

# Disaster displacement

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Indonesia country briefing

## Acknowledgements

Lead author: Christelle Cazabat

Contributing authors: Vicente Anzellini, Vincent Fung, Thannaletchimy Housset, Alesia O'Connor, Sylvain Ponserre.

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Cover photo: A mosque is the only building left standing on a strip of coast on 13 January 2005 in Aceh, Indonesia. The province of Aceh was one of the worst hit regions in the 9.0 earthquake and subsequent tsunami.  
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Vendors selling fresh produce on the streets of Indonesia. © Asian Development Bank

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*The islands of Gunung Kijang, Bintan. Bintan regency is one of the districts in Riau Islands Province, Indonesia.*

# Displacement figures at a glance

In 2021:

**749,000**

New displacements between 1 January and 31 December 2021

**155,000**

Internally Displaced Persons (IDPs) as of 31 December 2021

In the past decade (2010–2021):

**6.5 million**

New displacements between 1 January 2010 and 31 December 2021

**1,845**

Disaster events reported

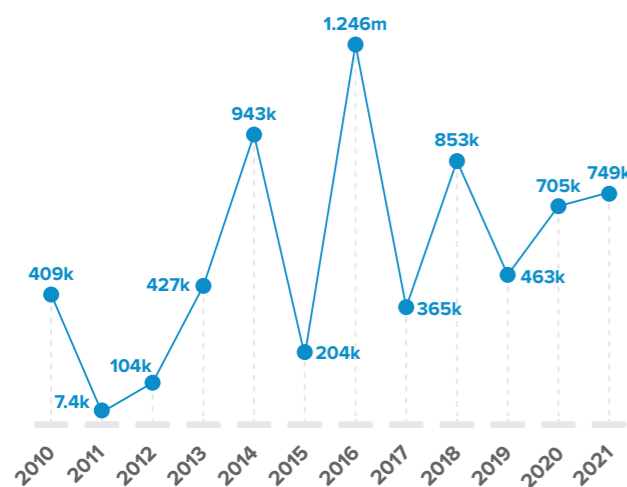


Figure 1: New Disaster Displacements Per Year (2011–2021)

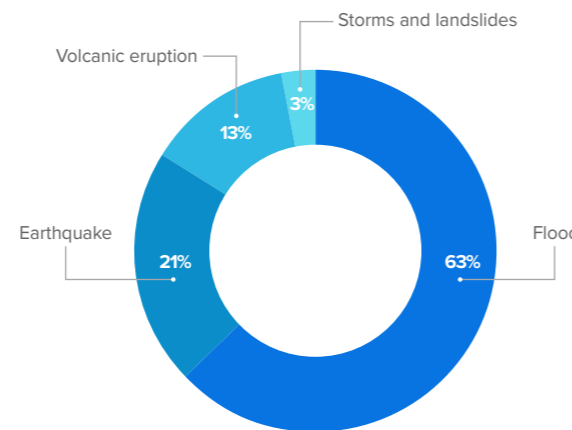


Figure 2: New Disaster Displacements by Hazard Type (2011–2021)



**In any given year in the future 3.6 million people**

on average could be displaced by storm surges, riverine floods, earthquakes, cyclonic winds and tsunamis.

Figure 3: Average Expected Number of Displacements in any Given Year for Sudden-onset Hazards

# Disaster displacement in Indonesia

## Drivers of internal displacement

All of Indonesia's more than 17,000 islands are prone to disasters.<sup>1</sup> Rapid population growth and urbanization have concentrated millions of people in highly exposed areas, and some communities are more vulnerable to disaster impacts as they have lower coping capacities.<sup>2</sup> These factors combine to give Indonesia some of the highest levels of displacement associated with disasters worldwide.

Despite these challenges, the country has good disaster risk management, and most displacement takes place in the form of the pre-emptive evacuation of populations at risk that take refuge in government-run shelters and centers.<sup>3</sup>

Indonesia is located on the Pacific Ring of Fire and its position at the intersection of three major tectonic plates makes the country particularly prone to volcanic eruptions, earthquakes, and tsunamis. It also experiences an annual monsoon season, which causes annual flooding and landslides.<sup>4</sup> Hazard maps show that a significant proportion of the population lives in areas at high risk of being affected by such hazards.<sup>5</sup> Around 5%—more than 11 million people—live in areas prone to earthquakes, and around 2.5 million people are exposed to tsunamis.<sup>6</sup>

After decades of rapid urbanization, in 2019 nearly 56% of Indonesia's population lived in urban areas, many of which have high exposure to hazards and climate change impacts.<sup>7</sup> During 2012–2021, primary forests, secondary forests, rice fields, and shrubs decreased. The unregulated pumping of groundwater has made the Greater Jakarta Area more prone to flooding (endnote 4). The coastal city is crisscrossed by 13 rivers that often break their banks during the monsoon season. The growth of informal settlements, rapid changes in land use, and the inability of its drainage system to cope have also increased the city's vulnerability to floods. Local authorities have devised a climate action plan and put flood protection measures in place, and there are longer-term plans to move the city to a new location.<sup>8</sup>

Human activities including deforestation, land degradation, and unplanned urbanization are increasing flood displacement risk. In South Kalimantan, the loss of forest coverage due to mining and plantation activities has reduced the region's ability to absorb heavy rainfall (endnote 3).

