

Myanmar



Myanmar is home to one of the highest concentrations of people vulnerable to the impacts of climate change, with 40 per cent of the population residing in low-lying and coastal regions. Following a military takeover in 2021, the establishment of the State Administration Council (SAC) was met with broad popular resistance, retriggering confrontations with ethnic armed organizations (EAOs) and local anti-junta militias. Conflict has exacerbated the country's vulnerability to climate change and environmental degradation.

- Since the 2021 military takeover, escalating violence and climate-related disasters have undermined Myanmar's crucial agricultural sector, impacting food security and livelihoods in conflict-affected communities.
- Internally displaced persons (IDPs) and urban migrants residing in informal settlements, including protest-engaged youth, are particularly vulnerable to climate hazards. This affects the flow of remittances to rural communities, which serve as a buffer during poor harvests.
- Myanmar's military and EAOs have used humanitarian aid and disaster response to bolster their legitimacy and gain the support of civilian populations, leading to unequal climate resilience and disaster recovery in areas affected by climate-related disasters.
- The military takeover accelerated extractive activities conducted by the military and private enterprises, leading to environmental degradation. The intersecting crises of conflict and climate change have created opportunities for elites to exploit vulnerable populations, the landless, ethnic minorities and women.

The United Nations and the Association of Southeast Asian Nations (ASEAN) have engaged in conflict mitigation in Myanmar since the military takeover, with limited success. The UN has emphasized that the military takeover triggered a humanitarian crisis, undermined human rights and heightened vulnerability to climate change. The UN and ASEAN leaders have highlighted the importance of peacebuilding initiatives and enhanced community resilience to climate change. Addressing the intersection of climate change, peace and security in Myanmar, without legitimizing the SAC, is critical for strengthening community resilience to climate change, preventing resource conflict and improving the cooperative management of shared resources across communities and other identity groups.

RECOMMENDED ACTIONS:

- ▶ The United Nations and the Association of Southeast Asian Nations (ASEAN) should support regional and local mechanisms for monitoring and responding to the effects of climate change, including by investing in Myanmar's meteorological monitoring capabilities through the UN's 'Early Warnings for All' initiative. Monitoring systems can support locally led disaster preparedness and risk-reduction efforts, improved climate adaptation strategies and climate-resilient agricultural practices.
- ▶ The new UN Special Envoy of the Secretary-General on Myanmar should support advancing a climate-sensitive analysis of conflict dynamics, including the impacts of climate change on displacement and migration and the different vulnerabilities of displaced people, ethnic minorities, and men, women and children. Within the UN, stronger reporting on climate-related security risks can improve responses to immediate humanitarian needs, as well as inform programming to reduce climate vulnerabilities and build peace in the longer term.
- ▶ The UN, ASEAN and governments involved in conflict mitigation should coordinate efforts to ease restrictions on access and remove bureaucratic impediments to the safe passage of humanitarian assistance after climate-related disasters. Engaging with local governance and grassroots networks can support conflict-sensitive recovery and build climate resilience, while reducing the risk that aid efforts are instrumentalized.
- ▶ UN General Assembly Resolution 76/180 highlights the disproportionate effect of conflict and human rights abuses on minority groups in Myanmar. Organizations working at the intersection of climate, peace and security should look for opportunities to advance minority rights through meaningful participation in, for example, environmental governance, sustainable livelihoods and ecosystem restoration programmes. Environmental conservation, equitable resource management and climate change adaptation can serve as entry points for strengthening resilience and livelihood security.

