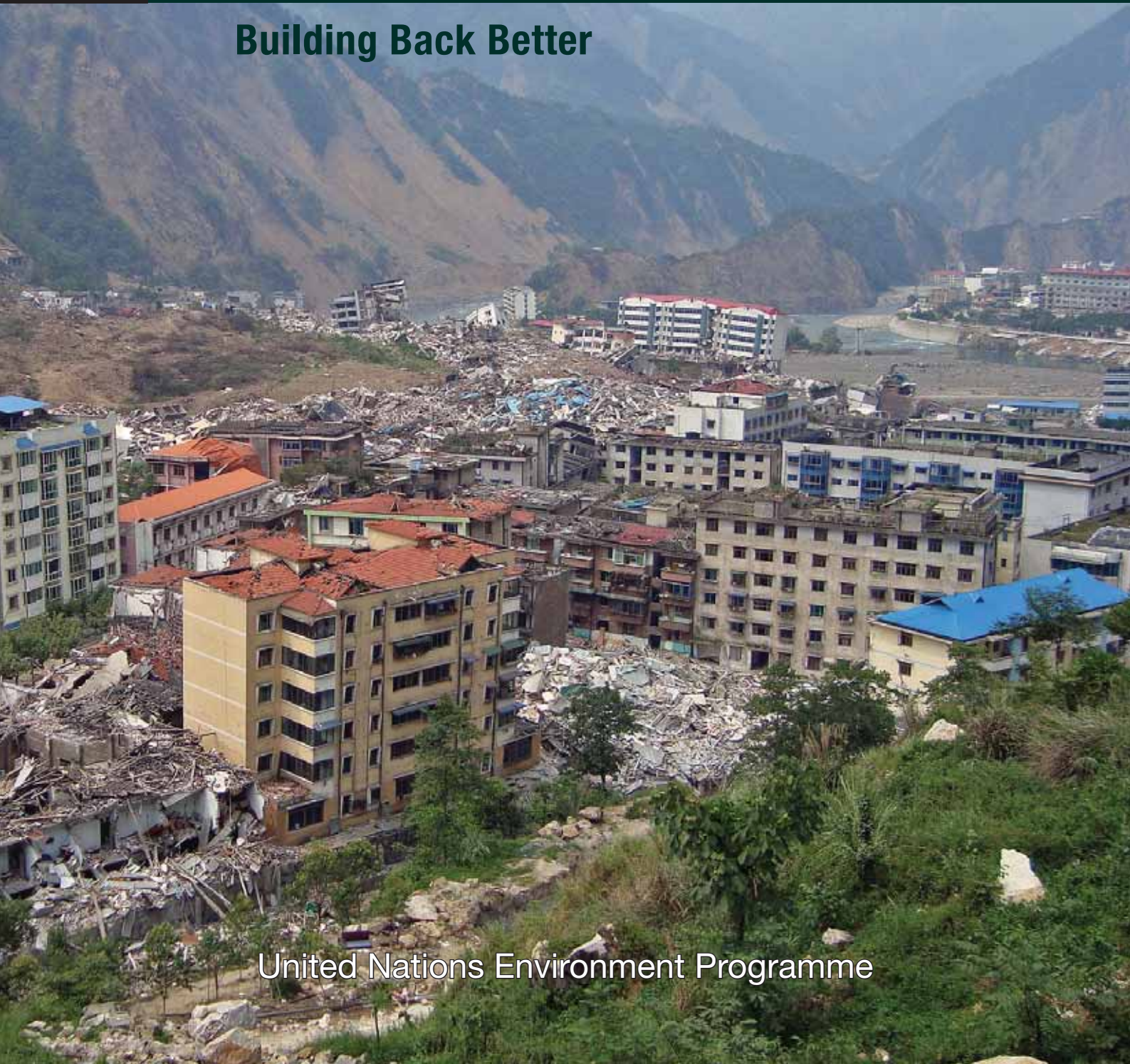




# UNEP in China

**Building Back Better**



United Nations Environment Programme

*UNEP's post-earthquake activities in China were made possible by generous funding from the Government of Norway.*

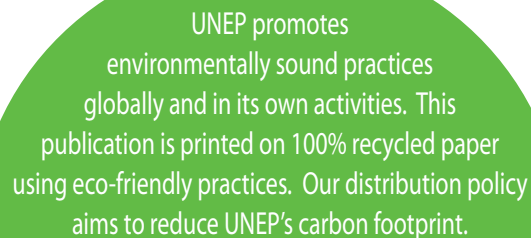
First published in June 2010  
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Cover image: The aftermath of the earthquake in the Sichuan Province on 12 May 2008 © UNEP

Editing: Reshmi Thakur

Layout: Matija Potocnik



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# UNEP in China

## Building Back Better



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Sichuan province has historically been known as the “Province of Abundance”

# A Province of Abundance

Sichuan Province, whose name means “four circuits of rivers,” is located in southwestern China. It is surrounded by the Himalayas to the far west, including the nearby Tibetan Plateau, Qinling range to the north-east, and mountainous areas of Yunnan to the south.

