Empowered lives.
Resilient nations.

PUTTING RESILIENCE AT THE HEART OF DEVELOPMENT

Investing in Prevention and Resilient Recovery

More than a decade's experience in disaster risk reduction

A disaster happens when a natural hazard – such as earthquake, flood, drought, cyclone and volcanic eruption – affect a society. UNDP works on building resilient societies that are capable of minimizing damages and swift recovery. This section illustrates UNDP's experience in: (1) disaster prevention and preparedness; (2) emergency response, recovery and reconstruction; (3) gender equality and empowerment in disasters; and (4) emerging risks such as climate change and urbanization.

Reducing the impact of disaster through prevention measures

Development and disaster risk are intrinsically linked. Disasters can put development achievements at risk. At the same time, development choices made by individuals, communities and nations can generate new disaster risks or exacerbate existing ones. For example, the expansion of infrastructure, including bridges, railway lines and roads, can create barriers across valleys within which cities are located. As a result, excess rainfall can no longer soak away quickly and problems of flooding can become severe. However, there are many examples of communities and nations reducing the risk of disasters or alleviating their impact through prevention measures.

Mozambique: Preparedness

The case of Mozambique, the second most disaster prone country in Africa shows how institutional strengthening and capacity building initiatives have saved lives in the long term.

© UNDP Mozambique

Mozambique has dealt with over 45 natural hazards since 1976, including devastating floods, droughts and cyclones. UNDP supports the government at the policy, programming, and operational level to develop disaster risk management strategies, risk mapping and early warning systems. In 2010, with the help of UNDP, the government established a regional emergency operations centre at Caia, in the high-risk Central Region. The centre's training exercises and practice simulations of flood, cyclone and earthquake responses have noticeably improved the emergency preparedness of the region and resulted in a significant reduction of the disaster death toll over the last decade.

Between 2001 and 2010, the total number of disaster affected people in Mozambique was reduced by almost 45 percent compared to the previous decade. Floods in 2000 left 800 people dead and over a half a million affected, while flooding of similar magnitude in 2007, after six years of disaster preparedness initiatives, left 29 people killed and 70,000 displaced. Flood related mortality in 2010 was less than 25 percent of the ten-year average and although 16,000 people were affected by flooding in 2010, this represented a decrease of more than 90 percent.

South Asia: Earthquake Risk Reduction and Preparedness

UNDP is also supporting disaster preparedness on a regional level. The Asia-Pacific region sees more than 70 percent of the world's seismic events, with an average of 15 significant earthquakes per year. The 2005 Kashmir earthquake in Pakistan which killed more than 75,000 people highlighted the low level of quality of construction in South Asia. In 2007, UNDP, with support from the Government of Japan, initiated the Earthquake Risk Reduction and Preparedness (ERRP) project, to help selected cities in five Asian countries (Nepal, Bhutan, Bangladesh, India and Pakistan) to introduce earthquake risk reduction and preparedness measures and to promote knowledge and experiences sharing in the region.

A compendium of digital earthquake risk maps with structural assessment of more than 35,000 public buildings that prompted local municipalities to establish permanent posts specialized on earthquake preparedness was developed. The training of more than 3,000 construction specialists and the simulation of powerful earthquakes on buildings, which was conducted by the Asian Disaster Reduction Center in Japan, has increased public awareness about the importance of building safety measures. As a result, at the policy level, all five countries have made changes to the existing national building codes and guidelines which can significantly reduce the loss of lives and livelihoods when properly enforced.

Emergency response and recovery from disasters

Resilient societies to disasters are societies which are able to smoothly respond, recover, and reconstruct when a disaster happens. UNDP, while working on all phases of disasters, focuses on capacity building to initiate recovery as early as possible, minimizing the gap between emergency and development.

Bangladesh: Emergency Response

© UNDP Bangladesh

Bangladesh is also an extremely disaster prone country. Floods, cyclones, riverbank erosion, droughts, salt water intrusion and tidal surges are just some of the 219 hazards that occurred there between 1980 and 2008. In recent years, however, the Government of Bangladesh has also been able to reduce the risk to disasters, as well as to minimise the human cost by supporting government departments, first responders, civil society and volunteer organizations improve their ability to manage disasters.

