Disaster displacement



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Cover photo: A villager from Singla village extracts belongings from the rubble in the aftermath of the earthquake in Nepal. \odot Asian Development Bank

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Displacement figures at a glance

In 2021:

32,000

New displacements in 2021

8,400*

IDPs as of 31 December 2021
*not including people displaced
by the Gorkha earthquake

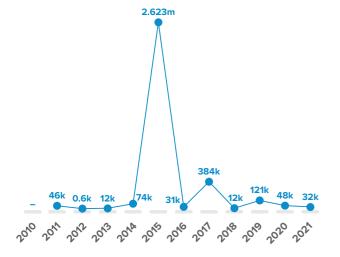
In the past decade (2011-2021):

3.4 million

New displacements 2011 - 2021

245

Disaster events reported



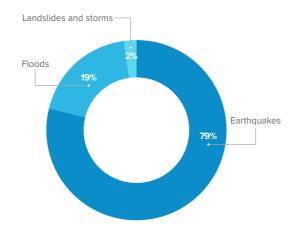


Figure 1: New Disaster Displacements per Year (2011–2021)

Figure 2: New Disaster Displacements by Hazard Type (2011–2021)

Disaster displacement in Nepal

Drivers of internal displacement

Every year, monsoon rains cause floods and landslides that displace thousands of people across Nepal. Given its location between the Indian and the Eurasian tectonic plates, the country is also exposed to earthquake risk. The 2015 Gorkha earthquake was the most significant disaster event in recent history, causing an estimated 2.6 million displacements. Damage and destruction were widespread in the country's capital, Kathmandu, which was near the epicenter. The city also hosted many displaced people. The earthquake had a lasting impact on Nepal's mountainous areas and may be contributing to more frequent landslides and landslide risk in other areas.

Shifting weather and climate patterns are also affecting landslide and flood risks throughout the Himalayan region, which could contribute to increased displacement in the future.⁴ Warming in Nepal is projected to be higher than the global average, with heat waves and extreme temperatures becoming more frequent in the future.⁵ Climate change is already causing glaciers to melt, and the frequency of extreme precipitation is increasing. The number of people affected by river flooding could more than double by 2030.⁶

Glacial lake outburst floods (GLOFs)—in which water pours out of a naturally formed dam—are another driver of displacement in Nepal. Since 1977, Nepal has experienced 26 GLOFs.⁷ With its mountainous landscape, large volumes of precipitation in the monsoon season, and rising temperatures, the risk of GLOFs is likely to rise. Across the country, 21 glacial lakes have been identified as potentially dangerous, with risks of breaching, melting, and the creation of reservoirs of water that could eventually lead to floods downstream.⁸

Another disaster affecting Nepal is drought. There is evidence suggesting it has increased in frequency, severity, and duration in recent decades.⁹ It can have extreme

impacts on agricultural production and potentially drive farmers into displacement.¹⁰ The probability of meteorological and hydrological droughts in the country is expected to increase as a result of climate change.¹¹ Dry spells—like the one experienced in 2021—can also lead to wildfires.¹² These can displace people and, by destroying natural vegetation, boost the risk of floods and landslides.

Nepal has made substantial investments in policies for disaster risk management. Its vulnerability to weather-related and geophysical disasters, however, is exacerbated by its limited capacity to prevent and respond to disaster displacement.¹³ Along with natural hazards, its low level of human development raises the risk that its population will be unable to cope with the consequences of disasters and climate change and be forced to move to survive.¹⁴

Scale of displacement

During 2011–2021, 3.4 million new displacements were linked with at least 244 disaster events recorded across Nepal. The 2015 Gorkha earthquake caused over 2.6 million displacements. During 2011–2021, 79% of new displacements were caused by earthquakes, 19% by floods, and about 2% by wet mass movements and storms. The events that caused the most displacements were:

Earthquakes:

2015 Gorkha earthquake on 25 April which caused 2,623,000 new displacements

2011 Earthquake EQ-2011-000136-NPL on 18 September which caused 46,000 new displacements

Floods:

2017 Monsoon floods in 35 districts in August caused 381,000 new displacements

Figure 3: Annual Number of New Internal Displacements Linked with Disasters in Nepal (2010-2021) and Key Events.