Sichuan has historically been known as the “Province of Abundance,” as it is one of the country’s major agricultural production bases. In addition to rice and wheat, commercial crops produced in the region include citrus fruits, sugar cane, sweet potatoes, peaches and grape seed.

Sichuan is also one of the major industrial bases of China. In addition to heavy industries such as coal, energy, iron and steel, the province has established a light manufacturing sector comprising building materials, wood processing, as well as food and silk processing.

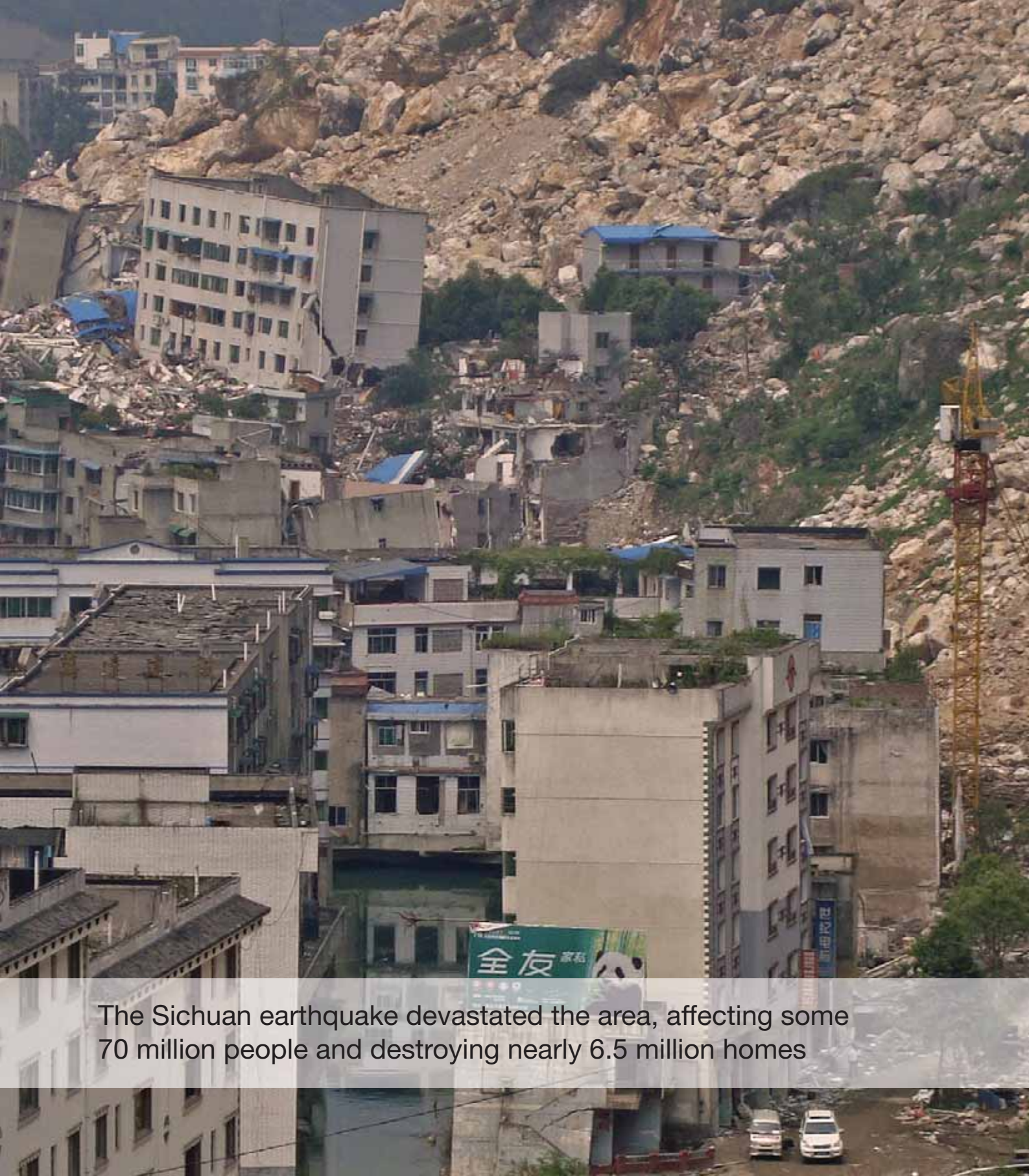
Chengdu, the provincial capital, is one of the most important economic centers and transportation and communication hubs in China, as well as one of the production bases for textiles and electronic products.



