

Building nations' resilient foundations for saving lives and developing economy

Disaster Risk Reduction

(DRR) is an initiative aimed

at sustainable economic

development.

Disaster Risk Reduction (DRR) is an effort to build a resilient national foundation, protect people's lives and livelihoods, break the vicious cycle of poverty, and promote stable economic development. By 2030, the goal is to reverse the trend of damage caused by natural disasters, including the number of deaths, affected people, and economic losses.



The number of affected people and economic losses caused by natural disasters are increasing globally

Disasters cause an average of 53,000 deaths per year worldwide*

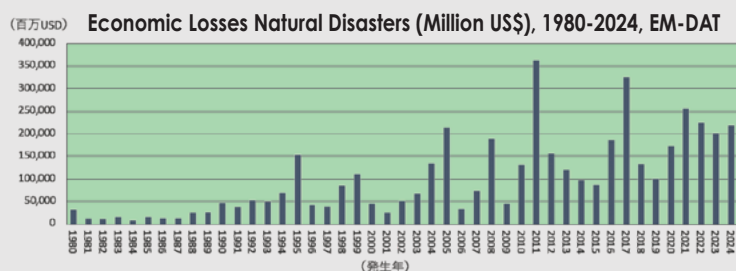
Earthquakes cause the most deaths, but extreme heat and cold, storms, and floods also lead to significant loss of life each year.

Over 130 million people are affected by disasters each year worldwide*

From 2005 to 2015, an average of 1,092 people per 100,000 population were affected by disasters annually. This figure nearly doubled to 2,034 between 2013 and 2022. Among all types of disasters, floods - especially in densely populated low-lying areas - have affected the greatest number of people.

Global economic losses from disasters average \$215.7 billion per year*

While annual figures vary, global economic losses from disasters are showing an increasing trend. (*average from 2020 to 2024, EM-DAT)



Disaster risks could further escalate due to the following reasons.

Expansion of vulnerable urban areas and infrastructure

Future disaster risks could increase due to new urban developments in flood- and landslide-prone areas, and the construction of buildings and infrastructure without adequate seismic resilience in earthquake-prone regions.

Globalization of the economy and internationalization of supply chains

With the increasing globalization of economic activity, disasters in one country can disrupt manufacturing and supply chains in others, amplifying disaster risks on a global scale.

Climate change

Weather-related disasters such as floods and storm surges are becoming more intense and frequent due to climate change, raising further concerns about the escalation of disaster risks.

Why do Japan and JICA work on the issue?

Japan's disaster management systems, experience, and knowledge benefit countries worldwide

Japan is a disaster-prone country that has experienced a wide range of natural disasters, including earthquakes, tsunamis, volcanoes, typhoons, floods, landslides, and avalanches—many of which occur globally. After each major disaster, Japan has continuously worked to prevent repeated damage by improving laws, systems, and technologies. These experiences and the disaster-prevention culture developed over time are among Japan's strengths.

With the globalization of economic activities and supply chains, disasters in one country can impact others. Therefore, disasters in other countries are not just someone else's problem for Japan. Reducing disaster risks internationally is also important for Japan.

● Transition of Flood Control in Japan

Based on materials from the Ministry of Land, Infrastructure, Transport and Tourism River Council

Pre-modern

Flood control for settlement protection, new land development, and river transport
Ex.: Constructed Shingen tsutsumi, Tonegawa River Eastward Transfer, Kasumi embankment

Late Meiji period Onward

Development of a national flood control plan
Ex.: Enactment of the River Act (1896), Construction of Ōkōzu floodway, Arakawa floodway

Postwar

Post-war reconstruction and development of economic infrastructure
Ex.: Enactment of the Basic Act on Disaster Management (1961), Amendment of the River Act (1964), improvement projects based on the basic policy and plan on river improvement

Present

After rapid urbanization, launching a review of flood control plan considering the effects of climate change

● Transition of Japan's Earthquake-Related Laws

After the Great Kanto Earthquake (1923)

Development of seismic standards for buildings (1981)
Ex.: Introduction of seismic forces into building codes (1924), Building Standards Act (1950), New seismic standards (1981)

After the Hanshin-Awaji Earthquake (1995)