## Scale of displacement

During 2010–2021, 6.5 million new displacements were linked to at least 1,845 disaster events that were recorded across the country. Floods caused 63% of the displacements, earthquakes 21%, and 13% resulted from volcanic eruptions. Storms and wet mass movement—such as landslides—accounted for the rest. The events that caused the most displacements were:



### Floods:

2016 The peak rainy season of floods and landslides caused 948,000 new displacements

2020 Flooding in the Jakarta Capital Region caused 397,000 new displacements



### Earthquakes:

2018 Consecutive earthquakes from July to August caused 445,000 new displacements

2018 An earthquake and tsunami in Central Sulawesi caused 248,000 new displacements



### Volcanic Eruptions:

2010 The eruption of Mount Merapi caused 361,000 new displacements

2017 The eruption of Mount Agung caused 150,000 new displacements

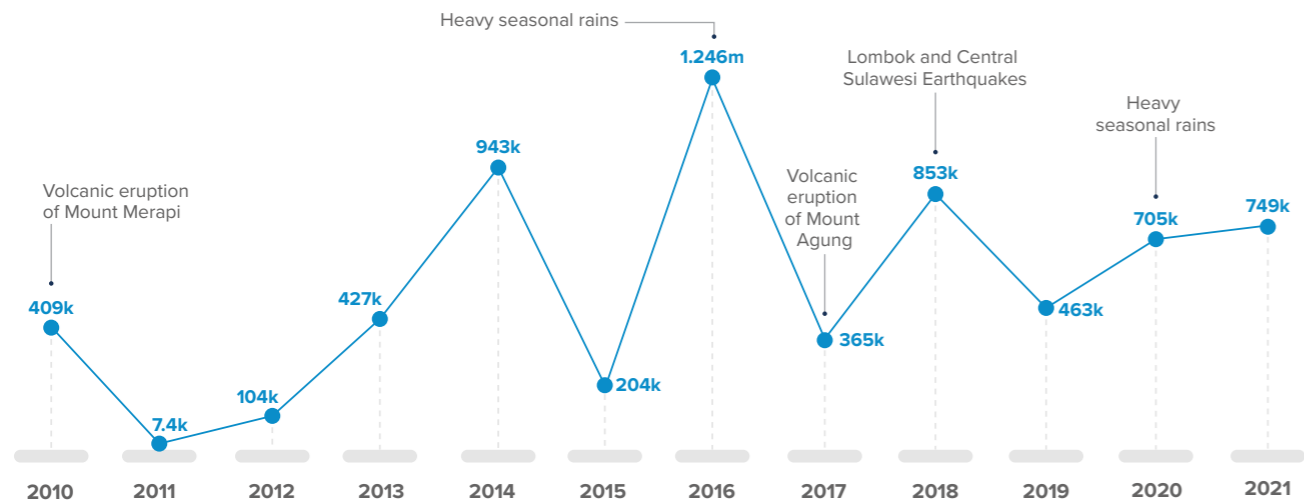


Figure 4: Annual Number of New Internal Displacements Linked with Disasters in Indonesia (2010 to 2021) and Key Events

In 2021, the Internal Displacement Monitoring Centre (IDMC) recorded approximately 749,000 new displacements due to disasters. 617,000 new displacements (82%) were predominantly due to floods. The two events that accounted for most of these displacements were the floods that occurred during 12–16 January in 11 regencies in South Kalimantan Province and the floods in Java in February. Both events occurred during the peak of the monsoon season in Indonesia.

2021 also was the 2nd consecutive year for La Niña, which continued to affect Indonesia during the monsoon period from October to December. October saw high incidents of floods and subsequent displacements which steadily reduced by the end of the year.

With most of these displacements taking the form of pre-emptive evacuations or short-term displacement, some people are still unable to get back home after weeks, months, or even years. About 49,000 people were still displaced by the end of 2021 from cyclone Seroja (which occurred in April 2021), and 28,000 from the South Kalimantan floods that occurred in January and February 2021. At the end of 2021, 55,000 people were living in internal displacement because of disasters in Indonesia.

## 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 peoples' exposure and vulnerability to hazards.<sup>9</sup> Building upon the disaster risk analysis developed by the United Nations Office for Disaster Risk

Reduction, IDMC's global disaster displacement risk model assesses the likelihood of such population movements in the future.<sup>10</sup> The analysis considers sudden-onset hazards—such as riverine floods, earthquakes, tsunamis, cyclonic winds, and storm surges—their likelihood, and their potential to cause housing damage, which serves as a proxy for displacement. More information on the methodology is available on IDMC's website.

Figure 2 summarizes the results for Indonesia, highlighting the high risk of disaster displacement associated with riverine floods, earthquakes, and tsunamis. On average, 3.6 million people could be displaced in any given year in the future by riverine floods, earthquakes, tsunamis, storm surges, and cyclonic winds. This estimate does not include pre-emptive evacuations or displacements linked with small-scale and very localized events (such as urban flooding), which can also add up to large numbers of displacements.

### Riverine flood risk

Floods are the hazard that put most people at risk of displacement in Indonesia. The Barito River system of Kalimantan could generate extended flooding. Flood waters could reach 6 m higher than usual streams. Similarly, on the island of Sumatra, the Musi River could generate flooding and disrupt the city of Palembang, displacing people for days and weeks.

