POLICY PAPER

Escalating Threats

How Climate Change Increasingly Affects Human Security

1 Introduction

In today's tense geopolitical climate – where the world risks slipping into an increasingly complex and potentially dangerous new world order, with multiple overlapping crises intensifying, including the climate crisis – the global community is called upon to uphold multilateralism and strengthen international co-operation to avert it. Yet, the political agenda in many countries has been shifting towards the, sometimes extreme, right and nationalism. The new US administration is a cautionary example: since the first day it has strategically acted on its own 'truths' and 'facts', and climate change denial.

Against this backdrop, security debates have taken centre stage. However, defence measures alone, with a focus on armed conflict, clearly cannot match the current geopolitical crisis. The complex nature of security challenges requires a set of equally sophisticated responses based on co-operation and multilateralism.

Climate crisis and its impacts are a global threat to national and human security. The most vulnerable countries are disproportionally affected, yet research[1] shows that no country has made sufficient provisions to address the threat of climate impacts with sufficient Climate Risk Management. Countries will need to improve climate risk management to guarantee human security, secure livelihoods, and minimise economic costs.

In this context, we want to show how aggravated climate change impacts affect human security. We have selected examples of extreme weather events that occurred in 2024 and a number of slow onset processes that illustrate this point, and highlight why human security urgently needs priority in national and international policy agendas.

2 The climate and security nexus

The first scientific studies on the climate and security nexus date back to the early 1990s, and public debate has gained momentum ever since. In recent years, the security dimension of climate change has increasingly been recognised by the international community. This has been evident at least since the first debate on Climate and Security in the UN Security Council (UNSC) in 2007. And more recently in UNSC formats such as the 'Group of Friends on Climate Security' as well as with the 'COP28 Declaration on Climate, Relief, Recovery and Peace'[2] in the context of the UN Framework Convention on Climate Change (UNFCCC).

[1] See Adil, L., et al., Climate Risk Index 2025 (accessed: 24 February 2025).
[2] UN, 2023, COP28 Declaration on Climate, Relief, Recovery and Peace (accessed: 11 Mach 2025).

Climate change has also arrived on national security agendas, e.g. in Germany, the EU, Brazil, and the US, and in declarations from the Pacific Islands Forum or by countries such as Vanuatu.[3] Regional political organisation such as the Organization for Security and Co-operation in Europe (OSCE)[4] and global security actors such as NATO[5] have understood that climate and security are intertwined and have addressed this nexus in their work and/or adapted their strategies to address it.

What makes climate change such a complex security challenge is its multidimensional and interconnected nature. Climate change is often described as a 'threat multiplier', as it affects individuals, communities, nation states, and regions across borders and sectors. This term reflects that climate change is not the direct source of insecurity, but rather that it interacts with and exacerbates existing social, economic, political, and environmental stressors. It has the potential to escalate conditions that foster insecurity or violent conflict.[6, 7] Nevertheless, climate change does not cause violent conflict in a direct manner.[8]

Climate change has serious implications for a variety of security dimensions. Bruno Kahl, president of the German Federal Intelligence Service (BND), has pointed out earlier this year that climate change impacts are increasing pressure on states, potentially with geopolitical implications.[9] This regards military and national security, and security of supply (including energy supply). More and more national and international security institutions are on track to integrate climate-related risks with their strategic planning, including recognising the specific potential for instability and conflict in climate-vulnerable regions. However, responses must not be driven by securitised, military-first approaches that risk marginalising human rights and development priorities. Vice-versa, the human security, human rights, and development goals need to be at the core of national and international decision-making. Thus, climate action should prioritise justice and resilience and address root causes of vulnerability rather than reinforce hard security paradigms. This includes supporting conflict-sensitive climate adaptation, strengthening social cohesion, and ensuring that climate policy remains grounded in equality and peace building rather than militarisation.

When we talk about climate change's human security implications in this paper, we draw on a holistic concept based on an expanded security concept that prioritises the well-being and freedom of individuals and communities over traditional state-centred security approaches. As early as in 1994, the UN Development Program (UNDP) identified the connection between climate change impacts and human security in their Human Development Report. The report found that human security encompasses various dimensions: there are personal, political, economic, health, food, environmental, and community security dimensions.[10] Ban Ki-moon, at the time UN Secretary-General described human security as 'the freedom from fear, freedom from want, and the freedom to live in dignity'. Other definitions also emphasise the right of future

[3] Parliament of the Republic of Vanuatu declared a Climate Emergency, reaffirming that climate change is the single greatest threat to the livelihoods, security, and wellbeing of the peoples of Vanuatu, see Vanuatu's revised and enhanced NDC (accessed: 10 March 2025).

[4] See OSCE, 2025, Strengthening Responses to Security Risks from Climate Change in South-Eastern Europe, Eastern Europe, the South Caucasus and Central Asia (accessed: 10 March 2025).

[5] See NATO, 2022, Strategic Concept (accessed: 10 March 2025).

[6] See Center for Climate and Security, 2023, Briefer No. 38 (accessed: 22 January 2025).

[7] See McDonald M., 2013, Discourses of Climate Security (accessed: 27 January 2025).