2019 Country-wide monsoon floods in June caused 98,000 new displacements

Other:

2014 The Sindhupalanchok landslide in August caused 40,000 new displacements

2019 A storm in Sudurpashchim Pradesh (Kailali) in June caused 10,000 new displacements

The Internal Displacement Monitoring Centre (IDMC) recorded 32,000 new displacements because of disasters in 2021. Of those displacements, 54% (17,500) were because of monsoon floods. Severe flooding and landslides also displaced more than 14,500 people in October in Koshi, Karnali, and Sudurpashchim provinces. Record-breaking wildfires in March and April spread from forests into human settlements, destroying 55 homes in Koshi and Lumbini provinces, and causing about 250 displacements.

Most new displacements take the form of pre-emptive evacuations or short-term displacement. Some people, however, are unable to go home for weeks, months, or even years. About 8,400 people were still displaced at the end of 2021 due to monsoon impacts. This figure does not include people still displaced by the Gorkha earthquake in 2015.

Disaster displacement risk

The risk of future disaster displacement is determined not only by the risk of hazards but also by how policies and

processes influence people's exposure and vulnerability to hazards. Building upon the disaster risk analysis developed by the United Nations Office for Disaster Risk Reduction, the IDMC global disaster displacement risk model assesses the likelihood of such population movements in the future. The analysis considers sudden-onset hazards—such as riverine floods and earthquakes—their likelihood, and their potential to render housing uninhabitable, which serves as a proxy for displacement. More information on the methodology is available in the appendix.

Figure 2 summarizes the results for Nepal and underscores the high risk of disaster displacement associated with sudden-onset hazards. On average, 96,000 people could be displaced in any given year in the future by earthquakes and riverine floods. This estimate does not include pre-emptive evacuations or displacements linked with small-scale and very localized events—such as landslides—that can add up to large numbers of displacements.

Flood risk

The climate of Nepal is dominated by the monsoon circulation system, which provides around 80% of the annual precipitation. The summer monsoon generally arrives in early June, is characterized by violent lightning and thunderstorms, and lasts through September. It is estimated that more than 6,000 rivers and rivulets are in Nepal flowing from north to south. During the monsoon season, these rivers swell and damage villages, and crop lands, threatening livestock and people who remain within the river basins.

On average, almost 90,000 people are expected to be displaced per year given all the events that could occur

over the return periods. In terms of probable maximum displacement (PMD), there is a 64% probability that a flood will displace about 1 million people at some point in the next 50 years.

Earthquake risk

Nepal is in a seismically active area above the collision between the Eurasian and Indian tectonic plates. The displacement risk associated with earthquakes is high. The collision was followed by the subduction of the Indian plate underneath Tibet Autonomous Region, which continues today at an estimated rate of about 10 cm per year.²⁰ Historical data shows that the country has witnessed other major earthquakes, including one with an 8.9 magnitude in 1505, and the Gorkha earthquake in 2015, which had a 7.8 magnitude.²¹²² On average, 6,400 people are expected to be displaced per year given all the events that could occur over the return periods. In terms of PMD, there is a 5% probability that an earthquake will displace about 1 million people at some point in the next 50 years.

The IDMC disaster displacement risk model relies on a resolution of 5 km², and 1 km² along the coast. This level of granularity is not suitable for informing land use and urban planning decisions, and further analysis must be conducted to refine these initial results. Better data on pre-emptive evacuations and small-scale events could help to calibrate the model. Information is also needed on people's vulnerability and exposure to hazards, including economic, social, environmental, and governance factors that affect disaster displacement risk. This would complement the model's analysis of physical damage to housing.



Probable Maximum Displacement (PMD) is the maximum displacement expected within a given time period, and determines outlier events that could occur during it.



Average Annual Displacement (AAD) is a compact metric that represents the annualised accumulated effect of small to medium and extreme events and predicts the likely displacement associated with them on a yearly basis.



RIVERINE FLOODS

There is a 64% probability that riverine floods will displace around 1 million people at some point in the next 50 years.



EARTHQUAKE

There is a 5% probability that earthquake will displace about 1 milion people at some point in the next



In any given year in the future 96,000 people

on average could be displaced by earthquakes and riverine floods.

Figure 4: Nepal's Disaster Displacement Risk Levels and Uncertainties for Selected Sudden-onset Hazards.

The cost of disaster displacement

Most disaster displacement in Nepal takes the form of pre-emptive evacuations or short-term relocation to homes of friends and relatives while a home is being repaired. Thousands of people, however, are unable to return to their homes for longer periods.

