

## **Chapter 2 Consideration of Disasters in FY2021**

### **Section 1 Consideration of the Prevention of Disasters Caused by Embankments**

The heavy rain from July 1 of 2021 caused sediment disasters (landslide disasters) and flood damage in many parts of Japan, largely debris flow disaster in Atami City, Shizuoka Prefecture, which brought about extensive damage.

The government compiled a "Package of Support Measures for the Heavy Rain from July 1 of 2021" on July 30, 2021. In the package, in order to take all possible measures against disasters likely to occur again and to minimize damage, they decided to "conduct a general inspection of embankments that seem dangerous, and establish a liaison conference of experts and related ministries and agencies. In light of this inspection, necessary measures, including the way to respond to dangerous areas and land use regulations, are considered to ensure safety."

In response to this, first of all, it was necessary to ascertain the actual condition of embankments affecting residential areas and to take immediate measures for parts that were considered dangerous. Therefore, from August 2021, under the cooperation of related organizations, a nationwide general inspection of embankments was initiated.

In addition, on August 10, 2021, we established the "Liaison Conference of Related Ministries for the Prevention of Disasters by Embankments" (hereinafter referred to as the "Liaison Conference of Related Ministries" in this section), which consists of related ministries and agencies. On September 30, 2021, a committee on the prevention of disasters by embankments (hereinafter referred to as the "Committee of Experts" in this section), consisting of experts from the private sector, was established to discuss measures to prevent disasters by embankments.

(Reference: [https://www.cas.go.jp/jp/seisaku/morido\\_saigai/index.html](https://www.cas.go.jp/jp/seisaku/morido_saigai/index.html)  
<https://www.bousai.go.jp/kaigirep/kentokai/moridosaignai/>)

#### **(1) General Inspection of Embankments**

On August 11, 2021, the relevant Directors-General of the Ministry of Agriculture, Forestry and Fisheries (MAFF), the Forestry Agency, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), and the Ministry of the Environment jointly issued a document requesting prefectural governors to conduct a comprehensive inspection, and each prefecture proceeded with a general inspection of embankments, including visual checks at each site.

In December 2021, the relevant ministries and agencies organized the status of inspections at that time and reported them to the Committee of Experts. Furthermore, the inspections of almost all of the 36,000 embankment sites nationwide, including visual inspections, (as of the end of March 2022) were reported to have been completed, and the results of these inspections were announced to the public.

## The General Inspection of Embankments (1)

- As of the end of March 2022, almost all of the 36,000 sites to be inspected nationwide, including visual inspection, were reported to have been completed .
- There were approximately 1,100 embankment sites that fell under one or more of these four inspection items.

### [Results of the general inspection of embankments (as of March 16, 2022)]

- The number of sites subject to general inspection: 36,354 sites  
Of the above, the number of completed inspections: 36,310 sites (99.9%)
  - On-site Situation
    - (1) Embankments where necessary disaster prevention measures could not be confirmed: 516 sites ] Conduct a detailed survey, if necessary
    - (2) Embankments where waste dumping were confirmed: 142 sites ] Administrative measures based on various law and regulation are required
  - Relationship with legal procedures
    - (3) Embankments for which no procedures such as permission or notification were taken: 728 sites ]
    - (4) Embankments where there were discrepancies between the content of procedures and local conditions: 515 sites ] Administrative measures based on each laws and regulations are required
- \*Some sites fell under multiple inspection items (1,089 sites if duplications are excluded)

\*The above sites are based on the results of sequential inspections conducted since August 2021, and do not take into account changes in conditions after each inspection (including those for which corrective measures have already been taken).