[8] We would like to clarify that climate change never directly raises the risk for violent conflict; it is not a direct cause of conflict. **Climate change should therefore never be conceptualised as a military issue, but rather encourage humanitarian assistance and co-operation**. To suggest direct causation could support political views that do not favour climate change mitigation or adaptation, and rather encourage military interventions further down the line. This argument could also frame the most vulnerable to climate change as threats to national security, when in reality they need support.

[9] See Auswärtiges Amt, 2025, Klimaschutz als Sicherheitspolitik: Erste nationale interdisziplinäre Klima-Risikoeinschätzung NiKE veröffentlicht (accessed: 10 March 2025).

[10] See Servicestelle Friedensbildung Baden-Württemberg, 2024, Menschliche Sicherheit (accessed: 22 January 2025).

generations to inherit a healthy environment and the right to protection from hazardous events.[11] The human security approach also embraces human rights.[12]

Climate change touches every aspect of life on earth and thus impacts all dimensions of human security[13] (see Table 1). The IPCC notes that climate change undermines livelihoods, compromises culture and identity, increases forced migration, and challenges the capacity of states to ensure human security.[14] Extreme weather events, such as storms, droughts, and floods, together with slow-onset processes, including sea level rise, ocean acidification, and temperature increases, threaten natural ecosystems, human livelihoods, and overall societal functioning. These events can disrupt food systems, impair health outcomes, and hinder economic development, with potentially far-reaching consequences on human security.[15]

We explore how climate change impacts and the losses and damages that ensue intersect with and consequently affect human security.

3 The impact of climate change on different dimensions of human security

Literature[16] speaks of seven interconnected dimensions of human security (see Table 1). Of those, some can be considered economic, some non-economic, dimensions, and some account for both. The same categories are applied in the discourse around loss and damage. Economic losses and damages comprise income, such as business operations, or loss of property and physical assets, such as infrastructure. Non-economic losses and damages (NELDs) can be individual, such as life or health; societal such as territory or cultural heritage; and environmental, such as ecosystem services. These categories overlap with the dimensions of human security according to the 1994 UNDP Human Development Report: economic security, food security, health security, environmental security, personal, community and political security.[17] Table 1 below summarises these security dimensions and illustrates how climate change directly affects each one.

[11] Scheffran, J., et al., 2012, Climate Change, Human Security and Violent Conflict (accessed: 22 January 2025).
[12] Daase, C., 2010, Wandel der Sicherheitskultur (accessed: 11 March 2025).
[13] See Martin, M., 2025, UN Approach to Human Security (accessed: 10 March 2025).
[14] Adger, W. N., et al., 2014, Climate Change 2014: Impacts, Adaptation and Vulnerability (accessed: 24 February 2025).
[15] See Schultheiß, L., 2023, Tipping Points and Their Impact on Human Security (accessed: 24 February 2025).
[16] See UN Trust Fund for Human Security, 2025, Human Security Milestones and History (accessed: 24 February 2025).
[17] United Nations Development Programme, 1994, Human Development Report 1994 (accessed: 10 March 2025).

Table 1: Examples of climate change threats to human security, differentiated by categories and dimensions of human security and Losses and Damages. Source: Author's table based on the human security dimensions of the Human Development Report.[18]

Human Security		Examples of Respective Climate Change Threats	Losses & Damages
Category	**Dimension**		
Personal	Food	**Climate-induced undernutrition/malnutrition, hunger, and famine** (due to agriculture losses and damages, e.g. crop failure / drought from heat waves, or due to slow onset processes, e.g. desertification).	mixed
	Health	Threats to **health / health systems** (due to heat waves, spread of diseases, etc.); to **healthcare systems** that are unprepared for climate change; mental health issues (due to post-disasters, forced migration, etc.).	NELDs
	Physical	Threats to **life and bodily integrity** (due to impacts of extreme weather events, slow-onset processes, or violence resulting from prevalent conflicts that climate exacerbates, e.g. on scarce resources).	NELDs
	Cultural	**Loss of cultural heritage**; **losing sense of belonging** (due to climate-change induced displacement).	NELDs
State	Societal	Societal conflicts (e.g. inter-ethnic, religious conflicts, due to exacerbated resource scarcity or climate-induced human mobility).	mixed
	Political	**National or international instability**; **human rights impacts**; **increased susceptibility to extremist/radical groups**.	mixed
	Territorial	**Uninhabitable/submerged territories or place of living** (due to heat, sea level rise, etc.); **loss of territory, economic zones** (including marine resources); **loss of heritage or belonging**; **loss of statehood** (closely related to political/cultural security).	mixed
Economic	Economic	**Threats to livelihoods and infrastructure**; **reconstruction costs after extreme weather events**; **adaptation costs** (due to slow onset processes); **reduced worker productivity** (due to rising temperatures, loss of livestock, etc.).	economic
	Energy	Fossil fuel based, national grid depending, and import depending energy systems as a problem (outages).	economic
Environmental		**Environmental insecurity** (due to sudden extreme weather events and gradual climate impacts, e.g. droughts, sea level rise, leading to water scarcity, soil degradation, flooding); threats to **basic ecosystem services** and **biodiversity** affecting natural resources for human livelihoods. Connection of the climate and biodiversity crises and the climate crisis and desertification, which threaten ecological security.	NELDs

Note: Conflicts, including through political and social tensions, can intensify risks or impacts on every human security dimension if exacerbated by climate change. This includes food security (scarce resources), physical security (violence and danger to bodily integrity), or societal security (social tension between social groups).