On average, 310,500 people are expected to be displaced per year given all the riverine flood events that could occur over the return periods. In terms of probable mass displacement (PMD), there is a 64% probability that a flood will

displace about 3.5 million people at some point in the next 50 years.

### Earthquake risk

Earthquake risk in Indonesia is high around the Great Sumatran fault (the convergence between the Indo-Australian Plate and the Sunda Plate). The regions of Sumatra are at the highest risk, especially the province of Aceh, West Sumatra. The provinces around Maluku could also experience intensive tremors in the coming years.

On average, 63,500 people are expected to be displaced per year given all the earthquake events that could occur over the return periods. In terms of PMD, there is a 10% probability that an earthquake will displace about 860,000 people at some point in the next 50 years.

### Tsunami risk

The archipelago of Indonesia is particularly vulnerable to tsunamis. During a tsunami, waves push a large amount

of water above sea level onto the shore. This is known as the run-up, the maximum vertical height above sea level reached by a tsunami onshore. In Indonesia, this height is estimated to be around 12 m for most of the coastal areas at risk. High risk is estimated to be on the Batu islands with waves greater than 15 m.

On average, 4,100 people are expected to be displaced per year given all the tsunami events that could occur over the return periods. In terms of PMD, there is an 18% probability that a tsunami will displace about 450,000 people at some point in the next 50 years.

### Storm Surges risk

As major storms cross the Pacific Ocean, winds push the water into a wall as it moves onshore. The impacts depend on coastal topography and the tides. If powerful storm winds are not directed toward Indonesia's coasts, the risk is limited. While the whole coast of Indonesia is exposed to storm surges, the risk of resulting displacement remains low.

PMD AAD

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

**STORM SURGES**  
There is a 39% probability that storm surges will displace around 700 people at some point in the next 50 years.

**RIVERINE FLOODS**  
There is a 64% probability that riverine floods will displace around 3.4 million people at some point in the next 50 years.

**EARTHQUAKE**  
There is an 18% probability that earthquake will displace around 850,000 people at some point in the next 20 years.

**CYCLONIC WINDS**  
There is an 8% probability that cyclonic winds will displace around 240 people at some point in the next 20 years.

**TUNAMIS**  
There is a 10% probability that tsunamis will displace around 450,000 people at some point in the next 50 years.

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



In any given year in the future  
**3.6 million people**

on average could be displaced by storm surges, riverine floods, earthquakes, cyclonic winds and tsunamis.

Figure 5: Indonesia's Disaster Displacement Risk Levels and Uncertainties for Selected Sudden-onset Hazards

On average, 21 people are expected to be displaced per year given all the storm surge events that could occur over the return periods. In terms of PMD, there is a 39% probability that a storm surge will displace about 700 people at some point in the next 50 years.

### Cyclonic winds risk

Cyclonic risk in Indonesia is low to moderate. However, recent studies highlight that the increased sea-surface temperatures associated with climate change are projected to increase tropical cyclone intensity, and those hazards could be experienced in unprecedented locations.<sup>11</sup>

On average, three people a year are expected to be displaced considering all the cyclonic wind events that could occur over the return periods. The country could experience wind speeds greater than 160 km/h with gusts of more than 180 km/h, particularly over Pulau Timor. In terms of PMD, there is an 8% probability that cyclonic winds will displace about 240 people at some point in the next 50 years.

IDMC's disaster displacement risk model relies on a resolution of 5 km<sup>2</sup>, and 1 km<sup>2</sup> 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 also help calibrate the model. In addition, information is needed on people's vulnerability and exposure to a hazard, including economic, social, environmental, and governance factors that affect disaster displacement risk, to complement the model's analysis of physical damage to housing.



Damage from the Asian Tsunami of 26 December 2004, one of Asia's worst disasters. © Asian Development Bank

# The cost of disaster displacement

Although most disaster displacement in Indonesia takes the form of pre-emptive evacuations or short-term relocation with friends and relatives while their home is being repaired, hundreds of thousands of people are unable to return to their homes for longer periods.

Protracted displacement can have repercussions on the welfare and well-being of displaced people. Displacement frequently affects the livelihoods, housing conditions, health, education, security, social life, and environment of displaced people.<sup>12</sup> In addition to their effect on people's lives, these impacts bring about new costs and can lead to financial losses. For instance, the loss of a home may at the same time mean a loss of capital and assets, and the need to cover new rental expenses.

Many studies on the cost of disasters have been published for Indonesia. The Indian Ocean tsunami of 2004 is estimated to have cost \$4.45 billion in damages and reduced output.<sup>13</sup> The cost of the Mount Merapi earthquake in 2010

was valued at \$36 billion.<sup>14</sup> A similar assessment following the Lombok earthquake in 2018 estimated a cost of more than \$350 million.<sup>15</sup> Since 2000, Indonesia has lost at least \$16.8 billion per year from disasters, and during 1990–2021 as much as \$3.5 trillion.<sup>16</sup> Between 2014 and 2018, the central government spent between \$90 million and \$500 million annually on disaster response and recovery, while subnational governments spent an estimated additional \$250 million.<sup>17</sup> The Global Facility for Disaster Reduction and Recovery estimates that the annual impact of disasters on the economy is 0.3% of gross domestic product, and a major disaster could cost as much as 3%.<sup>18</sup> These assessments mostly account for damage and losses to housing, infrastructure, and the productive economy, but not for the cost of disaster displacement.