Seismic retrofitting of existing buildings
Ex.: Act on Promotion of Seismic Retrofit (1995), Housing Quality Assurance Act (1999), Guidelines for seismic strengthening of school facilities (2003)

After the Great East Japan Earthquake (2011)

Strengthen Business Continuity Plan-BCP and resilience
Ex.: Basic Act on National Resilience (2013), Guidelines for functional continuity of disaster prevention facilities (2018)

Approach

1

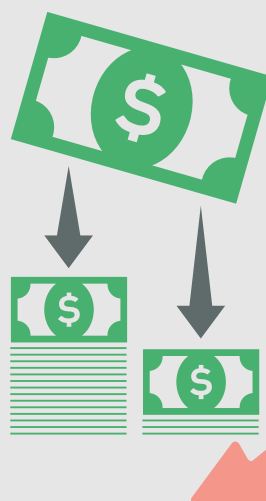
Promoting Pre-Disaster Investment

JICA supports partner countries in autonomously expanding, maintaining, and operating investments in disaster risk reduction-such as the construction of disaster-resilient infrastructure-through their own national budgets. These efforts are aimed at promoting pre-disaster investment that contributes to long-term resilience.

Specific examples include the construction of embankments to prevent river flooding, earthquake-resistant buildings, and the strengthening of key infrastructure such as bridges and ports. These are fundamental measures to prevent cities, buildings, and infrastructure from being damaged by disasters.

It is said that every one dollar invested in pre-disaster measures can save up to fifteen dollars in recovery costs, and one dollar spent on infrastructure resilience can reduce reconstruction needs by four dollars-making this a highly cost-effective approach.

These efforts align with Priority 3 of the Sendai Framework for Disaster Risk Reduction (DRR), the global guideline for DRR through 2030: "Investing in disaster risk reduction for resilience."



Every **USD1** invested in disaster preparedness can reduce recovery costs by **USD15** and reconstruction expenses by **USD4**.



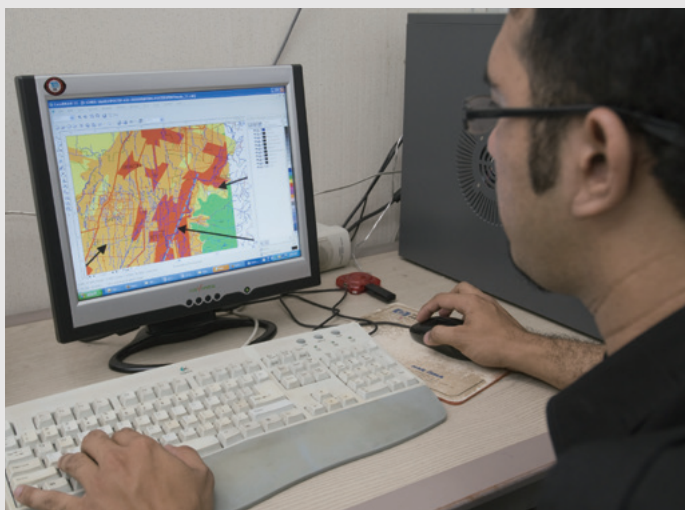
Source: UNDRR "Our impact"
Currency units are in USD

Approach

2

Strengthening Disaster Risk Understanding and Governance

JICA supports partner countries in strengthening institutional and organizational frameworks to enable the effective and efficient implementation of disaster risk reduction (DRR) measures based on scientific evidence such as meteorological and seismic observations. Specific examples include building capacity for weather and seismic observation and analysis, understanding past disasters and their frequency, formulating disaster-related laws, plans, and white papers, and strengthening the capabilities of disaster management institutions. These efforts align with Priority 1 "Understanding disaster risk" and Priority 2 "Strengthening disaster risk governance to manage disaster risk" of the Sendai Framework for DRR.



A hazard map used to understand disaster risks (Indonesia)

Photo: IMAMURA Kenshiro/JICA

Approach

3

Promoting "Build Back Better"

When a major natural disaster occurs in a partner country, JICA promotes the concept of Build Back Better to ensure that the country as a whole-including the affected areas-can rebuild in a way that is more resilient to future disasters. This includes support for recovery and reconstruction planning, as well as the rebuilding of infrastructure, based on lessons learned from the disaster.

