes, tsunamis, fires, and house collapses



Heavy rain, typhoons, landslides, etc. make houses uninhabitable



Electricity, water, food, and other supplies essential for daily life are cut off



Farmland and businesses are damaged, the country is devastated, and ability to compete in world markets is undermined



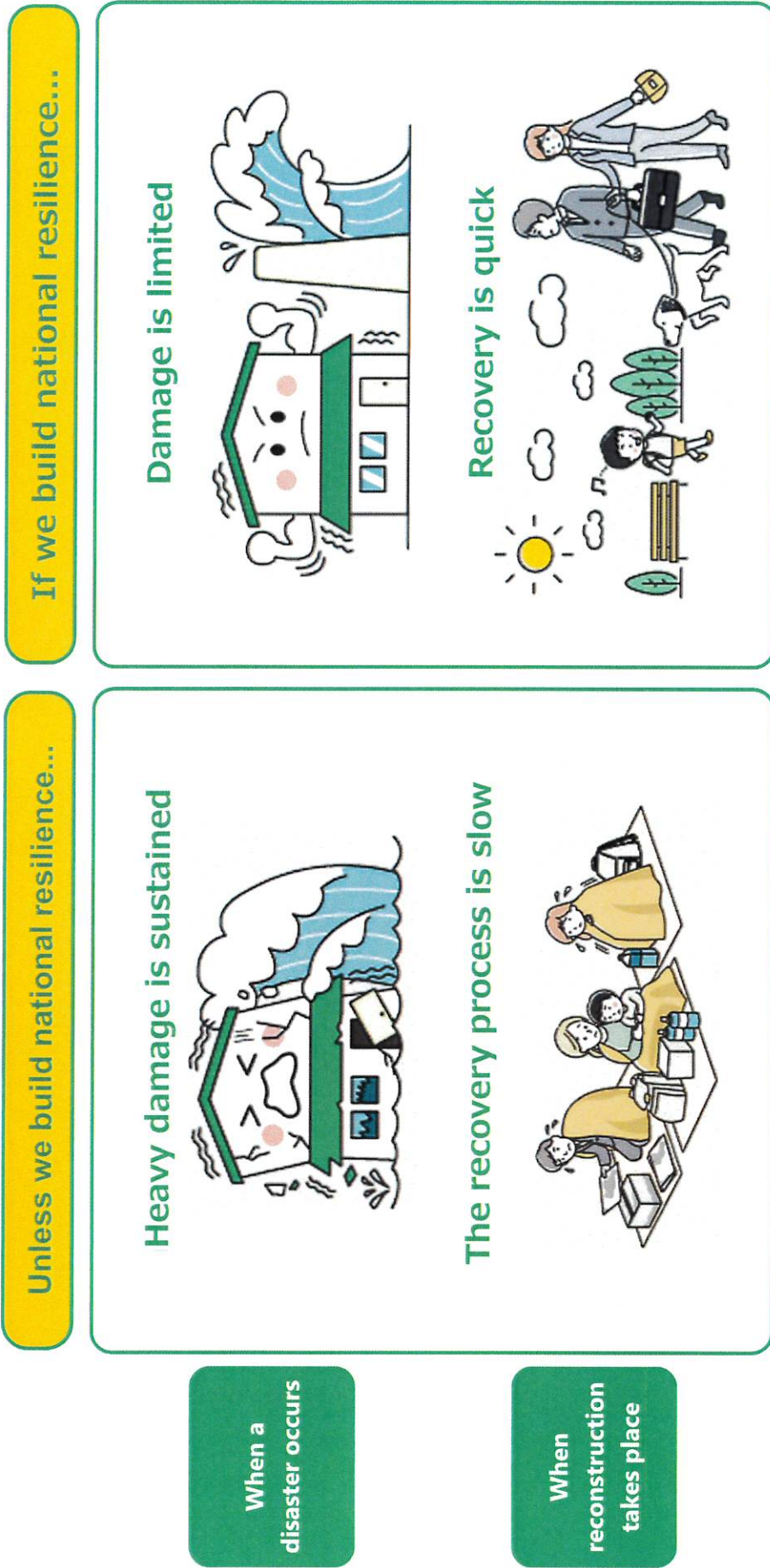
\*1 Japan Meteorological Agency. Number of earthquakes per month by maximum seismic intensity on the Japanese scale during the past 10 years (2011–2020) from the December 2020 Monthly Seismic and Volcanic Activity Report (Disaster Damage Prevention edition)

