Disaster Management Policies in Japan

An Overview

Asian Disaster Reduction

6 November 2024
Banda Aceh, Indonesia

Asian Disaster Reduction Center

33 Member Countries and 5 Advisor Countries

ADRC MILESTONES OF FISCAL YEAR 2023

Information Sharing

- **7,700+** Cumulative total of GLIDE numbers issued towards the end of FY2023
- **2,658** Items of "latest disaster information" on the online database
- **27** Requests activated by Sentinel Asia
- **1** Asian Conference on Disaster Reduction (ACDR2023) organized in Tajikistan
- **1** Tsunami Seminar organized
- **2** Study visits to disaster-impacted areas organized (Turkey & Japan)

Human Resource Development

- **132** Cumulative total of Visiting Researchers (VRs) as of FY2023
- **7** JICA-commissioned DRR Training Courses implemented
- **3** Interns accepted
- **4** Short-term programs conducted

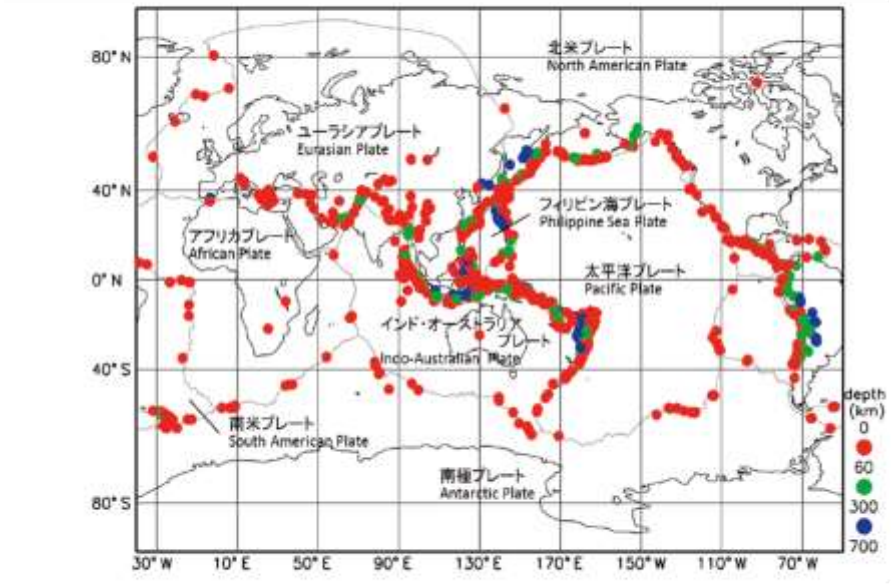
International Cooperation

- **17** International events that ADRC engaged in (e.g., Typhoon Committee)
- **5** Collaborative projects implemented with partners (e.g., ACE-LEDMP)
- **2** Regional initiatives, where ADRC served as co-chair (i.e., EPWG, Sentinel Asia)

Background

Japan is a disaster-prone country

World Geographical Distribution of Hypocenters and Plates

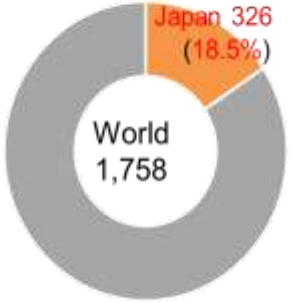


Note: 2008 ~ 2017

Source: Prepared by Japan Meteorological Agency based on the hypocenter data of United States Geological Survey

Source: Cabinet Office website, White Paper on Disaster Management 2020 edition Annex (PDF version)
http://www.bousai.go.jp/kaigirep/hakusho/pdf/R2_fuzokusiryo.pdf

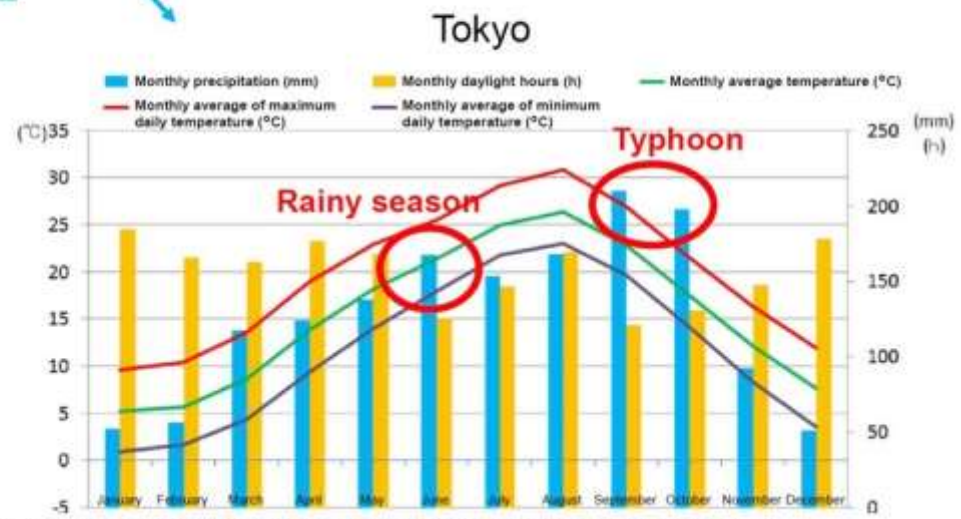
Number of earthquakes with magnitude 6 or greater (2003 ~ 2013)



Source: Cabinet Office website, White Paper on Disaster Management 2014 edition Annex
http://www.bousai.go.jp/kaigirep/hakusho/pdf/H26_fuzokushiryou.pdf

Earthquake, Tsunami,
Volcanic Eruption

Precipitation and Temperature in Tokyo



Source: The Japan Meteorological Agency website, Weather Overview in Japan, Weather Characteristics in the Kanto-Koshin region
https://www.ima-net.go.jp/tokyo/sub_index/tokyo/kikou/kantokoshin/TenkouKaisetsuMain_Kanto-Koshin.html

Flood, Typhoon, Landslide, etc.

Recent disasters in Japan

2015-2017

①Inundation (Kinu River)
(Joso-city, Ibaraki)

Kumamoto Earthquake (2016)

②Landslides
(Minamiaso-village, Kumamoto)

②Oita Highway Bridge damage
(Yufu-city, Oita)

③ Inundation (The Omoto River)
(Iwaizumi-town, Iwate)

④Inundation (Katsura River)
(Asakura-city, Fukuoka)

2018

⑤Inundation (Oda River)
(Kurashiki-city, Okayama)

⑥Inundation at the Kobe Port
(Kobe-city, Hyogo)

⑦Landslides (Atsuma-town,
Hokkaido)

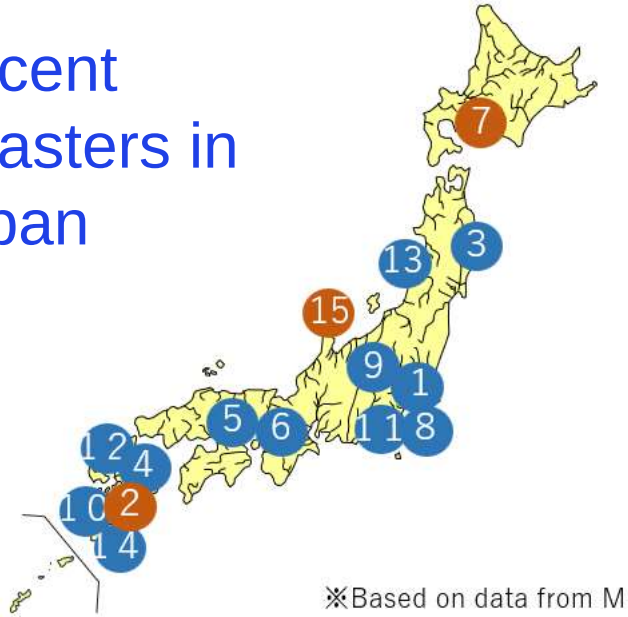
2019

⑧Collapsing utility poles
(Kamogawa-city, Chiba)

⑨Inundation (Chikuma River)
(Nagano-city, Nagano)

2020

⑩Inundation (Kuma River)
(Hitoyoshi-city, Kumamoto)



※Based on data from MLIT

2021

⑪Landslides (Izusan Area)
(Atami-city, Shizuoka)

⑫Inundation (Rokkaku River)
(Takeo-city, Saga)