Protracted displacement can have repercussions on displaced people's welfare and well-being. Displacement frequently affects displaced people's livelihoods, housing conditions, health, education, security, social life, and environment.²³ In addition to their effect on people's lives, these impacts generate new costs and can lead to financial losses. For instance, the loss of a home may mean a loss of capital and assets, and the need to cover new rental expenses.

Nepal loses property worth more than \$17.24 million on average each year to extreme climate events.²⁴ Modeling indicates that the economic impact of river flooding could triple by 2030 because of climate change.²⁵



Figure 5: Impacts of Internal Displacements

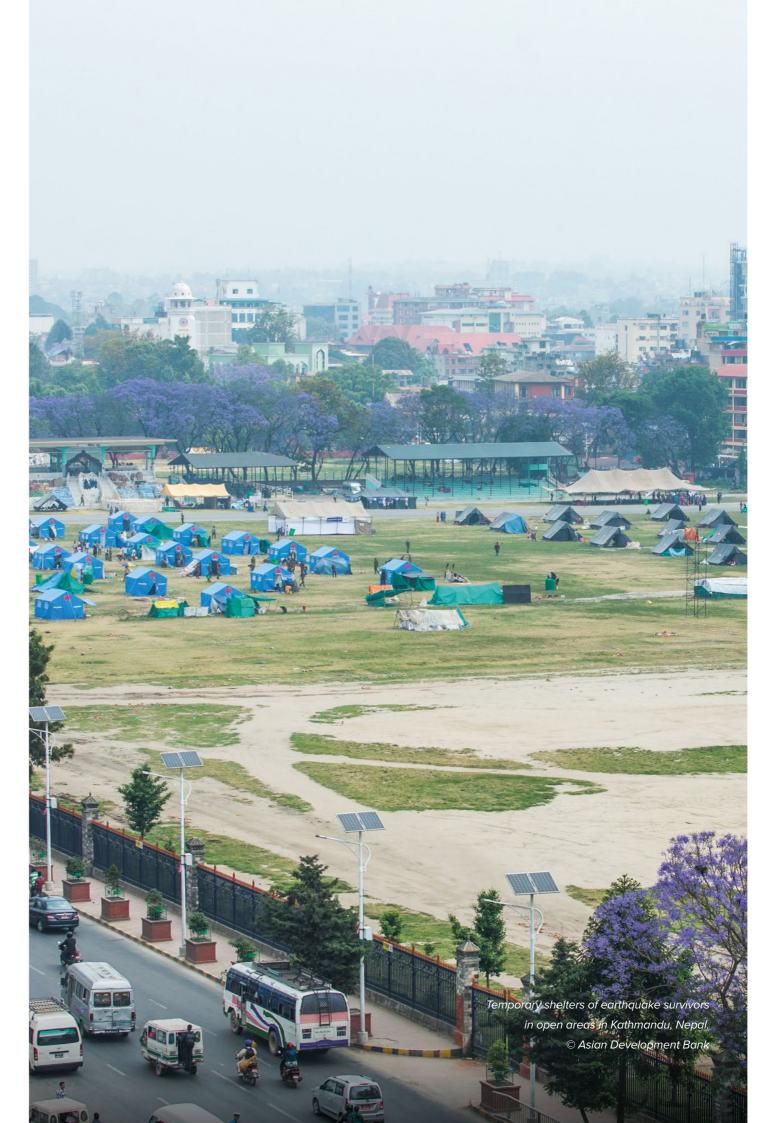
Based on a study by the Asian Development Bank, the country's annual GDP losses due to climate change is projected at 2.2% by 2050.²⁶ The April 2015 earthquake that struck the Nepalese region of Gorkha had an immediate economic impact estimated at as much as half of Nepal's \$20 billion in gross domestic product.²⁷

These assessments mostly account for damage and losses to infrastructure and the productive economy, but not for the cost of disaster *displacement*. The IDMC conducted a study on people displaced by the 2015 Gorkha earthquake in early 2022 to help fill this knowledge gap and highlight the need to collect more information on the socioeconomic impacts of protracted disaster displacement in the country. Key findings are highlighted in this section, and the full dataset along with the methodology and limitations are available on the IDMC website.