As a contribution to filling this knowledge gap and highlighting the need to collect more information on the socioeconomic impacts of disaster displacement in Indonesia, IDMC conducted a study on people displaced by floods and their host community in Jakarta in December 2021. Key findings are highlighted in this section, and the full dataset along with the methodology and limitations are available on IDMC's website.

The following results focus on people who had to leave their homes in Jakarta at least once in 2021 because of floods. Over half of the respondents had been displaced more than once. Most of them found refuge in the same neighborhood and were displaced for less than a week. All were able to return home after their displacement.

This pattern—in which displaced people stay close to their homes and are displaced for only a few days—is the most frequent in situations of flood-related displacement. It may appear to have less impact than protracted displacement, but there can be negative consequences for displaced people's housing conditions, livelihoods, health, and education.



Figure 6: Impacts of Internal Displacement



## Housing conditions

The people most affected by the floods live in lower-quality houses near the riverbank where rent is cheaper because of the recurring threat. Waste management in these densely populated areas can also exacerbate flooding. Many residents throw their garbage into the river, provoking overflows when the rain falls intensely.

*“The areas that are very close to the riverbank are densely populated. There are some buildings that are permanent or semi-permanent, and there are even shanties made of plywood. Some people live in houses with multiple floors, with many other people in them.”* – **Youth representative**

During their displacement, 40% of respondents stayed in houses belonging to acquaintances, 18% in a collective shelter, 14% out in the open or a makeshift shelter, and 7% in a tent. The free collective shelters include mosques, public halls, sports centers, schools, and parking lots where authorities and nongovernment organizations set up tents. While there, displaced people also receive food, clothes, and other essential items. Some people, however, refuse to leave their flooded houses for fear that their belongings will be stolen or because of the lack of intimacy and overcrowding in the collective shelters.

Collective shelters are not always accessible to displaced people with disabilities. They do receive some support, however, including transportation to the shelter and health centers.

*“We need (shelters) that are really accessible. (...) If I go to the bathroom, then my wheelchair also needs to come with me. So far there aren’t any places that are accessible to people with disabilities., If there are announcements, such as those for power cuts, deaf people won’t know because there are no sign language experts either.”* – **Representative of people with disabilities**

Lack of access to clean water is an issue during floods, especially in the collective shelters. Drinking water is provided in plastic bottles, but that can create other waste management issues.

*“We advise donors not to send bottled water when there is a disaster, because it will become trash. We advise them to send water purifiers, instead.”* – **Manager of a nongovernment organization working on health**

Local organizations provide some assistance for cleaning and repairing damaged houses, but displaced families often need several days to get rid of the mud and trash that settles after the floods. Nearly one-quarter of the respondents said they had to pay to repair their home, spending on average Rp1.6 million (about \$110) before they could return. That represents more than a month of work. Financial assistance is also available from the government for registered residents of Jakarta who need it.

Since the tsunami of 2004, the approach to reconstruction has been to Build Back Better, which includes an emphasis on disaster-resilient housing. Implementation, however, can be compromised by costs, time pressure, and a lack of experience in good practice for disaster-resilient construction.<sup>19</sup> Some informal settlements have been upgraded under initiatives such as the National Slum Upgrading Project and the Neighbourhood Upgrading and Shelter Project, which emphasize disaster resilience and response.<sup>20</sup> The neighborhood project, for example, built 1.5 million meters of drainage and improved road access for emergency vehicles.<sup>21</sup> Securing housing, land, and property rights are also important to reducing the risk of displacement and facilitating returns. Many residents do not have any formal documentation related to their homes.<sup>22</sup> Only 69% of displaced respondents had a written agreement proving ownership, compared with 81% of non-displaced respondents.

## Livelihoods

Most of the people displaced by the floods work at lower-earning jobs as street peddlers, manual laborers, motorcycle taxi drivers, and housemaids. By contrast, in the parts of town not affected by floods, people mostly work in offices or larger businesses. The average monthly income for displaced respondents who earned money from work was around Rp1.2 million (about \$80), compared with Rp3.7 million (about \$260) for non-displaced respondents.

Displaced people’s limited income forces them to remain in parts of town where the cost of housing is lower, such as along regularly flooded riverbanks. There they often live in one-story houses that they must abandon when the floods come. As a result, they are consistently displaced and find refuge in collective shelters or other people’s homes.

*“They rent houses on riverbanks because they are cheaper and more affordable than those further from the flood threat.”* – **School principal**

The nature of their work also means that many of them, once displaced, no longer have an income. They can no longer work on the flooded streets or construction sites, they are unable to reach their habitual place of work until the roads are cleared, and they have to spend days focusing on the rehabilitation of their homes after the floods recede. Almost half (47%) of displaced respondents continued to earn money in the same way when they were displaced by the floods, but 10% became unemployed as a result.

*“The floods ruin everything. Sellers’ goods go to waste, and their carts and pans are damaged by the mud. When the floods strike, sellers think about how to clean their houses first, rather than about selling their goods.”* – **Youth representative**

As a result, they are highly dependent on aid and support from their families and friends during their displacement. About 40% of respondents received some help from their family in Jakarta, 21% from the local government, and 19% from friends in Jakarta. Less than 4% received help from the national government or other organizations, including NGOs and international agencies. This help could include material or financial support.