Figure 1. Key statistics

Climate and environment

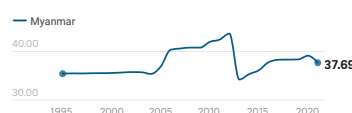
- Projected mean annual temperature increase of up to 2.07°C by 2060
- Natural hazards (e.g. cyclones, flooding and droughts) expose livelihoods and natural systems
- Increase in intense rainfall and incidences of flooding
- Agricultural zones are vulnerable to climate-induced natural disasters

Population

Total population	54.6 million (2023)
Internally displaced population	3.0 million (2024)
Population in acute food insecurity (IPC phase 3 and above)	10.6 million (2023)

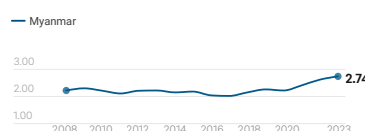
ND-GAIN Country Index

The ND-GAIN Country Index captures a country's vulnerability to climate change and other global challenges, and its readiness to improve resilience. It is a score out of 100; the higher the score, the less vulnerable and more ready the country.



Global Peace Index (GPI)

The GPI ranks 163 countries according to their level of peacefulness. It is a score out of 5; the lower the score, the more peaceful the country.



Human Development Index (HDI)

The HDI measures a country's achievement in key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living. It is a score out of 1.0; the higher the score, the higher the level of human development.



Sources: World Bank, Climate Knowledge Portal, 'Myanmar: Country summary', accessed 19 Feb. 2024; World Bank, Climate Knowledge Portal, 'Myanmar: Historical hazards', accessed 19 Feb. 2024; United Nations Population Fund, World Population Dashboard, 'Myanmar', accessed 18 Mar. 2024; UN High Commissioner for Refugees, Operational Data Portal, 'Myanmar', accessed 2 May 2024; and Integrated Food Security Phase Classification (IPC), 'The IPC Population Tracking Tool', accessed 23 Apr. 2024.

Climate exposure: Trends and projections

Myanmar has a tropical to subtropical monsoon climate, with significant regional variability and distinct hot, wet and cool seasons. The climate in Myanmar's diverse ecological zones is primarily influenced by their proximity to the coast and altitude. Climate change increases precipitation variability and intensifies extreme weather events (heat waves, droughts, cyclones and floods), with adverse societal impacts.¹

Temperature: Myanmar's mean annual temperature is slightly below 24°C, peaking at 32.75°C during the hot season (mid February to mid May). A temperature rise of 0.82°C has been observed over the last 50 years and temperatures are expected to increase as much as 2.07°C by 2060, which can lead to greater regional temperature variability and stress on climate-sensitive areas.² The 2024 El Niño has led to temperatures of 3–4°C above average, causing at least one death.³

Precipitation: Rainfall varies significantly across Myanmar, ranging from 2500–5500 mm in the south to 500–1000 mm in the central zone, which experiences dry spells and some droughts.⁴ From 1991 to 2020, mean annual precipitation was 2050 mm.⁵ Future precipitation projections are uncertain, however more intense 24-hour rainfall has set new records and amplified the risk of floods.⁶

Socioecological vulnerabilities

Over 1000 local armed resistance groups are active across Myanmar, in conflict with the military and SAC-backed militias; these include the People's Defence Force (PDF) and EAOs.⁷ Following the 2021 military takeover and breakdown of the Nationwide Ceasefire Agreement (NCA), conflict between signatory EAOs and Myanmar military forces has resumed in multiple states. Conflict with non-signatory groups, such as the Arakan Army, has also significantly escalated. At the end of 2023 a coalition of armed groups launched a major offence against the military on the northern border, capturing crucial border crossing towns.⁸

As a result of escalating conflict, Myanmar is experiencing a humanitarian crisis that is exacerbated by the effects of climate change. An estimated 18.6 million people require humanitarian assistance and nearly 25 per cent of the population is food insecure.⁹ Approximately 3 million people have been internally displaced, including 155 500 stateless persons in Rakhine State (predominantly the Rohingya community).¹⁰ Inadequate infrastructure, underdevelopment, violence and restrictive gender norms in remote communities can increase vulnerability to the effects of climate change.¹¹