The following results focus on people who had to leave their homes as a result of the 2015 Gorkha earthquake and found refuge in the Sindhupalchok District, where they arrived between January 2016 and October 2019. More than 70% of the respondents were displaced twice or more after the event.

Housing conditions

Immediately after the earthquake, the housing conditions of many people in the area were affected, whether they had to leave their homes permanently or not. People whose houses had been destroyed lived in makeshift shelters, public buildings, or out in the open for a few days until the government and other aid providers helped to set up temporary shelters made of corrugated galvanized iron sheets. Support was also provided in the form of cash to buy tarpaulins and other relief items, food, or cash-for-work programs.



The Government of Nepal granted displaced families NRs300,000 (about \$2,500) to rebuild their houses about a year after the earthquake. The cost of rebuilding, however, was often more than that. The local government in the host area flattened the land that internally displaced people (IDPs) were to settle on and invested in drinking water, lights, and electricity. The houses that were built after the disaster had to comply with improved construction regulations and are of better quality than the houses the people lived in previously. At the time of the study in 2022, 90% of the surveyed IDPs had bought a new home for an average value of NRs1,856,000 (around \$15,000) compared with about NRs1 million (around \$8.000) for their original home. Some IDPs, however, had yet to secure a permanent house and remained in temporary shelters where they were exposed to heat in the summer and cold in the winter.

"We couldn't move to the new house because it costs around NRs1,500,000 to complete, whereas the government has given us NRs300,000. Many households are still living in (temporary shelters made of) corrugated galvanized iron sheets because they do not have a regular income with which to pay the additional costs." - Representative of the displaced community

Many IDPs did not return to their hometown but settled in their host area, as they found better access to infrastructure and services there and felt less exposed to the risk of landslides and other disasters. About one-quarter of displaced respondents were more satisfied with their housing conditions than before the earthquake, mentioning better protection against weather events and increased safety, tenure security, and access to services. Some go back during the day to work their original farmland as they lack opportunities for farming in their new home.

"The only problem IDPs have now is that they don't have farmland here. So they go to their original lands for the livestock and farming. In a lot of integrated settlements, displaced people are rarely found during the daytime. Many also tend to sleep in the shed of their original home to guard their property." - Representative of the city

There were no tensions or security incidents reported between displaced and non-displaced communities in the host area, and all use the same facilities. Almost half of the non-displaced respondents (44%) reported additional expenses after the arrival of the IDPs increased utility bills;

higher prices for food, goods, furniture, or rent; and the costs of buying food and supplies for the IDPs.

Livelihoods

Livelihood opportunities were limited for everyone displaced or not—immediately after the earthquake. Almost one-quarter of displaced respondents (22%) lost their entire income, and another 28% had to find another income source. Those who became unemployed often remained so for months: 64% of them were still unemployed at the time of the survey 7 years later. By comparison, 12% of non-displaced respondents lost their income at the time of the earthquake, and 50% of them were still unemployed at the time of the survey.

There were significant gender disparities in 2015: 64% of displaced male respondents earned money from work before their displacement, compared with only 29% of displaced female respondents. For non-displaced respondents, the gender gap was even more significant, with 73% of the men and 36% of the women earning an income from work before the earthquake. The average income for women was also lower than for men in both groups.

In the first months after the disaster, nongovernment organizations provided some support in the form of food, cash, and cash for work, as well as some training for IDPs. Livelihood support is no longer provided to IDPs specifically, but about one-third of displaced and non-displaced respondents receive financial support from the government or other institutions.

Many IDPs work in the informal sector or as daily laborers, with women doing work at home and men working in mines and construction. Some members of the host community work in similar conditions, but more of them own farmland nearby or have a small business that allows for higher earnings. Owners of businesses and land have benefited to some extent from the arrival of IDPs in the area, as this has led to an increase in prices.

Before the earthquake, displaced households earned on average NRs23,305 (about \$192) per month compared with NRs33,473 (\$276) for non-displaced households. This gap remained in 2022 with displaced households earning on average NRs28,704 (around \$234) per month from work compared with NRs48,553 (\$396) for non-displaced households

Some of the displaced households (20%) do not earn any income from work, compared with 4% of the non-displaced households. Lower employment rates and income for IDPs can be linked to their less extensive social networks in the host areas and their lower education levels. Of the surveyed IDPs, 42% have no education at all, and only 17% have at least some secondary education. This compares with 22% of non-displaced respondents who have no education and 35% with at least some secondary education.