[18] United Nations Development Programme, 1994, Human Development Report 1994 (accessed: 10 March 2025).

3.1 Extreme weather events

Extreme weather events, such as heat waves, droughts, storms, and floods, are defined as 'rare at a particular place and time of year'; the specific characteristics depend on the place where it occurs in absolute values,[19] meaning the threshold when a specific wind speed can be counted as "extreme" is bound to place of occurrence. The Global Risk Report 2025, published annually in the context of the Davos Economic Forum, categorises extreme weather events as the second greatest risk and the top threat over the next decade.[20] Climate-related human security risks are hence undoubtedly perceived as serious for global economy. Between 1993 and 2022, 9,400 of these events claimed over 765,000 lives worldwide and resulted in direct economic losses of USD 4.2 trillion.[21] Beyond direct impacts of extreme events, there are lagged effects that manifest after an event occurred and are not counted as directly related, such as the death of a person from injuries in the aftermath of direct impacts. Economic losses are another form indirect impact, e.g. losses occurring during recovery from an event.[22]

With climate change accelerating and extreme weather events on a streak breaking records nearly every year, the future is ever more concerning. The past ten years were the ten warmest on record. 2024 sadly marked a new high as both the hottest year on record and the first year with an average temperature increase of 1.5°C above pre-industrial levels.[23] This trend continues in 2025 with the warmest January to date. Factoring in the cooling effects[24] of an emerging La Niña, this is even more alarming.

The IPCC Sixth Assessment Report found that:

> across sectors and regions the most vulnerable people and systems are observed to be disproportionately affected. The rise in weather and climate extremes has led to some irreversible impacts as natural and human systems are pushed beyond their ability to adapt.[25]

In the following, we examine how the three predominant extreme weather events, i.e. droughts, storms, and floods, threaten human security.

3.1.1 Drought

Drought is already one of the most predominant types of extreme weather events and will continue to increase in frequency and intensity through climate change.[26] Droughts have severe impacts on people and ecosystems, affecting human security in dimensions such as water and food security, personal, social, political, or economic security. Between 1993 and 2022, droughts led to about 25,000 fatalities; 1.9 billion were injured, lost their homes, or were otherwise affected. Economic losses due to drought summed up to over

[19] IPCC 2022, Climate Change 2022: Impacts, Adaptation and Vulnerability – Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (accessed 10 March 2025).
[20] See World Economic Forum, 2025, The Global Risks Report 2025 (accessed: 24 February 2025).
[21] See Adil, L., et al., Climate Risk Index 2025 (accessed: 24 February 2025).
[22] Sauer, I. J., et al., 2023, Not Enough Time to Recover? Understanding the Poverty Effects of Recurrent Floods in the Philippines (accessed 10 March 2025).
[23] Copernicus, 2025, January 2025 was the Warmest on Record Globally, despite an Emerging La Niña (accessed 10 March 2025).
[24] See WMO, 2025, January 2025 Sees Record Global Temperatures despite La Niña (accessed: 10 March 2025).
[25] See IPCC, 2022, Climate Change 2022: Impacts, Adaptation and Vulnerability – Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (accessed 10 March 2025).
[26] IPCC, 2022, Climate Change 2022: Impacts, Adaptation and Vulnerability – Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (accessed 10 March 2025).

USD 272 billion.[27] In 2023, globally 26.5 million people were internally displaced as a consequence of disasters, including extreme weather events, compared to 20.5 million due to conflicts. In 2023, droughts alone were responsible for 491,000 people internally displaced, according to IDMC.[28]

Droughts induce lower water quality and availability, harm to aquatic ecosystems, crop failure, loss of livestock, with knock-on effects on food security.[29] They can also affect societal and political security in terms of exacerbating conflicts (see below) or triggering displacement, and in terms of economic and ecologic security through the loss of livestock, among others. Droughts hence take a particular toll on the agricultural sector.[30]

According to von Uexkull et al. (2016), droughts can accelerate the risk for conflicts particularly in states with ethnic tension where exclusion, discrimination, and polarisation is already prevalent. This was observed in several cases, including in Asian and African countries for heavily agriculture-dependent and marginalised groups.[31]

Example: The 2024 drought in southern Africa

In February 2024, the southern African experienced the worst drought ever recorded, with Zimbabwe, Zambia, Malawi, Angola, Lesotho, Mozambique, and Botswana receiving less than 20% of their typical rainfall.

This unprecedented drought undermined human security. Water shortages and a fragile water supply infrastructure sparked outbreaks of cholera and other waterborne diseases,[32] further straining an already vulnerable public health system. The crisis also wreaked havoc on the agricultural sector, where the drastic reduction in harvests and significant livestock losses pushed roughly 23 million people into high levels of food insecurity, including over 2 million malnourished children.