Climate change and the ongoing conflict and humanitarian crises exacerbate poverty, particularly among rural religious and ethnic minorities.¹² Nearly 70 per cent of Myanmar's population reside in rural areas and almost half of the population is employed in agriculture.¹³ Intensive cultivation zones, such as the Irrawaddy Delta and the Dry Zone, generate the most agricultural outputs and are especially vulnerable to climate-related disasters.¹⁴ In 2008, for example, cyclone Nargis claimed 140 000 lives, affected 2.4 million people and inundated 63 per cent of the rice fields in the Irrawaddy Delta.¹⁵

Climate-related peace and security risks

Climate change is rarely the main driver of conflict, but it can undermine development gains, exacerbate the dynamics of ongoing violence and disrupt fragile peace processes. Violent conflict and political instability can also weaken community resilience to the effects of climate change. This fact sheet uses four interrelated pathways to navigate the relationship between climate change, peace and security: (a) livelihood deterioration, (b) migration and mobility, (c) military and armed actors, and (d) political and economic exploitation and mismanagement.¹⁶

Livelihood deterioration

The effects of climate change have significant repercussions for the food security and livelihoods of communities in conflict-affected regions of Myanmar. Livelihoods are affected by climate change, existing conflict and violence, and natural resource extraction led by the military. As a result of the 2021 military takeover, environmental conservation efforts have been halted and environmental degradation has worsened, jeopardizing the availability of food and the sustainability of agricultural livelihoods.¹⁷

In Myanmar's Dry Zone, including Mandalay, Magway and lower Sagaing, a rising mean temperature, extended dry spells and insufficient water have severely impacted the agricultural sector and undermined the livelihoods of 11 million people who depend on rainfed agriculture.¹⁸ The resulting financial hardship means that many households are threatened by debt and landlessness, at a time when agricultural inputs are becoming more expensive and financial loan services are in decline due to the military takeover.¹⁹ The impacts on rural economies are severe, increasing rates of poverty and malnutrition and influencing community support for local armed resistance groups.²⁰ This affects the broader conflict dynamics, particularly in Sagaing and Magway, where Myanmar's military has carried out scorched earth campaigns against rural communities.

The military takeover notably worsened Myanmar's food crisis, which is particularly acute in impoverished, conflict-affected areas such as Kayah, Chin, Rakhine, Taninthayi, Sagaing and Magway.²¹ High-level mediation efforts have focused on the immediate need for humanitarian access, while agricultural activities have led to local agreements between conflict parties. In one case, religious leaders brokered a temporary ceasefire between the military and the resistance forces in Karenni to allow local farmers to harvest crops.²² In the context of violence and climate hazards, the ceasefire offered a crucial window for local communities to secure food and sustain their livelihoods. However, this example also highlights how violent conflict and fragmented governance undermine the potential to develop a more climate-resilient agricultural sector.

Improved meteorological monitoring capabilities are crucial for building disaster preparedness and risk-reduction efforts in Myanmar in the short to medium term. They can also support improved climate adaptation strategies and climate-resilient agricultural practices in the medium to longer term. Organizations with relevant mandates, including the UN and ASEAN, should support local and regional mechanisms for monitoring and responding to the effects of climate change.

¹ World Bank, World Bank Open Data, 'Myanmar', accessed 6 Feb. 2024.

² World Bank, Climate Change Knowledge Portal, 'Myanmar', accessed 19 Feb. 2024.

³ Myint, M., 'Myanmar's extreme heat threatens lives', *The Irrawaddy*, 9 Apr. 2024.

⁴ World Bank (note 1); Mon, E., 'Thirst amidst turmoil: Water crisis in Myanmar's war zone', *Mekong Eye*, 12 Feb. 2024; and International Water Management Institute (IWMI), *Improving Water Management in Myanmar's Dry Zone for Food Security, Livelihoods and Health* (IWMI: Colombo, 2015).

⁵ World Bank (note 2).

⁶ Myanmar Information Management Unit (MIMU), 'Climate, environmental degradation and disaster risk in Myanmar', MIMU Analytical Brief, May 2022.