2022

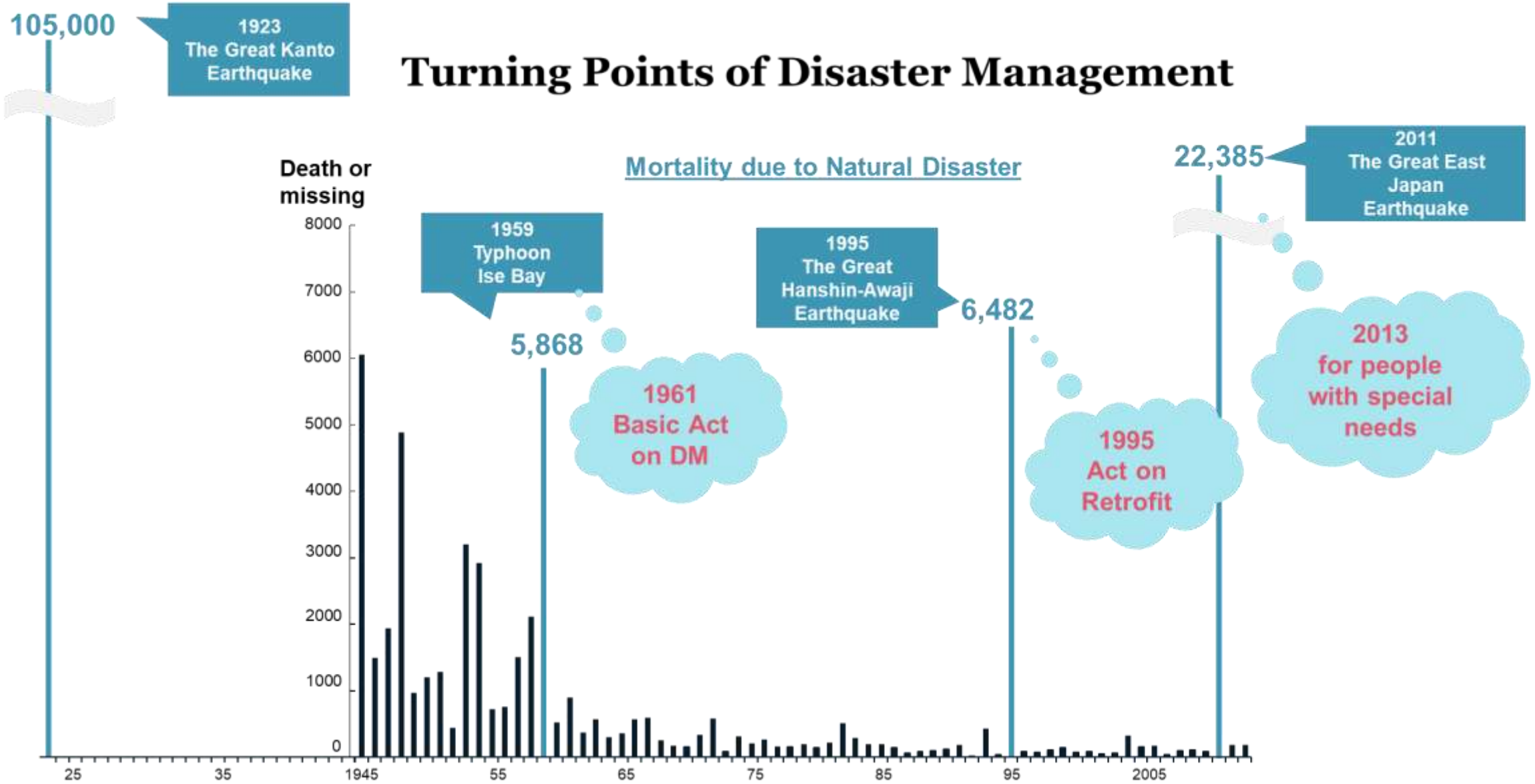
⑬国道121号の被害状況
（山形県米沢市）

⑭Landslide at National Road 327
(Morozuka Village, Higashi-Utsuki, Miyazaki)

2023

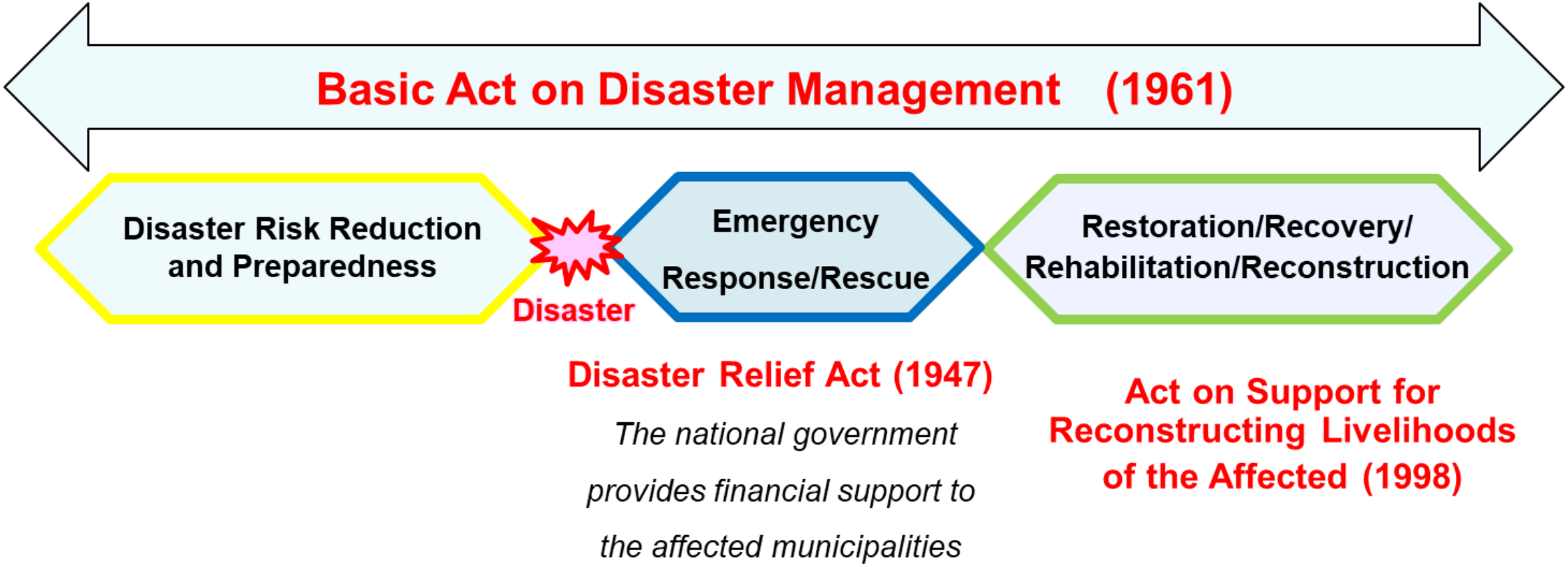
⑮Landslide
(Suzu-city, Ishikawa)

Major Disasters



Significant Acts on Disaster Management

1) Basic Act on Disaster Management (1961)
2) Disaster Relief Act (1947)
3) Act on Support for Reconstructing Livelihoods of the Affected (1998)



1. Basic Act on Disaster Management

Turning Point 1: Typhoon Ise Bay (1959)

Source: Cabinet Office

- Hit Nagoya area during midnight on 26th September in 1959.
- 5,098 people died.
- 551 Billion yen lost (4.2% of GDP)

1959 The Ise Bay Typhoon

Over 5,000 deaths and missing persons

Source: Nagoya City Port Disaster Risk Reduction Center Ise Bay Typhoon Library
Reference Number (Port 005,007,010,014)
https://www.minato-bousai.jp/album/isewan/

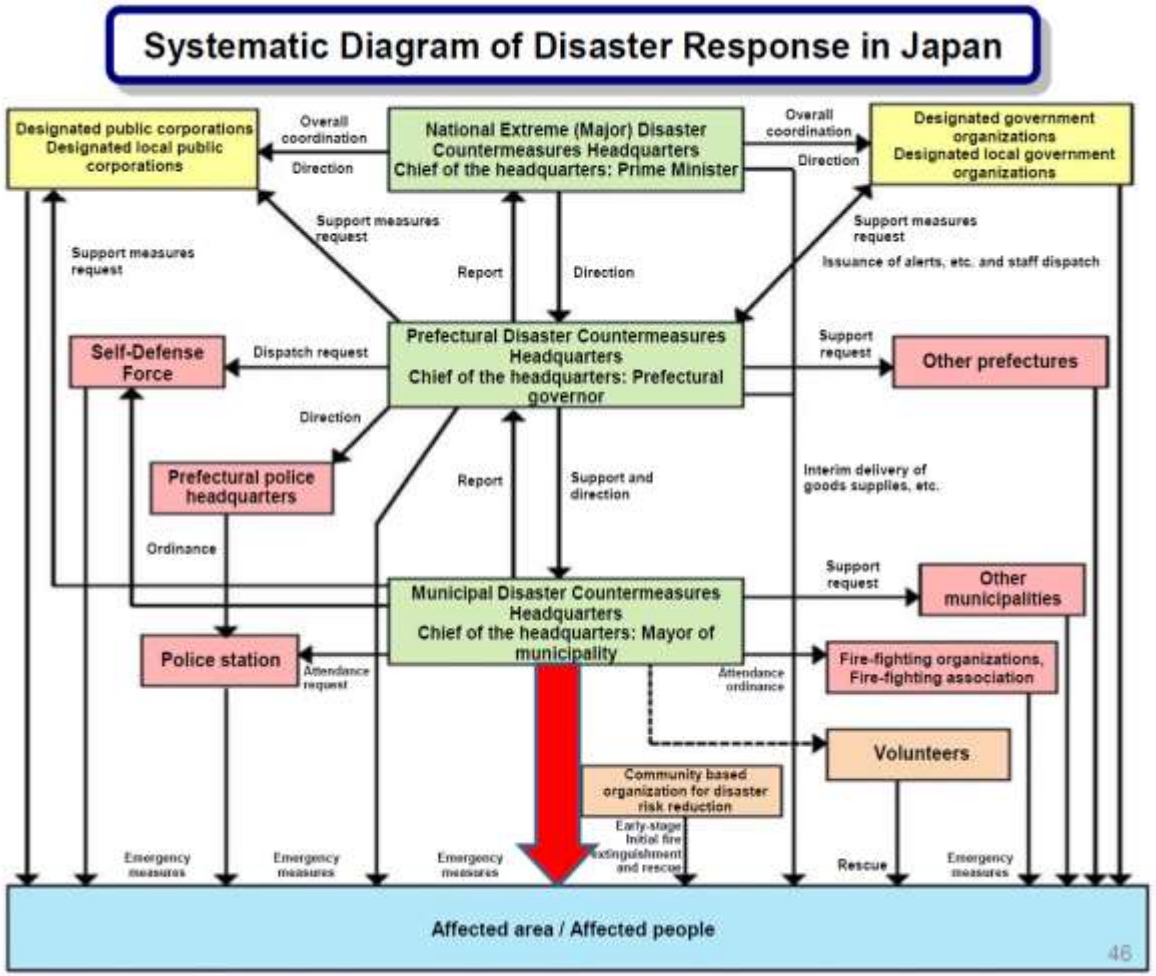
Occurrence of the disaster which became the background of the establishment of the Act