Beyond the physical impacts, the drought led to the displacement of thousands, exacerbated mental health challenges, and increased instances of gender-based violence.[333] Ecological security was also affected: vegetation severely deteriorated, to the detriment of ecosystem services.[344] In response, several governments declared states of disaster and mobilised resources to combat the crisis, although persistent funding shortfalls hampered the efforts.[355]

[27] See Adil, L., et al., Climate Risk Index 2025 (accessed: 24 February 2025).
[28] See Internal Displacement Monitoring Centre, 2024, Global Report on Internal Displacement (accessed: 10 March 2025).
[29] World Weather Attribution, 2023, Human-induced Climate Change Increased Drought Severity in Horn of Africa – World Weather Attribution (accessed 10 March 2025).
[30] Ibid.
[31] Von Uexkull, N., et al., 2016, Civil Conflict Sensitivity to Growing-Season Drought (accessed 10 March 2025).
[32] World Weather Attribution, 2024, El Niño Key Driver of Drought in Highly Vulnerable Southern African Countries (accessed: 12 March 2025).
[33] WHO, 2024, Drought in Southern Africa Health Analysis (accessed: 12 March 2025).
[34] UNOCHA, 2024, Southern Africa El Niño Regional Humanitarian Overview September 2024 (accessed: 12 March 2025).
[35] Southern African Development Community, 2024, Southern Africa Drought: SADC and Humanitarian Partners Call for Scaled-up Assistance and Collective Disaster Mitigation Strategies (accessed: 12 March 2025).

3.1.2 Storms such as tropical cyclones

Tropical cyclones are among the most disturbing, and costly, extreme weather events. Climate change is only going to worsen their destructive power.[36, 37] Cyclones threaten multiple human security dimensions and categories, including water and food, economic, and personal security.

Between 1993 and 2022, storms were responsible for about 264,000 fatalities (35% of all extreme weather related fatalities in that time span), and about 967 million people were injured, lost their homes, or were otherwise affected,[38] with serious impacts on personal security. Storm also threaten food and water security when storm surges and coastal flooding inundate agricultural lands and freshwater with saltwater.[39] Longer-term effects of exacerbated conflicts and displacement / forced migration put additional stress on political and social security. In 2023 alone, storms internally displaced 9.5 million people.[40]

Additionally, storms profoundly undermine economic security. Between 1993 and 2022, storms were by far the costliest extreme weather events, totalling USD 2.33 trillion in economic losses globally.[41] There is growing scientific evidence that tropical cyclones can reduce economic growth of affected countries for more than a decade[42] through lagged effects, that can have dire consequences especially for low income countries. For example in Dominica, Hurricane Maria in 2017 caused damages of about USD 1.8 billion and led to losses that amounted to about 270% of the island's GDP, with severe direct and long term consequences. In 1998, Hurricane Mitch led to a destruction of an estimated 70% of Honduras crops, and caused over 14,000 fatalities and economic losses of USD 7 billion, a major setback the country's development.[43]

Example: The 2024 typhoon season in the Philippines

In November 2024, the Philippines were hit by an unprecedented series of six typhoons in just 30 days. The heavy floods, landslides, and storm surges that followed severely affected the human security of over 15 million people. About 600,000 were displaced and hundreds killed, leaving communities reeling from the immediate impact.[44]

Beyond the tragic loss of life, the typhoons wreaked havoc on the nation's agricultural sector. Destroying livestock, inundating farmlands, and crippling irrigation systems, the weather events undermining food security.

Economic security saw losses amounting to roughly PHP 7.47 billion (approximately USD 13 billion) across agriculture and infrastructure. Additionally, over 300,000 houses were damaged, along with 1,500 road sections and 262 bridges rendered impassable, further isolating communities and complicating recovery efforts.[45]

[36] See IPCC, 2019, The Ocean and Cryosphere in a Changing Climate (accessed: 12 March 2025).
[37] World Weather Attribution, 2024, Climate Change Key Driver of Catastrophic Impacts of Hurricane Helene that Devastated Both Coastal and Inland Communities (accessed 10 March 2025).
[38] See Adil, L., et al., 2025, Climate Risk Index 2025 (accessed: 24 February 2025).
[39] See WMO, 2025, Tropical Cyclone (accessed 10 March 2025).
[40] See Internal Displacement Monitoring Centre, 2024, Global Report on Internal Displacement (accessed: 10 March 2025).
[41] See Adil, L., et al., 2025, Climate Risk Index 2025 (accessed: 24 February 2025).
[42] See Krichene, H., et al., 2023, The Social Costs of Tropical Cyclones (accessed: 10 March 2025).
[43] See Worldbank, 2024, Honduras (accessed 10 March 2025).

3.1.3 Floods

Floods can be categorised as riverine flooding, coastal flooding, and flash floods.[46] – can therefore affect people on the coasts as well as inland. According to the IPCC, assuming a 1.5°C global temperature increase, heavy precipitation and the associated risk of floods are expected to intensify worldwide and occur more frequently.[47] Floods undermine various security dimensions: food, water, personal, health, economic, and societal security.