Some respondents (28%) reported receiving money from their family or friends during their displacement, at an average of Rp1.1 million per month (about \$75). Others (11%) reported receiving an average of Rp1.2 million (about \$80) from the government during their displacement.

Displaced people receive food, clothes, blankets, and other essential items. Aid providers often consider the specific needs of infants, toddlers, pregnant women, older people, and people with disabilities. Registered residents of Jakarta can receive financial support from the city government, but some newcomers—many of whom live in the flood-prone parts of town—do not have access to this assistance.

*“(Some) newcomers do not know how to get aid and have not registered as a Jakarta resident. We help them with donations so they can survive.”* – **Manager of a foundation working on health**

## Education

Floods interrupt education through flood damage, school closures, and the subsequent rehabilitation of educational facilities. They also disrupt transportation services and cause schools to be used as temporary shelters. The recurring nature of flooding and other disasters in Indonesia leads to children regularly losing learning time. This can have a big cumulative impact. Disasters also have been shown to lower school enrolment rates, especially for children from low-income families.<sup>23</sup>

Compulsory schooling—although free—typically incurs costs for households that must buy items such as books and uniforms.<sup>24</sup> Most displaced respondents (80%) said they had to pay on average Rp484,000 per month—about \$34—for their children’s education. This includes meals, transportation, tuition, uniform, school materials, and additional classes.

Children in parts of town affected by the floods have their education interrupted for several days at a time when their school is closed, as they are unable to continue learning remotely. Their books are often washed away by the waters, and unlike other pupils, they do not have internet access allowing them to get online courses by phone. Their parents are busy cleaning their houses and cannot help them with homework, and it is difficult for them to concentrate when they are at a collective shelter.

Some survey respondents (10%) confirmed that their child was unable to go to school after displacement, and 27% reported having to pay more for their education at an average amount of Rp750,000 per month, or about \$52. This likely represents the cost of replacing items lost in the flood.

Displaced children who cannot replace their lost or damaged uniforms, shoes, or educational materials are more likely to stay out of school after the floods recede. It can also be difficult for them to wash their muddy and wet clothes in the collective shelters, as clean water is limited and used for drinking and bathing.

The impact of disasters on education has been compounded by the coronavirus disease (Covid-19) pandemic. In East Nusa Tenggara Province, 100,000 children could not complete take-home exams because of flash flooding. Because of the school closures related to the pandemic, they had nowhere else to go to take their exams.<sup>25</sup> Remote

learning mechanisms now in place since the beginning of the pandemic, however, can help ensure continued education in times of displacement.

Indonesia has a disaster management policy for preparedness, mitigation, response, and recovery, and an Education in Emergencies policy to allow for the continuation of education during crises.<sup>26</sup>

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## Health

Flood-related displacement is usually short-lived, but there is evidence in Indonesia of negative impacts on the physical and mental health of displaced people. Some displaced respondents (17%) reported a deterioration in their physical health during their displacement. They faced health issues, such as dermatitis from exposure to rats and unclean water, upper respiratory tract infections, fever, and diarrhea. Children and older people face higher risks of infection.

Local organizations are prepared to help pregnant women, older people, children, and people with disabilities when they need to be evacuated. They can use ambulances or rafts, with the support of the police or fire departments, as well as volunteers. Public health centers throughout the city provide free healthcare to insured patients, and health posts are set up near collective shelters to provide immediate assistance and basic medicines. Free food is also provided to displaced people, with the nutritional needs of small children considered.

Many displaced respondents (70%) said they had the same access to healthcare in displacement compared with times when they were not displaced. Some (20%) reported better access. This is aligned with the average cost of a visit to a health professional, which is reported at around Rp95,000 (about \$7) in times of displacement, compared with Rp208,000 (about \$14) in normal times.

*“Sometimes when we are asleep, our house is flooded from one moment to the next. I know how wearing that is both physically and mentally. There was a person who rented a small house somewhat below ground level, so when the waters came in the whole house was flooded. That person could not stop crying. She had lived there for a long time.”* – **Youth representative**

Displacement places a heavy burden on people’s mental well-being. Psychological support is not readily available. Nearly 70% of respondents reported feeling worried more often, and 63% were sad more often when they were displaced. The effects of flood-related displacement on children’s well-being are well known. Efforts are made to cheer them up in the collective shelters, but no professional psychological support seems to be provided.

*“During floods, we focus on children because when there is a drastic change in their lives they become suddenly quiet or sad. We send volunteers to play with them and engage in storytelling, drawing, and the reading of story-books so they are at ease and forget to some extent what they have experienced.”* – **Manager of a nongovernment organization working on health**

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## Way forward

Preventing, planning for, and responding to flood displacement is a priority for Indonesia, as one in four Indonesians lives in a high-risk zone for flooding.<sup>27</sup> Many efforts have been made in this direction in Jakarta. Local authorities and nongovernment organizations keep stocks of food, blankets, clothes, and medicine so that they are ready to support future internally displaced persons (IDPs). The Jakarta provincial government has started to dredge, deepen and widen the riverbed.<sup>28</sup> Thousands of biopore infiltration holes have been built to help with drainage.<sup>29</sup>