- **Until this disaster, rules of role sharing between disaster risk reduction organizations at the time of disaster had not been stipulated.**
- **The inundation area associated with this typhoon was extensive, and several prefectures and municipalities were affected.**
- **Rescue was delayed due to confusion at the sites caused by the absence of any rules.**
- **The development of basic rules on the disaster countermeasures was required.**

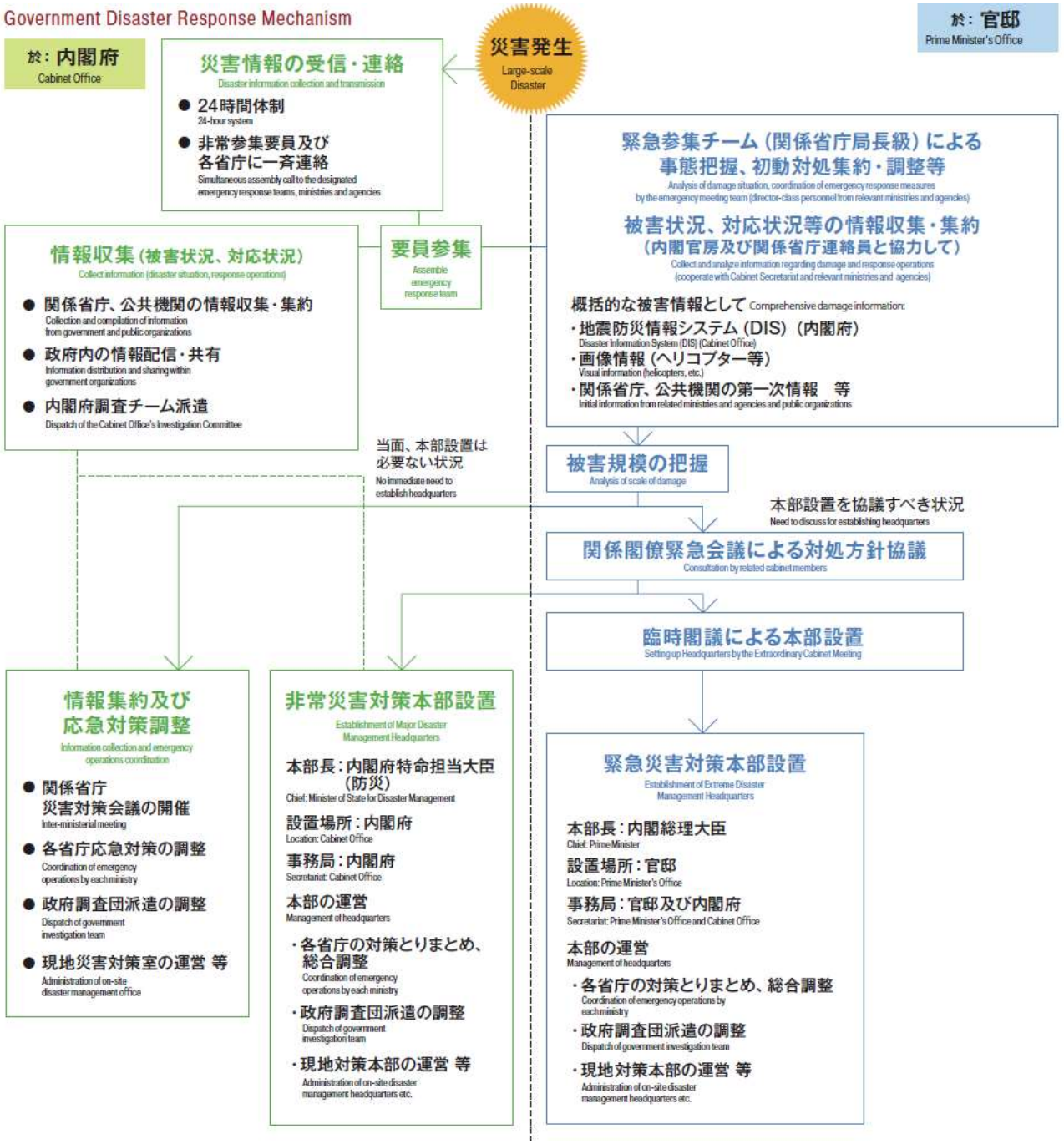
1961 Enactment of the Basic Act on Disaster Management

Highlighted: 1) objectives/responsibilities
2) organization
3) planning systems

e.g., Organization



Source: Cabinet Office Japan



e.g., Planning System

Disaster Management Basic Plan

- The Disaster Management Basic Plan shall be prepared by the national and local disaster prevention councils based on the Basic Act on Disaster Control Measures.

Disaster Management Basic Plan (Since 1963, last revised in 2019)
- Prepared by the Central Disaster Management Council (Chairperson: Prime Minister)
- The basis for various disaster management plans

Prefectural Local Disaster Management Plan (47 Prefectures)
- Prepared by prefectural disaster management councils (Chairperson: Prefectural governor)

Municipal Local Disaster Management Plan (1,718 Municipalities)
- Prepared by municipal disaster risk reduction and management councils (Chairperson: Mayor of the municipality)

Community Disaster Management Plan
- Local residents prepare a proposed draft
- The proposed draft is presented to the municipality to be stipulated in the Local Disaster Management Plan.

Items specified in the plan

- Construction or improvement of disaster risk reduction facilities in the region, investigation and research for disaster risk reduction, and other measures for disaster risk reduction and preparedness, including education and training.
- Collection and conveyance of information, issuance and transmission of forecasts or warnings concerning disasters, and other disaster emergency response measures, including evacuation, fire-fighting, flood prevention, rescue, aid, and sanitation.
- Disaster recovery plan

Estimated disasters

Earthquake, Tsunami, Flood, Volcano, Heavy snowfalls
Marine accidents, Traffic accidents, Nuclear disaster, etc.

Source: Cabinet Office Japan

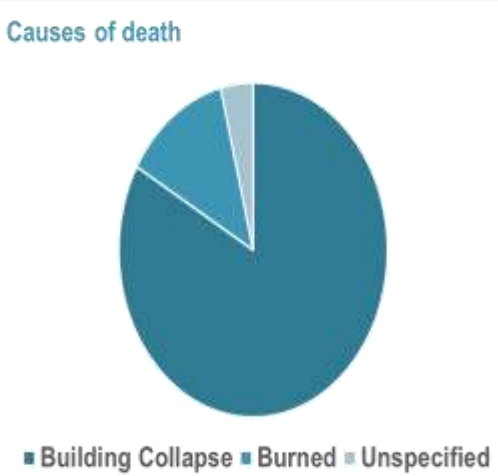
a. Act on Promotion of the Earthquake-proof Retrofit of Buildings (1995)

Turning point 2: the Great Hanshin-Awaji earthquake (1995)

- Hit Kobe area in the early morning on 17th January in 1995.
- Magnitude 7.3
- 6,434 people died.

Source: Cabinet Office, White paper on Disaster Management

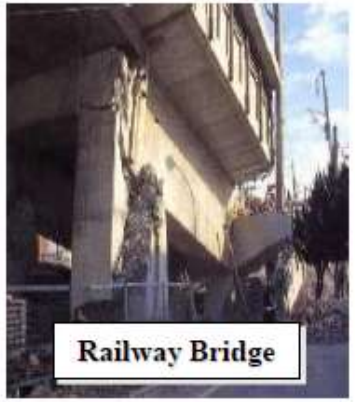
- **Act on Promotion of Earthquake-proof Retrofit of Buildings (1995)** was enacted to prevent death caused by building collapse



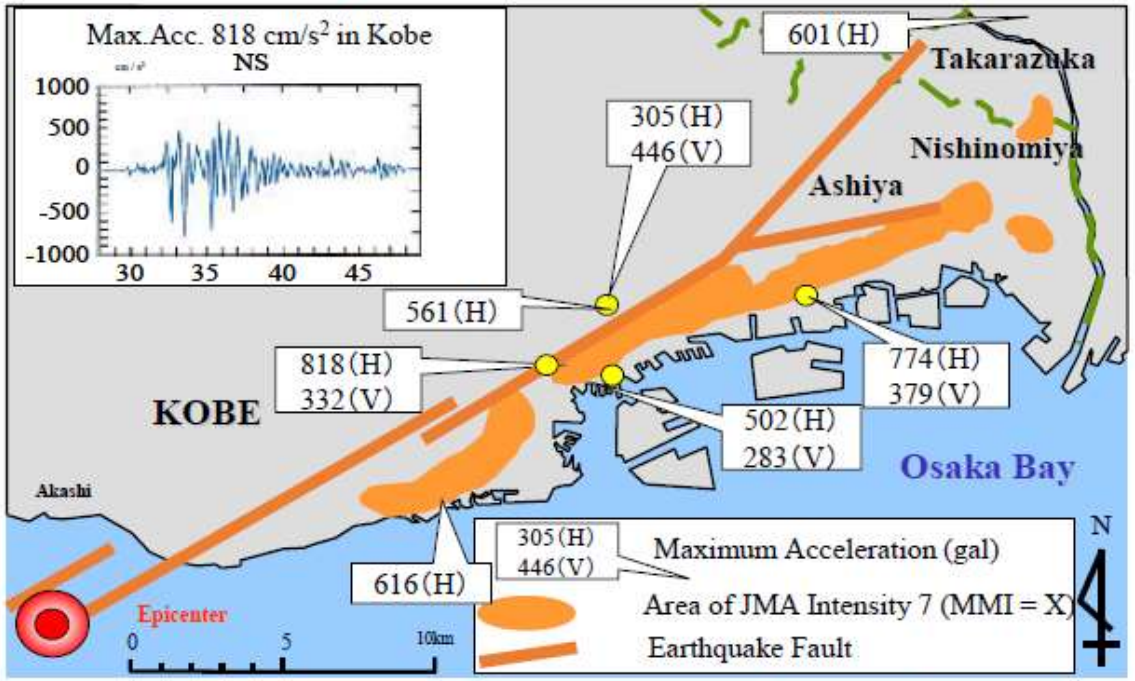
Prevention is more important than emergency response.