⁷ Brenner, D., 'Authority in rebel groups: Identity, recognition and the struggle over legitimacy', *Contemporary Politics*, vol. 23, no. 4 (Oct. 2017); and Armed Conflict Location & Event Data Project (ACLED), 'Myanmar: Resistance to the military junta gains momentum', *Conflict Watchlist 2024*, 17 Jan. 2024.

⁸ Sun, Y., 'Operation 1027: Changing the tides of the Myanmar civil war?', *Brookings*, 16 Jan. 2024.

⁹ United Nations Office for the Coordination of Humanitarian Affairs (OCHA), 'Overview of the humanitarian response in Myanmar', accessed 18 Feb. 2024; and International Food Policy Research Institute (IFPRI), 'The state of food security and nutrition in Myanmar: Findings from the Myanmar Household Welfare Survey 2021–2022', Strategy Support Program Research Note no. 88, Dec. 2022.

¹⁰ United Nations High Commissioner for Refugees (UNHCR), Operational Data Portal, 'Myanmar', accessed 2 May 2024.

¹¹ Htet Wai, K. and van Waas, A., *Gendered Aspects of Land Rights in Myanmar II: Evidence from Paralegal Case Work* (Namati: June 2016), and World Bank (note 1).

¹² MIMU (note 6).

¹³ World Bank (note 1).

¹⁴ Tun Oo, A., Boughton, D. and Aung, N., 'Climate change adaptation and the agriculture–food system in Myanmar', *Climate*, vol. 11, no. 6 (June 2023).

¹⁵ Warr, P. and Aung, L. L., 'Poverty and inequality impact of a natural disaster: Myanmar's 2008 cyclone Nargis', *World Development*, vol. 122 (Oct. 2019); MIMU (note 6); Mandile, L. et al., 'Assessing ecosystem service provision under climate change to support conservation and development planning in Myanmar', *PLOS ONE*, vol. 12, no. 9 (Sep. 2017); and Schoonover, R. and Smith, D., 'Five urgent questions on ecological security', *SIPRI Insights on Peace and Security* no. 2023/05, Apr. 2023.

¹⁶ Mobjörk, M., Krampe, F. and Tarif, K., 'Pathways of climate insecurity: Guidance for policymakers', *SIPRI Policy Brief*, Nov. 2020.

¹⁷ Root, R., 'Myanmar's forests fall victim to conflict', *Nikkei Asia*, 14 Sep. 2023.

¹⁸ MIMU (note 6); Mon (note 4); and IWMI (note 4).

¹⁹ Belton, B. and Filipksi, M., 'Rural transformation in central Myanmar: By how much, and for whom?', *Journal of Rural Studies*, vol. 67 (Apr. 2019); and International Food Policy Research Institute (IFPRI), 'Myanmar Agricultural Performance Survey (MAPS) dry season 2023: Agricultural input markets, credit and extension services', Strategy Support Program Research Note no. 104, Dec. 2023.

²⁰ Food and Agriculture Organization of the UN (FAO), 'Myanmar: Response overview', June 2022; and International Crisis Group, 'Taking aim at the Tatmadaw: The new armed resistance to Myanmar's coup', *Crisis Group Asia Briefing* no. 168, 28 June 2021.

²¹ OCHA, *Myanmar Humanitarian Needs and Response Plan 2024* (OCHA: Dec. 2023).

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Migration and mobility

Violent conflict is the primary driver of displacement in Myanmar, but climate change and extreme weather events further shape migration and mobility. In conflict-affected areas, restricted mobility can exacerbate people's vulnerability to climate change when they are unable to leave severely disaster-affected regions. Women and girls are at heightened risk of sexual violence in areas affected by conflict, which also affects their ability to move safely.²³ In February 2024 a compulsory conscription law was enforced by the military, which may compel individuals to remain in or return to climate- and conflict-affected areas and further exacerbate their vulnerability.²⁴

People displaced by conflict are particularly vulnerable to climate-related disasters. In May 2023 cyclone Mocha made landfall in western Myanmar, affecting around 1.2 million people living in temporary shelters. The cyclone's strong winds and heavy rains caused the widespread destruction of homes and other critical infrastructure in more than 200 IDP camps and hosting sites.²⁵