Despite the high level of disaster displacement, the medium- to long-term impact on IDPs is not well understood, including the cost to the economy and people’s livelihoods, housing conditions, health, and education.<sup>30</sup> Understanding these impacts is key to further improving disaster response, recovery, and solutions to displacement, and fulfilling the Sendai Framework goals, such as the reduction of economic loss as a result of disaster displacement to gross domestic product.<sup>31</sup>



**The floods ruin everything. Sellers’ goods go to waste, and their carts and pans are damaged by the mud. When the floods strike, sellers think about how to clean their houses first, rather than about selling their goods.**

– *Youth representative*





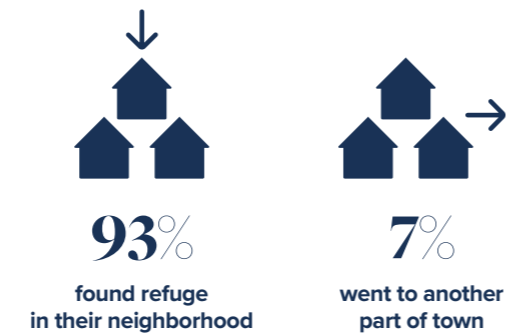
# Key findings

## Impacts of flood-related displacement in Jakarta

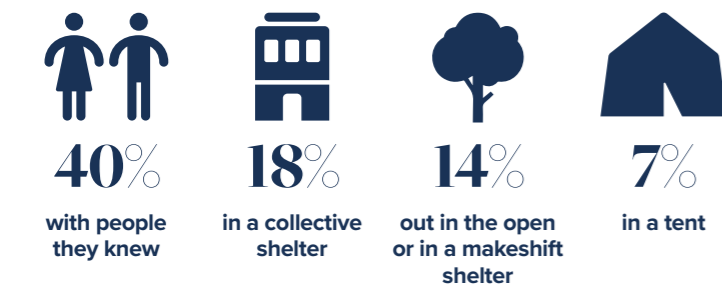
### Displacement is often repeated



### Displaced people stay nearby:



### Displaced people found refuge...



### Displacement is usually short-termed



### Internally displaced persons' loss of income is significant:



**[Some] newcomers do not know how to get aid and have not registered as a Jakarta resident. We help them with donations so they can survive.**

*– Manager of a foundation working on health*

# Capacity to prevent and respond to disaster displacement

A country's capacity 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.<sup>32</sup> Policies, frameworks, strategies, or plans—focused on or including disaster displacement—are a clear indication of a government's commitment as well as a useful guide for its action and that 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, their location, and needs is essential to tailor effective interventions.

Indonesia is one of the countries with the most comprehensive policies on disaster displacement and dedicates significant public resources to their implementation. Indonesia also produces quality information on disaster displacement, although additional disaggregation of the data on IDPs by sex and age could further improve knowledge of displaced people's needs.<sup>33</sup>

## Policies and implementation

Indonesia's National Disaster Management Authority (BNPB) is the national entity in charge of disaster displacement, including prevention and response.<sup>34</sup> In addition, there are provincial and local level Disaster Management Agencies in over 90% of the country's districts and cities.<sup>35</sup> The Government of Indonesia partners with the international community, civil society, businesses, academia, and the media for a multi-stakeholder, multi-sector approach to disaster displacement.<sup>36</sup>

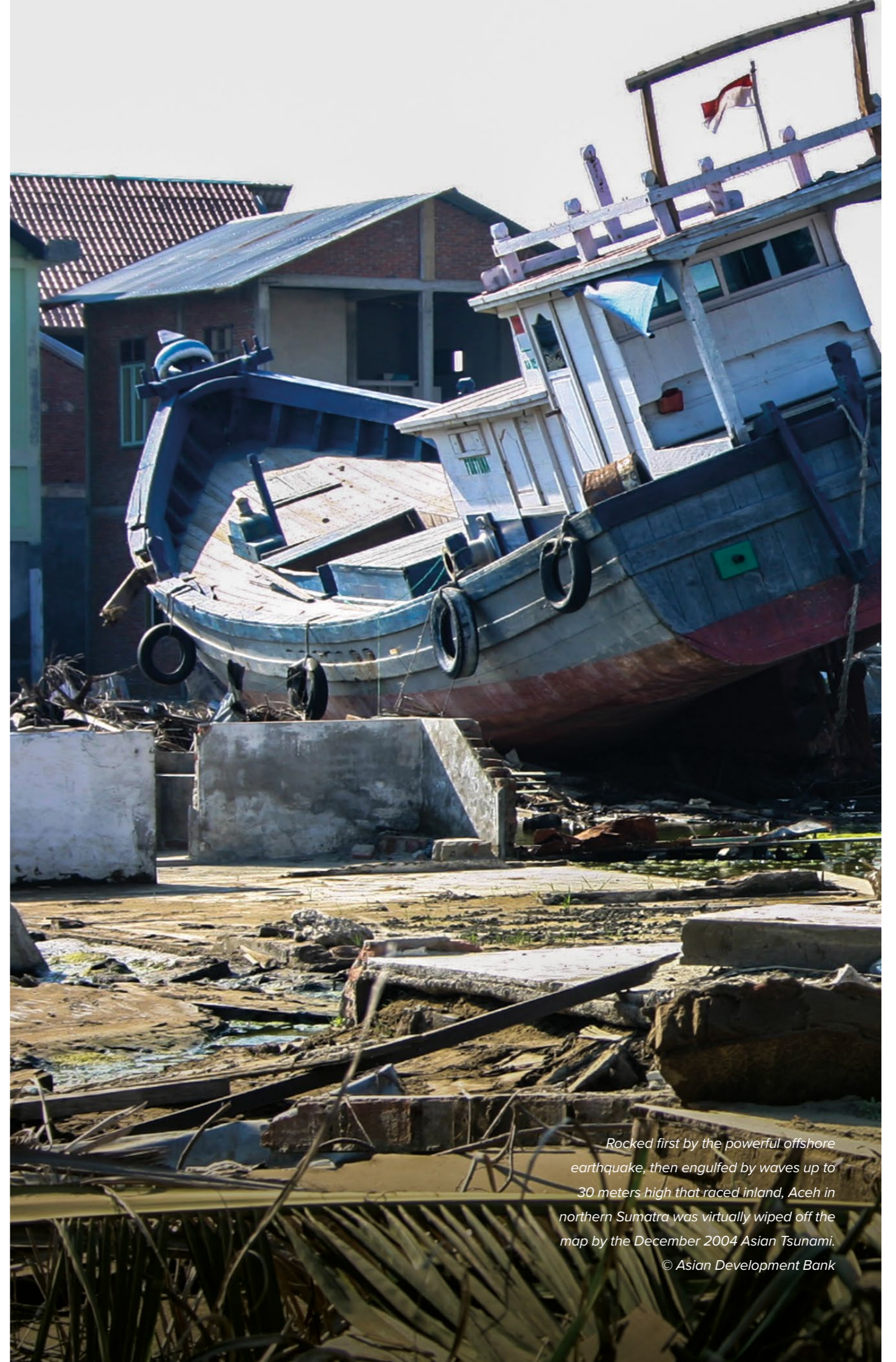
In 2007, Indonesia adopted Law Number 24 Concerning Disaster Management, which addresses "disasters due to natural factors, non-natural factors as well as human factors" and considers "people or groups of people forced to leave