Source: The 4th Liaison Conference of the Ministries and Agencies concerned for the Prevention of Disasters Caused by Embankments, Executive Committee Meeting (March 28, 2022)  
(Reference: [https://www.cas.go.jp/jp/seisaku/morido\\_saigai/kanjikai/dai4/gjjsidai.pdf](https://www.cas.go.jp/jp/seisaku/morido_saigai/kanjikai/dai4/gjjsidai.pdf))

## (2) Suggestion by the Committee of Experts

The Committee of Experts held discussions four times from September to December 2021 from the viewpoint of experts in each field, and based on the situation regarding the general inspection of embankments that was organized by the government, the committee summarized its recommendations on December 24, 2021. (Reference: [https://www.bousai.go.jp/kaigirep/kentokai/moridosagai/pdf/teigen\\_honbun.pdf](https://www.bousai.go.jp/kaigirep/kentokai/moridosagai/pdf/teigen_honbun.pdf))

The recommendations included the direction of measures regarding existing dangerous embankment sites and the future direction of mechanisms to prevent the occurrence of dangerous embankments, which should be addressed by the agencies concerned.

As for measures to be taken regarding existing dangerous embankment sites:

- It was proposed that "embankments with high disaster risk" identified in the general inspection of them should be set in motion to ensure their safety as soon as possible.
- While the basic policy is that the embankment builder should impose corrective measures, if it is difficult to do so, the local government will implement measures to deal with the hazardous parts. At the same time, the government should support the local government.

Specific measures were proposed for "thorough implementation of legal measures for the actors including embankment builders," "measures to be taken at dangerous sites" and "measures to be taken until solutions at dangerous sites are completed."

In addition, mechanisms for preventing a future occurrence of hazardous embankments include:

- Uniform rules should be established (a new legal system), and regulations should be strengthened to control dangerous embankment construction, etc.
- In order for the new legal system to be effective, the law enforcement system and capacity must be strengthened.
- Along with the establishment of a new legal system, it is important to take measures to ensure that soil discharged from construction sites is disposed of to appropriate destinations.
- In order to prevent the generation of soil mixed with waste, it is necessary to promote the separation and proper disposal of soil and waste at construction sites.

Fundamental concepts such as the above were presented. And the report proposed specific measures to "create a new legal system to regulate dangerous embankments," "strengthen the enforcement system and capacity," "clarify the destination of soil generated from construction work" and "prevent the generation of embankments mixed with waste."

### Summary of Proposal by the Committee on the Prevention of Disasters Caused by Embankments

#### 1. Measures to be taken regarding dangerous embankment sites

**[Basic concept]**

- For "embankments with high disaster risk" identified in the general inspection of embankments, it is necessary to **implement measures to ensure safety as soon as possible.**
- While **corrective measures should be taken by embankment builders as a basic policy, local governments should implement measures to deal with dangerous sites when it is difficult to do so, and the national government should provide support to local governments.**

**[Specific measures]**

**(I) Enforcement of legal measures against embankment builders**

- Administrative guidance and penalty based on laws and regulations should be given without hesitation to embankment builders and landowners of illegal embankments, and strict action should be taken against them.

**(III) Measures to be taken until the dangerous site measures are completed**

- Embankments identified as "high disaster risk" should be publicly announced and disclosed to residents. In order to ensure prompt evacuation in the event of an emergency, it is also necessary to disseminate information by establishing an emergency notification system.
- Monitoring of the site through non-material measures (e.g. surveillance cameras, fixed-point observation) is essential.

**(II) Measures against dangerous sites**

- Detailed investigation (e.g. surveying, boring) should be conducted for embankments where confirmation is required whether or not they are "high disaster hazard embankments."
- In addition, emergency measures (e.g. installation of sandbags) should be implemented to temporarily avoid collapses and other damage.
- For "embankments with high disaster risk," local government should implement drastic measures (e.g. removal of soil and sand, construction of retaining walls or weirs) to deal with dangerous sites, based on the urgency of the measures.

#### 2. Mechanisms to prevent the occurrence of dangerous embankments

**[Basic concept]**

- In order to prevent the collapse of embankments from affecting residences, a **nationwide uniform rule (i.e. a new legal system) should be established to regulate dangerous embankment construction** and regulations should be strengthened.
- **Soil that is not mixed with waste is from natural origin and should be properly utilized or returned to nature.** It is not appropriate to equate it with waste and place it under the same regulations (for waste-mixed soil, waste and soil should be separated as much as possible and disposed of in accordance with the Waste Management and Public Cleansing Act).
- In addition, in order to make the new legal system effective, it is necessary to **strengthen the enforcement system and capacity of the law.** In particular, a system for dealing with illegal embankments should be firmly established.
- Furthermore, in addition to the establishment of a new legal system, it is important to **take measures to ensure that soil removed from a construction site is properly delivered to the right destination.** Moreover, in order to prevent the generation of waste-mixed soil, it is necessary to **promote the separation of soil and waste at construction sites and to ensure proper disposal.**

