

JICA's Cooperation for Disaster Risk Reduction

Disaster Resilient Society for All

—Integrating Disaster Risk Reduction Challenges with Sustainable Development—



(Photo: JICA)

Global Framework for Disaster Risk Reduction

The United Nations General Assembly designated the 1990s as the “International Decade for Natural Disaster Reduction (IDNDR).” Since then, Japan has been working on disaster risk reduction in more than 140 countries. By the middle of the decade, in 1994, the first global DRR strategy, the “Yokohama Strategy and Plan of Action for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation” was endorsed at the World Conference on Natural Disaster Reduction hosted by Japan in Yokohama.

At the Second World Conference on Disaster Reduction held in Hyogo in 2005, “Hyogo Framework for Action 2005–2015 (HFA)” was adopted. Japan further promoted initiatives to reduce disaster risk based on five Priorities for Action.

On the other hand, the economic damage caused by natural disasters continued to grow, along with economic development, population increase, continuous urbanization and increase in extreme weather-related disasters due to climate change.

The Third World Conference on Disaster Risk Reduction was held in March 2015 in Sendai. The international community recognized that economic losses resulting from a disaster would hinder sustainable development. Therefore, the “Sendai Framework for Disaster Risk Reduction 2015–2030” was adopted as a new framework to “substantially reduce disaster risk, and the loss of lives and liveli-

hoods”. The Sendai Framework for Disaster Risk Reduction sets four Priorities for Action. Seven global targets are also to be monitored for progress through specific indicators.

- 1994 May.** World Conference on Natural Disaster Reduction (Yokohama)
- 1995 Jan.** Great Hanshin Awaji Earthquake
- 2004 Dec.** Sumatra Earthquake and Indian Ocean Tsunami
- 2005 Jan.** World Conference on Disaster Reduction (Hyogo)
- 2011 Mar.** Great East Japan Earthquake
- 2013 Nov.** Typhoon Yolanda
- 2015 Mar.** The Third World Conference on Disaster Risk Reduction (Sendai)
- 2015 Apr.** Nepal Earthquake

Increase in Economic Loss Due to Disasters, and Coping with Emerging Risks

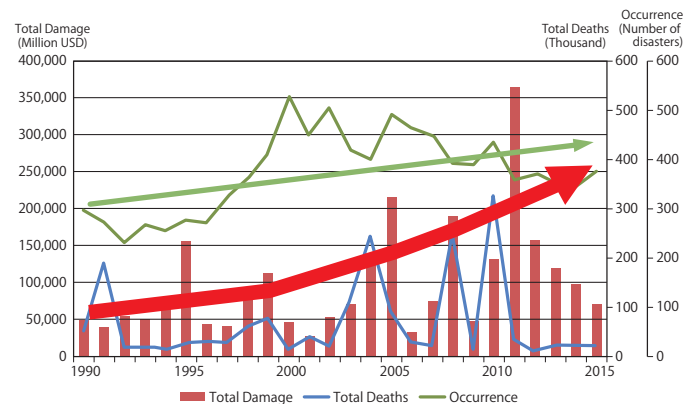
Economic Loss Due to Disasters

After the 1990s there was a sudden increase of disasters worldwide. There was a larger increase in economic damage compared to the number of deaths, due to economic development and more people occupying high-risk areas. Climate change and unplanned rapid urbanization are also emerging risks which cannot be ignored.



Flood in Thailand (2011) (Photo: JICA)

Number of Natural Disasters and Economic Loss and Deaths



(Source: JICA developed this figure based on The International Emergency Disasters Database(EMDAT))

Disasters Affect Global Supply Chains

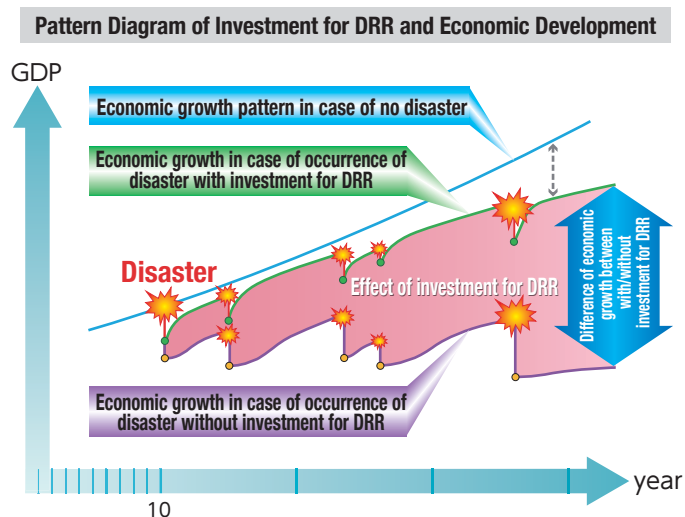
With the globalization of both companies and economies, local disasters in one country may now have a global impact. The 2011 flood in Thailand stopped factory operations in the industrial parks of Ayutthaya and Pathum Thani. It also disrupted supply chains for various industries (automobiles, electronics, distribution and more), and stagnated the supply of products and services. Therefore, it affected the world. The supply chain for hard disk drives (HDD), a key component of personal computers, was especially affected. This meant that the number of personal computers produced in Japan plunged. This example demonstrates that in a globalized world, large-scale disasters have a major impact not only domestically but also internationally.

Reduction

■ The Importance of Disaster Risk Reduction for Sustainable Development

Disasters repeatedly attack vulnerable areas. At the same time, they have a major impact on the local economy. Much of the suffering caused by disaster damage affects those in lower income brackets. It takes away their means of living and prevents them from breaking the poverty cycle. Consequently, disaster risk reduction is critical for sustainable economic growth.

The importance of “investment in Disaster Risk Reduction,” which the Japanese government has been supporting based on past disaster experience in Japan, was shared and adopted as one of the Priorities for Action in the Sendai Framework for Disaster Risk Reduction 2015-2030. Working on Disaster Risk Reduction (DRR) in advance reduces the level of damage caused by a disaster. This approach is also more cost-effective when compared with the cost required for post-disaster recovery and reconstruction. As a result, it also leads to sustainable economic growth. The values and outcomes of the Sendai Framework for Disaster Risk Reduction have been incorporated into “Transforming our World: the 2030 Agenda for Sustainable Development (SDGs).” This agenda emphasizes the importance of DRR activities in achieving the SDGs.