Floods destroy farmland and kill livestock, depriving communities of essential food resources. This may lead to malnutrition.[48] They also often exacerbate health security through water security, when floods transport sewage into nearby water bodies. Contaminated freshwater sources like streams and rivers limit access to clean drinking water and proper hygiene.[49] From this, vulnerable groups suffer disproportionately, particularly children and women. In Rangabali, Bangladesh, women had to walk miles to obtain safe drinking water after floods rendered local sources non-potable. In some cases, this has led women to use birth control medication to suppress menstrual cycles, with repercussions for their reproductive health.[50] Moreover, floods heighten the risk of waterborne diseases. During the severe floods in Pakistan, cholera, malaria, and dengue spread rapidly; two months after the flooding, the UN reported a peak of approximately 100,000 malaria cases.[51]

Physical security is also heavily impacted. In the 30 years between 1993 and 2022, floods caused around 205,000 fatalities and were responsible for around 967,000,000 affected people in that timeframe.[52] Additionally, floods internally displaced 9.8 million in 2023 alone.[53] Destroying homes and other properties, floods force large populations to relocate, often into more hazardous environments. For example, migrants to megacities such as Lagos (Nigeria), Mumbai (India), or Dakar (Senegal) frequently end up living in riskier areas than long-term residents, which further undermines their security.[54] In Somalia and Nigeria in 2023, floods devastated areas where people displaced by conflicts were living under challenging circumstances.[55]

Floods also damage regional and national economies. Between 1993 and 2022, floods were responsible for economic losses of USD 1.33 trillion.[56] In 2022, floods in Pakistan destroyed 10% of the country's arable land and reduced its GDP by at least 3–4%, a devastating blow given that agriculture accounts for 24% of Pakistan's GDP.[57] These immediate shocks also have long-term consequences, as funds diverted for disaster relief mean fewer resources for other critical sectors. The destruction of critical public infrastructure further compounds these challenges.[58]

[44] See WFP, 2024, WFP Philippines 2024 Typhoon Season, Situation Report #7 (accessed: 11 March 2025).
[45] See Abordo, V., 2024, Yearender: The Philippines Unprecedented Storms in 2024 (accessed: 11 March 2025).
[46] See EmDat, 2016, Annual Disaster Statistical Review 2016: The Numbers and Trends (accessed: 10 March 2025).
[47] See IPCC, 2021, Climate Change 2021: The Physical Science Basis Summary for Policymakers (accessed: 24 February 2025).
[48] See International Rescue Committee, 2023, How Do Floods Create Humanitarian Crises (accessed: 24 February 2025).
[49] See International Rescue Committee, 2023, How Do Floods Create Humanitarian Crises (accessed: 24 February 2025).
[50] See ibid.
[51] See Burke, S., et al., 2023, How Floods in Pakistan Threaten Global Security (accessed: 10 March 2025).
[52] See Adil, L., et al., 2025, Climate Risk Index 2025 (accessed: 24 February 2025).
[53]See Internal Displacement Monitoring Centre, 2024, Global Report on Internal Displacement (accessed: 10 March 2025).
[54] See IPCC, 2021, Climate Change 2021: The Physical Science Basis Summary for Policymakers (accessed: 10 March 2025).
[55] See Internal Displacement Monitoring Centre, 2024, Global Report on Internal Displacement (accessed: 10 March 2025).
[56] See Adil, L., et al., Climate Risk Index 2025 (accessed: 24 February 2025).
[57] Saeed, S., 2023, The Impacts of Climate-induced Displacement on Human Security in Pakistan (accessed: 24 February 2025).
[58] See International Rescue Committee, 2023, How Do Floods Create Humanitarian Crises (accessed: 24 February 2025).

Lastly, floods also threaten political security, as mutually reinforcing adverse effects of climate-related emergencies and conflicts are not unusual. In South Sudan in 2022 for example, non-state armed groups disrupted the relief to affected communities after flooding.[59]

Example: The 2024 floods in Brazil (Rio Grande do Sul)

In April to May 2024, unprecedented rainfall triggered record-breaking floods in Rio Grande do Sul. The catastrophe killed over 183 people, displaced at peak 600,000, and otherwise affected almost 2.4 million across 478 municipalities. The floods destroyed critical infrastructure, severing access to emergency services, food, and medical care. Hospitals, schools, and transportation networks were severely damaged. This left communities isolated and unable to respond effectively. Food security was at severe risk due to major agricultural losses, which exacerbated economic disparities. Outbreaks of leptospirosis and dengue emerged rapidly, further straining an already overwhelmed health system.

Beyond the physical devastation, the floods worsened social and economic inequalities. Low-income populations had to bear the heaviest burdens. The prolonged crisis also inflicted significant psychosocial stress, which eroded trust in public institutions and highlighting the urgent need for resilient support systems that address both short-term relief and long-term recovery.[60]

Slow onset processes

There is no universally accepted definition of slow onset processes. Schäfer et al. (2021) define them as 'phenomena caused or intensified by anthropogenic climate change that occur over prolonged periods – typically years, decades, or even centuries – without a clear start or end point.'[61] According to the UNFCCC, slow onset processes include desertification, loss of biodiversity, land and forest degradation, glacier retreats and related impacts, ocean acidification, sea level rise, salinisation, and rising temperatures.[62] Each phenomenon threatens human security of individuals and communities, and economies and nations around the world.

We give an overview of how two of the most prominent slow onset processes, sea level rise and the loss of biodiversity, affect human security.

3.2.1 Sea level rise

Sea level rise poses a serious risk for human security. Climate change induces sea level rise primarily through the melting of glaciers and ice sheets.[63]

[59] See Internal Displacement Monitoring Centre, 2024, Global Report on Internal Displacement (accessed: 10 March 2025).
[60] UNOCHA, 2024, Brazil: Floods in Rio Grande do Sul (accessed: 12 March 2025).
[61] See Schäfer, L., 2021, Slow-onset Processes and Resulting Loss and Damage: An introduction (accessed: 10 March 2025).
[62] See UNFCCC, 2018, Loss and Damage Online Guide (accessed: 10 March 2025).
[63] See IPCC, 2019, Sea Level Rise and Implications for Low-lying Islands, Coast and Communities (accessed: 10 March 2025).