Beginning in 1994, UNDP has supported the government to better plan, coordinate, finance and implement disaster management mechanisms that underpin a national disaster management and risk reduction system.

Capacities of over 60,000 government officials, as well as volunteers from civil society have now been built to act as disaster managers and first responders. In addition, structural improvements have been made, such as the building of emergency shelters to protect coastal residents from cyclones and exposed areas from flooding. Following Cyclone Sidr in 2007, more than 15,000 core family shelters in coastal districts were built. Around 4,000 flood-resilient shelters were built following flooding that same year. The structure of these shelters conforms to international disaster risk reduction standards, meaning that they will withstand future disaster shocks.

The measures taken by the Government of Bangladesh have led to a dramatic reduction in the loss of life from natural disasters. Historically, deaths from single events reached hundreds of thousands. But with the exception of two unusually violent cyclones in 1970 and 1991, the recent trend has been steadily downwards— from 37,000 deaths recorded in 1970-1979 to 9,600 in 2000-2009.

Ecuador: Resilient Recovery

© UNDP Ecuador

In Ecuador, UNDP has supported the transformative process of resilient recovery, supporting a community to adapt their livelihoods to the environmental conditions of the volcanic area under the leadership of the local government.

In 1999, after a long period of dormancy, Tungurahua Volcano began a violent eruptive phase. To this day, the volcano continues to spew large quantities of ash into the air, much of which falls onto local villages, disrupting livelihoods and endangering lives for people living in the surrounding canton. Among its effects, ash deteriorates grazing pasture, damages agricultural land and suffocates crops, including fruit trees and has become a serious threat to their economic well-being.

UNDP supported the Municipality of the surrounding canton of Cevallos to help villagers to diversify livelihoods and reduce reliance on fruit production. Farmers were given the opportunity to learn new skills and were supported as they diversified to such activities as raising small animals, meat processing, production of animal feed, shoe making, and marmalade and jelly making. The establishment of 22 new local producers' organizations has allowed 500 families to start guinea pig production, and a swine production and meat processing plant were constructed.

By diversifying to new ways of earning a living, the villagers were able to increase their resilience to the continuing eruptions of the volcano, and expected migration of the population to look for economic alternatives was avoided.

Gender equality and the empowerment of women in disasters

When disasters strike, they often exacerbate existing socio-economic inequity: some groups suffer disproportionately more than others. Meanwhile, the potential contributions that women can offer to mitigate disaster impacts are often overlooked, and female leadership in decision making processes to build community resilience to disasters is frequently disregarded. It is important to take into account the specific needs of women and vulnerable people in disaster risk reduction, response, and recovery and ensure their equal opportunities to participate in these processes. UNDP is committed to women's empowerment and will actively contribute to the application of the resolution on Gender Equality and the Empowerment of Women in Natural Disasters, adopted at the 56th session of the Commission of the Status of Women.

Colombia: Empowerment of women in disasters

In mountainside city of Manizales in central Colombia, landslides constitute the main hazard to the city's population. Manizales is exposed to seismic activity and torrential downpours, located on high steep slopes with a relatively thin layer of top soil. The risk of landslides is exacerbated by the increasing numbers of settlements on vulnerable land. UNDP supported a local government initiative that addressed this problem by empowering women on disaster reduction. 200 female heads of households have become municipal staff as "guardians of the mountainsides" and risk managers in their own community, promoting risk awareness, monitoring and identifying areas at risk of collapse, maintaining the infrastructure built to stabilise the mountainside, such as by cleaning drains and repairing retaining walls, and sharing information so that new families do not settle into high-risk areas.

© UNDP Colombia

This initiative has resulted in a reduction of human, economic, and environmental losses. Through this intervention, the monitoring and the maintenance of 49 high-risk mountainside areas have been established, and community's access to information on potential hazards has been improved. UNDP has also supported the systematization and dissemination of this initiative to other municipalities with similar problems.