**[Specific measures]**

**(I) Establishment of a new legal system**

- (1) Establishment of a basic policy by the government (The government presents a comprehensive concept of measures to deal with dangerous embankments across the entire country, and formulates a basic policy that provides a comprehensive overview of measures to be taken.)
- (2) Gap-free Regulations (Regardless of the land use classification, embankment activities that could cause damage to residences shall be subject to permission.)
- (3) Ensuring safety of embankment (e.g. sufficient safety standards should be set, periodic reporting of construction status and inspections should be conducted during construction and at the time of its completion, and additional safety standards and check items can be added by ordinances)
- (4) Clarification of responsibility (Clarifying that the landowner is responsible for maintaining the embankment in a safe condition, and allowing embankment builders to implement safety measures as well).
- (5) Stricter penalties (Strengthening penalties to a level higher than the maximum penalty under the ordinance (imprisonment of up to 2 years and a fine of up to 1 million yen)).

**(II) Enhancement of law enforcement system and capacity**

- (1) Establishment of criteria of illegal embankments and guidelines to deal with them
- (2) Implement liaison meetings and personnel exchanges among relevant departments in local governments
- (3) Publication of a list of permitted sites, posting of such sites and sharing of information on reports within local governments
- (4) Implementation of administrative penalty in accordance with each business law a gainst related businesses (\*).

**(III) Clarification of the destination of soil generated from construction work**

- (1) Clarification of the destination of soil generated from construction work by the prime contractor (Thorough implementation of the Plan for the Promotion of Utilization of Recycled Resources (\*1)).
- (2) Clarification of the destination of soil generated in construction by public work orders (Thorough implementation of designated use, etc. (\*2))
- (3) Efforts for further effective use of soil generated in construction (promotion of inter-construction use and development of good practices)

**(IV) Prevention of embankments mixed with waste**

- (1) Reinforcement of waste control by the industrial waste management chart (e.g. promoting the use of electronic charts)
- (2) Reinforcement of a system to let related businesses comply the law (e.g. strengthening construction site patrols)
- (3) Establish a system to deal with embankments mixed with waste (e.g. sharing information on reports)

**(V) Other measures**

- (1) Measures for soil contamination of embankments (e.g. early assessment of the situation)
- (2) Measures for solar power generation (e.g. ensuring compliance with technical standards)

\*1: A plan in which the prime contractor describes the destination of soil and sand (e.g. other construction sites and overburden disposal sites)

\*2: Promoting effective use and proper disposal of soil and sand by specifying the destination of construction soil at the construction order stage.

Source: Cabinet Office data  
(Reference: [https://www.bousai.go.jp/kaigirep/kentokai/moridosagai/pdf/teigen\\_gaiyou.pdf](https://www.bousai.go.jp/kaigirep/kentokai/moridosagai/pdf/teigen_gaiyou.pdf))

### (3) Actions based on the Recommendations

Based on the recommendations of the Committee of Experts, the Liaison Conference of the Related Ministries decided on "Measures to Prevent Disasters Caused by Embankments" on December 27, 2021. These measures are to respect "the recommendations of the Committee of Experts to the maximum extent and promptly embody all matters described in the recommendations in the relevant ministries and agencies."

In response, MLIT and MAFF considered a new legal system to regulate dangerous embankments with uniform standards nationwide to prevent damage to residences and others caused by collapsing embankments. In March 2022, they submitted a "Bill for Partial Amendment of the Act on Regulation of Residential Land Development" to the 208th session of the Diet. The bill was passed and enacted on May 20 after deliberations in both houses of the Diet.

#### ● Partial Amendment of the Act on Regulation of Residential Land Development

##### Background and Necessity

###### Current Situation on Embankments

- Heavy rains caused embankment to collapse in Atami City, Shizuoka Prefecture, and then debris flow occurred.  
→ Severe human and material damages (July 2021)
- Comprehensive embankment inspections, including visual inspections at approximately 36,000 sites throughout Japan (March 2022).