Source: Cabinet Office, White Paper on Disaster Management

e.g., Reinforcement of Structures



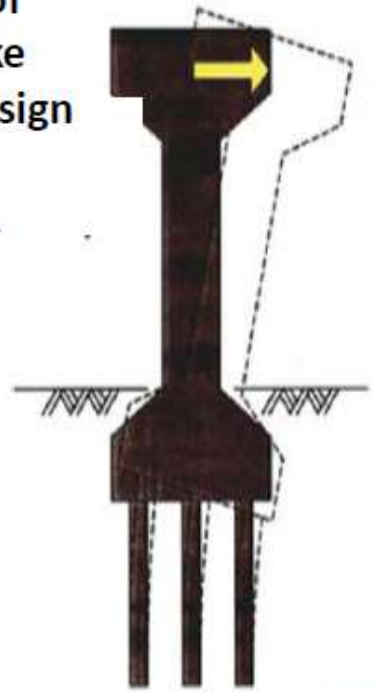
Collapse of Concrete Structures

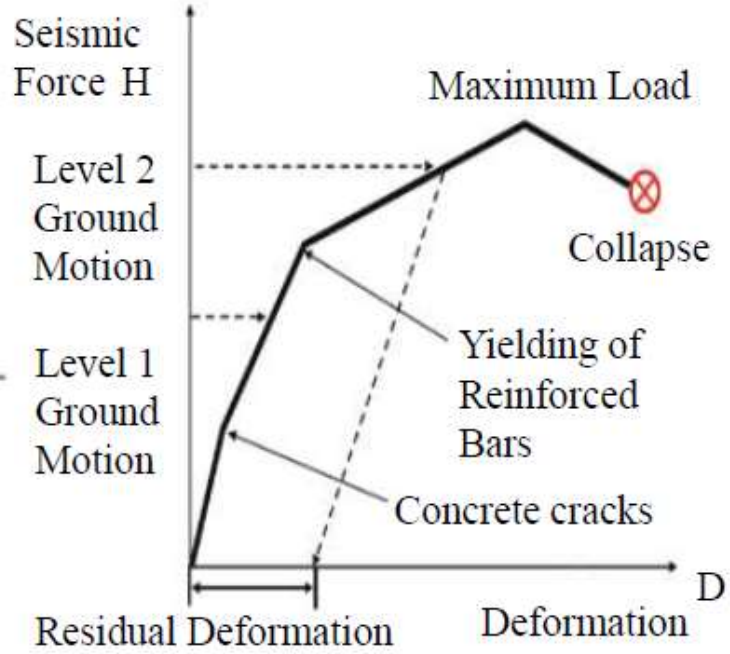


Intensive Earthquake Ground Monitor

Revision of Earthquake Resistant Design

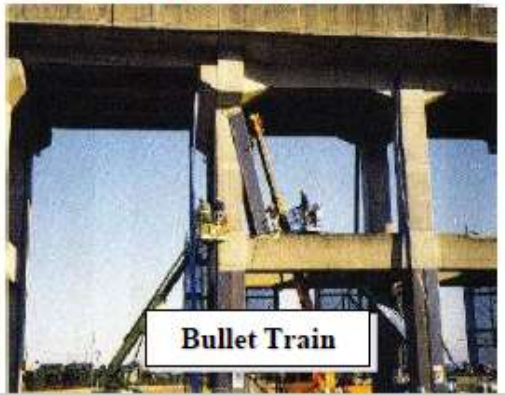
Design in Plastic Range





Reinforcement of Structures

Retrofitting of Concrete Structures



e.g., Seismic Retrofitting in Sendai

Sendai City Hall built in 1965 (before the 1981 seismic standard)
Earthquake Resistance Analysis done in 1996 ⇒necessity for seismic retrofit
Seismic retrofit work done in 2007 to 2008

Seismic Brace with vibration damper inserted.

Seismic Brace & Seismometer installed on ground floor hall.

M9 Earthquake Came ! 11 March 2011

Structural safety of City Hall confirmed in 1 hour.
City hall served as temporary shelter for stranded commuters & visitors.

Photo by Tobishima Cooperation

b. Amendments of the Basic Act on Disaster Management (2011~2015)

Turning point 3: the Great East Japan earthquake (2011)




- In the afternoon on 11th March in 2011.
- Magnitude 9.0
- Died 19,775 people
  Missing 2,550people

Source: Ishinomaki City, "Great East Japan Earthquake Archive Miyagi"

1. Transmission of the lessons learned from the past disasters
2. Introduction of the preparation for people with special needs in evacuation
3. Introduction of the Community Disaster Management Plan

Source: Cabinet Office

e.g., Transmission of Lessons

Information by Old Generation Saved People's Lives

More than 100 Stone Monumens on Past Tsunami in 1986 & 1933 were left

Example: Aneyoshi District
Stone monument delivers message "not to build houses below this point" based on the past experience of large Tsunami

Tsunami in 2011 reach only 50 m below the stone monument

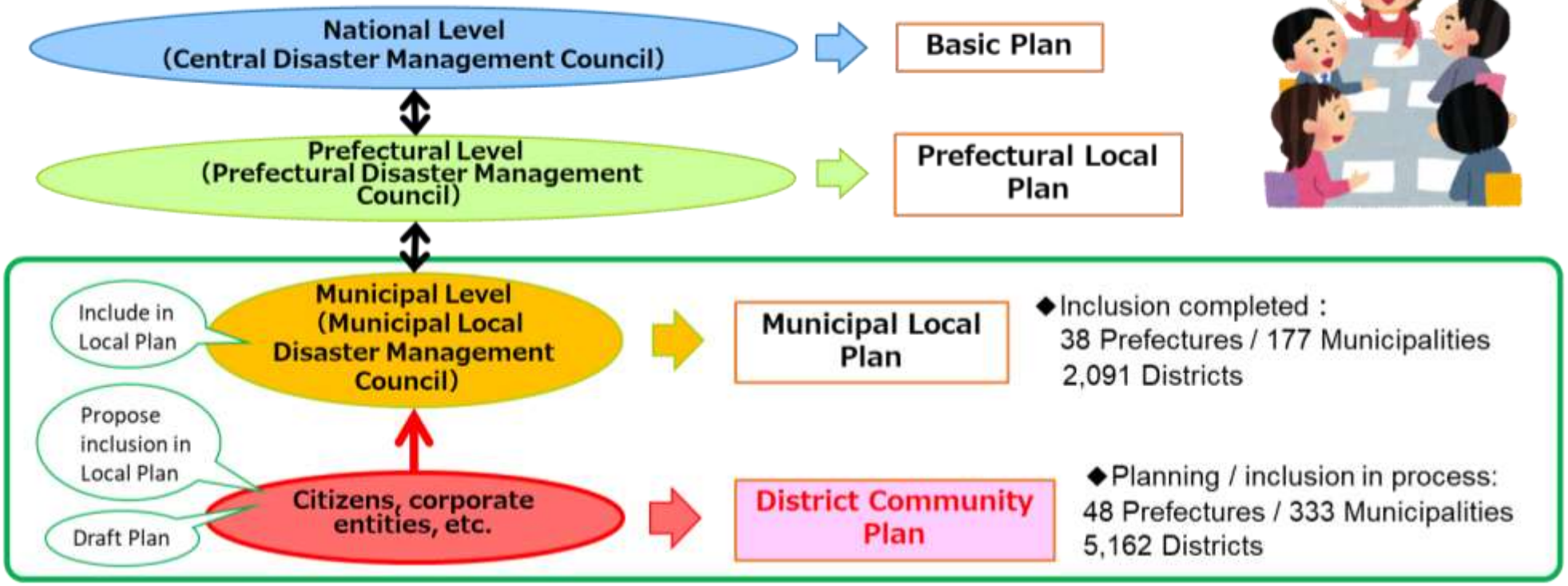
- all the houses in this district built above this point
- No damage to the houses in this district

Collaboration of School and Communities Led to Appropriate Evacuation Actions

Many Tsunami DRM activities had been done in schools in Kamaishi city since 2004.
-> Leading evacuation activities of junior high school students saved themselves as well as the residents around their areas
-> No students were killed in all 14 schools in the city (exclude those who stayed in their home for sick, etc. on the day)

e.g., Community Disaster Management Planning

Article for Community Planning system added in Basic Act on 2014 revision



Contents of District Community Plan

In normal time...	Under warning...	On emergency...	On rehabilitation
● Evacuation & firefighting drills ● Communication setup ● Evacuation routes/shelters ● Special planning for vulnerable population ● stockpiling etc.	● Information collection/sharing ● Evacuation order ● Civil safety confirmation etc.	● Evacuation guidance & support ● Relief supply distribution & service ● Shelter management, support for evacuees at home etc.	● Community-wide support for affected population etc.

Source: Cabinet Office Japan

e.g., Community Disaster Recovery Planning

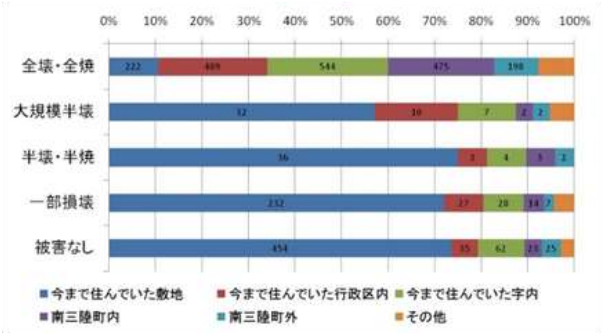
Minami-Sanriku Town Recovery Plan

Disaster recovery planning committee engages academic experts (inputs into recovery plan)

Disaster recovery planning residents' committee (symbol project selection)

Support

Experts from
- Miyagi University
- DRI



Survey of all residents

Town planning meetings at neighborhoods (detailed discussions on relocation and land compensation)

Community gathering (discussions on community level town planning)

2. Disaster Relief Act (1947)

e.g., Specifying the criteria for extending support

Articles and Applicable Conditions

Article 1, Paragraph 1, Item 1

Applicable Condition

In the case where the number of households with destroyed houses is at or above the level of the number prescribed in Appended Table 1, in accordance with the population of an area of the municipality (including special wards).