The Sendai Framework for Disaster Risk Reduction 2015–2030

Four Priorities for Action:

- (1) Understanding disaster risk
- (2) Strengthening disaster risk governance to manage disaster risk
- (3) Investing in disaster risk reduction for resilience
- (4) Enhancing disaster preparedness for effective response, and to “Build Back Better” in recovery, rehabilitation and reconstruction



■ Japan's Contribution to the Sendai Framework for Disaster Risk Reduction



JICA Distinguished Technical Advisor to the President participating in preparatory negotiations for the World Conference on Disaster Risk Reduction (Photo: JICA)

During the formulation process of the “Sendai Framework for Disaster Risk Reduction 2015–2030”, Japan reiterated the following points: the importance of prior investment and budget allocation for DRR; the importance of formulating new laws and frameworks through reinforced central DRR and management agencies; and the importance of developing DRR plans and strategies based on risk assessments.

Japan revises its existing related laws, regulations, and standards every time it is struck by a major disaster. This enables to build a more disaster-resilient country based on more stringent standards. This attitude – seeing major disasters as opportunities to build more disaster-resilient communities – was referred in the Sendai Framework as the concept “Build Back Better.” This will be an alternative strategy for countries to not repeat the same unfortunate disaster.

Japan's Experience in Disaster Risk Reduction

Japan's Historical Coexistence with Disaster

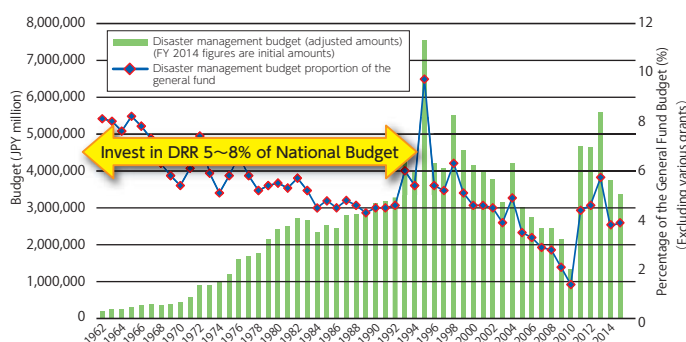
The Japanese "culture of disaster risk reduction" originates from earthquake-proof construction, flood control methods and other DRR activities that have been passed down through the generations since the Asuka period in the 5th century. In a country where different types of natural disasters, such as earthquakes, tsunamis, typhoons, floods and landslides occur in various places, the history of natural disasters is actually the "history of disaster risk reduction." The Japanese have coexisted with these natural disasters. The Hōryū-ji Temple Pagoda (in Nara Prefecture) built by Prince Shōtoku in 607 is one of the oldest existing wooden buildings in the world. The unique architectural structure of this five-story pagoda is said to be earthquake-proof: a central pillar, and separate, independent stories that absorb and resist the horizontal shaking caused by earthquakes. This earthquake-proof construction method of structurally separating the central pillar and the outer pagoda body has been adopted in the design of the Tokyo Skytree (a TV transmission tower with a height of 634m) built in 2012. The ideas established and used 1300 years ago are still alive today. In the 16th century, Takeda Shingen, a prominent feudal lord during the Sengoku period, built an embank-

ment called the "Shingen tsutsumi" where the Midai-gawa River and Kamanashi-gawa River joined together in Kai City, Yamanashi Prefecture. This area was frequently flooded during the rainy season and the local people were suffering from the damage, and Shingen planned to build an embankment to protect the area. It took almost 20 years, but the river course of Midai-gawa River was straightened. The construction of an embankment over 1,800m long in the lower reaches also protected people and their lives from flood damage in the Kōfu Basin. In Japan, a country where natural disasters are a part of everyday life, JICA has been actively working on DRR. Through these activities, government organizations protect the people and their assets to ensure stable lives for all. Local people have also been actively participating in DRR through voluntary flood prevention activities hosted by self-governing bodies centered around villages and other activities. The culture of these activities go back to the local fire-fighters during the Edo period.

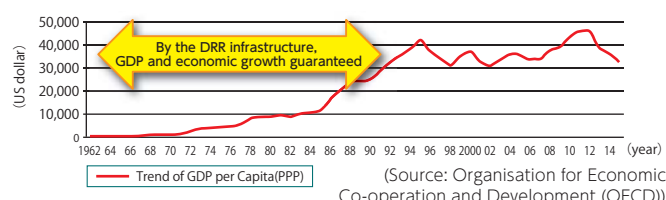
Japan's Disaster Risk Reduction and Management System

Until the 1960s, floods and typhoons caused more than 1,000 deaths and missing persons in Japan. The 1959 Isewan Typhoon which caused serious damage in central Japan was a turning point to shift from response oriented approach to preventive approach and as a result, "Basic Act on Disaster Countermeasures" was enacted. The Great Hanshin-Awaji Earthquake in 1995 caused a major urban catastrophe destroying houses, disrupting lifelines and paralyzing traffic systems. This triggered the recognition that government organizations (public help) cannot be the only source of help in the event of a disaster. It was also important to save one's own life (self-help) and support each other (mutual help) within the local communities. The earthquake also encouraged initiatives to establish volunteer positions and to build a society where multiple stakeholders play different roles before and after a disaster. The "Act on Promotion of the Earthquake-proof Retrofit of Buildings" and the "Act on Support for Livelihood Recovery on Disaster Victims" were also enacted. Since the Great East Japan Earthquake of 2011, Japan has been reviewing the risk assessments and countermeasures for major earthquakes and

improving DRR measures. Emphasizing the idea of "disaster mitigation" as the basic principle is an example. Various disaster risk reduction related laws in Japan clarifies disaster management plans and regulates the responsibilities and roles of the central government, prefectures, municipalities, local communities and private companies both before and after a disaster happens. Such disaster management plans are put in practice by each stake holders. Especially at the recovery stage of the Isewan Typhoon (in 1959) when the economy was still developing during reconstruction after World War II, Japan strengthened the country's DRR system by investing 5–8% of the annual budget in DRR projects to build a strong infrastructure and to counter disasters. Every time Japan is struck by a major disaster, Japan reinforces its efforts to improve laws and regulations, to develop infrastructure for disaster mitigation, and to research and clarify the mechanisms behind disasters. Disaster prediction technology is also being improved. Japan's DRR technologies cultivated through these experiences are highly regarded around the world.