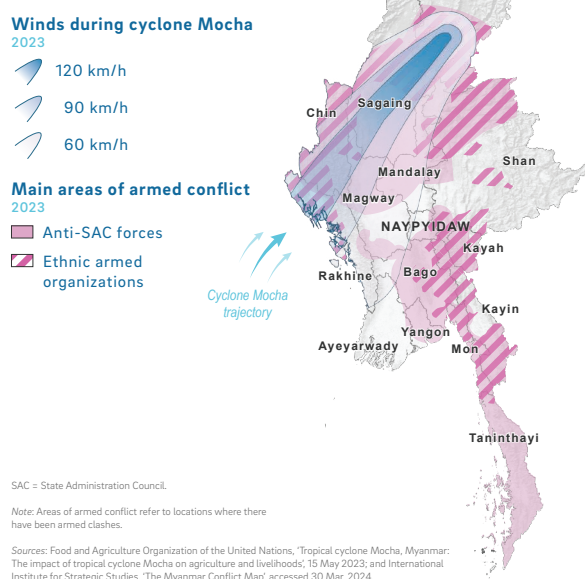
The humanitarian crisis that followed the 2021 military takeover and the impacts of climate-related disasters all contribute to cross-border and rural-to-urban migration, as people seek alternative employment and income sources. Young people, in particular, seek opportunities to emigrate overseas, and the remittances from young migrant workers form a safety net for rural households during bad harvests.²⁶ Urban migrants, particularly those in informal settlements, are especially vulnerable to flooding during Myanmar's prolonged rainy season.²⁷ Following a number of non-violent protests in urban and peri-urban areas against the military takeover, the military imposed martial law and curtailed the freedom of movement in those areas, increasing people's vulnerability to disasters.²⁸

Migration and displacement patterns in Myanmar are changing due to violent conflict, political instability (including the recent enforcement of conscription by the SAC) and climate-related disasters. In April 2024 the UN Secretary-General appointed a new Special Envoy on Myanmar, which offers an opportunity to advance a climate-sensitive analysis of conflict dynamics in Myanmar, including the impacts of climate change on displacement and migration and the different vulnerabilities of displaced people, ethnic minorities, and men, women and children. Within the UN, stronger reporting on climate-related security risks can improve responses to immediate humanitarian needs, as well as guide programming to support voluntary returns in ways that do not exacerbate climate change-related vulnerabilities.

Military and armed actors

Both the military and armed resistance groups in Myanmar have leveraged humanitarian disaster response, environmental conservation and climate hazards as opportunities to reinforce political legitimacy. Many EAOs operate in Myanmar's border regions with some stable territorial control and non-state governance structures in place, and some have responded to climate-related disasters and provided relief to their (ethnic) constituencies. For example, in the aftermath of cyclone Mocha in May 2023, the Arakan Army (which has widespread support from the Arakan, or Rakhine, ethnic community) issued warnings and evacuated civilian populations in the areas of Rakhine State under its

Figure 2. Climate and conflict in Myanmar



control.²⁹ However, most Rohingya communities were neglected by both the military and the Arakan Army, demonstrating how marginalization exacerbates the climate change vulnerability of minority groups.

The SAC has also used disasters to gain tactical advantages by restricting humanitarian access and thereby attempting to weaken civilian support for resistance forces. Following cyclone Mocha, it leveraged aid delivery to expand its control of disaster-affected areas and undermine the authority of the Arakan Army.³⁰ SAC authorities denied travel authorization to the UN and other humanitarian agencies, delaying the delivery of humanitarian assistance for over a month, during which time the monsoon season floods exacerbated the cyclone's damage.³¹