Article 1, Paragraph 1, Item 3

Applicable Condition

In the case where the number of households with destroyed houses is at or above the level of the number prescribed in Appended Table 4 in accordance with the population of the prefecture which includes the area of said municipality, OR in the case where there are many households with destroyed houses due to special circumstances specified by a Cabinet Office Ordinance which make the relief and protection of affected people extremely difficult, such as the case where said disaster has occurred in an isolated area.

Appended Table 1 (Article 1, Paragraph 1, Item 1)

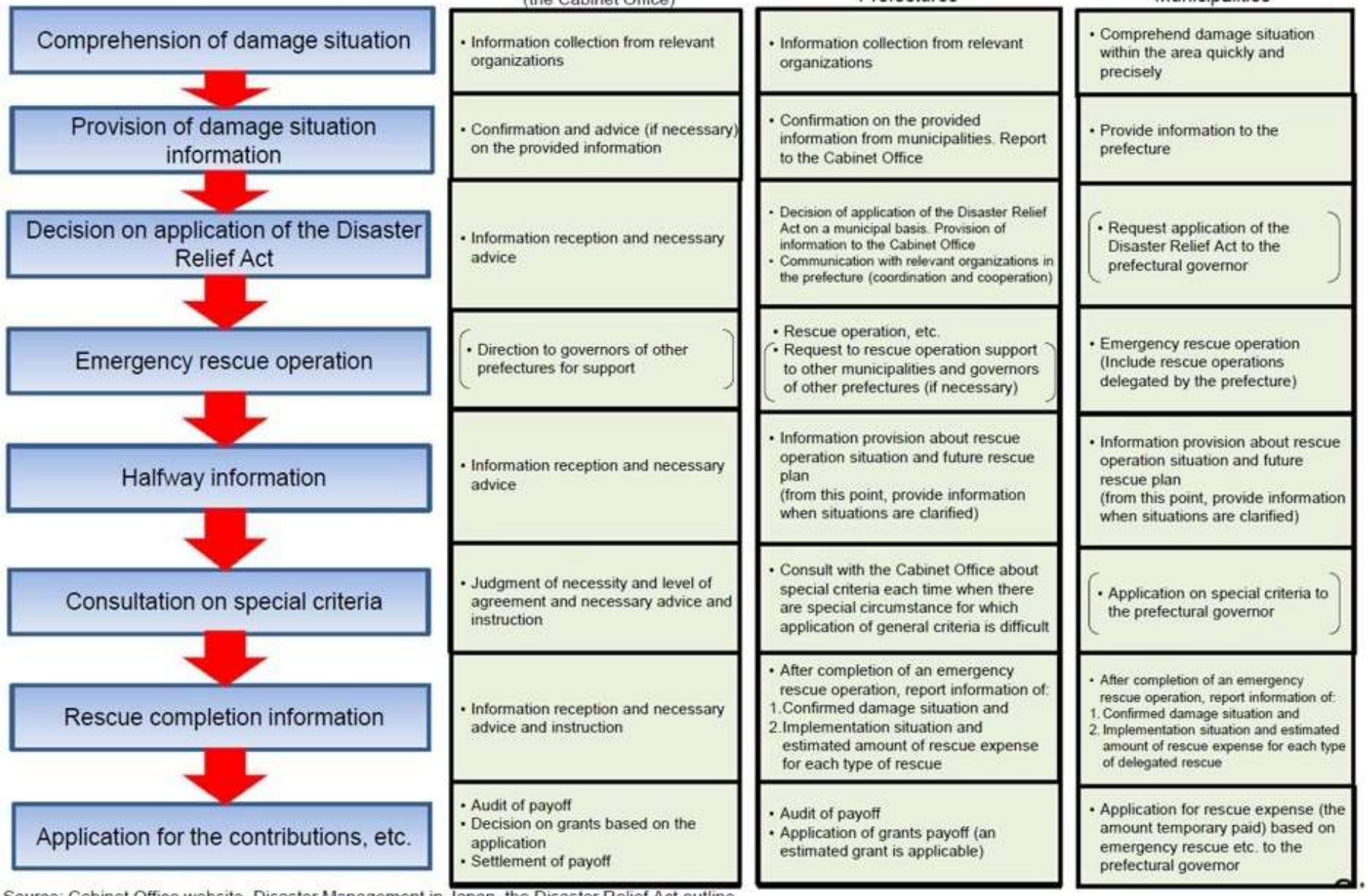
Population of the Area	Number of households with destroyed houses
Less than 5,000	30 households
5,000 to less than 15,000	40 households
15,000 to less than 30,000	50 households
30,000 to less than 50,000	60 households
50,000 to less than 100,000	80 households
100,000 to less than 300,000	100 households
300,000 or more	150 households

Appended Table 4 (Article 1, Paragraph 1, Item 3)

Population of the Area	Number of households with destroyed houses
Less than 1 million	5,000 households
1 million to less than 2 million	7,000 households
2 million to less than 3 million	9,000 households
3 million or more	12,000 households

e.g., Specifying the flow for administering the support

Administration flow of the Disaster Relief Act



Source: Cabinet Office website, Disaster Management in Japan, the Disaster Relief Act outline
http://www.bousai.go.jp/taisaku/kyuujo/kyuujo.html

3. Act on Support for Livelihood Recovery (1998)

Outline of the system

Purpose	To contribute to stabilization of residents' livelihoods and quick recovery of affected areas, by providing Assistance Grant for Life Recovery to affected people, whose basic livelihoods are severely damaged by natural disasters, through the use of funds contributed by prefectures from the perspective of mutual assistance.
Subject Disasters	Shown on the next slide
Subject to Payment	Caused by the above natural disasters (1) A household whose house is destroyed (2) A household whose house is partially destroyed or whose land is damaged and therefore the house has to be demolished (3) A household who remains uninhabited for an extended period due to continued risk caused by disasters (4) A household whose house is partially destroyed and is difficult to live in without major repairs (severely destroyed household)
Amount of payment	Total amount of the following 2 assistance grants (if there is 1 person in a household, the amount equivalent of 3/4 in each applicable column)

The assistance grant to be paid in accordance with the rebuilding method of house (Additional assistance grant)

Rebuilding Method of House	Construction or purchase	Repair	Lease (Other than public housing)
Amount of payment	2 million yen	1 million yen	500,000 yen

* In the case of construction or purchase (or repair) of a house to live in after renting a house, a total of 2 (or 1) million yen

The assistance grant to be paid in accordance with the level of damage to house (Basic assistance grant)

Level of damage to house	Destroyed	Demolished	Long-term evacuation	Partially Destroyed in Large-scale
Amount of payment	1 million yen	1 million yen	1 million yen	500,000 yen

Application for payment	(Application counter) Municipalities (Documents to be attached at the time of application) (1) Basic assistance grant: Disaster Victim Certificate, Residence Certificate, etc. (2) Additional assistance grant: Contract (Purchase of houses and leasing), etc. (Application period) (1) Basic assistance grant: within 13 months from the date of the disaster occurrence (2) Additional assistance grant: within 37 months from the date of the disaster occurrence

Procedures for Payment of Assistance Grant

(1) Application of the Support Act (prefecture)

↓

(2) Report on application of the Act and public announcement from prefectures to the national government, support corporations, and municipalities (prefecture)

↓

(3) Issuance of disaster victim certificates (municipality)

↓

(4) Payment application for assistance grants (affected households)

↓

(5) Receipt of applications by municipalities, then checking and sending them to support corporations by prefectures

↓

(6) Assistance grant payment to affected households (support corporation)