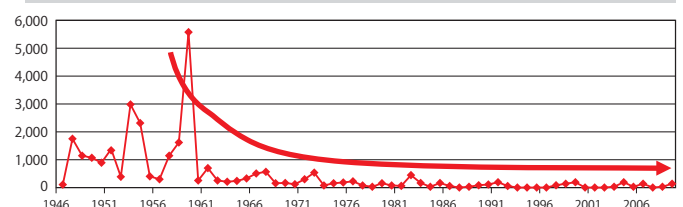


(Source: White Paper Disaster Management in Japan 2015, Cabinet Office, Japan)

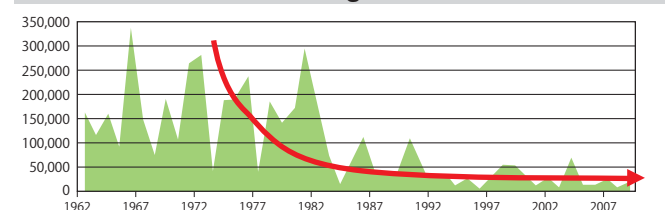


(Source: Organisation for Economic Co-operation and Development (OECD))

Number of deaths from floods



Flooded regions (ha)



(Source: Water Disaster Statistics, Ministry of Land, Infrastructure Transport and Tourism)

and International Support

■ Japan's International Cooperation in Disaster Risk Reduction and DRR Support

During the “International Decade for Natural Disaster Reduction (IDNDR)”, Japan actively promoted DRR. The Japanese government hosted the World Conference on Natural Disaster Reduction in 1994, in which the “Yokohama Strategy for a Safer World” and its plan for action during the decade was endorsed. From the Yokohama conference onward, Japan has been actively making contributions in the field of disaster risk reduction and management. Japan also hosted the Second World Conference on Disaster Reduction in Hyogo in 2005. After the “Hyogo Framework for Action 2005–2015” was adopted, participating countries have taken DRR actions based on the five priorities identified in the Hyogo Framework. Japan took a leading role in the adoption of the “Sendai Framework for Disaster Risk Reduction 2015–2030” at the Third World Conference on Disaster Risk Reduction. Japan’s experience and knowledge of disaster risk reduction was recognized internationally. At this Third Conference (Sendai 2015), the Japanese government also announced the “Sendai Cooperation Initiative for Disaster Risk Reduction,” and committed DRR cooperation and human resource development totalling 4 billion USD and training of 40,000 people from 2015 to 2018. Japan has also been providing emergency aid and seamless support to Nepal to recover from the earthquake disaster, which occurred immediately after the Third World Conference on Disaster Risk Reduction. A month after the earthquake, JICA organized the seminar “Build Back Better Reconstruction for Nepal,” which emphasized concepts of reconstruction policy. The Japanese government also announced its contribution to DRR measures at both the Pacific Islands Leaders Meeting held in May 2015, and at the Conference of the Parties (United Nations Framework Convention on Climate Change/UNFCCC). Through these events Japan makes its international contributions to improving disaster risk reduction and management through sharing its DRR



Symposium on Third UN World Conference on Disaster Risk Reduction (Photo: JICA)

experience, knowledge and techniques. Between 1991 and 2010, Japan was the top bilateral donor in DRR. (Source: ODI, GFDRR, 2013, Financing Disaster Risk Reduction)

■ Adoption of “World Tsunami Awareness Day”

The Japanese Government made a proposal at the Third World Conference on Disaster Risk Reduction, to mark November 5th as “World Tsunami Awareness Day.” It was then supported by 142 countries and adopted at the 70th Session of the United Nations General Assembly (December 2015). This proposal originates from “Inamura-no-Hi (A Fire on the Hill),” an old story about a tsunami that struck Wakayama, Japan on November 5, 1854. The community leader informed all the villagers to evacuate by setting fire on harvested rice sheaves. Success stories are very rare in DRR. His selfless decision to give up crops successfully protected the villagers, and he also disbursed his assets for reconstruction. This is an anecdote of how important early warnings are, as well as a great example of Build Back Better. The final resolution set forth: (1) the designation of November 5th as World Tsunami Awareness Day; (2) Recognizing the significance of preparedness and the prompt dissemination of information through early warning system, the use of traditional knowledge and the concept of “Building Back Better” in the recovery, rehabilitation and reconstruction phases (3) request all member nations, organizations and individuals to facilitate the observance of world Tsunami Awareness Day, and stresses the cost of all activities that may arise.



Tsunami evacuation training in Indonesia (Photo: JICA)

JICA's Cooperation and Contribution

■The key points of Japan's Cooperation for Disaster Risk Reduction

The the 2030 Agenda for Sustainable Development (SDGs) adopted at the UN Summit in September 2015 reflect the principles of "Human Security" as its basic principle. Since this is consistent with Japan's policy of Official Development Assistance, JICA as a development organization treats the SDGs as an issue of the highest importance and will contribute to supporting the various countries working on it.

Disaster risk reduction is not specified in the 17 goals of the SDGs; however, many of them touch on the principles of disaster risk reduction.