Depending on the ambition of global emissions reductions, the IPCC projects a sea level rise from 0.5 m to as much as 15 m by 2300, with variations by region.[64] Under any emissions scenario, countries such as Bangladesh, the Netherlands, and China will face considerable threats, with major consequences for their coastal populations.[65]

According to the Potsdam Institute for Climate Impact Research, under a scenario of 3°C warming by 2050, major cities in G20 countries could see a sea level rise of at least 15 cm. New Orleans (41 cm) and New York City (26 cm) are projected to be hit particularly hard.[66]

The UN projects that other megacities, including Jakarta, Lagos, Bangkok, and London, will also face serious challenges.[67] The costs for relocating people and infrastructure, even industries, from megacities by building new ones would be immense. Small Island States are even more vulnerable, with potential sea level rises of 10–30 cm above global averages under the same scenario.[68]

Moreover, the IPCC notes that sea level rise will continue well beyond 2100. In a relatively low emissions scenario (which seems way out of reach at this moment), sea levels could rise by about 1 m by 2300. For Small Island States such as the Marshall Islands, a 1 m rise would permanently inundate 40% of its capital, could submerse some islands, and make others inhabitable, posing an existential threat to their citizens and their territory.[69]

Sea level rise threatens all identified human security dimensions (personal, state, economic, and ecological). For example, in the personal dimension, rising seas jeopardise food security by endangering critical agricultural regions such as the Nile and Mekong deltas, where 10–20% of arable land is at risk. This not only impacts local communities but has far-reaching implications for regional and global food supplies, with repercussions for economic stability and the economic dimension of human security.[70] In addition, with roughly 900 million people (about 10% of the global population) living in coastal zones, sea level rise may trigger widespread displacement,[71] as sea level rise facilitates saline intrusion into coastal areas, disrupts ecosystem services (thereby threatening ecological human security) and eventually renders regions uninhabitable. Leading to further displacement, this could create cascading security risks at local, national, and regional levels. In Bangladesh, for instance, a 1 m rise could result in saline intrusions that affect half of the country's territory.[72]

At the state dimension level, implications are equally profound. National identity and territorial integrity will be challenged when water encroaches on coastlines, which often define national borders. The International Law Commission has highlighted that shifting maritime zones and the loss of landmass could threaten the very existence of states.[73] This is particularly concerning for Small Island States, whose survival

[64] See Geomar, 2025, Sea Level Rise is Accelerating! Where Is the End of the Line? (accessed: 10 March 2025).
[65] See United Nations, 2023, Climate Change-induced Sea Level Rise Direct Threat to Millions around the World, Secretary General Tells Security Council (accessed: 14 February 2025).
[66] See Potsdam Institute for Climate Impact Research, 2024, UN report: Accelerated Sea-level Rise Poses Significant Risk for Pacific Islands (accessed: 14 February 2025).
[67] See United Nations, 2023, Climate Change-induced Sea Level Rise Direct Threat to Millions around the World, Secretary General Tells Security Council (accessed: 14 February 2025).
[68] Ibid.
[69] See Secretariat of the Pacific Regional Environment Programme, 2023, Sea Level Rise Threatens the Existence of Marshall Islands (accessed: 10 March 2025).
[70] See United Nations, 2023, Climate Change induced Sea Level Rise Direct Threat to Millions around the World, Secretary General Tells Security Council (accessed: 17 February 2025).
[71] Ibid.
[72] See SIWI, 2021, Security Implications of Climate Change Impacts on the Ocean (accessed: 10 March 2025).
[73] See United Nations, 2023, Climate Change Induced Sea Level Rise Direct Threat to Millions around the World, Secretary General Tells Security Council (accessed: 17 February 2025).

is directly tied to their diminishing territories. International law currently does not adequately address scenarios when state territory physically disappears.[74] Furthermore, as coastlines recede, maritime boundaries shift inland, which potentially alters the extent of Exclusive Economic Zones (EEZs).[75] For many Pacific Island nations, this could have severe economic repercussions due to emerging licensing issues on foreign fishing fleets and sea mining operations.[76]

3.2.2 Loss of biodiversity

Slow onset effects of climate change also take a toll on biodiversity. As we speak, the world is experiencing its sixth mass extinction. Biodiversity is disappearing at rates 1,000 to 10,000 times faster than historical mass events.[77] Climate change exacerbates this trend and contributes to an estimated 16% of biodiversity loss today. Changing climates are expected to become the 'greatest pressure on biodiversity' by 2070.[78] In return, biodiversity loss is a threat to human security, especially personal and ecological dimensions, and has indirect, yet considerable, impacts on state and economic security.