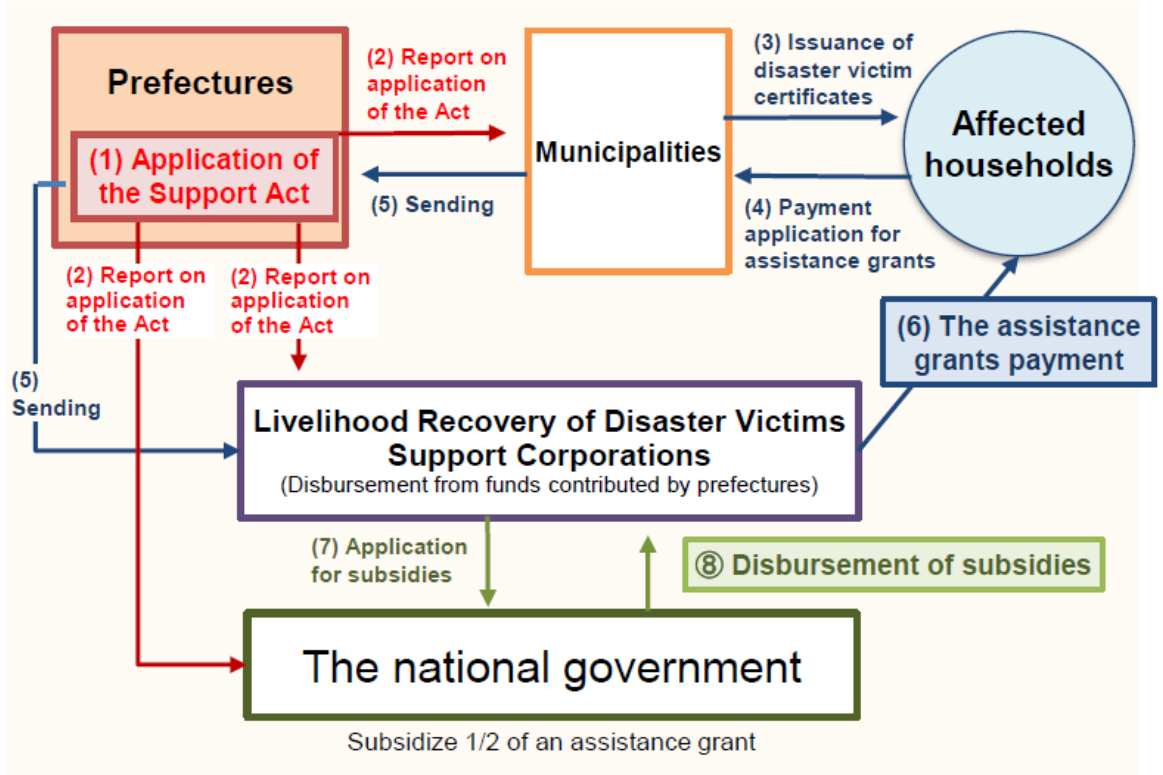
↓

(7) Application for subsidy from support corporations to the national government

↓

(8) Subsidies from the national government to support corporations

Extract from the Cabinet Office website, Disaster Management in Japan

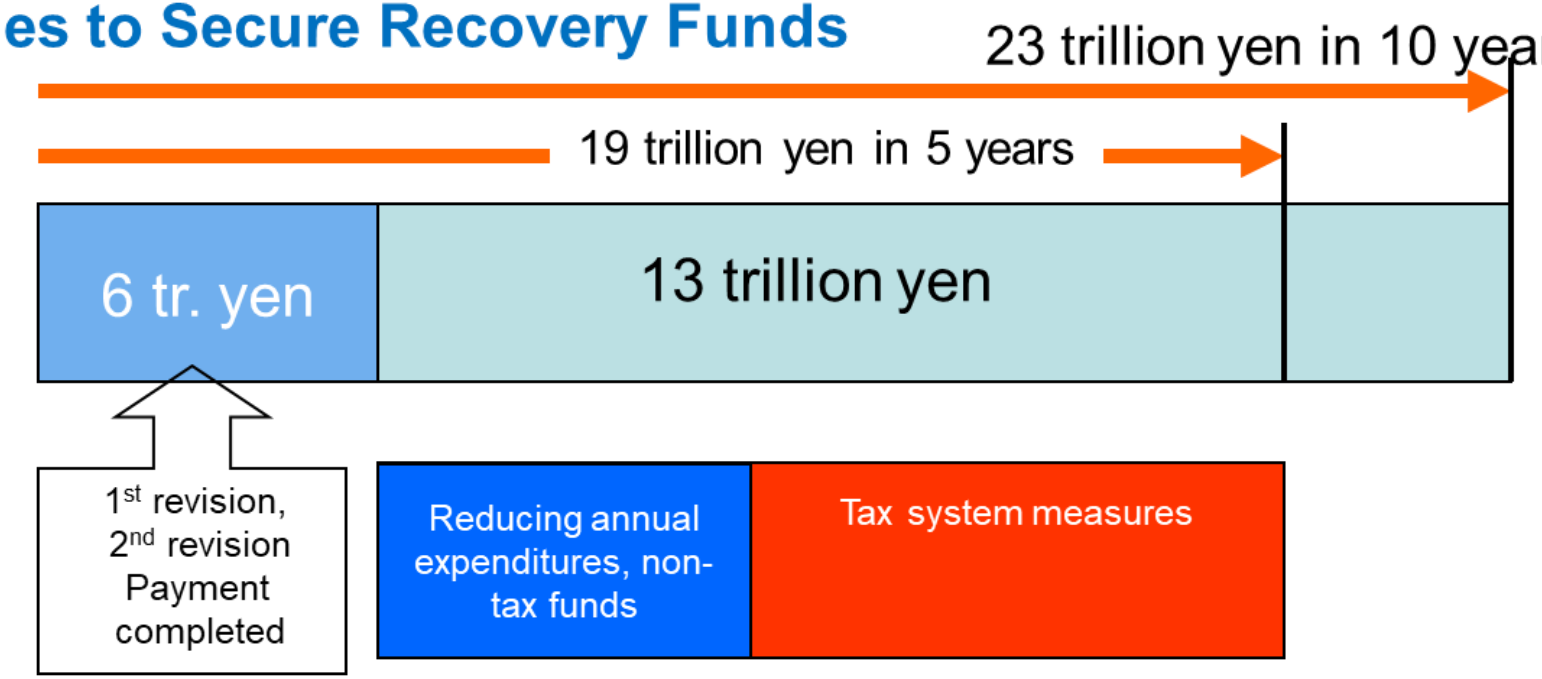


<Application period>	1. Basic assistance grant: within 13 months from the date of disaster occurrence 2. Additional assistance grant: Within 37 months from the date of disaster occurrence
<Documents required for the applications>	• Assistance Grant payment application form • Residence certificate • Disaster Victim Certificate, etc. • Copy of bank book • Other related documents Contract documents (purchase and repair of houses, lease of houses, etc.)

- According to Basic Recovery Policy, recovery debt managed as a separate government bond, repayment method clarified in advance; this will become the basic source of funds for recovery
- In practice, issuing recovery loans is an special case exception of basic law, necessary to create a special law for public bonds

Activities to Secure Recovery Funds

e.g., Sources of funds for housing recovery following the Great East Japan Earthquake of 2011



"Recovery Loans" issued as a temporary stop-gap measure, repayment from tax system measures

- Of the 4 trillion yen in the 1st revision, 2.5 trillion will come from pensions budget as a temporary source of recovery funds
- Sources for repayment under consideration: income tax, corporate tax, tobacco tax
- the 3rd supplemental budget , including 9.1 trillion yen for expenses related to the disaster, determined by Cabinet.

Disaster Risk Reduction Education

○ System for promoting disaster risk reduction education

Prefectural general meeting
(Priority issues to be addressed)

*Liaison and coordination

Regional meeting → Municipal meeting ↕ Each school

Regional training session → Each school

*School training session at each school

○ Preparation and distribution of materials for schools

Disaster risk reduction education supplementary reading material "Live Tomorrow (Asu ni Ikiru)"

School Disaster Risk Reduction Manual

[Activities]

○ Normal times
- Various training activities
- Promotion of Disaster Risk Reduction Education in Hyogo at each school
- Cooperation with local disaster risk reduction systems in each area

○ In the event of disaster (Support for affected schools)
- School education emergency countermeasures and early resumption
- Mental care for school children
- Management of evacuation centers, etc.

○ School support team at the time of earthquake disaster (EARTH)

Emergency **A**nd **R**escue **T**eam by school staff in **H**yogo

- Established in 2000 to repay the support received after the Great Hanshin-Awaji Earthquake
- Japan's first “school support organization by teachers”

Source: Hyogo Prefectural Board of Education

Disaster Reduction Drills

The national government	• Disaster Preparedness Day (September 1), Comprehensive disaster risk reduction drill • Extreme Disaster Management Headquarters, Secretariat operation training, etc.	
Local government	• Simultaneous evacuation drills for Nankai Trough earthquake and Tsunami (Example: Hyogo Prefecture)	
Joint	• Joint disaster risk reduction drills of 9 prefectures and cities, etc. • (Example: Prefecture and municipalities)	

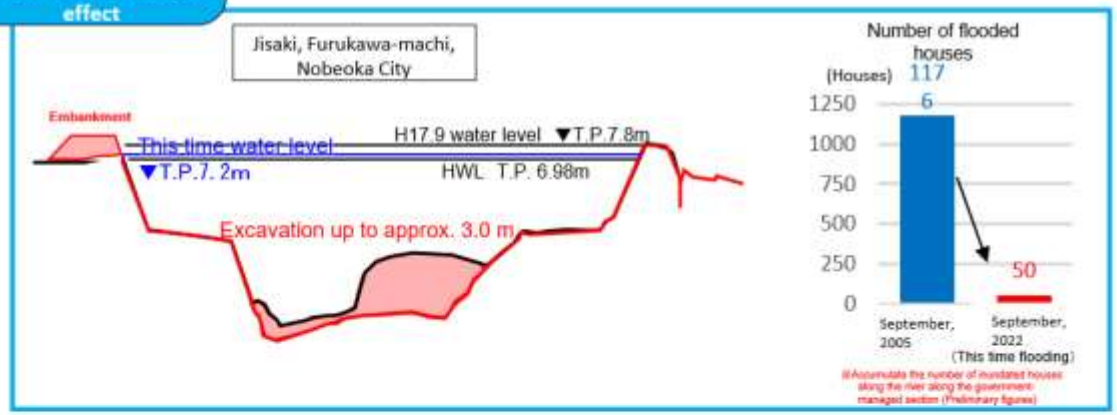
River Widening

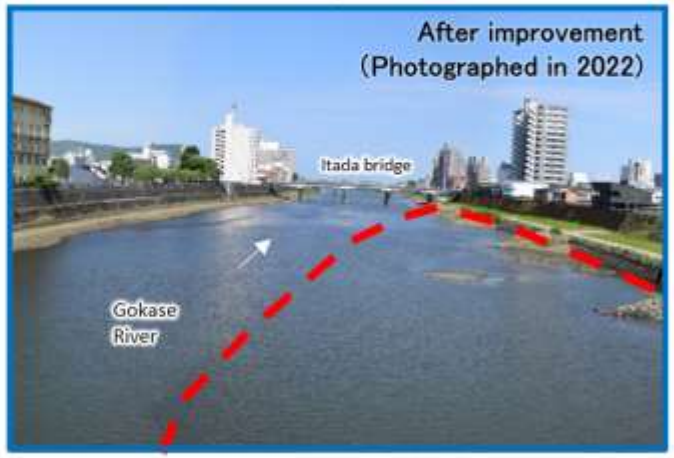
Embankment construction and river channel excavation based on 5-year Acceleration Plan & 3-year Emergency Plan
Prior discharge of water from three upstream dams
→ Prevented overflow from the Gokase River and Ose River and flooding damage from Typhoon Nanmadol in September 2022.