A resolution to promote gender-sensitive disaster risk management

On 9 March 2012, the final day of the 56th session of the Commission on the Status of Women, the resolution submitted by the Government of Japan, "Gender Equality and the Empowerment of Women in Natural Disasters" was adopted by consensus of member states. The resolution recognizes women's vital role in disaster risk reduction, response and recovery and promotes women's participation in all phases of disaster. It also points out the importance of providing support for employment opportunities for women in recovery phase. The resolution urges governments and other parties to review national policies, strategies and plans and take actions to integrate gender perspective in policies, planning, and funding for disaster risk reduction, response and recovery.

© UNDP Dominican Republic

Emerging risks: climate change and urbanisation

Climate change combined with rapid urbanisation will increasingly continue to cause or contribute to the occurrence of disasters in coming decades. Climate change will alter the severity and frequency of climate-related hazards. UNDP's Climate Risk Management approach looks at how climate change will impact on development sectors such as agriculture, water resources, food security, health, the environment and livelihoods. The focus is on enabling national governments and communities to scale up their mitigation and climate adaptation efforts, while integrating disaster risk reduction into climate change management at national and local levels.

Himalayan Region: Risk of glacial lake outburst floods

In the Himalayas, where melting glaciers pose a serious threat to the 210 million people living in the region, UNDP supports the governments of Nepal, Bhutan, India and Pakistan to reduce the risk of glacial lake floods. In areas at risk, disaster risk reduction strategies are integrated with climate change adaptation strategies. In the Kingdom of Bhutan, while harnessing Himalayan meltwater through hydroelectric dams, providing much needed energy to millions, the Government has also partnered with UN agencies—including UNDP—to avert the risk of glacial flooding from lake Thorthormi, in the country's north-central region. In addition, Bhutan is also installing early warning systems along rivers to ensure its people and infrastructures are prepared for glacial flood.

© Royal Government of Bhutan

Recognizing the immense disaster risks faced by urban centers, UNDP has implemented several urban risk management projects with a clear focus on local action. Risk in urban areas is a combination of two factors: first, location and exposure to hazards; and second, increased vulnerability due to poor local governance, environmental degradation, and the overstretching of resources.

Jordan: Urbanization and economic development zone planning

In Aqaba, a fast growing city and a US$21 billion investment special economic zone in southern Jordan which is particularly exposed to seismic risks, UNDP strengthened the disaster risk reduction capacity of local authorities and provided them with technical support and planning tools to ensure safer living conditions in urban areas.

A seismic risk assessment was conducted to assist city authorities to identify seismic risks and zones when planning and allocating land for development and investment initiatives. A disaster risk reduction unit (DRR Unit) was established, and more than 200 officials were trained to improve the capacities of Aqaba Special Economic Zone Authority to plan, coordinate and implement disaster risk reduction responses more efficiently. The DRR Unit is now serving as the focal point for multi-stakeholder coordination and action to integrate disaster risk reduction into all policies and development planning. In addition, over 25,000 university students have been reached in a large scale awareness campaign and evacuation drills.

The initiative, replicated in other cities of the country, helped to improve the capacities of local authorities to protect trade, tourism, and culture in the multi-billion dollar economic development zone of Aqaba.

© UNDP Jordan

Challenges and next steps to build resilient societies

Even though the number of disasters and their catastrophic consequences increase, few governments are well prepared to undertake the recovery efforts necessary to bring affected areas and communities back to normal in the aftermath of a disaster. Recovery failures set back years of development, increase poverty and inequality and the vulnerability to future disasters. This section highlights some of the challenges we learned from the experiences and suggests next steps we should take in order to build resilient societies and mainstream disaster risk reduction in development.