\*2 Japan Meteorological Agency. Changes in Extreme Weather Phenomena (Heavy Rain, Extreme Heat, etc.) to Date | Average annual frequency of rainfall events in the last 10 years (2011–2020) from the nationwide (AMeDAS) annual frequency of hourly rainfall of 50 mm or more

\*3 Japan Meteorological Agency. What is an Active Volcano? | From the definition of "active volcano and changes in the number of active volcanoes"

## What is meant by creating a disaster-resilient nation (building national resilience)?

Building national resilience refers to initiatives to make a nation and communities resilient to the effects of natural disasters such as earthquakes, tsunamis, and typhoons.



Taking preventive measures in advance not only limits the damage but also ensures that reconstruction is quick!



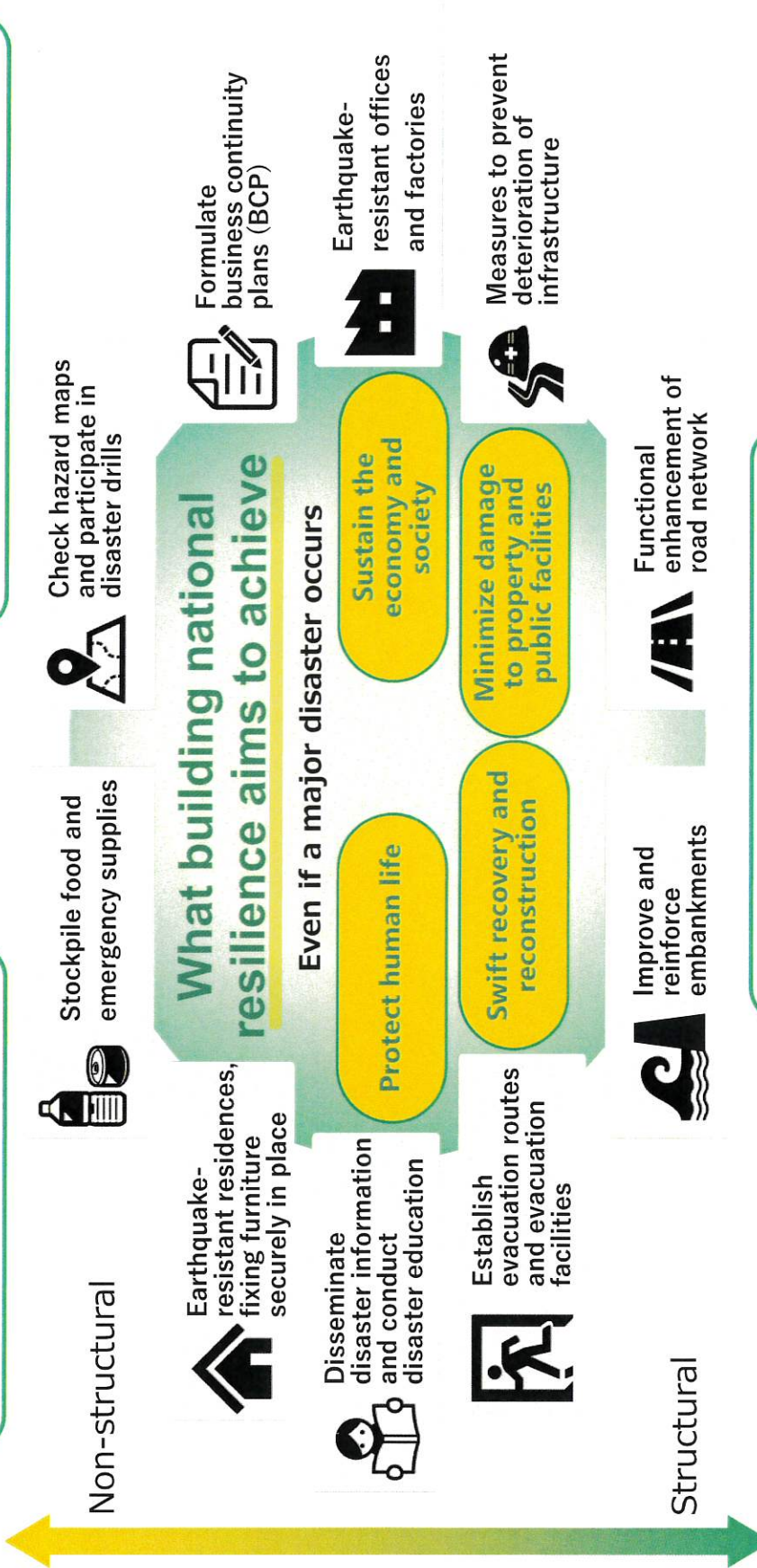
# Initiatives to build national resilience

