PHILIPPINES
Floods and landslides in Mindanao Island

acaps | Briefing note
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CRISIS IMPACT OVERVIEW

In late January 2024, torrential rains triggered by the trough of a low-pressure area (LPA) and the northeastern monsoon resulted in widespread floods and landslides across Mindanao Island, southern Philippines. As at 15 February, the rains had affected 13 provinces, 70 cities, and 861 barangays (the smallest administrative division in the Philippines) across Regions X (Northern Mindanao), XI (Davao), XII (Soccsksargen), and XIII (Caraga), as well as the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) (DROMIC 12/02/2024; NDRRMCC 12/02/2024). Mindanao Island is the second-largest island in the Philippines.

As at 16 February, the floods and landslides had affected more than 1.7 million people (478,000 families), displaced over 300,000 people, and damaged or destroyed more than 1,600 houses and at least 25,000 hectares of crops (NDRRMC 16/02/2024; DROMIC 12/02/2024; Govt. Philippines 15/02/2024). Casualty reports are rapidly evolving and differ between sources, with up to 90 reported deaths and around 50 people missing (OCHA 14/02/2024; ECHO 13/02/2024; Al Jazeera 11/02/2024). Many of these casualties occurred because of a landslide triggered by rainfall in the gold-mining Barangay of Masara, Davao de Oro province (PhilStar 11/02/2024; Al Jazeera 11/02/2024).

Although the floods and landslides affected Mindanao Island most severely, the north-eastern monsoon also hit Metro Manila and the rest of the Luzon and Visayas groups of islands, disrupting fishing and other livelihood activities. The monsoon conditions, expected to continue till May, have resulted in livelihood losses, education gaps, and an increased likelihood of waterborne disease transmission (DROMIC 09/02/2024; PAGASA accessed 12/02/2024).

Anticipated scope and scale

Weather forecasts anticipate wet conditions until the end of February in southern Philippines, with possible flash floods and landslides resulting from downpours and thunderstorms (PAGASA accessed 15/02/2024; WU accessed 15/02/2024).

Seasonal forecasts for the March–May period anticipate below-average precipitation in large parts of the Philippines. While this suggests drier-than-normal conditions across the country, largely attributed to the influence of the current El Niño, localised extreme rainfall events could still occur, potentially leading to new flooding and landslides (C3S accessed 15/02/2024; WMO accessed 15/02/2024).

On 10 February, two earthquakes, respectively of magnitude 5.9 and 5.4, hit northern Mindanao Island, suspending rescue operations in Maco municipality and Barangay Masara in Davao de Oro province, Davao region. The Philippine Institute of Volcanology and Seismology (PHIVOLCS) subsequently issued an advisory for expected aftershocks (Phivolcs 10/02/2024; Reuters 10/02/2024; ECHO 12/02/2024). These aftershocks would likely delay rescue efforts and potentially lead to increased casualties.

Humanitarian constraints

Heavy rain continues to hinder rescue operations and increase the risk of further landslides (Al Jazeera 11/02/2024).

As at 16 February, the floods and landslides had affected more than 290 roads, rendering 78 impassable with more than 26 bridges destroyed. Additionally, 5 seaports which had been affected have been restored and are currently fully operational (NDRRMC 16/02/2024). These transport disruptions are likely to affect humanitarian access to the affected population and the evacuation of people.

The flooding and landslides have also destroyed electricity lines and disrupted communication networks in various areas (STC 12/02/2024). This may hinder humanitarian coordination and prevent information-sharing on the humanitarian response among communities.