Investments in preparedness for recovery

© UNDP Dominican Republic

Increase in recurrence and intensity of disasters in the 21st century was marked by escalation of their costs – both human and financial costs. The nearly 4,000 recorded disasters from 2000 to 2009 killed more than 780,000 people and affected the lives of more than 2 billion people. Economic losses from disasters grew from an estimated US$ 75.5 billion in the 1960s to US$ 659.9 billion in the 1990s and US$ 960 billion by 2009. Disaster risk reduction is an investment worth making by all countries; yet, there have been limited and inadequate investments in developing capacities for managing disaster preparedness and recovery. Case studies revealed that government commitment and ownership and investment in local capacity development as well as systematic exchange of local expertise played a key role for successful intervention. Considering that recovery processes are more efficient, effective and less costly when preparedness and planning are strategically pursued before disasters, building capacities for long term recovery stands as a key priority.

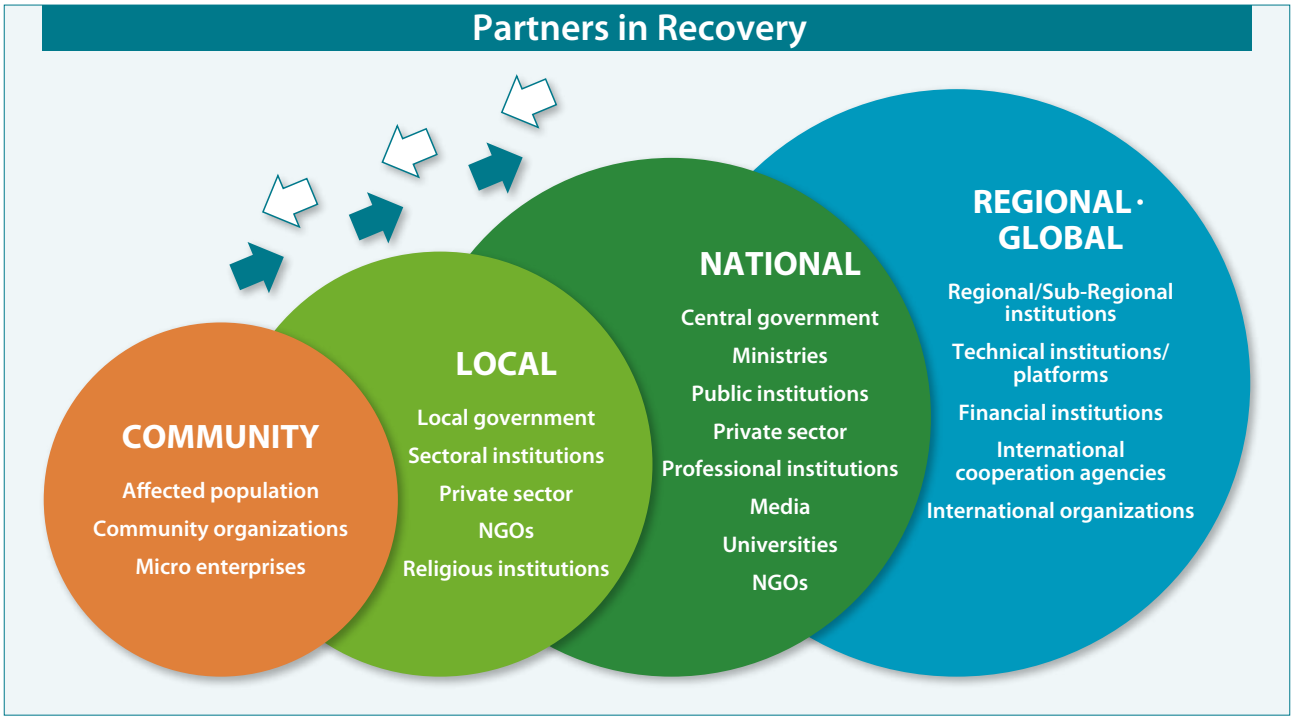
Institutional capacities and policies to support recovery planning

Policy guidance and regulatory, coordination, institutional and planning aspects of recovery are absent or inadequately conceived in the majority of high risk countries. The failure to prioritize or include disaster risk reduction in development policies, strategies and plans ultimately leads to an increased risk of the loss of lives and livelihoods. Thus, it is critical to take these governance challenges into consideration for the realization of resilient societies. For example, legal and other frameworks for receiving emergency assistance and providing coordinated and inclusive recovery and reconstruction is essential to put policies and plans into practice. It is equally important to strengthen capacities for pre-disaster recovery planning and management of recovery processes among governments and regional bodies. Recovery processes should not only repair the damages but also transform the society making it more resilient to disasters and avoiding the increase of inequalities. The process also needs to restore coping mechanisms, empower communities and address the root causes and vulnerabilities that make societies disaster-prone.