Sichuan Province is also one of China's major industrial bases



SOURCE: WIKIMEDIA COMMONS



The Sichuan earthquake devastated the area, affecting some 70 million people and destroying nearly 6.5 million homes

## The Event

On 12 May 2008, at 14:28 hours, Sichuan Province was struck by a devastating 8.0 magnitude earthquake. Its impact was felt as far as Beijing and Shanghai, some 1,500 km and 1,700 km away. The epicenter of the quake was located in Wenchuan County, 80 km northwest of the provincial capital Chengdu. The disaster affected approximately 70 million people and destroyed nearly 6.5 million homes. Some 15 million people were evacuated and it is estimated that approximately 4.8 million people were forced to live in temporary shelter. In addition, more than 5 million farmers lost their harvest. As of December 2008, the death toll had reached more than 100,000 with over 374,643 injured and 17,923 missing.

As the United Nations system's designated entity for addressing environmental issues at the global level, the UN Environment Programme (UNEP) was requested by the Government of the People's Republic of China to lend assistance in the aftermath of the disaster. UNEP immediately engaged in the post-disaster recovery effort, including by coordinating the environmental response to the earthquake through its office in Beijing, which was supported by international experts and technical staff from across the organization.

This publication outlines the key achievements of UNEP's engagement in the country from 2008 to 2010, which focused primarily on providing high-level expertise and capacity development for the management of the environmental impacts of the disaster.



Some 15 million people were evacuated from their homes, and it is estimated that approximately 4.8 million people were forced to live in temporary shelter



To assist the national Government and UN agencies in the aftermath of the disaster, UNEP mobilized environmental experts to the country



# Early Response

Monitoring the situation from the onset, UNEP noted a significant number of potential secondary environmental risks and impacts stemming from the earthquake.\* These included a spill of 80 tons of toxic liquid ammonia from two chemical factories in the city of Shifang, the derailment of a forty-car freight train carrying gasoline that had caught fire, damage incurred by over 400 dams, numerous landslides blocking roads and limiting humanitarian access to the affected area, the formation of so-called 'quake lakes' due to the blocking of waterways by landslides, as well as bleach powder, used for disinfection, catching fire and causing toxic gas clouds.

To support the UNEP to respond to the volume of requests for assistance and guidance, and to assist the Government and UN agencies to address environmental concerns in early recovery planning, a senior environmental expert was deployed to Beijing in early June 2008.

In the immediate aftermath of the earthquake, as the entire country focused on rescue and relief operations, UNEP established a network of UN agencies and donors in the country to facilitate a coordinated response and to ensure the smooth transfer of information to environmental issues relating to the earthquake. This "environment network" worked in close cooperation to ensure that environmental issues were seen as an integral part of the response process.

The USD 33.5 million "China Appeal for Recovery Support" that was launched by the United Nations in July 2008 recognized the critical importance of addressing environmental issues such as water, soil contamination and hazardous waste management. An envelope of nearly USD 6 million was requested from the donor community for environmental issues, highlighting the need for UNEP's assistance and the commitment of the national Government to build back better through the integration of critical environmental considerations in the post-disaster recovery and reconstruction.



**Michael J. Cowing**  
UNEP Senior Expert

"Environment is not, unfortunately, often on the radar screen during the disaster response period. However, in every post-disaster situation, there are many environmental issues that must be addressed. These range from dealing with hazardous healthcare waste to safeguarding drinking water sources. We focused our efforts in the early days, to good effect, on raising awareness among the international players on this important link."



UNEP noted a number of potential secondary environmental risks stemming from the earthquake, including issues related to waste, landslides, and chemical spills

\* These observations were noted in the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Humanitarian Situation Reports: [http://www.reliefweb.int/rw/RWFFiles2008.nsf/FilesByRWDocUnidFilename/MUMA-7F32MQ-full\\_report.pdf/\\$File/full\\_report.pdf](http://www.reliefweb.int/rw/RWFFiles2008.nsf/FilesByRWDocUnidFilename/MUMA-7F32MQ-full_report.pdf/$File/full_report.pdf)

# 后重建环境保护国际经验交流会

Experience-sharing for Post-Earthquake Environmental Restoration

2008年7月8日 中国北京  
8th 2008 Beijing China

主 办 单 位 环 境 保 护 部  
主 持 单 位 中 国 环 保 网



In June, UNEP co-organized an international workshop on “Experience-Sharing from Best Practices on Post-Earthquake Situations”

# Sharing International Experience in Post-Disaster Management

While the Government of China deployed extensive internal resources to manage the impacts of the earthquake, they were keen to understand and learn from international experience in similar situations. In June 2008, upon request from the national Government, UNEP assisted the Ministry of Environmental Protection (MEP) to organize an international workshop on “Experience-Sharing from Best Practices in Post-Earthquake Situations.”