KEY FIGURES

+1.7M
AFFECTED PEOPLE

+USD 32M
ESTIMATED COST OF DAMAGE

+25,000
HECTARES OF CROPS DESTROYED

5.3
INFORM CLIMATE CHANGE RISK SCORE

FUNDING AND RESPONSE CAPACITY

- Several INGOs, including USAID, ECHO, ICRC, Save The Children, and AHA
- NDRRMC, DSWD, and the office of civil defense

CRISIS IMPACTS

WASH and health

As at 16 February, NDRRMC reported around 410 flooded areas in BARMM, Caraga, Davao, and Northern Mindanao regions of Mindanao Island. Water supply in four cities in Davao region remained interrupted (NDRRMC 16/02/2024). These impacts will aggravate pre-existing WASH challenges in several affected regions. The 2022 National Demographic and Health Survey found that only 80% of the BARMM population had access to at least basic drinking water services, and only 55% had access to basic sanitation services. These were the worst access rates nationwide. In Caraga, only 58% of the population had access to piped water (PSA/ICF 06/2023).

The contamination of drinking water sources and spread of stagnant water because of flooding and rainfall can promote the transmission of waterborne and vector-borne diseases (PCHRD accessed 14/02/2024). In the first quarter of 2023, the Philippines saw a rise in bloody diarrhoea, typhoid, and rotavirus cases, partly driven by the use of contaminated water during the dry season (Inquirer 14/04/2023). In Northern Mindanao region, cases of typhoid and rotavirus (which lead to watery diarrhoea) doubled between January and mid-March, while cases of influenza-like illness increased by around 41% between January–August (Outbreak News Today 16/04/2023; CDC accessed 14/02/2024; Rappler 28/09/2023). Dengue cases were reported across the Philippines throughout 2023, with the highest numbers from July–December, during the May–December rainy season. Cases were particularly high in Davao region in August–September (WHO 01/02/2024; Crisis24 07/08/2023; SunStar 15/10/2023). There is a risk of these diseases spiking again because of the recent rainfall and floods, with rapid transmission in crowded evacuation centres. Poor healthcare access across Mindanao Island could aggravate this situation (MB 11/11/2023).

Shelter and displacements

As at 16 February, the floods, rains, and landslides had damaged or destroyed more than 1,600 houses. These included at least 650 that were totally damaged and more than 900 partially damaged in Davao and Caraga regions (NDRRMC 16/02/2024).

As at 16 February, the floods and landslides had affected more than 1.7 million people, including over 300,000 displaced. The majority (around 206,000) were staying with relatives and friends, while a minority (around 15,000) were in 82 temporary evacuation shelters in Davao and Caraga regions (Govt. Philippines 15/02/2024; NDRRMC 16/02/2024). These numbers add to a pre-existing displacement crisis across Mindanao Island, where there were already over 145,000 people displaced by conflict and natural hazards as at 12 January 2024 (OCHA 15/01/2024). Some of the people displaced by the current crisis may be experiencing repeated displacement, straining their coping capacity and placing additional pressure on host communities.

Livelihoods

As at 16 February, the recent floods had destroyed more than 25,000 hectares of crops and affected more than 9,000 farmers and 12,000 fisherfolk countrywide (NDRRMC 16/02/2024; DROMIC 09/02/2024). Estimated agricultural losses amount to at least PHP 1 billion (USD 18 million), and many people are left without an income as the floods are occurring during the planting season for some crops. In Davao Oriental and Davao de Oro, this time signals the climax of cropping, as rice is prepared for harvesting (BPI 10/08/2020; NDRRMCC 12/02/2024; IFRC 15/02/2024). As at 2018, more than 50% of BARMM's population were employed in agriculture (FAO 03/2021). These agricultural impacts may spread beyond the affected regions, as Mindanao Island is considered the Philippines' food basket, with a third of its area being agricultural land. The island supplies 40% of the country's food needs (Rappler 30/05/2017).

The landslide in the gold-mining barangay of Masara (Davao de Oro province, Davao region) has also affected the livelihoods of the affected people, which depend on abundant metallic and non-metallic mineral resources. Davao de Oro is known as the Gold District in Davao region, with mining ranking second only to agriculture as an income source (NEDA accessed 16/02/2024).