Building national resilience is an extremely broad concept.

Building national resilience includes not only initiatives at government level but also at the corporate, regional, and individual level. And it includes not only structural but also non-structural measures.

Individual, local community

Private companies and organizations



I had thought that building national resilience is something the government does, but now I see that it includes efforts by individuals and non-structural initiatives.

National and local governments

## Examples of initiatives to build national resilience (1)

Let's take a look at some examples of how local people have worked together to build national resilience.

### Disaster Preparedness Guide for Parents and Kids (Kawabe, Mabi-cho, Kurashiki City, Okayama Prefecture)

The Disaster Preparedness Guide for Parents and Kids was produced as part of the "Kawabe Reconstruction Project ARUKU" launched by residents of areas that sustained damage in the West Japan flood disaster out of a desire to ensure that children are protected from fear and that no-one has to suffer the pain of loss.

The Guide sets out in an accessible format what residents should know to prepare for disaster, such as (1) Dispersed evacuation other than evacuation shelter - Decide where to evacuate; (2) Timing for evacuation - Decide when to evacuate; (3) Think about what to take with you - Prepare what you will take with you.



\* <https://aruku2018.org/oyako-notebook/>  
(in Japanese)

\* <https://aruku2018.org/english-version/>

What a great opportunity to involve our children in preparing for an emergency!



### Formulation of Disaster Prevention Plan for Sapporo Tokeidai (Sapporo Clock Tower) Building (Chuo-ku, Sapporo)

Sapporo Tokeidai Building houses an FM radio station, eating establishments, and a childcare facility. An area for recharging batteries and a rest area have also been prepared to allow employees of tenants to stay in the building for three days in the event of a disaster, with relief supplies and information also being provided.



Also, a "Nursery School Response Team" comprised of representatives from each tenant company has been formed to protect the safety of the children being cared for in the facility.

These initiatives are helping to raise awareness of the importance of self-help and mutual assistance in times of disaster.

So disaster preparedness was motivated by having experienced an earthquake and an awareness of the need to keep the children in the nursery school safe.



# 04

## 04 Examples of initiatives to build national resilience (2)

Let's take a look at some examples of how national and local governments have built national resilience.

### Mitigating flood damage by upgrading river embankments

(Satsuma, Isa City, Kagoshima Prefecture, etc.)

During the heavy rains that fell from July 1, 2020, the water level was reduced by approximately 3.1 m as a result of embankment improvement and river excavation. As a result, the mainstream Kawauchi river did not spill its banks, mitigating flood damage.