In early July 2008, with the assistance of UN and other international organizations, including the World Health Organization (WHO), the International Union for Conservation of Nature (IUCN) and the United States Environmental Protection Agency (US EPA), UNEP facilitated the mobilization of a host of senior international experts for a three-day workshop in Beijing on “Post-Earthquake Reconstruction in the Environmental Sector.” Key environmental issues covered included:



In July 2008, UNEP and other international organizations delivered a three-day workshop on environmental issues in post-earthquake reconstruction, including management of disaster waste



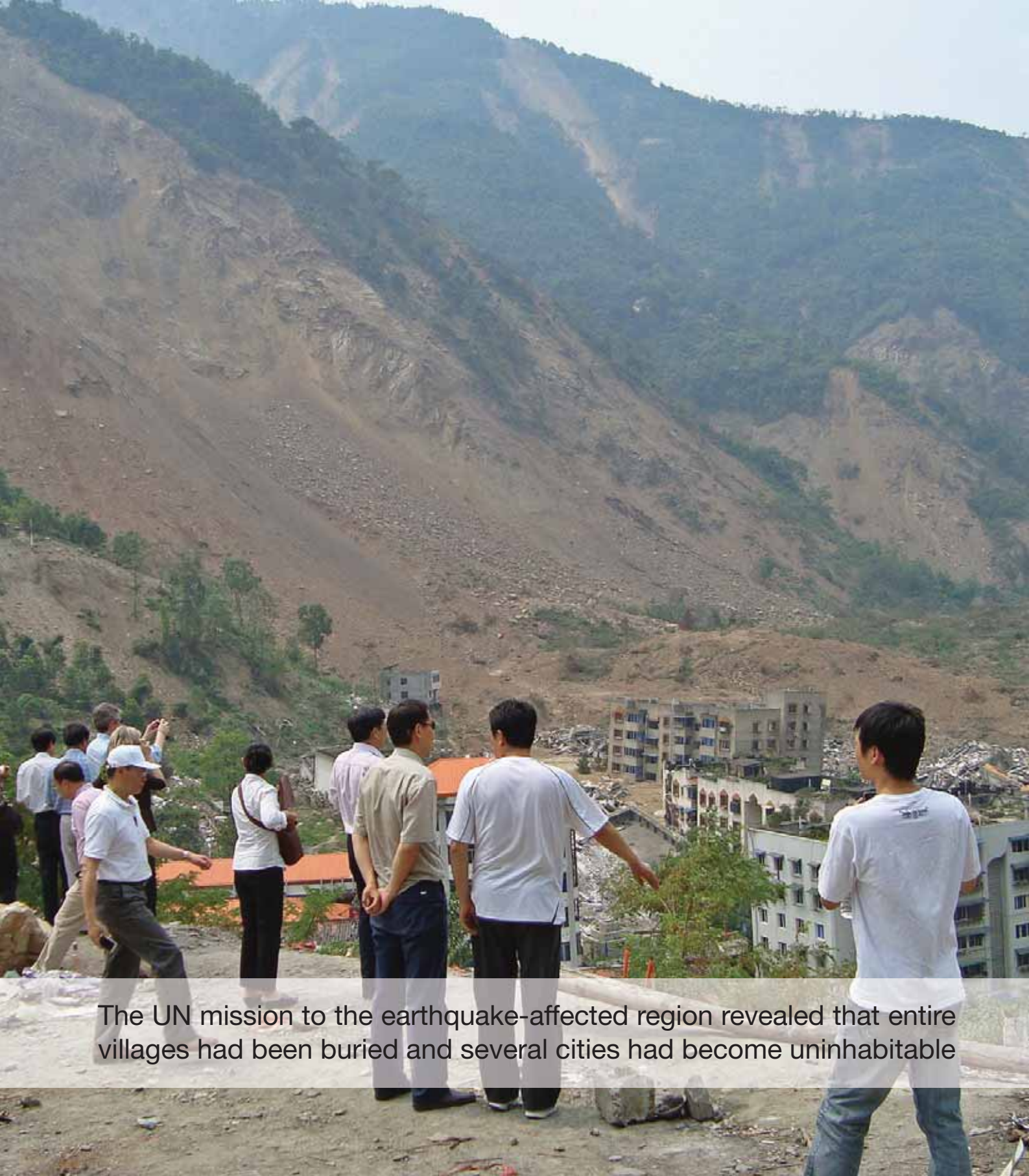
**Ms Yu Fei**  
**Deputy Director-General**  
**Department of Total Pollutants Control**  
**Ministry of Environmental Protection, China**

“We were very impressed by the speed with which UNEP was able to bring high-quality senior international experts with decades of experience into China for supporting us at this critical time of need.”

- Management of disaster waste;
- Asbestos identification and handling;
- Management of wildlife and nature reserves;
- Management of healthcare waste;
- Environmental emergency response; and
- Financing emergency response and rebuilding in post-disaster situations.