Education

As at 12 February, floods and landslides had damaged 43 schools, particularly in Davao de Oro province, Davao region (STC 12/02/2024. As at 16 February, classes had been suspended in more than 115 municipalities with more than 1,600 children between the ages of 4–19 hosted in either evacuation centres or by family and friends are likely to face interrupted education and disrupted routines, which can lead to learning gaps, academic setbacks, and potential school dropouts (NDRRMC 16/02/2024; DROMIC 09/02/2024). Separation from peers, friends, and familiar school environments can also contribute to feelings of isolation, loneliness, and difficulty adjusting to new surroundings, affecting social interactions, learning, and mental health.

As at 2020, the Philippine Statistics Authority reported a national literacy rate of 97%. There are disparities between affected regions, with lower literacy observed in BARMM (86.4%) compared to Caraga (96.4.%), Northern Mindanao (96%), and Soccskargen (94.7%) and (PSA/ICF 06/2023; PSA 07/04/2023).

IMPACT ON CRITICAL INFRASTRUCTURE

As at 16 February, there were more than 190 recorded incidences of flood- and rain-related infrastructure damage in Mindanao Island, including damage to government facilities, flood control structures, bridges, utility service facilities, roads, and private infrastructure. As at The estimated cost of damage is more than PHP 827 million (USD 14.7 million) (NDRRMC 16/02/2024).

DRIVERS OF THE CRISIS

Northeast monsoon and low-pressure area (LPA)

Initial reports of the LPA's effects were observed on 29 January, particularly in the municipalities of Compostela, Monkayo, and New Bataan in Davao de Oro region and the municipalities of Bunawan and Rosario in Agusan del Sur region of Mindanao Island. As at 1 February, floods resulting from continuous heavy rainfall because of the LPA were observed in North Cotabato province in SOCCSKARGEN and Maguindanao del Sur province in BARMM. The adverse weather conditions persisted until 2 February, with light to heavy rains contributing to further flooding and landslides before dissipating on 3 February (DROMIC 12/02/2024 and 11/02/2024).

The severe weather conditions have been attributed, in part, to climate change and the occurrence of El Niño, a natural weather phenomenon characterised by fluctuations in sea surface temperatures, causing LPAs, changes in rainfall patterns, and atmospheric circulation disruptions in the Pacific Ocean (STC 12/02/2024; ACAPS 25/07/2023).

Climate change and susceptibility to climate hazards

The Philippines has an INFORM climate change risk score of 5.3/10 ('high') and a 7.0/10 rating for hazards and exposure to floods (EC accessed 12/02/2024). Climate change has aggravated the weather patterns in the Philippines.

Climate change has also altered precipitation patterns, leading to more frequent and intense rainfall events. This has increased the risk of floods, landslides, and flash floods, causing significant damage and displacing communities (UNDRR/ADPC 31/07/2019). Rising temperatures and changing precipitation patterns have also contributed to an uptick in heatwaves and droughts. These extreme weather phenomena affect agricultural production and water availability (BBC 27/11/2023; WB/ADB 11/08/2021; CCC 01/01/2011).

Situated along the Western Pacific tropical storm region and the Pacific Ring of Fire, the Philippines is the world's most disaster-prone nation, according to the World Risk Report 2023 (USAID 16/10/2023; BEH/IFHV 20/09/2023). In recent months, the country has witnessed several disasters, including landslides, earthquakes, and floods, causing significant damage and displacement. The compounding effects of these disasters are likely to constrain the ability of affected individuals to fully recover. The region is still recovering from super typhoon Goring in August 2023, worsening the impact of the recent landslide (USAID 16/10/2023; DROMIC 27/08/2023).