Coordination Arrangements

© UNDP Tajikistan

When multiple national and international organizations initiate and promote recovery activities in affected-countries, coordination and information sharing become essential to avoid duplications and gaps and to optimise the resources for sustainable recovery. In general, mechanisms for disaster recovery tend to rely on ad hoc measures and are often uncoordinated. Information exchange and coordination mechanisms established during emergency response must be maintained and enhanced to support dialogue and consensus-building among national and local governments, civil society organizations, private sector, donors and other institutions. Good coordination capitalizes on a large number of recovery initiatives at the local, regional and national level and allows multiple stakeholders to work together effectively.



At community and local level

Disaster prone populations with weak local recovery mechanisms cope with disasters through spontaneous recovery processes that often reconstruct pre-existing vulnerabilities and increase risks of future disasters. Resilient disaster recovery at community level should strengthen local governance systems and empower community beneficiaries and other stakeholders such as civil society, media, local experts and community representatives to participate and manage post-disaster recovery. It should also enable inclusive and integrated planning and decision-making across local and national levels, improve access to funds for reconstruction, and involve community-to-community exchange of knowledge.

To better support resilience to disasters at local level, UNDP is enhancing synergies between two areas of programmatic expertise: one in Disaster Risk Reduction and Recovery provided by the Bureau for Crisis Prevention and Recovery (BCPR) and another one to empower local authorities and stakeholders provided by ART (Articulating Territorial and Thematic Networks for Human Development) Initiative. With the combination of both programmes, disaster risk reduction and recovery is integrated into local development planning and the exchange of experiences between communities, cities and regions, through more than 600 partnerships established worldwide.

Transfer of best practices in disaster risk management with decentralized cooperation platform

Every winter season, Cuba is exposed to hurricanes, and very frequently hit by them. To reduce the levels of negative effect, the country has developed one of the most efficient early warning systems in the world and reduced drastically the risk of mortality compared with neighboring countries with similar grades of exposure to hurricanes. UNDP, combining two areas of expertise - Disaster Risk Reduction (through BCPR) and decentralization (through ART Initiative) - supported a process of consolidation of the Cuban experience within the country and its transfer overseas.

© UNDP Cuba

In 2005, 59 risk reduction management centres were established in the most affected municipalities of Cuba helping to access critical information on local disaster risks and extending the early warning system in remote and isolated settlements. To share this practice with other small island developing states (SIDS), the experience has been documented and systematized to make it replicable to other SIDS and the transfer of knowledge has been systematically facilitated by UNDP since 2005. Countries like Haiti, Honduras, Granada, Trinidad and Tobago, and more recently Fiji and the Pacific Islands with the support of the Government of Japan have been benefited through South-South cooperation. Living in an island no longer means to live in isolation.

At national level

Countries that have integrated disaster risk reduction in their national development plans and systematically invested in capacities for preparedness and adequate legislations have emerged stronger after each disaster. Successful countries also ensure that communities participate in their own reconstruction, and engage with private sector and civil society. Even countries with low incomes such as Bangladesh, Mozambique, Cuba and many small island developing states have achieved significant reduction in loss of lives due to sustained preparedness and training of communities, investments in early warning systems and increased speed and efficiency of their response.

© UNDP Jordan

At national level, it is crucial to build resilient societies which are capable of managing emergency response and a swift recovery. When countries are engaging in preparedness, it is vital to integrate disaster risk reduction at all levels. After disasters, having a common vision of recovery, assessing capacities of relevant actors, and establishing partnerships with the private sector will enable a resilient recovery. Media and academia will also play an important role to create opinions and monitor the process.