The workshop was attended by some 60 Chinese civil servants from numerous departments of the Ministry of Environmental Protection, Ministry of Health, Ministry of Housing and Urban-Rural Development, as well as academic institutions and other experts working on the environmental dimension of recovery and reconstruction plans.

Following the event, working teams were formed pairing national and international experts on specific thematic areas to enable transfer of international best practice and advice on addressing local challenges.



The UN mission to the earthquake-affected region revealed that entire villages had been buried and several cities had become uninhabitable

## Assessing the Situation on the Ground

In July 2008, as part of a select group of UN agencies, diplomatic missions and donors, UNEP was invited by the national Government to survey the earthquake-affected region first hand. While the mission team, consisting of some 70 members, included many senior international and multi-disciplinary experts, many of whom had significant experience of disasters, the scale of the Wenchuan earthquake was beyond anyone's imagination. Entire villages had been buried under mud and several cities had become uninhabitable.

The mission also revealed the level of the environmental challenges that needed to be addressed. As evidenced by the tens of thousands of buildings and hundreds of factories that had collapsed, one of the most challenging issues related to the management of the vast quantities of building rubble generated by the quake, much of which may have been contaminated with hazardous materials such as asbestos, hydrocarbons and toxic chemicals. Other areas of

immediate concern related to the contamination of soil and water resources, and to the disposal of hazardous healthcare waste. Moreover, hundreds of so-called "quake lakes" had formed, for which stability was a key issue. The destabilization of hill slopes and the frequency of rock falls and mudflows were also major concerns. Additional missions by UNEP staff to the earthquake-affected area followed in September and December 2008.

The swift response from the Government of China was remarkable. Within a matter of months, affected populations within nearby villages and cities had been rehabilitated in temporary camps out of the area. In addition, new schools were established and fully operational, as well as field hospitals for each camp facility. The environmental management of the newly established camp sites, particularly in regard to the management of sanitary arrangements, sewerage, and solid waste were deemed of an exemplary standard.



Affected populations were relocated in temporary camps outside the affected area within a short period of time



Disaster waste management was a key challenge for the Government in the aftermath of the earthquake

# Disaster Waste Management

All disasters, irrespective of scale, leave a trail of debris that requires collection, sorting, treatment, and disposal. In fact, depending on the scale of the disaster, the management of disaster waste can generate a billion-dollar economy, as illustrated by Hurricane Katrina in 2005.

With respect to the Sichuan earthquake, as a result of the vast quantities of damaged infrastructure, including collapsed houses, schools, hospitals and commercial buildings, the Chinese Government had a serious challenge in addressing disaster waste management issues. Upon request from the national Government, UNEP, together with the MEP, developed a training package on disaster waste management for Environmental Protection Bureaus at the provincial and county levels. This included guidance on which elements of disaster waste debris could be reused, as well as health and safety advice for handling different types of wastes.

Following the success of the July workshop on “Post-earthquake Reconstruction in the Environmental Sector,” UNEP and the MEP co-hosted a second workshop on waste management in the Sichuan Province on 9-10 December 2008. The objective was to provide training to civil servants in the technical areas of management of hazardous healthcare waste, asbestos and contaminated soil. Fifty participants from county, city and provincial environmental authorities, as well representatives from the MEP, took part in the workshop, which comprised of a theoretical as well as fieldwork component.



Piles of debris could be seen at Leigu township in Sichuan Province, which was devastated by the earthquake

## Typical composition of disaster debris

- Construction debris (brick, wood)
- White goods (washing machines, refrigerators, etc.)
- E-waste (computers, TVs)
- “Under the sink” chemicals (bleach, washing fluids, detergents)
- Radioactive materials from laboratories, industries and hospitals
- Explosive gases from houses (cooking gas, Liquid Petroleum Gas), hospitals and industries
- Petroleum products from gas stations, power plants
- Polychlorinated biphenyls from transformers
- Ammunition from army camps and police stations
- Chemicals from school laboratories



Long-term exposure to asbestos, which is commonly found in construction materials, can lead to serious health issues



# Handling Asbestos

Asbestos is a set of six naturally occurring fibrous silicate minerals exploited commercially for their desirable physical properties. It is extensively used in the manufacturing and construction industries for its chemical and thermal insulation properties. There are over 3,000 known asbestos-containing products, of which the most common are insulation, fire break coatings, building boards, roofing sheets and wall materials.

It is now established that asbestos fibers can cause serious health impacts. Consequently the use, handling and disposal of asbestos are regulated in most countries. However, significant quantities of asbestos have been used in buildings and industries worldwide.