their dwelling places for an uncertain time due to negative impact of disaster".<sup>37</sup> The text contains preventive measures, promotes durable solutions for IDPs, and addresses consequences for non-displaced affected people, through efforts to reduce social conflict and tension in disaster-affected communities. As such, it is one of the most comprehensive policies on disaster displacement worldwide. The law also addresses budget allocation for disaster management.

The Government of Indonesia spends approximately 1%–2% of its annual budget on disaster risk reduction (equating to \$0.7 billion–\$1 billion), mostly focusing on physical disaster risk reduction.<sup>38</sup> Government officials announced the doubling of the country's disaster response budget in 2019, amounting to Rp15 trillion (\$1.06 billion).<sup>39</sup>

Since 2010 there has been a standing Multi-Partner Trust Fund Facility for Disaster Recovery to help fund the Government of Indonesia's rehabilitation and recovery plans following a disaster. As of the end of December 2020 around \$5 million had been used from the fund for six projects by the Food and Agriculture Organization of the United Nations, the International Labour Organization, the International Organization for Migration, and the United Nations Development Programme.<sup>40</sup>

The government acknowledges the financial burden that disasters place on the state budget and the impact this has on other priority sectors, including education and health. In 2018—recognizing the need to diversify funding sources for disaster risk reduction and response—the Minister of Finance launched a National Disaster Risk Financing and Insurance strategy.<sup>41</sup> With support from the World Bank and the Swiss State Secretariat for Economic Affairs, the Government of Indonesia established a Pooling Fund for Disasters in August 2021.<sup>42</sup> The fund will help ensure faster social assistance payments for victims of disasters and improve preparedness



*Rocked first by the powerful offshore earthquake, then engulfed by waves up to 30 meters high that raced inland, Aceh in northern Sumatra was virtually wiped off the map by the December 2004 Asian Tsunami.*  
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## Data

In 2019, the National Disaster Management Agency and National Statistics Indonesia jointly developed the *Satu Data Bencana* Indonesia (Indonesia One Disaster Data), a systematic data collection mechanism and one of the main sources of information on disaster displacement.<sup>43</sup> One Disaster Data aligns statistics among different producers in the country and ensures that definitions and measurements are interoperable and follow international standards. It covers all stages of a disaster lifecycle, from preparation to recovery.

The National Disaster Management Agency's (BNPB) data is disaggregated by location but not by sex and age.<sup>44</sup> BNPB reports on displacement figures through press releases, infographics, and other communication products, and maintains an online data repository.<sup>45</sup>

BNPB has been using its version of the DesInventar database since April 2021, and its portal is available via <https://dibi.bnpb.go.id/>. Indonesia is a good case study in capacity strengthening through assistance from international organizations like the UNDRR and building systems that are feasible and sustainable for their use.