Indonesia: mainstreaming disaster risk reduction in development plans

Indonesia, ranked as the second country in the world with highest risk of natural disaster, provides a good example of how preparedness for recovery can substantially reduce the human, economic, and social impacts of disasters.

© UNDP Indonesia

In the years following the 2004 Indian Ocean Earthquake and Tsunami, when Indonesia lost 126,732 lives and economic losses of US$ 4.45 billion, the Government made major policy and institutional changes to address disaster risks. Key among them was the establishment of national and regional disaster management agencies in 2007 mandated to coordinate relevant ministries and sectors' work on disaster risk reduction. UNDP has been closely engaged with the National Disaster Management Agency in integrating disaster risk reduction into development plans and in making institutions work for disaster risk reduction. The Agency developed nation-wide action plans on disaster risk reduction and disaster risk management. In 2008, a national platform was set up to coordinate and monitor disaster risk reduction activities and share knowledge among practitioners and experts. Indonesia became one of the first countries in the region to develop comprehensive guidelines and tools for assessing damages, losses and needs for post-disaster recovery.

Today Indonesia is among the South-East Asian countries with full policy and institutional capacity for large scale disaster recovery. The result of this investment in preparedness and recovery was demonstrated when a powerful 7.6 magnitude earthquake hit the Aceh province in the northern tip of Indonesia on 10 January 2012 with no damage or casualties—a very different situation compared to seven years earlier when Aceh alone had claimed more than 70 percent of the 230,000 lives to the earthquake and tsunami that hit across South East Asia. The preparedness activities and quick relay of early warning by the Aceh Government helped to evacuate people out of harm's way, thus preventing any loss of lives.

Tajikistan: National planning and monthly reporting

In Tajikistan, one of the most disaster prone countries in Central Asia, where natural hazards like earthquakes, floods, mudflows and landslides are a recurrent problem, UNDP has worked with the government since 2003 at a national level to better develop emergency response, recovery and reconstruction capacities.

This has included the establishment of the Information Management and Analytical Center which is currently conducting disaster risk assessment throughout the country. This will be used in national and local development planning, especially to establish risk-sensitive land use planning.

© UNDP Tajikistan

UNDP Tajikistan, in partnership with the Ministry of Economic Development and Trade, produces monthly reports on monitoring and early warning systems providing information and succinct analysis on the evolution of natural, economic, food and energy-related factors, and other risks in Tajikistan.

At regional and international level

International and regional intergovernmental organizations can play a key role in augmenting national and local capacities for resilient recovery, and promoting best practices and exchange of experiences. For example, efforts of organizations such as the Association of Southeast Asian Nations (ASEAN) has led to the ASEAN agreement on Disaster Management and Emergency Response ensuring cooperation between member countries to strengthen disaster management capacities and support disaster preparedness and response.

© UNDP Pakistan

Regional Strengthening and Disaster Risk Reduction in Major Cities in the Andean Community

Conflict, poverty, droughts and a lack of social services in many rural areas in the Andean Region are causing rapid urban migration. The cities in Bolivia, Colombia, Ecuador, Peru and Venezuela now face an increased risk of disasters, as poor people occupy cheap marginal land in informal settlements. This land is often on steep slopes or by rivers that flood frequently, making these new urban migrants more vulnerable to earthquakes, landslides, floods and fires.

© UNDP Venezuela

In order to reduce the risk of catastrophe in the five capital cities of the Andean Region, UNDP is helping local governments to analyze and identify areas that are most at risk of disaster; develop strategies for reducing the risks; and collaborate amongst one another to provide mutual technical support and knowledge exchange. The network established between the participating cities has allowed them to learn from each other's experiences, access sustainable solutions and provide each other technical support. Regional pools of technicians to deal with disasters have been formed. This initiative has also reinforced the ability of the five capital cities to understand and manage risk.

Empowered lives.
Resilient nations.

United Nations Development Programme
Representative Office in Japan
UN House 8F, Jingumae 5-53-70
Shibuya-ku, Tokyo 150-0001, Japan
http://www.undp.org
http://www.undp.or.jp