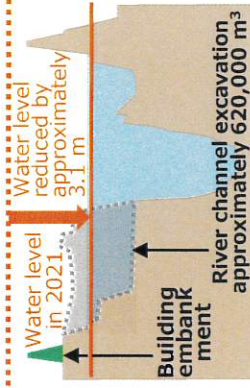
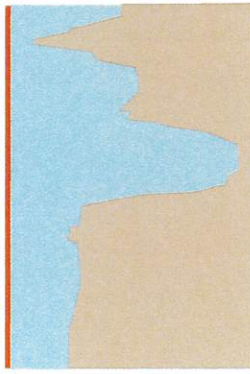


Before upgrade



During river channel excavation

\* Water level if river improvements not carried out



\* Estimated water level at time of 2021 water outflow volume using cross-section of channel prior to 2006

It's great that the river no longer overflows its banks!



### Ensure safety of school facility through seismic reinforcement

(Chikugo City, Fukuoka Prefecture)

The school gymnasium was at high risk of falling down so was earthquake-resistant. This measure ensured the safety of the school facility.

In the event of a disaster, it can be used as an evacuation site.



Before seismic reinforcement works



After seismic reinforcement works

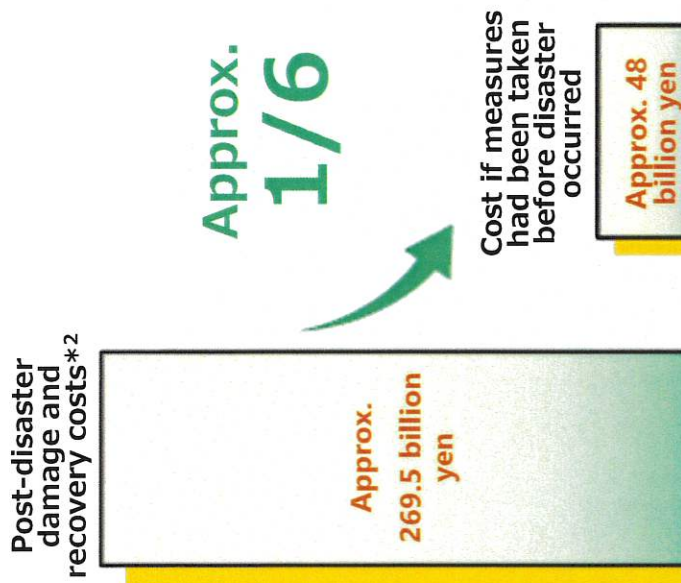
Now we can send our children to school with peace of mind!



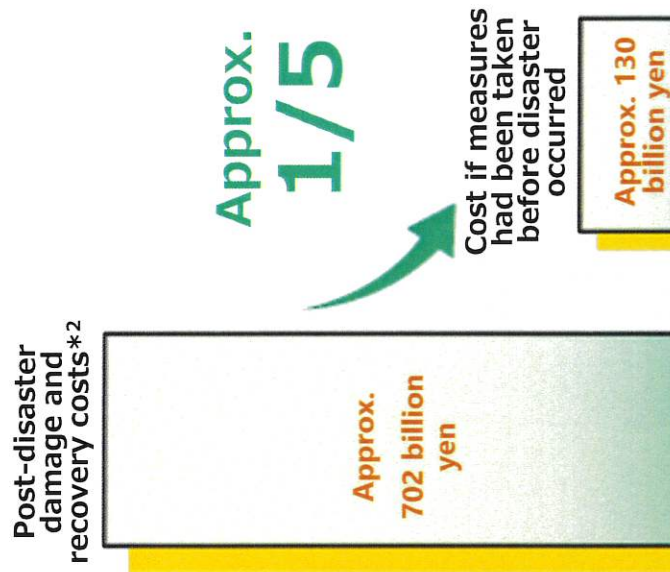
## Effectiveness of building national resilience

Let's take a look at the effectiveness of initiatives for building national resilience

### Example (1) Odagawa River, part of the Takahashi River system, in the torrential rains of July 2018<sup>\*1</sup>

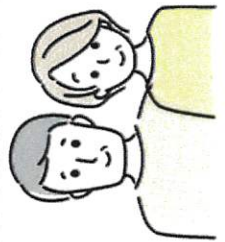


### Example (2) Abukuma River in Typhoon Hagibis (2019)<sup>\*1</sup>



<sup>\*1</sup> Prepared by the National Resilience Promotion Office of the Cabinet Secretariat based on materials prepared by the Water and Disaster Management Bureau, Ministry of Land, Infrastructure, Transport and Tourism

<sup>\*2</sup> Present status of recovery costs for general damage, support for victims and affected areas, disaster waste disposal costs, etc.