Many in the Rakhine ethnic community perceived the SAC's response to cyclone Mocha as inadequate, and grievances towards the authorities deepened.³² In contrast, the Arakan Army was seen to have effectively delivered relief to affected groups in Rakhine State, which highlighted its local governance capacities.³³ Conflict between the Arakan Army and the SAC erupted again at the end of 2023. While climate-related disasters may not be a direct cause of conflict escalation, they can contribute to exacerbating the grievances of marginalized groups and influence conflict dynamics indirectly. As climate change is expected to lead to more frequent and extreme weather events in Myanmar, and as violent conflict continues unabated, EAOs may play an increasing role in humanitarian relief operations and long-term community resilience. For instance, the Karen National Union is already involved in environmental conservation, cooperating with grassroots actors in conservation initiatives and supporting the formulation of local land and forestry policies.³⁴

To mitigate the impact of conflict on humanitarian efforts, the UN, ASEAN and other relevant actors must coordinate efforts for aid delivery and involve local governance in building resilience to climate-related disasters. These steps are essential in ensuring aid reaches those in need without being co-opted for political purposes, paving the way for sustainable recovery and resilience in Myanmar.

²³ OCHA (note 21); and Borrás, Franco and Nam (note 22).

²⁴ Myo Hein, Y., 'Myanmar's fateful conscription law', United States Institute of Peace (USIP) Analysis, 26 Feb. 2024.

²⁵ ReliefWeb, 'Tropical cyclone Mocha—May 2023', accessed 9 Feb. 2024.

²⁶ Tun, A., 'Migration in post-coup Myanmar: A critical determinant in shaping the country's future?', ISEAS Perspective no. 37, 13 Apr. 2022; and Kmoch, L. et al., 'Cyclone Komen's aftermath: Local knowledge shows how poverty and inequalities fuel climate risk in western Myanmar', *Regional Environmental Change*, vol. 21, no. 4 (Oct. 2021).

²⁷ Forbes, E., 'Migration, informal settlement, and government response: The cases of four townships in Yangon, Myanmar', *Moussons*, no. 33 (May 2019).

²⁸ Lin, K., 'Myanmar workers and unions on the front lines in fight against coup', Labor Notes, 26 Feb. 2021; and Prasse-Freeman, E., 'Amid Myanmar violence, there is one township in Yangon that "scares the military"', *South China Morning Post*, 4 Apr. 2021.

²⁹ Hlaing, K. H., 'Responses to humanitarian needs in western Myanmar after cyclone Mocha', ISEAS Perspective no. 72, 15 Sep. 2023; and Transnational Institute, 'Assessing what is happening in Arakan: One month after cyclone Mocha', 29 June 2021.

³⁰ Myanmar International Television, 'Order no. 34/2023: Assignment of senior military officers for rehabilitation works', 18 May 2023.

³¹ Farge, E., 'Aid restrictions by Myanmar junta may be war crimes: UN', Reuters, 30 June 2023; and The Irrawaddy, 'At least 400 flood-hit villages in Myanmar's Rakhine State need urgent aid', 15 Aug. 2023.

³² Hlaing (note 29).

³³ Hlaing (note 29).

³⁴ Hyolmo, S. L., 'Not waiting for the government, Myanmar's Karen people register their own lands', Mongabay, 26 Feb. 2024.

Political and economic exploitation and mis-management

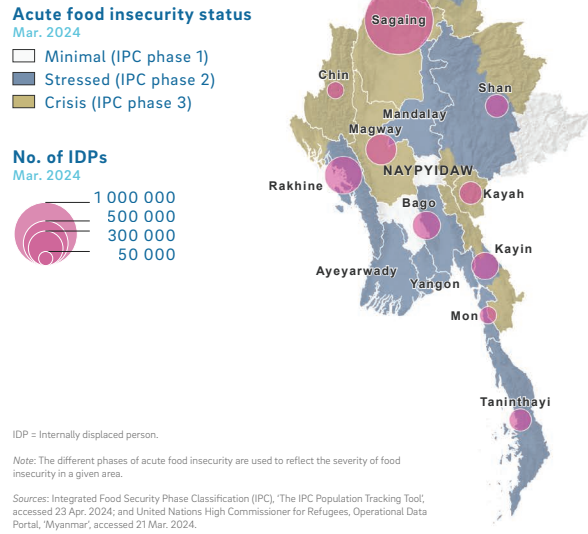
The 2021 military takeover in Myanmar intensified environmental degradation and socio-economic instability, partly as a result of exploitation and weak governance. Ongoing conflict and weak governance have led to the proliferation of environmentally damaging business operations that exacerbate environmental degradation and exposure to the effects of climate change.