For both groups, gender disparities have persisted, although at a reduced level. Almost half of the displaced male respondents (49%) earned money from work in 2022. This is compared with 32% of the displaced female respondents, 67% of the non-displaced men, and 44% of the non-displaced women. The average income for displaced men was NRs30,356 (\$248) per month, compared with NRs12,938 (\$105) for women.

Over half of the displaced respondents (51%) feel they have sufficient financial resources to fulfill all their needs and wants, compared with 60% of non-displaced respondents. This is an improvement from before the earthquake when rates were 44% of displaced and 49% of non-displaced respondents

Education

Many children had their education interrupted after the earthquake. Temporary learning centers were quickly set up, but they focused mostly on the psychosocial well-being of the children. School material was distributed for free for some time, along with food. Some nongovernment organizations gave out cash, school bags, and books.

About 85% of the displaced children experienced a break in their schooling, two-thirds of them for 1 to 6 months, and 17% for more than a year. That compares to slightly lower effects for non-displaced children, 80% of whom experienced a break in their education: 81% for 1 to 6 months, and 7% for more than a year. Nearly all the children in both groups were eventually able to return to school.

"Students in (IDP) families that were not financially sound were expected to work, while IDPs who were well off sent their children to Dhulikhel and Kathmandu to study. There is a huge difference in the quality of education for rich and poor in the district, and in Nepal." - Representative of a nongovernment organization working on education

The difference may be explained by the fact that although many schools were damaged by the earthquake and closed to everyone for a couple of months, the financial difficulties faced by displaced families kept their children out of school for longer periods. Some children had to start working to help support their families. Some of them also reportedly stayed out of school because they were traumatized by the disaster, while still others faced language barriers if they came from areas with different ethnolinguistic makeup.

"About half of the displaced families are able to pay for their children's education, the other half struggle. The government has been providing free snacks for children up to grade 5. A nongovernmental organization also sponsored 10 students and paid for their fees, dress, notebooks, and stationery." - School teacher in the host area

Access to public schools run by the government is free, other than the cost of school materials, uniforms, and meals. The quality of education, however, is reportedly lower than in the private schools, which are found in larger cities. Some public schools also ask for "donations" from parents so they can hire enough teachers for the large number of students. Nearly all displaced and non-displaced respondents pay for their children's education, but the average amount varies from NRs4,662 (\$38) per month for displaced to NRs6,426 (\$52) per month for non-displaced respondents.

Health

Most displaced respondents feel that their health is unchanged from what it was before their displacement, but 21% feel that it has worsened and 14 % feel that it has improved. More than one-quarter of them have access to free healthcare, up from only 11% before their displacement. Access to free healthcare has also improved for non-displaced respondents, with 35% having such access compared with 22% before the earthquake. When they do have to pay for healthcare, both groups report a lower cost for a standard visit to a health professional than before the disaster.

The Government of Nepal and nongovernment organizations provided some assistance in the immediate aftermath of the earthquake to all those affected in the form of mobile health posts, free medicine, and psychosocial support. The health insurance system introduced after the earthquake



helped both displaced and non-displaced people in accessing better healthcare.

Healthcare has gotten better overall since before the earthquake, but the capacity of the local health facility could be increased. It provides primary healthcare, and basic checkups are free. Secondary and tertiary healthcare, however, is only available in larger cities, such as Chautara, Dhulikhel, or Kathmandu, where visits come at a cost beyond what patients pay for transportation.

Displaced people who still live in temporary shelters made from corrugated galvanized iron are more exposed to cold-related infections in the winter. Some of them also suffer from poor nutrition because of the lack of financial resources. That is especially the case for pregnant women, infants, and children.

Displacement has affected psychosocial well-being, with one-third of the displaced women and 23% of the displaced men reporting feeling worried, nervous, angry, or sad more often now than before. People who were displaced three times or more seem even more affected, with 41% feeling worried, nervous, angry, or sad more often than before their displacement, compared with 24% for those displaced only once. The impact of displacement is also much greater for people with disabilities or living with someone who has a disability, at 60%.