In the personal human security dimension, food security is particularly affected. Rising temperatures and extreme weather events compromise the ecosystems that underpin food production. As these systems degrade, agricultural systems become more vulnerable to pests, pathogens, and the stresses imposed by climate change. Productivity declines, pollination is jeopardised, and crucial services such as water purification and the maintenance of genetic diversity in crops and livestock are at risk.[79] Current trends suggest that up to one million animal and plant species face extinction.[80] This situation is further aggravated by the dominance of monocultures in global agriculture, which are highly susceptible to shocks.[81] For example, out of 6,000 different plant species, only nine account for 66% of production (sugarcane, wheat, rice, maize, potatoes, sugar beet, cassava, oil palm, and soybean). Similarly, livestock production is concentrated among eight species (pig, chicken, cattle, sheep, goat, turkey, duck, and buffalo) which collectively represent 97% of global meat production.[82] A decline in pollinating species, essential for soil fertility, water and air purification, and overall ecosystem health, further exacerbates these risks with devastating impacts for ecosystems and agricultural production and food security.[83]

Marine biodiversity loss, though seemingly slower than on land, is accelerating due to overexploitation, ocean acidification, and warming. Marine ecosystems are crucial for human livelihoods as a source of food. They are natural buffers against extreme weather and help regulate the overall climate by sequestering carbon.[84] Alarmingly, only 10–15% of marine species have been documented, and of those, merely 3% have undergone endangerment assessment, which identified 11% as threatened with extinction.[85] The decline in marine biodiversity jeopardises food security, physical safety, and economic stability, particularly for communities that depend on marine resources for income.[86]

[74] See Caligiuri, A., 2022, Sinking States: The Statehood Dilemma in Face of Sea-level Rise (accessed: 10 March 2025).
[75] See SIWI, 2021, Security Implications of Climate Change Impacts on the Ocean (accessed: 10 March 2025).
[76] See Doyle, A. 2021, How Sea-level Rise Could Affect Pacific Nations Fishing Rights (accessed: 10 March 2025).
[77] See Hurrey, F., 2022, Biodiversity Loss Part I: Human Security Implications (accessed: 18 February 2025).
[78] See FAO, 2023, Biodiversity in Action (accessed: 10 March 2025).
[79] Ibid.
[80] See Hoffmann, I., 2021, Declining Biodiversity Threatens Food Security (accessed: 10 March 2025).
[81] See Hurrey, F., 2022, Biodiversity Loss Part I: Human Security Implications (accessed: 18 February 2025).
[82] See Hoffmann, I., 2021, Declining Biodiversity Threatens Food Security (accessed: 10 March 2025).
[83] Ibid.
[84] See Hurrey, F., 2022, Biodiversity Loss Part I: Human Security Implications (accessed: 18 February 2025).
[85] See Our Shared Seas, 2025, Habitat and Biodiversity Loss (accessed: 18 February 2025).
[86] Ibid.

Public health is another area deeply vulnerable to the combined effects of climate change and biodiversity loss. Many medical treatments and potential drug discoveries depend on natural biodiversity. A reduction in biodiversity not only limits these opportunities but also increases the risk of infectious diseases up to pandemics. Habitat degradation, driven by biodiversity loss, is linked to the proliferation of disease-transmitting organisms, many of which are vectors for cholera, malaria, and the Zika virus. These shifts have significant implications for human health and overall security.[87]

3.2.3 Tipping points

Tipping points are critical thresholds in the Earth's climate system beyond which changes are severe and usually irreversible. It remains uncertain when exactly these tipping points will be crossed.[88] However, the IPCC warns that tipping points might be reached with a global temperature rise of just 1–2°C (the Paris Agreement's long-term limit of global temperature rise is 1.5°C).[89]

Admittedly, there is a level of uncertainty in projections of highly complex systems such as a planet's climate. However, the impacts of the projected changes would be massive, irreversible, and continental in scale. They would imply extensive risks and consequences for human systems and, ultimately, human security.

Slow onset processes may eventually build up to these tipping points. For instance as soon as the Greenland ice sheet disintegrates, sea levels rise would drastic and irreversible. If the Amazon forest eventually deteriorates into a savannah, it will lose its vital role as a carbon sink, and instead turn into a source of carbon. Similarly, if the Atlantic Meridional Overturning Circulation (AMOC) slows down, global precipitation and temperature patterns could be drastically altered.

Once we exceed the thresholds, the resulting changes are often severe and irreversible, potentially triggering cascading effects that exacerbate climate change impacts well beyond current projections. For example, a weakened AMOC and ensuing shifts of precipitation patterns could reduce land suitable for wheat production by nearly 58%, which would then exacerbate global food insecurity and threaten human security on multiple fronts.[90]

There is excellent research on tipping points,[91] but we still need a systematic approach to translate this research into concrete policy recommendations beyond 1.5°C limit enshrined in the Paris Agreement. We also need to call political decision-makers in affected countries, regions, and the international community to action if we want to avert the build-up of slow onset processes to the point of no return.[92]

4 Conclusion

As elaborated above, climate change poses a profound threat to every aspect of human security. Our natural foundations are vital to life, and human security not only depends on defending against conflict and violence but also on addressing the existential risks that climate change poses to the resilience of livelihoods worldwide. In today's tense geopolitical situation, the focus lies on war and conflict, prioritising military solutions.

[87] Ibid.
[88] See Schultheiß, L., 2023, Tipping Points and Their Impact on Human Security (accessed: 24 February 2025).
[89] See IPCC, 2019, The Ocean and Cryosphere in a Changing Climate (accessed: 12 March 2025).
[90] See OECD, 2021, Managing Climate Risks, Facing up to Losses and Damages (accessed: 12 March 2025).
[91] Leading institutions in this field of research with a comprehensive body of literature include the University of Exeter or the Potsdam Institute for Climate Impacts.
[92] See Kuenzel, V., et al., 2022, An Early Warning System for Tipping Points in the Climate System (accessed: 10 March 2025).