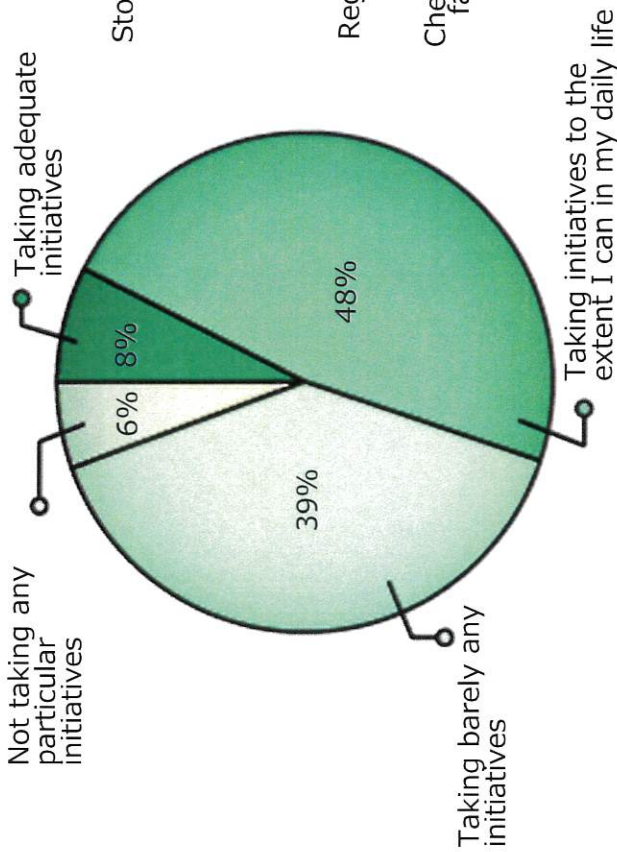
So taking proper precautions not only limits the damage, but also reduces recovery costs!

# How well prepared are you for national resilience initiatives?

Let's take a look at the results of a survey to determine how others are faring in their attempts to build national resilience.

## How well prepared are you for a disaster?

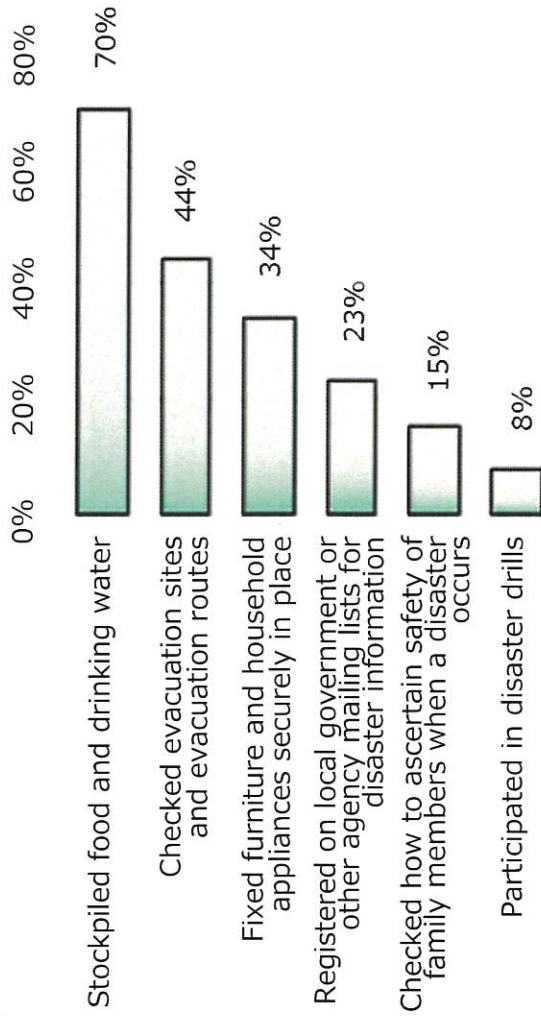
### Status of initiatives to prepare for disaster\*



So less than 1 in 10 people are taking adequate initiatives.