###### Institutional Issues

- Regulate development by various laws to ensure residential land security, forest functions and farmland preservation.  
→ Due to the limitation of the purpose of respective laws, there exist areas where embankments, etc. are not sufficiently regulated (some local governments have enacted ordinances to deal with this).



28 dead or missing, and 98 houses damaged  
July 2021 Atami City, Shizuoka Prefecture



July 2009 Higashihiroshima City, Hiroshima Prefecture



June 2021 Tako Town, Chiba Prefecture

Collapse of discarded earth and stones 1 slope, 1 residential building and 1 house damaged

Collapse of discarded earth and stones 1 supply route and embankment road closed

**A legal system to comprehensively regulate dangerous embankments, etc. with uniform standards throughout the country is needed.**

※ The National Governors' Association and others have also requested the establishment of uniform national standards and regulations through legislation.

##### Overview of the Law

- To protect the lives and bodies of citizens from disasters caused by embankments, etc., the "Act on Regulation of Residential Land Development" was drastically revised, including the name and purpose of the act, to comprehensively regulate dangerous embankments, etc. under uniform standards nationwide, regardless of land use (e.g. residential land, forest, agricultural land, etc.).

\*The name of the act has been amended to the "Act on Regulation of Residential Land Development and Specific Embankments."  
Commonly known as the "Embankment Regulation Act"  
\*Co-administered by the Ministry of Land, Infrastructure, Transport and Tourism, and the Ministry of Agriculture, Forestry and Fisheries, with close cooperation between the two ministries

**The Minister of MLIT and the Minister of MAFF shall formulate a basic policy for the prevention of disasters associated with embankments.**

- ##### 1. Gap-free Regulations

**Regulated areas**

- ◆ Prefectural governors, etc. designate areas where embankments may cause damage to houses, etc. as regulated areas.
  - ⇒ \* Designation of a wide range of areas where people live such as urban areas, settlements and their surroundings as well as forests and farmland
  - \* Designation of areas which are far from urban areas and settlements, that could pose a hazard to houses, due to topography and other conditions (e.g., slopes)

**Regulated Subjects**

- ◆ Embankments, etc. in the regulated areas to be subject to permission of the prefectural governor, etc.
  - ※ Regulate not only embankments for residential land development, etc., but also mere dumping and temporary deposition of soil
- ##### 2. Ensuring Safety of Embankments

**Permit criteria**

- ◆ Establish the necessary permit criteria for disaster prevention according to the topography and geology of the area to raise the ground level.

**Interim and completion inspections**

- ◆ To ensure that safety measures are in place in accordance with permit standards, conduct:
    - (1) Periodic reports on the status of construction, (2) Interim inspections during construction and (3) Completion inspection at the completion of construction.
- ##### 3. Clarification of Responsibilities

**Management responsibility**

- ◆ Clarify that landowners are responsible for maintaining land in a safe condition at all times where embankments, etc. have been placed

**Supervisory orders**

- ◆ When necessary to prevent disasters, order corrective measures, etc., not only to the landowners, etc., but also to the causal embankment builders.
  - ※ The land developer, contractor, or past owner of the land who constructed the embankment, etc., may also be subject to the order as causal embankment builders.
- ##### 4. Effective Penalty Measures

**Penalties**

- ◆ To ensure that the penalties function adequately as a deterrence, the penalties of imprisonment and fines against unauthorized acts and violations of orders, etc., are strengthened to a level higher than the maximum penalties under the ordinance.
  - ※ Maximum imprisonment of up to 3 years, a fine of up to 10 million yen, and for a corporate entity, heavier penalty of up to 300 million yen

**[Targets and Effects]**

**Comprehensive regulation of dangerous embankments, etc. to prevent disasters associated with embankments, etc.**

(KPI) The number of prefectures, etc. (prefectures, ordinance-designated cities and core cities) that designate regulated areas  
⇒ All prefectures, within 5 years after enforcement

Source: MLIT