■ Implementing body: Ministry of Lan, Infrastructure, Transport and Tourism Kyushu Regional Development Bureau
■ Project overview and cost:

Main Projects		Details of Measures	Project cost	Project period
River improvement projects		Implementation of embankment construction and river channel excavation	Approx. 35.2 billion yen	From 2005 to 2022
	Of which 3-year Emergency Plan	River channel excavation	Approx. 0.6 billion yen	From 2008 to 2020
	Of which 5-year Acceleration Plan	Implementation of embankment construction and river channel excavation	Approx. 1.2 billion yen	From 2020 to 2021

Water level reduction effect





【Effects of Typhoon Nanmadol in September 2022】

If the river channel was not excavated...
- Levees were not constructed
- Dam did not release water prior to the flood

Then...
The city center of Nobeoka City was expected to be flooded due to overflowing of outside water.

→ **No damage from external flooding**
With record rainfall of 395mm/12 hours
(Highest in history of Hinokage Rainfall Observatory)

Flood Mitigation

Effective infrastructural measures

- Active installation of storage and infiltration facilities, etc.

Improvement of non-infrastructural measures

- Publication of inland water hazard maps
- Promotion of real-time information provision

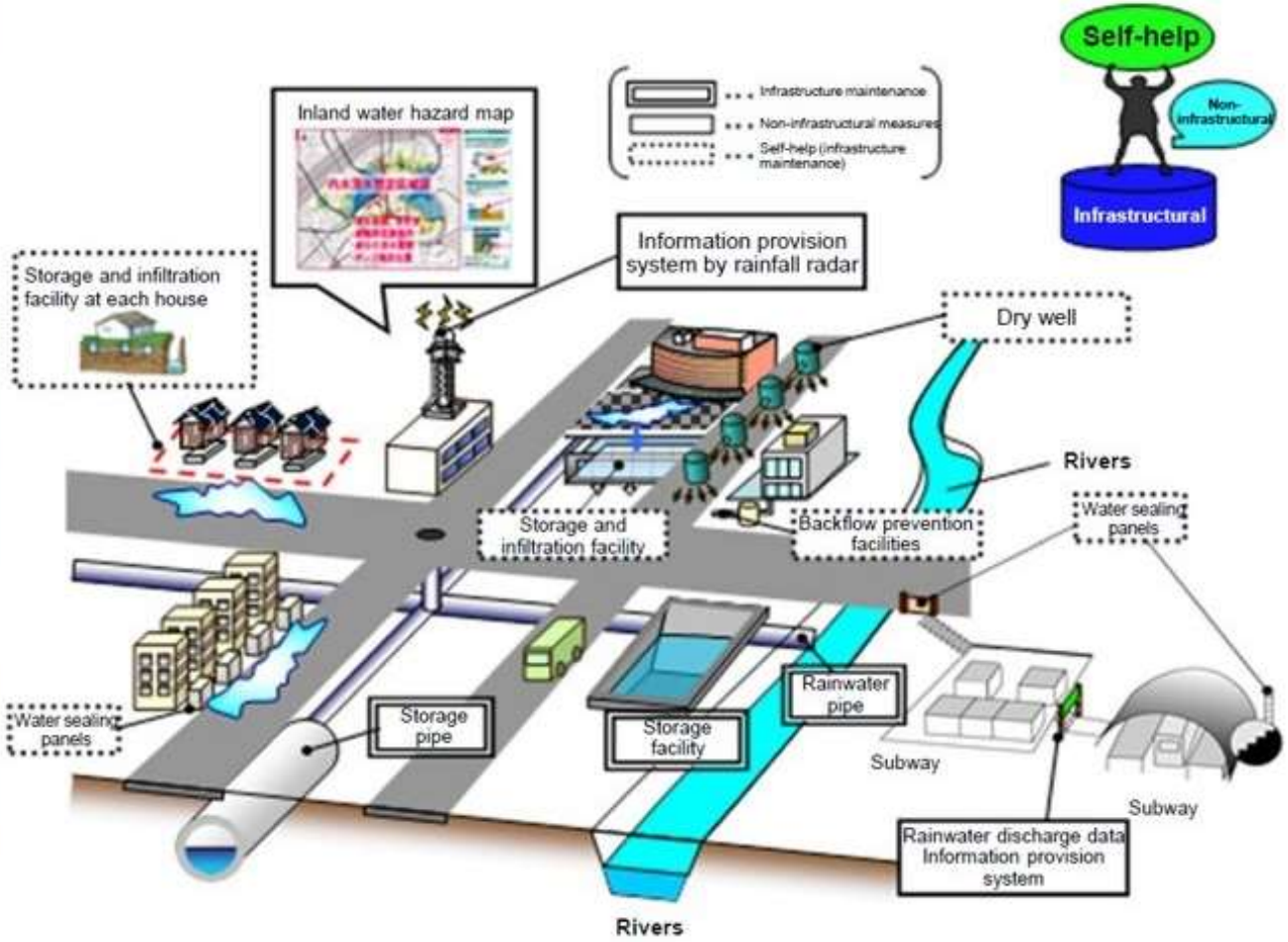
Promotion of self-help

- Installation of sandbags at the time of inundation
- Self-evacuation, etc.

Rainwater pump
(Hiroshima City)

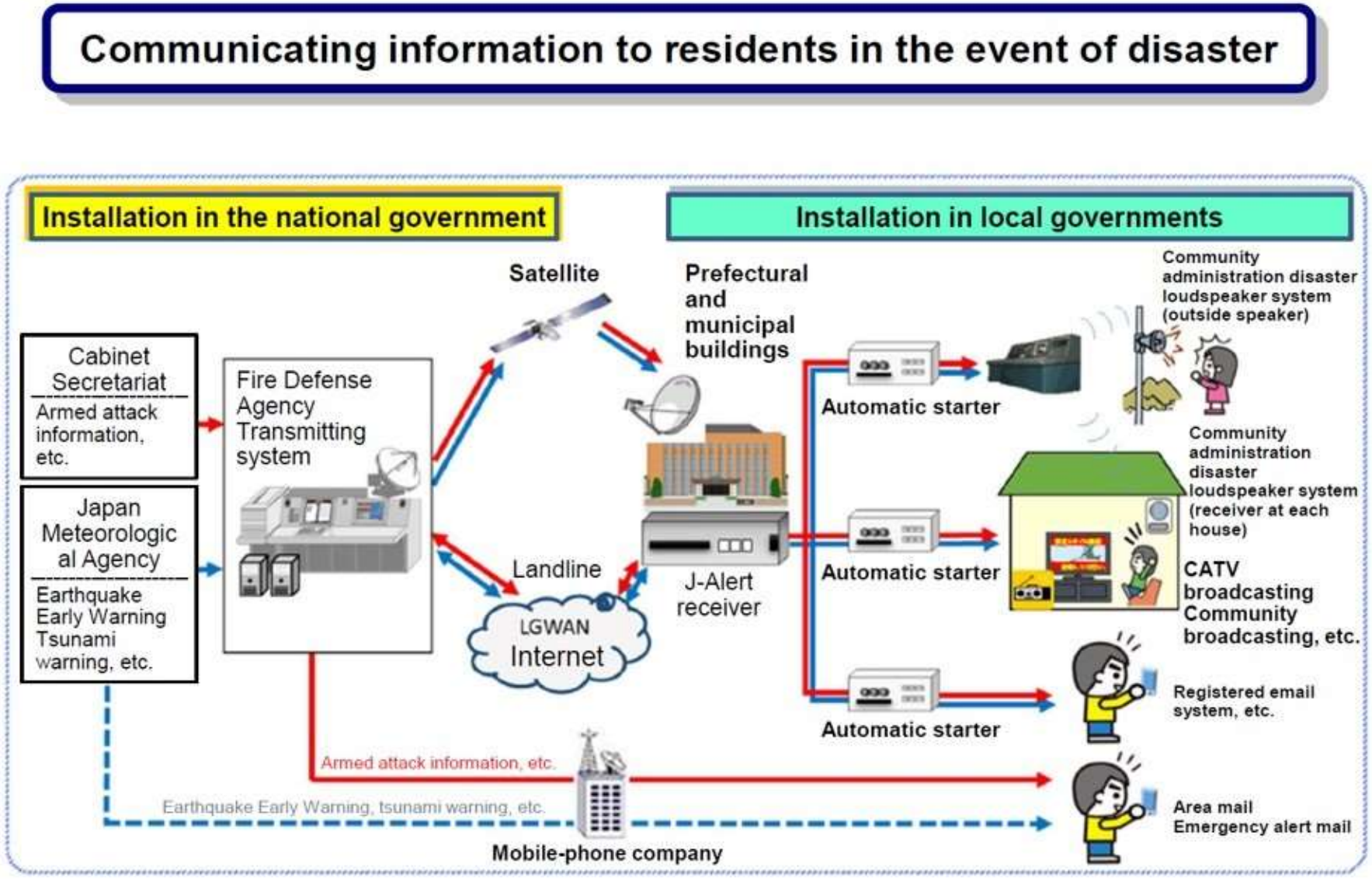
Rainwater storage pipe
(Tokyo)

Storage facility
(Fukuoka City)