Disasters such as earthquakes lead to substantial challenges regarding the handling of asbestos. Unbroken, asbestos is relatively harmless and can be collected and disposed of in a controlled manner. However, during an earthquake, asbestos-containing materials become mixed with general building rubble, potentially contaminating very large quantities of debris and multiplying by two orders of magnitude the amount of “hazardous waste” requiring specific handling. If suitable measures are not taken during the clean-up operation, clean-up teams stand to be exposed. Worse, if the demolition debris is collected without sorting and separating the asbestos, and then sent for crushing and reuse, the fine carcinogenic particles can spread much further, increasing harmful exposure to a wider number of people.

In the immediate aftermath of the May 2008 earthquake, UNEP worked with the MEP to create awareness of the issue. Asbestos was included as a topic of discussion in the International Best Practice Sharing Workshop in July 2008, and this was followed by specific training programmes for staff in the MEP, the Environmental Protection Bureaus and local governments. Since the challenge was widespread and hundreds of crushers were being established throughout the impacted area, UNEP also conducted a



**David Smith**  
**UNEP Consultant, Asbestos Expert**

“We came across a range of sources of asbestos in China, in both domestic and industrial settings. The key to the safe handling of asbestos is its early identification and a systematic approach to its disposal.”

“training of trainers” programme for the supervisors of debris handling.

In order to further strengthen local capacity for handling asbestos, UNEP, working with local entrepreneur Luo Hong, developed a plan to establish an asbestos screening and monitoring facility within the Sichuan Environmental Protection Bureau. Specialized equipment was procured and laboratory staff trained about the basics of asbestos screening and identification.

It was evident from subsequent visits made by UNEP that the advice provided has been followed at the operational level. The demolition debris used for constructing temporary roads or making new aggregates did not contain asbestos. This was very rewarding as the lack of guidance at the critical moment could have created a far more significant issue than that caused by the original quantity of asbestos.



The Sichuan earthquake, which occurred in a mountainous area, resulted in massive landslides and rock falls

# Slope Stabilization

Earthquakes are tectonic events that release so much energy that they can literally “move mountains.” The Sichuan earthquake, which occurred in a mountainous area, resulted in massive landslides, rock falls, and “quake lakes,” which were created when rivers were blocked by falling debris. Even in areas where landslides or rock falls were not visible, many of the hillsides were considerably destabilized, and were at risk of further destabilization from aftershocks or heavy rains.

In typical earthquake situations, the post-disaster response would include the immediate clean-up of debris and the clearing of road blocks to allow entry of relief materials. Given its magnitude, however, the Sichuan earthquake required a different approach. Indeed, the disaster had reformed the entire landscape of the affected region. The situation therefore had to be assessed on a case-to-case basis to identify what had changed in the landscape and to determine the “new reality.” This approach was also used in regard to subsequent stabilization and rehabilitation efforts, recognizing that decisions on intervention measures would have significant financial implications as substantial investments in infrastructure were made in the impacted area, including for roads, railways, communication, and electrical towers

In March 2009, UNEP deployed two international experts with extensive experience on post-disaster management of landscapes and infrastructure. The expert team, together with national experts from Institute of Mountain Hazards and Environment, Chinese Academy of Sciences located in Chengdu, visited a number of sensitive areas in the impacted counties in northern Sichuan to examine early warning systems, “quake lakes,” impacted infrastructure facilities, and active rock fall sites.

Following these inspections, the UNEP expert team advised provincial authorities engaged in reconstruction, providing specific guidance on which areas were amenable to rehabilitation and which should remain untouched, and on the approaches that should be adopted for rehabilitation and restoration.



**Professor Jean Friedrich Schneider**  
**University of Natural Resources and**  
**Applied Life Sciences**  
**Vienna, Austria**

“When nature starts reforming landscapes, it is important for us to remember that our role is not to put it all back in its original condition. We should adapt our lives and new investments to the new realities in a manner that minimizes our vulnerabilities to future disasters.”



An expert mission was deployed in March 2009 to examine landslides, “quake lakes”, impacted infrastructure facilities and active rockfall sites



One of the key early recovery concerns was the potential contamination of debris with hazardous materials

# Management of Contaminated Sites

Sichuan Province is home to some of China's leading chemical industries, a number of which were heavily impacted by the earthquake, leading to localized contamination.

Even prior to the earthquake, the Chinese Ministry of Environmental Protection (MEP) had identified management of contaminated sites as a priority area for capacity-building. Within the context of the post-disaster environmental recovery process, UNEP and the MEP developed a joint programme for long-term capacity-building on contaminated site management in Sichuan Province.

A senior expert from the US Environmental Protection Agency (US EPA) was hosted at UNEP's office in China to lead these efforts. The Chinese Research Academy for Environmental Sciences and Sichuan University were identified as the key counterparts. Two impacted areas were selected as pilot sites for demonstrating modern approaches to contaminated site assessment and clean-up. This included an initial assessment of the location to identify the contaminants and impacted resources, and detailed chemical analyses to determine the extent of the contamination.

UNEP experts also conducted a series of field training sessions to impart practical knowledge, and provided participants with information on international standards, procedures, and laboratory protocols.