JICA will continue to make contributions not only in the field of disaster risk reduction but in all development issues by mainstreaming DRR. This will

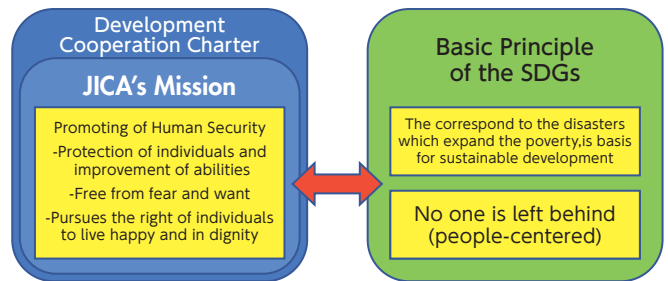


Figure: JICA's Mission and SDGs



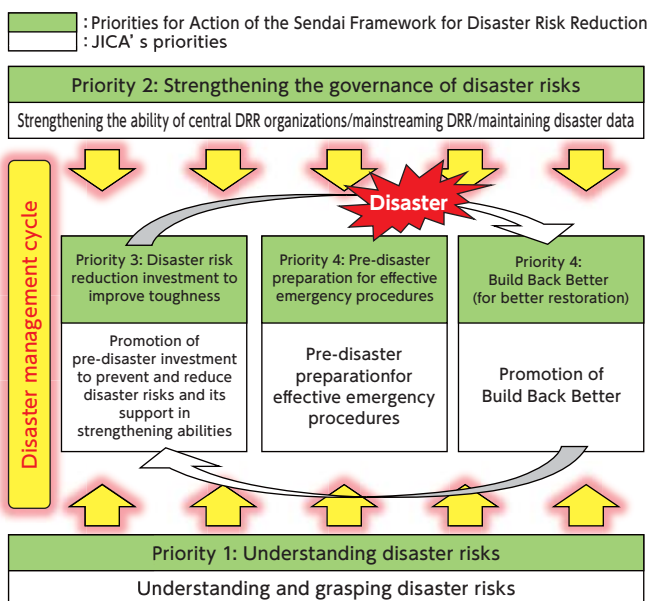
Figure: SDGs targets that include disaster risk reduction

■JICA's Approach to Disaster Risk Reduction Cooperation

JICA will analyze issues by each country for which it has primary responsibility and cooperate based on the "Sendai Framework for Disaster Risk Reduction" to reduce and alleviate disaster risks and the resulting damage most effectively and efficiently for each country. JICA provides support for all stages of the disaster management cycle: prevention and mitigation, preparedness, response, rehabilitation and recovery. JICA puts the highest priority on prevention and mitigation, and encourages "disaster risk reduction investment to improve resilience." This directly reduces damage and disaster risks. Developing countries need to make efforts for prevention and mitigation. Efforts include "strengthening governance for disaster risks", i.e. strengthening the central agency leadership so that more budget

is allocated to disaster risk reduction and management. "Understanding disaster risk" based on scientific data is also important to recognize the actual level of disaster risk.

JICA makes every effort to be fully prepared for an effective and seamless response to a disaster, firstly to save lives, secondly to prevent disaster, and finally to rehabilitate and reconstruct as soon as possible. JICA will also encourage the "Build Back Better" concept in order to take each disaster, though unfortunate, as an opportunity to build a more disaster-resilient society for future disasters.



Cooperation example for each stage of the disaster management cycle



(Photo: JICA)

■ Contribution to International Discussions Based on Japanese Experience

As a world-leading development cooperation organization, JICA shares Japan's knowledge of disaster risk reduction. It leads discussions in the international arena, and contributes to implementing the Sendai Framework for Disaster Risk Reduction. The accumulated disaster risk reduction know-how and knowledge, allows Japan to present suitable solutions to disaster risk reduction issues in developing countries, which correspond with their level of development. Examples include: the maintenance and accumulation of disaster statistical data such as the disaster risk reduction white book; the implementation of disaster risk reduction measures together with the central government, local governments, local communities, the

private sector, academic research organizations, civil society organizations and other related organizations; and the continued improvement of the legal framework to build a disaster-resilient society after a major disaster under the Build Back Better concept. JICA will work with many stakeholders such as central ministries, local governments, universities, private organizations and communities.

■ Collaboration with International Partners

JICA has exchanged a Memorandum of Cooperation with the United Nations Office for Disaster Risk Reduction (UNISDR). This memorandum promises to JICA and UNISDR to jointly promote the implementation of Sendai Framework for Disaster Risk Reduction, along with the development implementation agency, the United Nations Development Programme (UNDP). JICA also collaborates with the multilateral and regional development banks, such as the World Bank or the Asian Development Bank, to widely share its knowledge.

By sharing its knowledge and techniques with the world as a disaster-prone country by cooperating with related organizations, JICA will provide support to build a disaster-resilient society based on the Sendai Framework. Moreover, without setting cooperation as the end goal, JICA will examine and promote cooperation by individually judging whether such cooperation will contribute to promoting the Sendai Framework.

For JICA, the Japanese stakeholders are invaluable partners in sharing the Japanese experience and know-how with developing countries. In order to practice disaster risk reduction cooperation more efficiently, JICA will certainly strengthen cooperation not only with the central government but also with local public bodies, academic organizations, fields of industry and civil society.



Signing ceremony for the Memorandum of Cooperation between JICA and the UNISDR (March 2015)
(Photo: JICA)

■ Mainstreaming Disaster Risk Reduction in Development

In order to promote the "Human Security" approach and sustainable development, JICA believes that there is a need for building a disaster-resilient society by: (1) government prioritizes DRR in the country's policy; (2) disaster risk reduction is incorporated into development plans and programs in all sectors and fields; and (3) prior investment in DRR is increased.

To promote "mainstreaming DRR," for JICA projects, JICA incorporates DRR consideration not only into the area of disaster risk reduction but to all sectors.

The process includes the evaluation of disaster risks, followed by reduction and mitigation of those disaster risks, through business projects and plans.



Typhoon-resilient school (Myanmar)
(Photo: JICA)

Priorities for Action 1 Sendai Framework for Disaster Risk Reduction

Understanding Disaster Risks

Scientific technology needs to provide a reliable risk assessment based on scientific analysis data to plan effective disaster countermeasures. Japan maintains and utilizes each type of disaster statistical data; the government closely works with the Science Council of Japan in the Central Disaster Management Council. Japan also promotes evacuation training and disaster risk reduction education with the local communities. Based on these experience in Japan, JICA helps promote “understanding of disaster risks.”