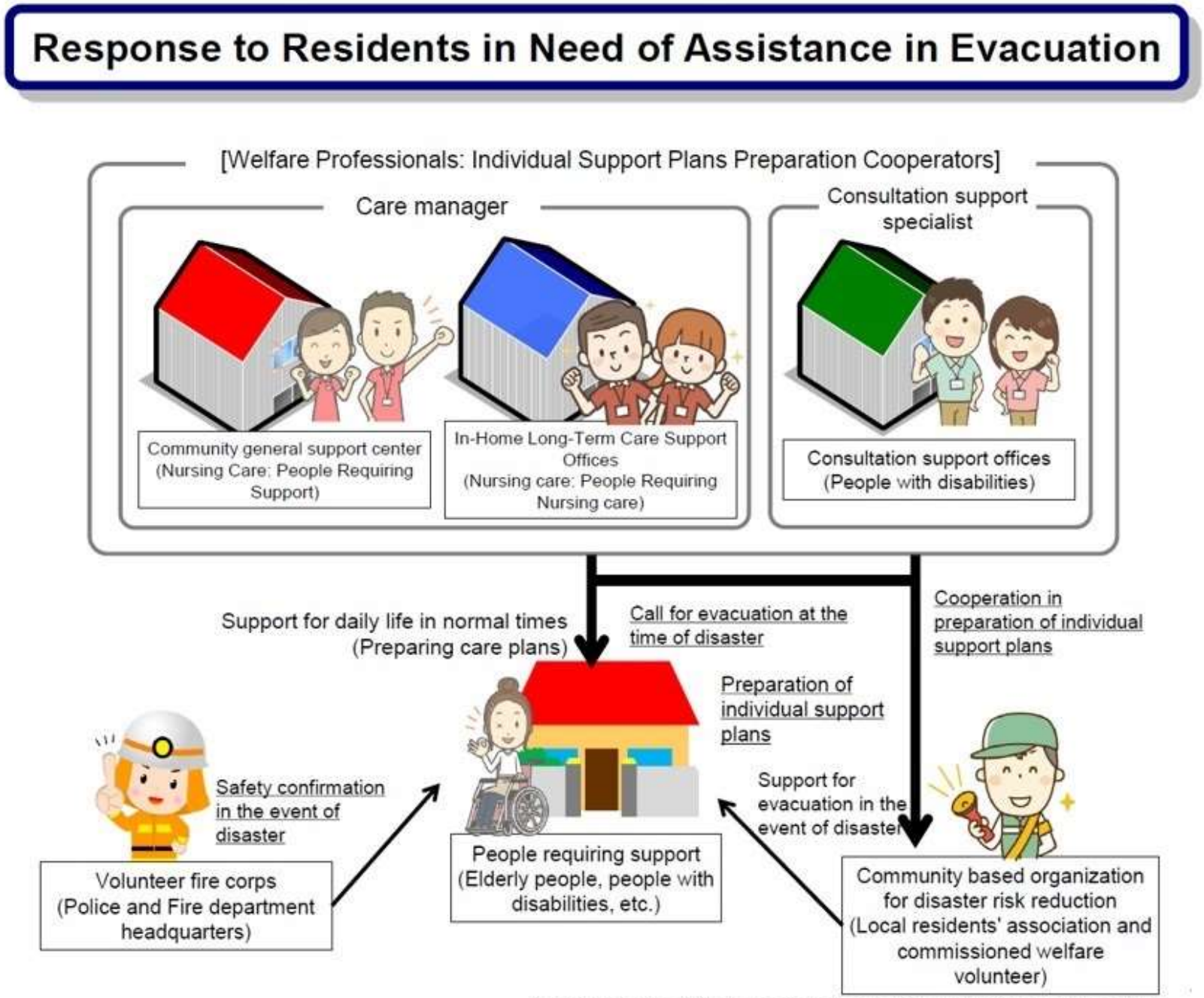
Source: Ministry of Land, Infrastructure, Transport and Tourism website, Inundation countermeasures in sewerage system
https://www.mlit.go.jp/mizukokudo/sewerage/crd_sewerage_tk_000117.html

Early warning and alert dissemination



Source: The Fire and Disaster Management Agency, Ministry of Internal Affairs and Communications website, 2017 edition White Paper on Fire Management Special Feature 10, Japan Instant Warning System (J Alert) - issue and response on information transmission (partially edited) https://www.fdma.go.jp/publication/hakusho/h29/topics10/46067.html

Evacuation Support



Source: Extract from materials provided by Hyogo Prefecture

Push-Type Support

- **The Great East Japan Earthquake (2011)**

  → Wide-area disaster response
  The need for Push-type support

  (Utilized at the time of the Kumamoto Earthquake in 2016)

- **Western Japan torrential rains disaster (2018)**

  → The need for response to residents in need of assistance in evacuation

Build Back Better

Reconstruction of Levees in Mabi Town, Okayama after the July 2018 Floods

Source: MLIT Mabi Bureau

Spanning a length of 9.5 kilometers, the top width of the levees along the Oda river was expanded from 5 to 7 meters, accompanied by a gentle inclination (approximately 30%) of the slopes. In addition, provision for drainage was created for quick drainage of excessive water. Source: https://www.cwsjapan.org/2019/03/04/lessons-from-mabi/

Pre-Disaster Recovery Plan

Photo: East Nippon Expressway Company Limited

Source:Disater Mnagement in Japan, CAO

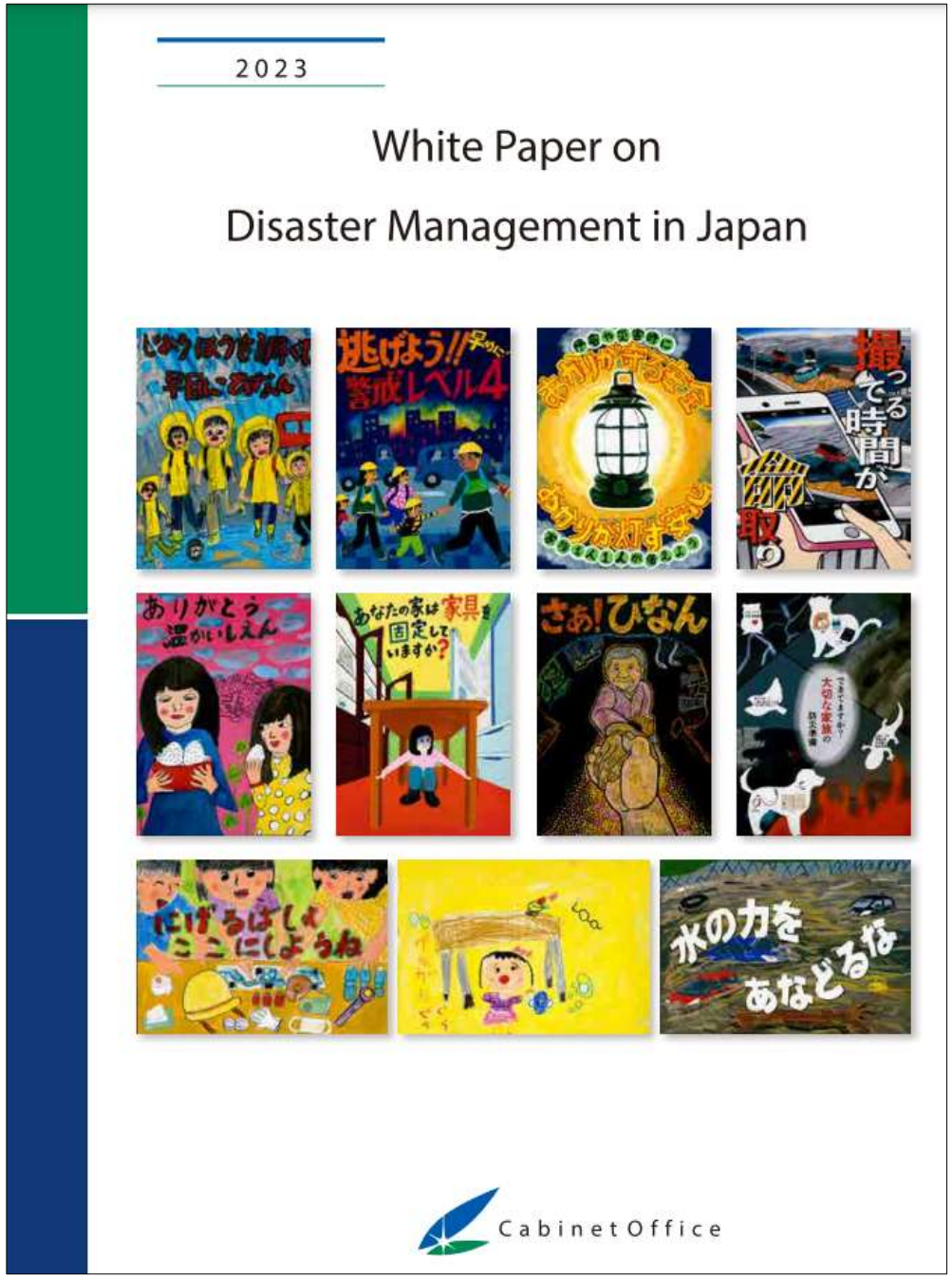
Insight: Obtain budgetary support by presenting the pre-disaster recovery plan while public interest is high. This enables swift funding response the national government in the event of a disaster.

White Paper on Disaster Management

https://www.bousai.go.jp/en/documentation/white_paper/index.html

	Push-Type	Pull-type
Definition	A transportation method of emergency goods supply based on estimated needs of affected areas where sufficient information about needs for relief supplies cannot be obtained	A conventional transportation method of relief supplies according to needs of affected areas where sufficient information about needs for relief supplies can be obtained
Operation Outline	Even in the immediate aftermath of the disaster, etc., where the requests or information about affected areas' needs for relief supplies are not obtainable, the needs for emergency relief supplies of the affected areas are estimated and the relief supplies are dispatched based on the outline of damage situation. Relief supplies are secured and supplied based on the collected information as much as possible, including the number of affected people and the locations for delivery.	Based on the requests for supplies and information about needs in affected areas, the contents and delivery locations of supplies are accurately identified, and based on this information, relief supplies are secured and supplied.

(Source) Ministry of Land, Infrastructure, Transport and Tourism, Policy Research Institute for Land Infrastructure and Transport, Research on logistics of relief supplies https://www.mlit.go.jp/pri/shiryou/press/pdf/shiryou131021_2.pdf



Main Reference

https://www.bousai.go.jp/1info/pdf/saigaipamphlet_je.pdf

Contact:

https://www.adrc.asia

https://www.facebook.com/ADRC.KOBE

Asian Disaster Reduction Center