## What specific actions are you taking?

### Specific details of preparations for disaster\*



So there are many different ways we need to prepare!

\* Partial extract from results of Questionnaire Survey on Promotion and Raising Public Awareness of National Resilience conducted in 2021  
 Survey period: November 9-11, 2021  
 Survey method: Online questionnaire  
 Number of valid responses: 1,048

## What specific preparations should I start with?

It is best not to overthink it - just start wherever you can.

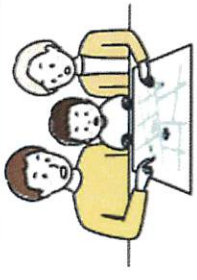
### Checklist

### Action

#### Investigate


- Talk about disaster planning with your family and friends
- Investigate disasters that have occurred in the area where your house, workplace, or school is located
- Check hazard maps and evacuation sites
- Check the routes to evacuation sites and do a test run



#### Prepare


- Decide what you will do if a disaster occurs in various scenarios (while sleeping, on the way to school, at work)
- Decide with your family and friends how you will stay in touch in the event of a disaster (e.g., use the 171 Disaster Emergency Message Dial service)
- Register for disaster information email alerts and emergency apps
- Prepare emergency supplies and food reserves (preferably enough for one week)
- Earthquake-resistant your home by installing earthquake-sensitive circuit breakers and fixing furniture securely in place, earthquake-resistant your house



#### Work together


- Make an effort to greet and converse with people in the neighborhood on a daily basis
- Participate in disaster drills in your community, company, school, etc.
- Share information on disasters received from various authorities via SNS and other platforms
- Participate in voluntary disaster prevention organizations



So we too should just get started in whatever way we can! I think I'll start by having a conversation with the family about disaster planning.



Let's share what we know with everyone to keep everyone safe!

## Use a worksheet (1) If an earthquake were to occur...

Begin by having a conversation with your family and friends about what damage you anticipate in the event of a disaster and what you should do to prevent it!

Talk about what happens when an earthquake strikes

### Collapse

When a house collapses or a piece of furniture topples over, people may be pinned down or injured underneath it.



### Tsunami

People may be swept away by a tsunami and go missing, or lose their lives to drowning.



### How to reduce damage from collapse

Will your house collapse or your furniture topple over in an earthquake? Think about how to earthquake-resistant your house, fix furniture securely in place, etc.!



### How to mitigate damage from tsunami

How many minutes after an earthquake will a tsunami wave arrive and how high will it be? Check the evacuation sites on the hazard map!



### Outages of essential utilities

When outages of essential utilities occur, living conditions deteriorate and people are more likely to become sick. Living in a shelter for a prolonged period also causes significant mental stress.



### How to prepare for outages of essential utilities

What would you need in order to be able to manage if the electricity, water, or gas were shut off? Prepare the things you will need such as stockpiles of food and a portable toilet!



### How to mitigate against fire damage

Have you taken the necessary precautions to prevent electrical appliances and furniture from tipping over and causing damage to electrical wiring? Make a habit of keeping the area around the stove and electrical wiring tidy and free of clutter! Have fire extinguishers ready!



### Fire

Fires can be caused by things like damage to electrical wiring or flammable materials coming into contact with heating equipment. Efforts to evacuate may be hampered by a fire and people may perish.



Talk about other ways in which your surroundings will be affected.

Talk about what else you can do.



So an earthquake can cause all kinds of damage.



It's important to be prepared for an emergency at all times!

## Use a worksheet (2) - If heavy rains or a typhoon were to occur...

Begin by having a conversation with your family and friends about what damage you anticipate in the event of a disaster and what you should do to prevent it!