COMPOUNDING/AGGRAVATING FACTORS

Recent earthquakes

On 10 February, northern Mindanao Island (southern Philippines) experienced two earthquakes. The first measured magnitude 5.9 according to national authorities and occurred at a depth of 10km, while the second, shallower tremor measured magnitude 5.4 at a depth of 12.8km (Phivolcs 10/02/2024 a and 10/02/2024 b). The US Geological Survey estimated significant ground movement, with 61,000 individuals experiencing very strong shaking and 130,000 individuals exposed to strong shaking. With no casualties reported, PHIVOLCS did not anticipate any significant damage but cautioned about potential aftershocks (Reuters 10/02/2024; ECHO 12/02/2024). The 5.8-magnitude earthquake's epicentre was approximately 9km south-southwest of Tungao city (Agusan del Norte province, Caraga region) (ECHO 12/02/2024).

Even without reported casualties, earthquakes of this magnitude can damage buildings, roads, bridges, and other infrastructure, disrupting essential services such as water, electricity, and communications. Aftershocks can also trigger landslides, particularly in areas with unstable slopes. This could further hinder access and pose additional risks to communities in need of aid.

Deforestation

Logging, the conversion of forested land to agricultural land, and mining have been identified as the primary drivers of deforestation in the Philippines. Deforestation disrupts natural water cycles, reduces soil stability, and increases surface runoff, creating favourable conditions for landslides. It also diminishes biodiversity, disrupts ecosystems, and worsens climate change impacts (WB 06/2013 and 09/11/2022).

Poverty

In 2023, the Philippines Statistics Authority estimated that at least 16.4% of the population in the Philippines lived below the poverty threshold. Regions within Mindanao had the highest poverty rates in the country, with BARMM recording the highest at 34.8%, followed by Northern Mindanao at 24.8%, SOCCSKSARGEN at 22.9%, Caraga at 20.8%, and Davao at 20.4% (PSA 22/12/2023). Because a majority of the population in these regions are farmers, they tend to work on hillsides, floodplains, or near waterways, exposing them to higher risks during natural hazards. Many communities also lack access to essential resources, such as healthcare, education, and disaster preparedness training, leaving them ill equipped to cope with disasters (SAMHSA 07/2017; ASEAN et al. 12/04/2011).

FUNDING AND RESPONSE CAPACITY

As at 16 February, the Department of Social Welfare and Development had responded with PHP 228 million (USD 4.1 million) in humanitarian aid, including food packs, sleeping kits, tents, and household items. As at 9 February, affiliates of the Directorate-General for European Civil Protection and Humanitarian Aid Operations had been deployed for assessment and initial relief distribution. The Mindanao Humanitarian Team had also received official requests for assistance (NDRRMC 16/02/2024; ECHO 09/02/2024).