Utilizing Science and Technology

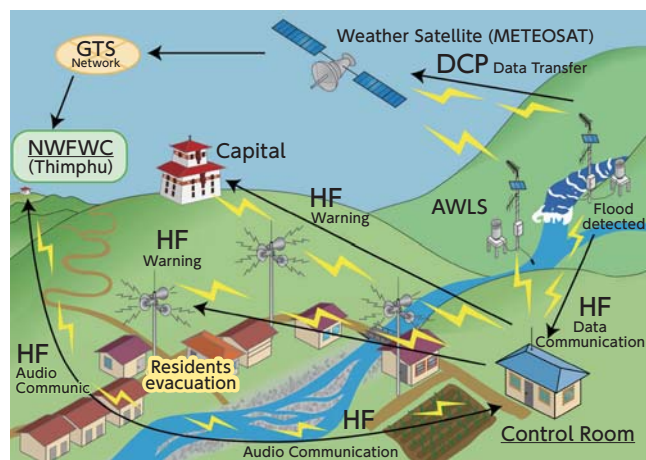
●Bhutan “The Study on Glacial Lake Outburst Floods (GLOFs) in the Bhutan Himalayas”

In the Himalayan Mountains where Bhutan is located, glacial lake outburst flood (GLOF) is an outburst of melted water from glacial lakes formed by global warming which severely affects the downstream.

In cooperation with the Japan Science and Technology Agency (JST) and under the Science and Technology Research Partnership for Sustainable Development (SATREPS) program, JICA conducted research to clarify the GLOF mechanisms. Nagoya University participated as the research leader from the Japanese side. Their research results led to another project which included a quick

flood risk analysis, establishment of a warning system, and improving the emergency response capabilities at the local and community level, to ensure the safety of the community.

JICA assisted to enhance cooperation among the related ministries involved in the DRR sector. The research results under SATREPS followed by another project contributed to reducing the damage from natural disasters, mainly GLOFs and floods, in this Bhutan.



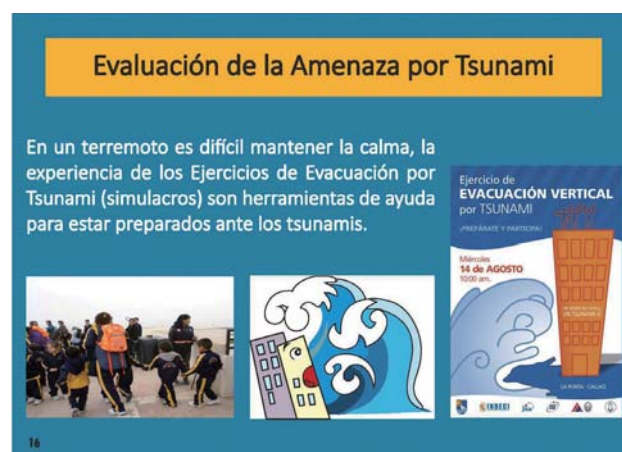
Summary of Early Flood Warning System (EWS)



Glacial lake in northern Bhutan. The increase in melting glacial ice poses a risk of lake outburst flooding. (Photo: Kensaku Seki/JICA)

●Peru “Disaster Management Cycle Support; Cooperation with Government and Academy in Assessment, Prevention and Mitigation, Preparedness, Response, Rehabilitation and Reconstruction”

Peru is located on the circum-Pacific volcanic belt and is exposed to various natural disaster risks such as earthquakes and tsunamis. JICA has been supporting Peru to reduce disaster risk for nearly 40 years, which includes the establishment of the 'Japan Peru Earthquake Disaster Prevention Center'. JICA comprehensively supports Peru in its disaster management cycle of 'evaluation,' 'prevention,' 'mitigation,' 'preparation,' 'response,' 'rehabilitation' and 'reconstruction'. JICA also works with organizations that scientifically analyze earthquakes and provide data to the government. A public awareness campaign is also carried out to explain the risks of earthquakes to junior high schools and elementary schools in comprehensible terminology.



Brochure designed to easily understand the experiment and results.

JICA provides CISMID disaster prevention technologies such as risk assessments for earthquakes and tsunamis, assistance with earthquake-resistant reinforcement, and disaster prevention education. JICA also signed an ODA loan project to meet the demands for emergency assistance. This loan project allows the quick recovery of public services such as hospitals, and water and sewer systems. JICA works both with the government and with academia. For example, an exchange student from Peru studied earthquake countermeasures at a Japanese University and then led the joint research with a university in Japan after he returned home.



Staff measuring the earthquake damage to a wall
(Photo: Kosuke Okahara /JICA)

■ Disaster Risk Reduction Planning Based on Scientific Risk Assessment

● Nepal “Project for Assessment of Earthquake Disaster Risk for the Kathmandu Valley”

The 7.8 magnitude earthquake that hit Nepal in 2015 caused devastating damage in the country and surrounding areas. It killed 8,790 people, injured 22,300, and destroyed 510,000 houses. There were hardly any earthquake resistant structures, or restrictions on land usage, or building regulations in Nepal, despite the fact that large earthquakes have repeatedly struck Kathmandu Valley in the past.

This project carried out a hazard assessment of the Kathmandu Valley using the most advanced academic knowledge available and a risk assessment based on knowledge and damage estimates using multiple occurrence scenarios. These risk assessment results helped to organize the project models in the local government. Examples are the creation of local disaster risk reduction plans and earthquake resistance plans for public infrastructure.



Damage in Nepal from the 2015 earthquake
(Photo: JICA)

■ Cooperation Using the Advanced Technologies of Japan

● Pacific Region "Enhancing the Abilities in the Meteorological Field"

Countries in the Pacific Ocean region experience many natural disasters. Damage from flooding and landslides caused by cyclones have been increasing along with the expansion of social and economic activities.

JICA has implemented three capacity development programs since 2001 which targeted the meteorological agencies of 11 countries in order to improve the skills across the whole area. Japan shared the data of its weather satellite, Himawari No. 7, and provided technical advice on analyzing the data. The meteorological agency in the Solo-

mon Islands now issues warnings based on data from the Himawari satellite. When the Japanese Meteorological Agency updated the satellite to the “New Himawari” No. 8 in November 2015, JICA provided assistance to enable them to continue to receive observation data from the new Himawari No. 8. JICA shares and utilizes Japanese technologies that have been developed over the course of many years.

