

## Indicator 11.5.2

### Indicator Name, Target and Goal

**Indicator 11.5.2** Direct economic loss attributed to disasters in relation to global gross domestic product (GDP)

**Target 11.5** By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations

**Goal 11** Make cities and human settlements inclusive, safe, resilient and sustainable

### Definition and Rationale

#### ○ Definition

This indicator measures the ratio of direct economic loss attributed to disasters in relation to GDP.

#### ○ Concepts

Economic loss: total economic impact that consists of direct economic loss and indirect economic loss.

Direct economic loss: the monetary value of the total or partial destruction of physical assets existing in the affected area. Direct economic loss is nearly equivalent to physical damage.

Indirect economic loss: a decline in economic value added as a consequence of direct economic loss and/or human and environmental impacts.

#### ○ Rationale and Interpretation

The indicator for the Global Target C of the Sendai Framework for Disaster Risk Reduction 2015-2030 will be used to report on Indicator 11.5.2.

Among the global targets of the "Sendai Framework for Disaster Risk Reduction 2015-2030" adopted at the Third UN World Conference on Disaster Risk Reduction in March 2015, "Target C: Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030" will contribute to sustainable development and strengthen economic, social, health, and environmental resilience. The economic, environmental, and social perspectives would include poverty eradication, urban resilience, and climate

change adaptation.

The open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction (OIEWG) established by the United Nations General Assembly (resolution 69/284) has developed a set of indicators to measure global progress in the implementation of the Sendai Framework, which was endorsed by the UNGA (OIEWG report A/71/644).

## **Data Sources and Collection Method**

Ministry of Land, Infrastructure, Transport and Tourism:

“Statistics on Building Disaster” - “Estimated Amounts of Building Damage”

“Statistics on Water-related Disaster Damage” - “Statistics on Water-related Disaster Damage to General Assets” - “Amounts of Damage to Assets of Business Establishments by Industrial Classification”

“ Statistics on Disaster Damage to Public Infrastructure” - “Appraised Amounts by Infrastructure Type”

Ministry of Education, Culture, Sports, Science and Technology:

“Disaster Restoration Project Expenditure”

Numerical data provided by the Ministry of Agriculture, Forestry and Fisheries

## **Method of Computation and Other Methodological Considerations**

### **○ Computation Method**

This indicator is calculated as a simple summation of related indicators from the disaster loss databases of Japan divided by its most recent GDP (based on the System of National Accounts).

$$X = (C1 + C2 + C3 + C4 + C5 + C6) / \text{National GDP}$$

In this calculation,

C1 means the amount of damage to houses attributed to disasters;

C2 means the amount of damage to disaster-affected productive assets;

C3 means the amount of disaster damage that were related to roads, bridges, or sewerage, and that were administered by the national government or by local governments with national subsidies;

C4 means the amount of direct disaster damage to the agricultural, forestry,

and fishery industries;

C5 means the project expenditure for restoration of facilities such as schools in connection with disasters; and

C6 means the project expenditure for restoration of cultural heritage such as the designated national cultural heritage in connection with disasters.

○ Comments and Limitations

- C1: Any house whose floor area that was lost or damaged by disasters is 10 square meters or less in total is excluded.
- C2: The amount of damage to productive assets is limited to the amount caused by water-related disasters such as floods, inundation, storm surges, or debris flows.
- C3: Subsidized projects of prefectures are limited to those in which the amount of damage was 1.2 million yen or more, and subsidized projects of municipalities are limited to those in which the amount of damage was 600 thousand yen or more. Furthermore, national road projects are limited to those in which the amount of damage was 5 million yen or more at each disaster site. The period of statistics is from January 1 through December 31 of the year.
- C4: Direct disaster damage is limited to the damage that can be calculated in accordance with the guidelines for summarization of reported damage to the agricultural, forestry, and fishery industries.
- C5: With regard to national and public schools, the project expenditure is limited to such expenditure for those national and public schools that suffered certain damage for which disaster restoration project subsidies were available, and that made applications for such subsidies. Furthermore, with regard to private school facilities and public social education facilities, the project expenditure is limited to such expenditure for those private school facilities and public social education facilities that became eligible for subsidies since the disasters they had suffered were designated as disasters of extreme severity, and that made applications for such subsidies. The period subject to computation is from January 1 through December 31 of the year.
- C6: The project expenditure is limited to such expenditure in connection with restoration of cultural heritage, such as designated national

cultural heritage, that suffered certain damage for which disaster restoration project subsidies were available, and regarding which applications for such subsidies were made.

### **Data Disaggregation**

N/A

### **References**

N/A

### **Custodian Ministries of Data**

Cabinet Office,

Ministry of Education, Culture, Sports, Science and Technology

Ministry of Agriculture, Forestry and Fisheries

Ministry of Land, Infrastructure, Transport and Tourism

### **Custodian Ministries of Related Policies**

Cabinet Office

Ministry of Land, Infrastructure, Transport and Tourism

### **International Organizations**

United Nations Office for Disaster Risk Reduction (UNDRR)