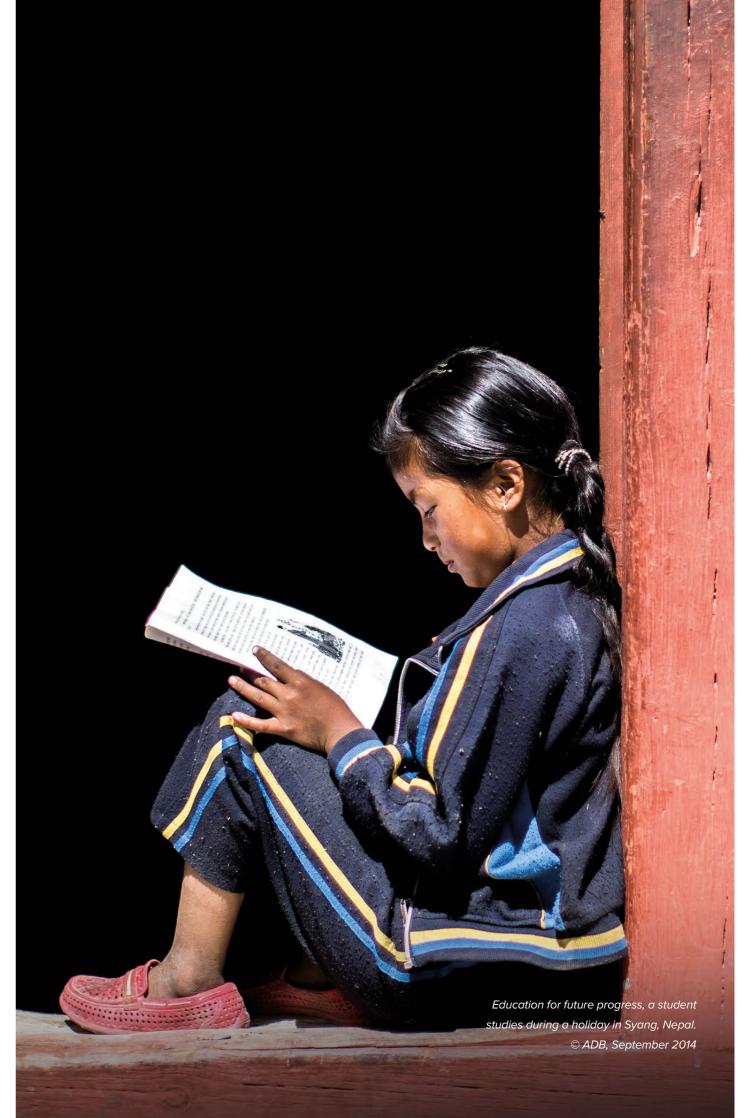
The way forward

The 2015 Gorkha earthquake affected everyone in the Kathmandu area, whether they were considered IDPs because they could never return to their original home, or were eventually able to fix their house and stay. Housing conditions, livelihoods, and access to education and health-care changed for everyone, but IDPs experienced these effects more. Despite a wide range of aid mechanisms—including in-kind assistance and financial support from the Government of Nepal and from nongovernment organizations—some of these effects are still being felt 7 years later.

The costs of providing IDPs with shelter, food, non-food items, healthcare, and education were to some extent borne by aid providers and host communities. IDPs also had to find additional resources to build new homes, while losing access to some of their income-generating activities and facing challenges in their host area labor markets. The arrival of large numbers of IDPs in host areas led to an

increase in prices, which harmed some people and benefited others, including business owners and landlords.

Displacement creates many challenges, particularly when it is protracted and affects so many people. It can also create opportunities leading to economic growth and the potential improvement of infrastructure in host areas. Measuring the impacts of displacement more systematically and comprehensively can help design interventions that address its negative consequences while capitalizing on the opportunities it creates.



Key findings

Impacts of displacement linked with the Gorkha earthquake

Displacement is often repeated



were displaced





three times or more

IDP loss of income is significant:

lost all income upon displacement

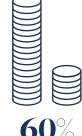
unemployed seven years later

In 2022, displaced households earn **only 60**% of non-displaced households' income on average

Seven years later, IDPs remain worse off than non-displaced people:



of the displaced children experienced a break in their schooling



of the non-displaced respondents feel they have sufficient financial resources to fulfil all their needs and wants

Income losses can endure for generations if education is affected

85%

of the displaced children experienced a break in their schooling

Displaced parents spend on average

of what non-displaced parents spend on their children's education



Capacity to prevent and respond to disaster displacement

The capacity of a country to prevent and respond to internal displacement depends on the scale, drivers, and impacts of the displacement it is faced with, as well as the resources it dedicates to addressing the phenomenon. Policies, frameworks, strategies, or plans focused on or including disaster displacement are a clear indication of government commitment as well as a useful guide for its actions and those of its partners. These policies must be accompanied by sufficient financial, technical, and human resources to be implemented. Lastly, information on internal displacement—including the number of displaced people and people at risk of future displacement, as well as their location and needs—is essential to tailoring effective interventions.

