

SUPPORTING RESILIENT POST-EARTHQUAKE RECOVERY IN CHINA

Building back better in the aftermath of disaster

AT A GLANCE

Country China

Risks Seismic risk and other natural hazards

Area of Engagement Enabling resilient recovery

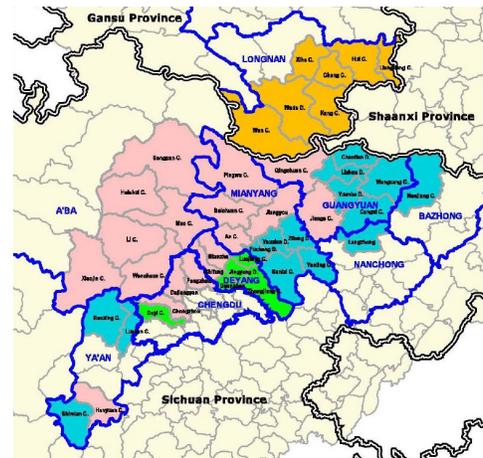
Following the 2008 Wenchuan earthquake, the recovery process not only helped to restore essential infrastructure, health, and education services, but also promoted disaster risk reduction and enhanced local capacity to manage recovery.

ONE OF THE COSTLIEST AND DEADLIEST EARTHQUAKES IN RECENT HISTORY

Facing a range of natural hazards, including flooding, landslides, and wildfires, southwestern China also sits on an active fault system, putting the region at high risk of major seismic events. On May 12, 2008, that risk became reality when an 8.0-magnitude earthquake struck the region, centered in Wenchuan county in Sichuan province. Leaving a trail of death and destruction across six provinces – Sichuan, Gansu, Shaanxi, Henan, Yunnan, and Hubei – the Wenchuan earthquake left over 69,000 people dead, 374,000 injured, and 18,000 missing.

The costliest earthquake to hit China since the 1976 Tangshan earthquake, the Wenchuan earthquake caused staggering economic losses in the six affected provinces. Total direct economic losses are estimated to be over US\$133 billion, with Sichuan and Gansu provinces bearing the brunt of these losses. Asset damage was severe and widespread in the six provinces, and included: 34,000 kilometers of highways destroyed; 1,263 reservoirs damaged; 7,444 schools and 11,028 hospitals and clinics in a state of collapse; and the houses of more than 4 million families either destroyed or damaged.

Project counties in Sichuan and Gansu Provinces



- Provincial Boundary
- Prefecture Boundary
- Twinning Assistance Supported Counties
- Sichuan Recovery Program: Infrastructure, Health
- Sichuan Recovery Program: Health
- Gansu Recovery Program: Infra, Health, Education
- 237 Earthquake-affected Counties

BUILDING BACK BETTER AFTER THE WENCHUAN EARTHQUAKE

In the immediate aftermath of the Wenchuan earthquake, the Global Facility for Disaster Reduction and Recovery (GFDRR) and the World Bank supported the Chinese government in undertaking a comprehensive damage, loss, and reconstruction needs assessment. Informed by this assessment, the Wenchuan Earthquake Recovery Project (WERP) provided assistance to restore and enhance basic infrastructure, as well as health and education services, in 27 severely affected counties in Sichuan and Gansu, the two hardest-hit provinces. Supported by GFDRR and the World Bank, and implemented by the Chinese government, the project was carried out from 2009 to 2016.

Recognizing the need to strengthen resilience to disasters in southwestern China, the government and its partners adopted a “Build Back Better Plus” approach to reconstruction. WERP mandated that all project-related construction must use higher

seismic-proof standards and flood risk management codes, and that project design and implementation should consider poverty reduction and economic development. WERP also included elements designed to strengthen the capacity of provincial, municipal, and county governments to manage the recovery, making the reconstruction process more sustainable.

To complement the physical reconstruction efforts, GFDRR provided the support needed to prepare policy notes, mobilize international experts, and provide disaster and emergency preparedness training for teachers, school staff, and hospital staff. GFDRR also worked with the Chinese government to review the implementation of its national reconstruction master plan and six sector-specific reconstruction plans. Additionally, GFDRR provided technical assistance to help advance the dialogue on disaster risk reduction with provincial authorities in Sichuan – an effort that continues today in conjunction with the World Bank-funded Lushan Risk Reduction Project (2016-2022).

LESSONS LEARNED

Strong government leadership, both national and local, can go far in making recovery efforts more effective.

Recovery efforts were responsive to conditions on the ground in large part due to the Chinese government's leadership in undertaking a comprehensive damage, loss, and needs assessment immediately after the earthquake. In addition, the Sichuan provincial government proactively provided technical assistance to relevant provincial bodies, greatly enhancing their ability to implement the project.

A flexible approach to implementation enables the project to accommodate evolving needs on the ground.

Rather than specifying activities ahead of time, WERP was designed such that specific investments could be identified over the course of project implementation on the basis of a general framework and guidelines. This flexible design allowed the project to accommodate the most immediate and urgent needs on the ground. For example, in Gansu province, the education component of the project was revised to focus on middle, senior secondary, and vocational schools after primary schools in the province became a priority for the Chinese government's own reconstruction program.



nearly
**13 MILLION
PEOPLE**
benefitted from restored infrastructure

ESSENTIAL INFRASTRUCTURE RESTORED

In Sichuan and Gansu provinces, much of the essential infrastructure, as well as health and education services, has been restored to levels equal to – and even exceeding – those existing before the Wenchuan earthquake. WERP built or renovated 300 roads, constructed and equipped 67 health facilities, and rehabilitated and constructed nine wastewater treatment plants. Overall, the improvements directly benefitted 12.7 million people.

VULNERABILITY TO SEISMIC HAZARDS REDUCED

Reconstruction efforts were designed to meet earthquake safety standards based on an 8.0 event on the Richter scale, compared to the previous standard of 6.0. Demonstrating the successful application of these new standards, reconstructed assets sustained only minor damage following the 7.0 magnitude earthquake that struck Lushan county in Sichuan province in 2013.

LOCAL GOVERNMENT CAPACITY STRENGTHENED

A comprehensive training program improved the ability of provincial, municipal, and county governments in Sichuan and Gansu provinces to manage the recovery themselves. Training activities covered a range of technical areas, including procurement, financial management, engineering design, and construction supervision.