Foreign businesses and associates of Myanmar's military leadership have been engaged in illegal logging, land grabs and mining activities, which have damaged the environment and created socio-economic tensions—for example, when land grabs have dispossessed small-scale farmers.³⁵ The resulting environmental degradation and labour displacement have historically led to local protests.³⁶ Therefore, the impacts of escalating conflict and repression in Myanmar, combined with the increasingly severe effects of climate change, highlight the urgent need for environmental conservation and social reforms to progress in tandem.³⁷

Loss of livelihoods and harvests are a risk for poor, rural communities that depend on agriculture, forestry and biodiversity, as their coping mechanisms can be exploited by individuals with relatively more wealth and power.³⁸ In rural Myanmar, for example, people cope with lean seasons by taking loans to mitigate financial losses.³⁹ It is common practice to advance salaries and rely on brokers, however many people are at risk of exploitation as a result; women are particularly vulnerable to being trapped in bonded labour because of unpaid debts.⁴⁰ While attention is more often paid to the immediate effects of climate change—on sudden, extreme weather events—it also impacts wider socio-economic vulnerabilities and creates new or deepens existing patterns of exploitation.⁴¹

Climate action in fragile societies risks exacerbating the existing grievances of marginalized groups towards the central authorities if actions are not implemented in a conflict-sensitive way.⁴² In Myanmar, shifting to renewable energy, including hydro and solar power, can lead

Figure 3. IDPs and food insecurity in Myanmar



to land grabs and forced displacement, which fuels social unrest.⁴³ Large dam development, such as the Myitsone dam, has historically been used by the state to exert control over ethnic minority regions.⁴⁴ This underscores the challenge of transitioning towards renewable energy without doing harm to the affected communities.

UN General Assembly Resolution 76/180 underscores the acute impact of conflict and human rights abuses on Myanmar's minorities. A focused effort from organizations in the country working at the intersection of climate, peace and security should prioritize meaningful, inclusive participation in, for example, environmental governance, sustainable livelihoods and ecosystem restoration programmes. Such efforts in conservation and resource management are crucial for enhancing climate resilience and livelihood security in Myanmar.

³⁵ Borrás, Franco and Nam (note 22); and Kyed, H. M. and Chambers, J., 'Climate change action in conflict-affected contexts: Insights from Myanmar after the military coup', DIIS Policy Brief, Mar. 2023.

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³⁸ Root (note 17).

³⁹ International Organization for Migration (IOM), *Debt and the Migration Experience: Insights from South-East Asia*, (IOM Thailand: Bangkok, 2019).

⁴⁰ Deshingkar, P., Litchfield, J. and Ting, W.-C., *Capitalising Human Mobility for Poverty Alleviation and Inclusive Development in Myanmar (CHIME)* (IOM: Yangon, 2017).

⁴¹ Boutry, M. et al., *Land Tenure in Rural Lowland Myanmar: From Historical Perspectives to Contemporary Realities in the Dry Zone and the Delta, Of Lives and Land Myanmar Research Series*, Research Report (GRET: Yangon, 2017).

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⁴⁴ Ivars, B. and Venot, J.-P., 'Grounded and global: Water infrastructure development and policymaking in the Ayeyarwady Delta, Myanmar', *Water Alternatives*, vol. 12, no. 3 (2019).

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The Climate, Peace and Security Fact Sheets aim to generate reliable, relevant, timely and actionable information and analysis on climate-related peace and security risks in selected countries and regions on the United Nations Security Council agenda.

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