The Government of Nepal passed several policies and frameworks acknowledging internal displacement associated with disasters and aimed at mitigating its risk and responding to its negative consequences. Data are available on disaster displacement from government and nongovernment sources, although it is not systematically reported or sufficiently detailed to inform better support for IDPs.

Policies and implementation

The Government of Nepal recognizes internal displacement associated with disasters as an issue and has adopted several policies and plans to address it. The 2007 National Policies on Internally Displaced Persons, 2063 (2007), concerns displacement triggered by disasters, conflict, and violence, and establishes the responsibility of the government for preventing displacement, supporting IDPs, and facilitating their return or resettlement.²⁹ The text is a comprehensive framework for responding to the impacts of displacement on IDPs. It mentions various types of assistance, groups of IDPs who are especially vulnerable—such as children, women, and indigenous communities, —the protection of their human rights, and the need for them to participate in decisions and elections.

Durable solutions are envisaged in the form of voluntary returns accompanied by support or resettlement in other parts of the country if this is their preferred option. Impacts on other groups of people such as host communities, or communities of origin, are not considered, nor are preventative measures to limit disaster displacement.

The 2007 policies call for the development of government mechanisms to coordinate efforts on internal displacement and for the allocation of technical and financial resources for these efforts. The Ministry of Home Affairs is identified as the entity in charge of implementing policies developed by all ministries that include IDPs in their plans. The various government entities engaged in addressing internal displacement are represented in a Central Steering Committee. The identification of IDPs is managed at the district level through an IDP Identification Committee.

Nepal published a National Disaster Response Framework in 2013, and a National Disaster Risk Reduction and Management Strategic Plan of Action 2018–2030 in 2019.^{30 31} These texts do not focus on displacement per se. They do, however, mention measures such as early warning systems, Building Back Better, and relocating populations to low-risk areas to limit future displacement. The Disaster Risk Management Localization Manual provides a framework for training local authorities on disaster risk management and includes a section on response to displacement.³²

Data

The main sources of data on disaster displacement in Nepal are the Nepalese Red Cross Society, the International Federation of Red Cross and Red Crescent Societies, the Government of Nepal's Disaster Risk Reduction Portal, and reputable local and national media for triangulation or a complementary source if government data is not available. The Nepalese Red Cross Society releases specific



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and reliable displacement data associated with disasters, particularly during the monsoon season, and the Nepal Disaster Risk Reduction Portal provides information on destroyed housing.

Estimates of the number of people internally displaced by disasters rely on data on destroyed housing and household size estimates. This can lead to over or underestimations in the absence of more precise information on affected people. Such estimates also do not allow for accurate age and sex disaggregation, which is useful for planning more tailored support for IDPs.

Data on disaster displacement is generally more available during the monsoon season. Events that occur outside of this period are less systematically recorded, and small-scale events are less reported than large-scale events.



Key takeaways

Nepal is heavily affected by disaster displacement, with 3.4 million displacements recorded during 2012–2021. Climate change and low levels of human development increase the risk of disaster displacement.

On average, 96,000 people could be displaced in any given year in the future by earthquakes and riverine floods.

Nepal has adopted comprehensive policies to respond to internal displacement's negative impacts on IDPs. National frameworks could be expanded to include measures to prevent disaster displacement beyond disaster risk reduction.

Disaster displacement risk analyses could be improved with more granular and systematic data on pre-emptive evacuations and small-scale events. Information on people's vulnerability and exposure to hazards—including

economic, social, environmental, and governance factors can strengthen displacement risk analyses and support better prevention and preparedness. Better data on displaced people's sex, age, and other key socioeconomic characteristics can help design more inclusive and comprehensive

assistance.



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Every day, people flee conflict and disasters and become displaced inside their own countries. IDMC provides data and analysis and supports partners to identify and implement solutions to internal displacement.

Join us as we work to make real and lasting change for internally displaced people in the decade ahead.



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