Priorities for Action 2 Sendai Framework for Disaster Risk Reduction

Strengthening Disaster Risk Governance to Manage Disaster Risk

“Disaster Risk Reduction and Management” is a dual approach to a range of different measures for avoiding and reducing the risk of a disaster. In Japan, disaster countermeasures relied on “public help” for a long time. The experience of the Great Hanshin-Awaji Earthquake and the Great East Japan Earthquake demonstrated the importance of improving “self-help” and “mutual help” during a large-scale disaster. The “Disaster Countermeasures Basic Act” in Japan clearly states that disaster risks should be managed and reduced comprehensively through the vertical roles of the national and local governments, the horizontal role of society in the whole area, and collaboration with other stakeholders such as private sectors, NGOs and local communities. The Sendai Framework for Disaster Risk Reduction views that “disaster risk governance,” and the idea of “cooperation” is indispensable to build a disaster resilient social structure. The Sendai Framework also sets its priorities on “mainstreaming DRR,” “disaster risk reduction plans and strategies” and “collaboration between government and multiple stakeholders.”. Legislation and standards of Japan have been developed and improved through history by experience. JICA will promote disaster risk governance through improvement of disaster risk reduction facilities, cooperation systems between related entities, and cooperation with those in the fields of science and technology.

Inclusive Approach for Local Governments and Communities, Gender

● Fiji and Solomon Islands

“The Strengthening Community-Based Disaster Risk Management Project in the Pacific Region”

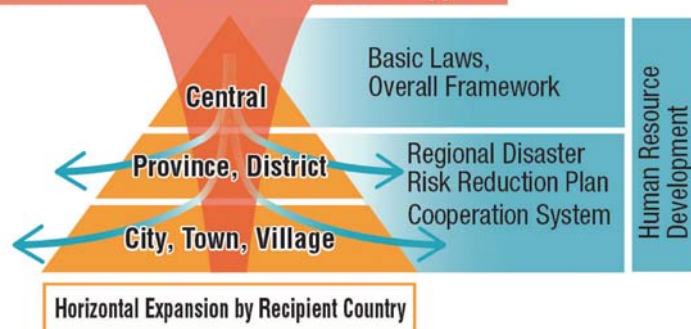
The Pacific Region is vulnerable to natural disasters such as typhoons, earthquakes, tsunamis, and volcanic eruptions. The region is additionally affected by rising sea levels and abnormal weather due to climate change. It is also difficult for disaster information to quickly and accurately reach the people because many small islands spread out over a wide area. The same applies to disaster response of a disaster: there are limitations to responsibilities that the central government can fulfill. There is a growing interest and need for disaster countermeasures at the community level.

In this project, JICA aimed to improve disaster risk reduction skills at the central and community level. JICA created a disaster risk reduction plan and planned evacuation drills and warning systems at the village level. This was done with cooperation from the disaster risk reduction organizations in the central and local governments, along with the residents’ organization in the community. This

project involved various elements such as “self-help,” where people do not just wait for the warning but understand the risks and “warn” each other, and “communicate” among themselves. Other elements include “mutual help,” where they make evacuation plans as a community. They understand and utilize the disaster risk information in order to prepare accurate plans.

Systems were created so that all residents including those people who require special consideration such as women, children, and people with disabilities can protect themselves from disasters and evacuate safely. Community members actively participated in disaster risk reduction activities. For example, a women’s group held a study session on disaster risk prevention.

Strengthening of Central Government and Pilot Dissemination to Local Areas by JICA’s Support



Women participating in the discussion of community disaster risk reduction and management plan
(Photo:JICA)

■ Assistance for Local Strategies and Improvement of Cooperation Between National and Local Governments

● Indonesia “The Project for Enhancement of the Disaster Management Capacity of BNPB and BPBD”

Indonesia is frequently affected by natural disasters such as droughts in the dry season, floods from squalls, heavy rain in the rainy season, as well as earthquakes and accompanying tsunamis. Importance of disaster risk reduction is increasingly recognized at the national and local level. Indonesia has been promoting improvement of the disaster risk reduction system through enacting the Disaster Management Law No. 24 in 2007 and also establishing the National Disaster Management Authority (BNPB). However, few activities have resulted in effective disaster risk reduction.

With the objective of improving disaster response abilities, JICA implemented a project involving stakeholders from the central and local governments, targeting a different levels. JICA provided assistance to how to draw up hazard risk maps and how to prepare and initiate local disaster risk reduction plans for Local Disaster Management Agencies (BPBD). JICA encouraged the Indonesian government to increase the budget for disaster risk reduction, and conducted evacuation drills at the community level. Guidelines for the formulation of regional disaster risk reduction plans were widely distributed and shared nationwide by order of the head of the disaster management authority.



Training on hazard mapping and command post training (Photo:JICA)

■ Promotion of Mainstreaming DRR and Assessment of Underlying Risks

● Sri Lanka “The Disaster Management Capacity Enhancement Project Adaptable to Climate Change”

After the Sumatra earthquake and tsunami disaster in December 2004, Sri Lanka has been improving its disaster countermeasures by establishing a new national disaster risk reduction committee. JICA provided support for rehabilitation and reconstruction as well as support to further improve disaster risk reduction skills.

In this project, JICA provided support to improve the skills of each agency related to important public projects. JICA helped the National Building Research Organization to increase their ability to improve landslide disaster countermeasures. JICA also aimed to establish a disaster risk reduction system model covering evacuation and disaster risk reduction activities of the local residents.

As a result of this project, a disaster impact assessment method was developed and is now conducted prior to infrastructure development and maintenance in Sri Lanka. JICA also helped the Meteorological Agency improve their skills to monitor and forecast the weather efficiently and accurately. The Meteorological Agency used to take 50 minutes to collect data in the event of a disaster because the collected data was processed manually. Thanks to improvements in the information network, they are now able to collect the observation data within 10 minutes. Their ability to announce warnings more quickly has contributed to reducing the damage.



By providing high-precision elevation data, JICA assists in the drawing of hazard maps for landslides and floods. (Photo:JICA)

Priorities for Action 3 Sendai Framework for Disaster Risk Reduction

Investing in Disaster Risk Reduction for Resilience

Sendai Framework for Disaster Risk Reduction Priorities for Action 3 Investing in Disaster Risk Reduction for Resilience Increasing the amount of investment in disaster risk reduction to reduce the risk of disasters is important not only to protect human lives, but also for the surrounding environment, including assets, capital, and opportunities for development. As a country plagued by many disasters, Japan has been working on disaster preparation and JICA understands from experience that investment in disaster risk reduction is a necessary element for continuous growth. JICA utilizes the best Japanese technology to reduce disaster risks, such as setting standards based on risk assessment, establish regulations on land usage, and promote suitable disaster risk prevention projects. JICA also promotes “mainstreaming DRR” for development plans and sector plans.