### Talk about what happens when heavy rains and typhoons come

#### Flooding, inland flooding



The volume of water in rivers can suddenly increase and flow into towns and farmland. Also, the rain that falls on towns may not drain, resulting in sewage overflows.

#### Mudflows, landslides, cliff failures



Sediment carried by rainwater can wash away homes and damage transportation networks such as roads and railroad tracks.

#### Tidal wave



Houses may be flooded and/or damage and outages to essential utilities may occur. The entire city could also be inundated, with people being trapped in underground spaces a particular risk.

#### Storm



People may be struck by objects blown by strong winds, causing them to fall over and sustain injuries. Power lines may also be cut, causing power outages.

Talk about other ways in which your surroundings will be affected.



So even the typhoons and heavy rains we see every year can cause major damage...

### Talk about what you can do to prevent damage

#### How to mitigate against flood damage



Is there a possibility of flooding in the area where you live? Check flood damage hazard maps to see which places are dangerous and where the evacuation routes are!

#### How to mitigate against damage from landslide disaster



Check landslide disaster hazard maps to see which places in the surrounding area are at risk of landslide disasters! When heavy rains fall, be sure to evacuate early.

#### How to mitigate against tidal wave damage



Pay close attention to weather information such as approaching typhoons and times of high tide! Check hazard maps to see where evacuation sites are!

#### How to mitigate against storm damage



Are the shutters and windows sturdy? Also ensure they can be locked tight! Check for unsecured items outside the house that could be carried away on the wind, and that there are no trees that could get caught in power lines!

Talk about what else you can do.



Make sure you're prepared for disaster!



The Cabinet Secretariat provides the following information. We recommend that you consult these reference sources.

- **Pamphlet: “Building National Resilience!” Workbook: “learning how to reduce disaster risks at the national and community levels”**

Pamphlet and educational materials summarizing the concept of building national resilience in an accessible format.  
[https://www.cas.go.jp/jp/seisaku/kokudo\\_kyoujinka/about.html](https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/about.html) (in Japanese)  
[https://www.cas.go.jp/jp/seisaku/kokudo\\_kyoujinka/index\\_en.html](https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/index_en.html)
- **Examples of effectiveness of disaster prevention and mitigation to build national resilience**

This document summarizes examples of the effectiveness of disaster prevention and mitigation in recent disasters that have occurred.  
[https://www.cas.go.jp/jp/seisaku/kokudo\\_kyoujinka/kouhou/kouhahakkijirei.html](https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/kouhou/kouhahakkijirei.html) (in Japanese)
- **Collection of initiative examples from three-year emergency response plan for disaster prevention, disaster mitigation and building national resilience**

This document summarizes examples of the effectiveness of all 160 three-year emergency measures when disasters have occurred.  
[https://www.cas.go.jp/jp/seisaku/kokudo\\_kyoujinka/kouhou/3kanenjirei.html](https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/kouhou/3kanenjirei.html) (in Japanese)
- **Examples of private sector initiatives for building national resilience (April 2022)**

This document summarizes examples of private-sector initiatives spearheading efforts to build national resilience.  
[https://www.cas.go.jp/jp/seisaku/kokudo\\_kyoujinka/r4\\_minkan/index.html](https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/r4_minkan/index.html) (in Japanese)



National Resilience Promotion  
Office, Cabinet Secretariat  
[https://www.cas.go.jp/jp/seisaku/kokudo\\_kyoujinka/index.html](https://www.cas.go.jp/jp/seisaku/kokudo_kyoujinka/index.html)



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October 2022 edition  
TEL : 03-5253 2111  
(Extension: 33743)

# Creating a disaster-resilient nation, to protect the lives and livelihoods of you and your family:

Evacuation sites in the event of a disaster

Names and contact details of family members and others who you would want to know were safe

Name:

Telephone number:

Email:

Address:

Name:

Telephone number:

Email:

Address:

Name:

Telephone number:

Email:

Address:

Name:

Telephone number:

Email:

Address:

How to stay in touch with your family in the event of a disaster



Print this out and carry it with you wherever you go!