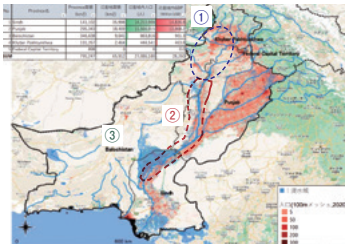
These efforts align with Priority 4 of the Sendai Framework for DRR, specifically: "Building Back Better in recovery, rehabilitation, and reconstruction."



A disaster-resilient school rebuilt in an affected area by storm surge during Typhoon Yolanda in 2013 (Philippines)

Strengthening levees to protect communities from breaches during floods of Pakistan's major rivers and to enhance technical capacity for proper levee maintenance and management using methodologies informed by Japan's expertise.

Region / Theme	Issues	Projects being undertaken as of 2025
① Upstream / Flash floods	<ul style="list-style-type: none"> Lack of hydrological and meteorological observation in the upstream areas Weak riverbank protection at high-flow impact zones 	Grant Aid The Project for the Installation of Weather Surveillance Radar Technical Cooperation Project for Improving of Meteorological Observation, Weather Forecasting and Dissemination
② Midstream / Strengthening of the main river levee	<ul style="list-style-type: none"> Insufficient levee risk assessment and maintenance Levee vulnerability at high-flow impact zones 	Grant Aid The Project for Flood Management Enhancement in the Indus Basin Technical Cooperation Project for Capacity Development for Effective Management of River Dikes Management Response to 2022 Flood Technical Cooperation Technical Advisor on Flood Management
③ Downstream / Flooding in low-lying areas	<ul style="list-style-type: none"> Unimplemented floodgate measures 	Preparatory Survey The Preparatory Survey for the Project for Flood Protection and Dike Improvement for Indus River
④ Common / National Disaster Management Plan	<ul style="list-style-type: none"> Lack of a national disaster management plan 	Technical Cooperation Technical Support Project to Review and Update National Disaster Management Plan (NDMP)



Midstream during 2022 flood

Expert guidance on midstream Indus levees

Efforts are underway to strengthen embankments and build capacity for proper maintenance, utilizing Japan's expertise, to protect communities from major river flood damage.



The Project for the Improvement of Facilities for Primary and Secondary Education in Ulaanbaatar City, Mongolia

Grant Aid, FY2018

- Design and construction of model schools with disaster considerations.
- Intended for use as evacuation shelters and future DRR hubs.



Gender and Diversity in Disaster Risk Reduction

The Knowledge Co-Creation Program (KCCP)

- Targets government officials and civil society working on DRR and gender.
- Focuses on inclusive disaster response and recovery.
- Contributes to the Women, Peace and Security (WPS) agenda. (full-stop)



The Project for Road Disaster Prevention of National Road No. 7 in Bolivia

Grant Aid, FY2018

- Slope and debris flow measures support smooth logistics and sustainable development in a landlocked, road-dependent country.

Collaborating with Partners

Collaborating with diverse actors can be an effective way to reduce disaster risk in developing countries.

Following the devastating Typhoon Ise-wan in 1959, Japan enacted the Disaster Countermeasures Basic Act, establishing an integrated DRR framework that involves all relevant stakeholders. Since then, various actors—including government ministries, local authorities, private companies, NGOs, and academic institutions—have actively contributed to disaster preparedness and response. To meet the growing needs for DRR and recovery in developing

countries, it is essential to collaborate not only with Japan's public sector with many years of experience in pre-disaster investment, but also with private enterprises, NGOs, and research institutes including universities in both Japan and partner countries. Furthermore, JICA will continue to work closely with international organizations and other donors, sharing its knowledge and experience in DRR.



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Japan International Cooperation Agency (JICA) is an international cooperation organization that is centrally responsible for the implementation of bilateral assistance among Japan's Official Development Assistance. JICA cooperates with about 150 countries and regions around the world.



What is Global Agenda?

JICA's 20 cooperation strategies for global issues to contribute to the achievement of the SDGs by 2030 and to the realization of Human Security as the guiding principle of Japan's development cooperation. We set global goals based on an analysis of the issues and promote our development cooperation projects to achieve them. Furthermore, we aim to expand the results of development cooperation by promoting dialogue and collaboration with our partner countries as well as various actors at home and abroad.