Risk-Resilient Critical Infrastructure

●Thailand “Subway that can operate in the event of a flood because of prior disaster management - Blue Line subway in Bangkok”

Traffic congestion and air pollution in Bangkok, the capital of Thailand have become a serious problem along with its development from the 1990s. The Blue Line subway that opened in 2004 was designed with help from Japan to provide an alternative to road transportation, and the design includes many elements of disaster risk reduction. Since Bangkok is located in a flood-prone area, the subway entrance was made higher than the sidewalk. They also incorporated a structure that prevents water from getting into the station in the event of a flood, and designed a structure that functions as a water shield at the subway entrance. Some of the vents were set at a higher position, and a drainage pump was installed. A guideline for procedures to close down the stations has been provided. There is also a system in place for the safe operation of public transportation. At the time of the 2011 flood when the airports and roads were closed, the Blue Line could continue to operate even in flooded areas without water getting into the subway stations. This public infrastructure maintenance project contributed not only to resolving environmental problems such as traffic jams and air pollution, it also showed a great example of mainstreaming DRR.



Subway that is resistant against flood (Thailand)
(Photo: Shinichi Kuno/JICA)

●Philippines “Typhoon-Resistant Hospital - Aurora Memorial Hospital”

Aurora Memorial Hospital, located in the Luzon Region in the middle of the Philippines, is the largest hospital in the Aurora province. However, its outdated facilities and shortage of doctors made it difficult to provide a high level of medical services. Therefore, if patients required surgery or intensive care, it was necessary to transport them to a special hospital located in the neighboring province. This was impossible if the road was closed due to a typhoon. Therefore, there was a major need to improve the medical services provided in the province of Aurora.

JICA provided assistance to build a new hospital and provide medical equipment so that operations and medical care can be provided even during a disaster. Special attentions were paid to overcome the effects of strong typhoons; Hospital building was designed to be wind resistant by applying building style of Okinawa (typhoon prone islands in Japan). Also, the floor is raised up to refrain from inundation. When strong typhoon Yolanda hit the area in 2013, damages to Aurora Hospital was small and the hospital was able to provide medical services as usual.



Typhoon-Resistant Hospital (Philippine)
(Photo: JICA)

●Bolivia “ The Project for Capacity Development of Road Disaster Prevention and Bridge”

In Bolivia, roads are the main mode of transport for people, agricultural products and daily goods between communities. However, due to the lack of road maintenance, and Bolivia’s harsh climate and geography, large-scale landslides, rock falls, and bridge washouts frequently occur during the rainy season, causing extensive damage. Therefore, in order to build national roads that are always accessible, JICA implemented a project to develop the capacity of the Bolivian Road Administration for road protection and bridge management control. This project has contributed largely to establishing the concept of “road protection” in Bolivia. The Road Administration has started several construction projects and road protection activities in collaboration with other institutions, which have already shown some results. In addition, this project also contributes to the 9th goal of the SDGs, “Build resilient infrastructure, promote sustainable industrialization and encourage innovation.”



Road shoulder reinforcing by stepped structure and restorative planting (Photo: Fernando Xavier Cuellar Otero/JICA)

■Pre-Disaster Planning and Countermeasures Decrease Disaster Damage

●Philippines “The Project for Flood Mitigation in Ormoc City Phase 1 and 2”

In 1991, Typhoon Uring (Thelma) struck the Visayas region in the Philippines, killing over 5,000 people, flooding houses and destroying roads and bridges. Disaster recovery was limited to repairing broken parts and replacing collapsed bridges. Measures to prevent flooding of the main rivers have not yet been taken. JICA repaired two rivers in Ormoc City which had sustained massive Damage.

JICA also implemented a flood protection project for the purpose of maintaining a safe environment for community residents. A two-storied primary school was built to be used also as an evacuation center in case of floods. JICA involved community organizations in maintenance of the center and to raise the local awareness of disaster risk reduction. Since the project was implemented, there has been no major damage to roads or bridges by flooding. The improved safety against flooding enables public facilities in the city to function for a longer time.



Steps built into the bank protection are used to assess the water level visually during a flood.(Photo: JICA)

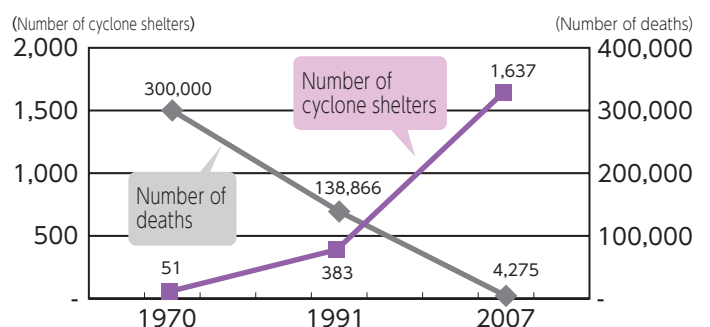
●Bangladesh “The Project for Construction of Multipurpose Cyclone Shelters (Phase 5)”

In Bangladesh, most of the national land is lowland, less than 9m above sea level, making the country vulnerable to flood damage during the rainy season. Particularly in the coastal area along the Bay of Bengal, storm surges due to cyclones cause the loss of lives, livestock and property.

The Bangladesh government is proceeding with building multi-purpose cyclone shelters, which are evacuation facilities to protect residents. The Japanese government along with other countries and international organizations is providing ongoing cooperation. Through this project, 20 cyclone shelters have been built. When Cyclone SIDR struck Bangladesh in 2007, more than 37,000 people were accommodated in the shelters and the damage was limited to a minimum.

Multi-purpose shelters are usually used as primary schools, which solves the problem of a lack of classrooms and helps to improve the learning environment. They are also used for meetings and weddings, and play a role in promoting community activities.