**Fred B. Stroud III**  
**Expert, US Environmental Protection Agency**

“There is a lot of international experience on contaminated site assessment and clean-up, both good and bad, which we could share with the Chinese counterparts. This will ensure they have access to best practices and don't have to repeat the mistakes we did.”



Sichuan hosts some of China's leading chemical industries, a number of which were severely impacted by the earthquake



The whole city of Beichuan was reconstructed  
in an alternative location

# New Approaches to Reconstruction

Environment was one of the key priorities within the Chinese Government's ambitious three-year reconstruction plan, worth some 1 trillion Yuan. In the early stages of its implementation, UNEP worked with the MEP and local governments to help "green" the reconstruction of damaged and new buildings, while addressing environmental improvements across sectors such as industry, education and agriculture.

The reconstruction by the Chinese Government included a number of innovative elements, such as an initiative to pair 19 of the most impacted counties with the country's 19 most prosperous provinces. Each of these provinces was asked to lead the restoration efforts in "its" county and earmark up to 1 percent of its gross domestic product (GDP) for these efforts.

This initiative was highly successful, as expert teams from each of the respective provinces were deployed to the counties, enabling reconstruction at an extremely rapid pace. UNEP had the opportunity to interact with a number of provincial reconstruction teams and provide strategic and real-time technical advice on the integration of environmental elements into the reconstruction programme and activities.

By December 2009, UNEP teams on the ground observed that substantial reconstruction had already been completed. The whole city of Beichuan, for example, had been recreated in an alternative location, with tens of thousands of houses, schools, hospitals, and commercial buildings, new roads and bridges built.



**Professor Mary Comerio**  
University of California, Berkeley, USA

"In addition to the pace of reconstruction, what impressed me most was the effort by the Government to ensure that some traditional aspects of community living were preserved in the rebuilt houses. In post-disaster reconstruction, it is all too easy to limit the focus to physical rehabilitation and disregard the social aspects of community recovery."



Environment was a critical priority within the Chinese Government's three-year reconstruction plan



A sustainable building could eliminate the need for transitional shelters, be earthquake resistant, as well as environmentally friendly



# Sustainable Building

In response to the catastrophic event in Sichuan Province, the Chinese private company Broad Air Ltd developed a concept for a “sustainable building” method comprised of the following basic elements:

- Building frames made of steel with a high amount of recycled content, thereby reducing the total amount of materials involved in construction, and pre-fabricated to reduce the environmental impacts and time needed for construction;
- Fully modular buildings aspiring to produce zero waste at site;
- Buildings constructed to minimize energy needs for cooling, heating and lighting through high levels of insulation and low carbon technologies; and
- Buildings designed to withstand high-intensity earthquakes.

These sustainable buildings could be set up in just three days, thereby eliminating the need for transitional shelters. Additionally, the straightforward processes and materials used for pre-fabrication would be transferrable to local factories and tradesmen.

UNEP was requested by Broad Air to provide feedback on the design of the building. In May 2009, UNEP visited the first prototype of the building at Broad Town in Chang Sha, the provincial capital of Hunan. In December 2009, a fully functional prototype was built and operational, and UNEP experts had an opportunity to stay in the building and provide further feedback.

Once it is finalized, a modular, earthquake-resistant and environmentally friendly structure such as the one developed by Broad Air is expected to have a significant international potential.



**Michael Samways**  
Director, SKM Enviros Ltd.  
London, UK

“The Broad Sustainable Building has many interesting sustainability features, not least the innovative use of low-impact materials. However, what impressed me most was the fact that an entrepreneur whose primary expertise is not in building design made the effort to conceive and build such a building. I am very glad to be able to provide some useful inputs into this process.”



A Broad Air sustainable building can be established in just three days



UNEP's relationship with the Chinese Government was based on sharing international best practices on environmental considerations

# Build Back Better: A Learning Process

A unique feature of UNEP's post-earthquake intervention in China was that not only were UNEP experts able to provide Chinese authorities with international best practice on environmental considerations, but that they were also able to learn from Chinese best practices. This knowledge is invaluable and can be applied to other post-disaster situations.

From an environmental point of view, three specific areas are worth highlighting:

- **Centralized camp management:** Impacted communities ranging from 5,000 to 20,000 people were moved to large camps in which adequate provisions were made by the State for key facilities and social infrastructure, such as schools, hospitals, and play areas. From an environmental point of view, this ensured that issues of water supply, sewage, and solid wastes could be professionally managed in a centralized fashion.
- **Planning guidelines for reconstruction:** Clear guidance was issued to communities and cities on what areas could be used for rebuilding and what areas should remain untouched. Most importantly, environmental and disaster reduction considerations were built into this assessment, which enabled local communities to rapidly deploy their resources, rebuild their homes where possible, and return to normalcy. From an environmental and disaster risk reduction point of view, this ensured that rebuilding was not undertaken in environmentally sensitive or disaster-prone areas, which greatly helped to minimize the impact of further risk.
- **Pace of reconstruction:** Thanks to an innovative financial model developed by the Government, reconstruction occurred at a very rapid pace. As a result, a significant amount of the local population was able to return to permanent accommodation. Such a model is an example of best practice,



**Muralee Thummarukudy**  
UNEP Senior Expert

“In 2010, I was deployed to Haiti to provide support to the recovery efforts in the aftermath of the earthquake. I was able to bring a wealth of experience gained in China on best practice after the 2008 Wenchuan earthquake.”