Since 2014, InAWARE—an advanced hazard monitoring and early warning system—has been consolidating information locally and nationally.<sup>46</sup> It also facilitates information sharing within and between Indonesia's national and provincial disaster management stakeholder agencies. The InaRISK platform facilitates information between ministries for risk analysis.<sup>47</sup> However, there is a lack of sub-national disaster risk data and a lack of disaggregated disaster data.<sup>48</sup>

One innovative method that has been used in recent years to map disasters is Peta Bencana—or Disaster Map—which collects data from users of social media to map and visualize data that can assist other users and emergency response services.<sup>49</sup> The platform gathers confirmed situational updates from the street level in real time. For instance—in the case of floods—residents can use the platform to check where the most flooded areas are and where the emergency shelters are located, and hence how best to get there safely. The platform follows BNPB's standards and processes.<sup>50</sup>

Post disaster needs assessments (PDNAs) are another source of useful information on the needs of people affected by disasters.<sup>51</sup> One review of the use of PDNAs concludes that they have improved responsiveness to the needs of IDPs, including livelihood sustainability.<sup>52</sup>

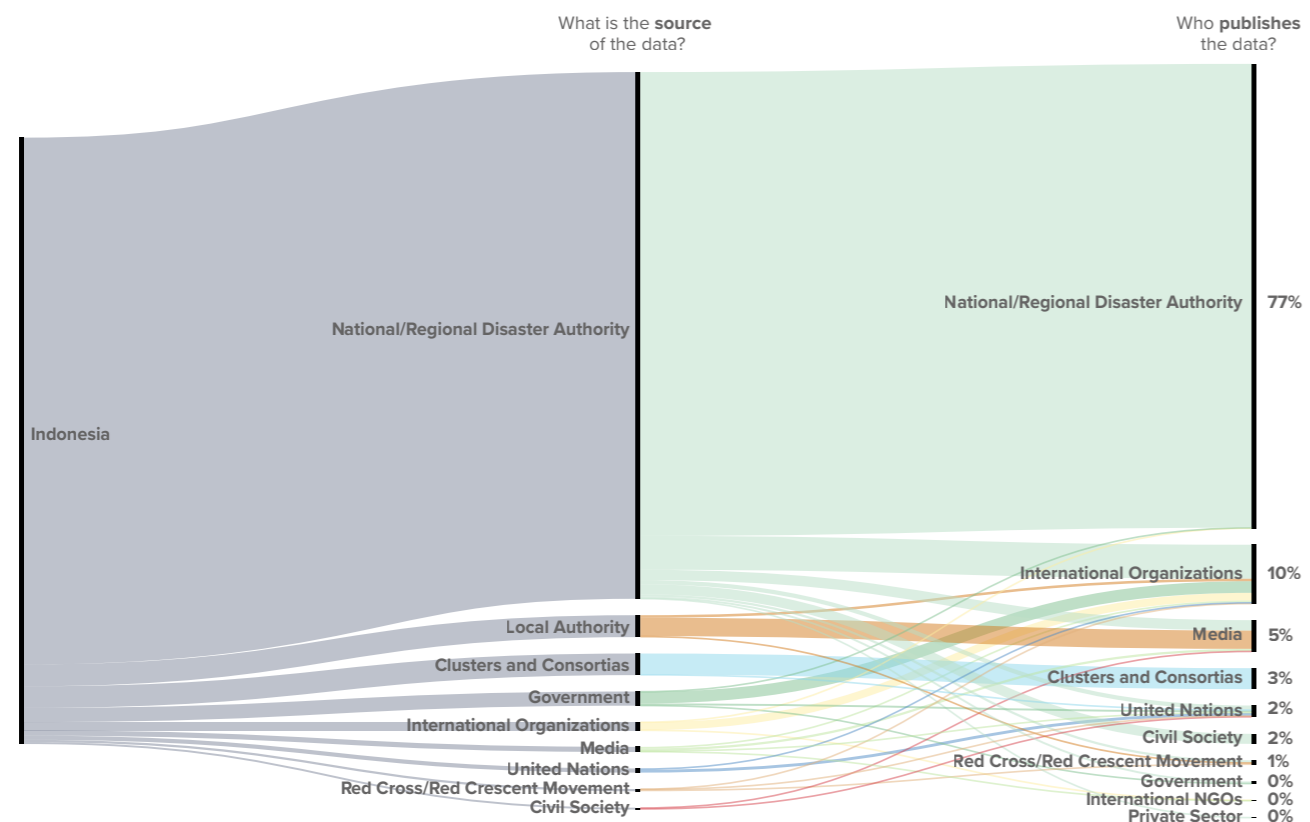


Figure 7: IDMC's Sources of Data on Disaster Displacement in Indonesia



After the Asian Tsunami of December 2004, rebuilding housing was a priority. The Asian Development Bank built 8,500 new homes in Aceh and repaired 2,500 more. © Asian Development Bank.



# 1

Indonesia is heavily affected by disaster displacement, with 6.5 million displacements recorded during 2012–2021. Human activities—including deforestation and unplanned urbanization—increase the risk of disaster displacement.

# 2

Climate change is likely to increase the risk of disaster displacement in the coming years. On average, 3.6 million people could be displaced in any given year in the future by riverine floods, earthquakes, tsunamis, storm surges, and cyclonic winds.

# 3

Indonesia's efforts to prevent and respond to disaster displacement are an example of good practice, with a comprehensive policy, dedicated public resources, and solid data sources.

# 4

Disaster displacement risk analyses could be improved with more granular and systematic data on pre-emptive evacuations and small-scale events.

# 5

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.

# 6

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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*Ten years on from the unprecedented Tsunami of December 2004, the progress achieved has been remarkable and the lives of many of those affected have improved immensely.*

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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.**



**The Internal Displacement Monitoring Centre**

La Voie-Creuse 16, 1202 Geneva, Switzerland

+41 22 552 3600 | [info@idmc.ch](mailto:info@idmc.ch)



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