Construction of Cyclone Shelters and Change in Cyclone Victims in Bangladesh



Priorities for Action 4 Sendai Disaster Risk Reduction Framework

Enhancing Disaster Preparedness for Effective Response and to “Build Back Better” in Recovery Rehabilitation and Reconstruction

In order to minimize the damage and influence from disasters, and to achieve early restoration and recovery, the following actions are important: Strengthen the preparation for emergency measures in advance, take action in forecasting of disasters, and improve organizations and structures to respond effectively at all levels. In addition, assuming that disasters will happen, Japan has prepared for various situations in advance. These include signing agreements between the national government, local authorities and the private sector on disaster response. Japan has revised its systems and structures through lessons learnt from large-scale disasters, and aims to build a society which is stronger against disasters with the slogan “Build Back Better.” Precautionary measures are important, but in developing countries it is sometimes difficult to adequately prepare for disasters due to limited funds. As the second best choice after an unfortunate and unavoidable disaster, it is necessary to carry out “Build Back Better.” This approach will make the country more resilient and will prevent repeating damages from similar disasters. JICA will help affected countries achieve “Build Back Better” by promoting precautionary measures, and restoring and recovering from disasters.

Seamless Approach from Response to Development and “Build Back Better”

Philippines “The Project on Reconstruction and Recovery from Typhoon Yolanda”

Typhoon Yolanda hit the Philippines with a historically unprecedented scale on November 8, 2013 and inflicted extensive damage to a wide area of the country.

Soon after the disaster, the government of Japan dispatched the Japan Disaster Relief Medical Team and Expert Team. They immediately conducted an investigation to assess the affected areas and a survey on the needs for recovery. The government of Japan has seamlessly connected its emergency response to assistance activities in order to provide assistance in cooperation with grass-root businesses. This includes a grant aid project, technical advice and the JICA Partnership Program. JICA encouraged high ranking officials to intensively embrace the concept of “Build Back Better” for sustainable reconstruction.

The project is not just for recovery and reconstruction, but also helps with the complete process of early recovery and reconstruction of the afflicted areas. The project helps build disaster-resilient communities and society based on Japan’s experience during the Great East Japan Earthquake in 2011. JICA encouraged partnerships between autonomous bodies with the cooperation of local

governments related to the 2011 earthquake. JICA will also work on providing comprehensive recovery assistance such as measures to improve local people’s income and encouraging the social participation of women.



Reconstruction assistance on YOLANDA stipulating the concept of Build Back Better



Local authorities’ officials discussing matters at a recovery planning workshop (Photo: JICA)

Revision of Technical Standards and Laws after Disasters

El Salvador “Enhancement of the Construction Technology and Dissemination System of the Earthquake-Resistant Vivienda Social”

In El Salvador, adobe (sun-dried brick) is popular among low- and middle-income earners. These houses are vulnerable to earthquakes and most of them were completely or partially destroyed by two major earthquakes in 2001.

JICA conducted experiments and research on the earthquake resistance of architectural methods that are either popular today, or are expected to become popular among low- or middle-income earners. As a result, a legally backed architectural technology standard was enacted in 2014. In El Salvador, structural calculations have been

used to confirm safety for low- or middle-income earners in most cases. The new technological standard does not require structural calculations, it regulates only the specification code. It is expected to be used to design and build small houses.

The project has also provided opportunities to raise the awareness of highly quakeproof houses. The “Build Back Better” project, based on the experience of the earthquake in 2001, is steadily being implemented.

●Philippines “Project for Enhancing capacity on Weather Observation, Forecasting and warning”

The Philippines is located in the Subtropical Monsoon Zone at the western edge of the Pacific, where typhoons often pass through. Every year, human and economic damage from typhoon disasters is huge. Economic activities especially agriculture are seriously affected nationwide for a long period of time. Because many of the lower incomes are engaged in the agriculture sector, effective disaster risk reduction measures are also required to reduce poverty.

The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) is playing a central role in providing meteorological information to the country’s system of disaster risk reduction.

Japan has helped with the construction of weather radar and the

procurement of equipment that provides high-quality typhoon alarm warnings and typhoon information to the organizations related to disaster prevention and the citizens. Making use of this equipment, this project provides technical assistance to improve meteorological observation capabilities and forecasting techniques of PAGASA. The project also aims to more effectively disseminate disaster related information to the relevant organizations and the citizens. This will help improve the level of meteorological observation, forecasting and warnings in the Philippines, and strengthen the precautionary steps taken against disasters.

■Strengthening the DRR System and Allocation of Emergency Credit Line

●Philippines, El Salvador and Peru “Stand-by Emergency Credit for Urgent Recovery-SECURE”

This loan is introduced to promptly meet financial needs during the reconstruction period after disasters. The loan agreement is signed prior to a disaster happening to contribute to prompt reconstruction and recovery.

Currently, Japan has entered into this type of loan agreement with the Philippines, El Salvador and Peru. These countries are all prone to disasters and have experienced huge human and economic losses after a number of disasters.

Each government raises policy actions. These can be actions to improve the risk reduction capabilities of the relevant organizations, local authorities and communities. They can also be actions to better

monitor and analyze natural disasters in order to minimize the damage they will cause.

The actions also include bringing disaster prevention measures into the mainstream in order to reduce disaster risks and improve management capabilities.

These loans support the policy actions of each country, respond to the temporary financial needs in the event of a major disaster, and contribute to reducing risk before a disaster. They also help improve management capabilities, and are able to provide prompt support for reconstruction.

■What is “Build Back Better”?

It is important to take precautions to reduce the risk and damage caused by natural disasters. However, the reality is that in developing countries, it is difficult to allocate enough funds for unexpected disasters in advance. “Build Back Better” is the concept of turning disasters to an advantage by creating a stronger country and society. This is done through reconstruction of physical infrastructures, living standards, economic and industrial recovery, and restoration of the community environment and culture.” Once a disaster happens, not only human lives, but also precious time, opportunities for further development, and property built by individuals and companies are all

gone. What’s more, a huge amount of funds is then necessary, first for the disaster response, and then for the restoration and recovery after the disaster. Moreover, water related disasters occur frequently and tend to affect the same area and repeatedly cause economic harm. People in the area will be deprived of opportunities for economic development and will not be able to escape the cycle of disasters and poverty. Recovery with the concept of “Build Back Better” after a disaster will build up a society that will be stronger against the next disaster.