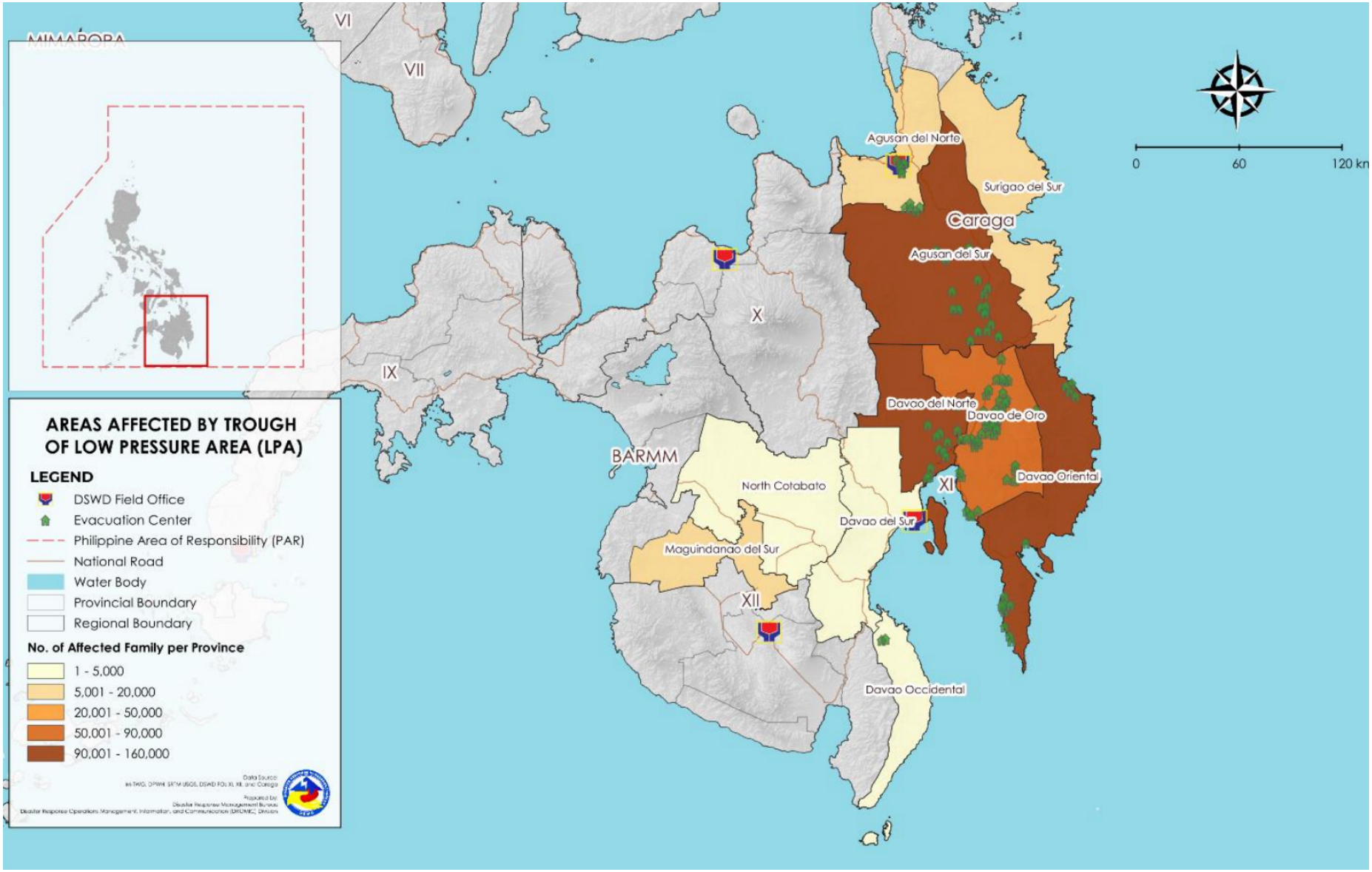
At the same time, Save the Children Philippines had dispatched humanitarian response teams to distribute children's hygiene kits and other essential supplies. They had conducted assessments to determine the needs in areas affected by the landslides (STC 12/02/2024).

The Office of Civil Defense had also started addressing persistent flooding in Davao and other flood-prone regions by reviewing and formulating new policies and plans pertaining to major river basins, environmental protection measures, flood-control infrastructure, and other engineering interventions. Efforts were also being directed towards the permanent relocation of vulnerable communities (OCD 01/02/2024; 05/02/2024).

As at 8 February, the Department of Social Welfare and Development – Davao Region Field Office had distributed Family Access Cards in Emergencies and Disasters to the affected families. These cards function as verification tools for families to access response and rehabilitation support interventions from the Government and other stakeholders (DSWD 08/02/2024).

As at 5 February, the National Disaster Risk Reduction and Management Council – Office of Civil Defense remained on blue alert status, indicating that half of its members were on standby for potential emergencies stemming from the current disaster. The Philippine Atmospheric, Geophysical and Astronomical Services Administration continued to monitor and issue regular advisories of early weather warnings and their development (AHA Centre 05/02/2024).

AREAS AFFECTED BY THE TROUGH OF AN LPA AS AT 15 FEBRUARY



Source: NDRRMC (16/02/2024)