The ongoing reconstruction process integrates environmental and disaster reduction considerations

and can be replicated in other parts of the world. In disaster-prone areas, reconstruction plans often take up to a decade, and due to the longevity of the process, transitional camps become virtual slums, undermining the population's quality of life and causing environmental damage.

## UNEP's Role in China



Interview with Zhang Shigang,  
Head of UNEP China Office

### **What were the steps taken by UNEP in the aftermath of the earthquake?**

In the immediate aftermath of the earthquake, UNEP established a task force to monitor the situation from the onset and provide emergency response advice. Rescue teams consisting of international environmental experts were alerted and ready for deployment if required.

In late May, we established an internal “Working Team” comprised of experts from across the organization, to assess the impact of the earthquake, identify potential secondary environmental risks and provide technical support to the Chinese Government and the UN system on environmental matters. UNEP was one of the first UN agencies to deploy specialized experts to China after the earthquake, and immediately became the primary international environmental actor of the ground.

As a member of UN Country Team in China, UNEP was actively involved in the UN Appeal for Wenchuan

Earthquake Early Recovery, which recognized the critical importance of addressing environmental issues such as water, soil contamination and hazardous waste management. The Government of Norway subsequently pledged USD 1.5 million for environmental initiatives by UNEP, UNIDO, and UNDP. Environment was also included by the Chinese authorities as one of the key priorities of the reconstruction programme.

### **What was the real value added of UNEP in this particular situation?**

As the primary environmental actor on the ground, UNEP was able to raise awareness of environmental and ecological considerations within the overall state planning processes for post-earthquake recovery and reconstruction, and to ensure that these considerations were duly included. Upon the request of the national Government, UNEP focused its efforts on capacity development and provision of technical support and coordination.

With regard to capacity-building, UNEP was able to bring together the best international experts to share practical knowledge with Chinese civil servants on a wide range of environmental issues linked to disaster recovery and reconstruction. Three international workshops were held in cooperation with the MEP in 2008 to share experiences on best practices in post-earthquake situations, and several practical training sessions were held on the ground, for example to assist with the development of field-level plans for the handling and processing of rubble that was potentially contaminated by asbestos, or on contaminated sites management.

With regard to technical support, UNEP immediately strengthened its office in Beijing by hosting international experts and technical staff from across the organization, to be able to assist the MEP in addressing the environmental challenges of the post-earthquake period. In addition to lending support for the drafting of inputs to national recovery plans and appeals, as well as numerous reports and project proposals, UNEP worked closely with the MEP and local governments to help “green” the reconstruction, while addressing environmental improvements across sectors such as industry, education and agriculture. UNEP deployed experts on the ground to assess the situation and advise national and provincial authorities engaged in reconstruction, providing specific guidance on the approaches that should be adopted for rehabilitation and restoration.

### **What was the reaction from the Chinese Government?**

The Chinese Government was very appreciative of UNEP’s ability to be flexible and respond quickly to changing needs and circumstances. This certainly impacted positively on the quality of support and technical assistance that we were able to provide relating to environmental health and safety, prevention of secondary damage by industries, monitoring of water quality for drinking, and the prevention of contamination of water resources during the rescue phase of the earthquake, as well as in raising overall environmental awareness, providing support and building capacity in the recovery and reconstruction phases. In particular, UNEP was recognized for its environmental expertise in debris and waste management and for helping to “green” the recovery work.



## About UNEP's Disasters and Conflicts Programme

From Kosovo to Afghanistan, Lebanon, Sudan or China, UNEP has responded to crisis situations in more than 40 countries since 1999. As the international community has shifted its focus from post-crisis intervention to crisis prevention, UNEP has expanded its operational range, adding disaster risk reduction and environmental cooperation to its core services of environmental assessment and recovery.

UNEP's Medium Term Strategy (MTS) for 2010-2013 designates "Disasters and Conflicts" as one of the organization's six priority areas of work. The Disasters and Conflicts sub-programme is comprised of four operational pillars: post-crisis environmental assessment, post-crisis environmental recovery, disaster risk reduction and environmental cooperation for peacebuilding. The Post-Conflict and Disaster Management Branch (PCDMB) is tasked with coordinating the theme across UNEP.

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