The 'tragedy of the horizons' of climate change and its impacts – where cause and effect are too distant to be visible enough – it gets easily sidelined that greenhouse gas emissions are creating (and have already created) new or interconnected threats. But in the long term, delayed action and continued neglect of human security approaches risks to have profound impact on human wellbeing on a global scale. Therefore, addressing climate change impacts should be rather framed through a human security lens to protect and sustain the very basis of life – without disregarding the linkages to violent conflicts. Vice versa, security strategies and approaches must not ignore but rather factor in the multidimensional climate change impacts.

We suggest several actions to mitigate the threats of climate change for human security:

- **Ambitious mitigation action**: First and foremost, emissions need to reduce dramatically. According to the IPCC, global greenhouse gas emissions must fall by 48% compared to 2019 levels by 2030, and reach net-zero by 2050.[93] This can be achieved through fossil fuel phase-out, 100% renewable energy production, increased energy efficiency, and minimised energy demands, and different measures in fields including land use, forestry, industry emissions.
- **Integrating human security with climate policy frameworks**: All climate policies and international agreements should adopt a human security perspective. This includes assessing how climate change affects all dimensions of human security, e.g. food security, public health, economic stability, and state sovereignty, guiding holistic and effective policy responses. This also includes societal and political human security for which the adaptation measures that are sensitive to existing or potential conflicts and additional resilience building is essential. Additionally, international law has to be extended (with regard to procedures and implications) in order to enable reactions when countries lose territory due to climate change and to address potential challenges to national sovereignty and international law.
- **Building resilience:** Countries urgently need to bolster their resilience to climate change impacts to minimise effects of climate change impacts on populations and economies. This goes beyond advanced and comprehensive climate risk management. We need better preparedness, for example through early warning systems, but also adaptation strategies and measures, and approaches and measures for loss and damage.
- **Increasing and sustaining climate finance:** Some states are retreating from multilateralism, international treaties and responsibilities, and global solidarity. The urgency of climate change calls for robust financial support for countries of the Global South from progressive Global North countries. Cutting back on development and climate finance would only exacerbate vulnerability now and in the future. Additional funds are also essential for building resilience (see above).
- **Operationalising climate change with security processes:** Climate change concerns need integration with national and regional security strategies. Moreover, countries need to operationalise the climate and security nexus in their foreign policies and actions, for example by considering the different impacts of climate change on vulnerable groups, including women, and children. This needs to be based on a human rights and gender-responsive approach. Peace and conflict resolution processes need to consider climate change as one important component.

In the face of escalating climate impacts, human security must be at the heart of policy responses. Not as an afterthought, but as the guiding principle. A human security approach centres on the protection and empowerment of people. It addresses the root causes of vulnerability and fosters long-term resilience.

[93] IPCC, 2018, Special Report on Global Warming of 1.5°C (accessed: 11 March 2025).

References

Abordo, V., 2024, Yearender: The Philippines Unprecedented Storms in 2024, https://www.gma-network.com/regionaltv/news/105867/yearender-the-philippines-unprecedented-storms-in-2024/story (accessed: 11 March 2025)

Adil, L., et al., 2025, Climate Risk Index 2025, https://www.germanwatch.org/sites/default/files/2025-02/Climate%20Risk%20Index%202025.pdf (accessed: 24 February 2025)

Adger, W. N., et al., 2014, Climate Change 2014: Impacts, Adaptation and Vulnerability, https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap12_FINAL.pdf (accessed: 24 February 2025)

Auswärtiges Amt, 2025, Klimaschutz als Sicherheitspolitik: Erste nationale interdisziplinäre Klima-Risikoeinschätzung NiKE veröffentlicht, https://www.auswaertiges-amt.de/de/newsroom/2700052-2700052 (accessed: 10 March 2025)

Burke, S., et al., 2023, How Floods in Pakistan Threaten Global Security, https://www.wri.org/insights/pakistan-floods-threaten-global-security (accessed: 10 March 2025)

Caligiuri, A., 2022, Sinking States: The Statehood Dilemma in Face of Sea-level Rise, https://www.qil-qdi.org/sinking-states-the-statehood-dilemma-in-the-face-of-sea-level-rise (accessed: 10 March 2025)

Center for Climate and Security, 2023, Briefer No. 38, https://councilonstrategicrisks.org/wp-content/uploads/2023/01/38-CCThreatMultiplier.pdf (accessed: 22 January 2025)

Coperinicus 2025, Copernicus: January 2025 was the Warmest on Record Globally, despite an Emerging La Niña, https://climate.copernicus.eu/copernicus-january-2025-was-warmest-record-globally-despite-emerging-la-nina (accessed 10 March 2025)

Daase, C., 2010, Wandel der Sicherheitskultur, https://www.bpb.de/shop/zeitschriften/apuz/32301/wandel-der-sicherheitskultur (accessed: 11 March 2025)

Doyle, A., 2021, How Sea-level Rise Could Affect Pacific Nations Fishing Rights, https://www.csmonitor.com/Environment/2021/0311/How-sea-level-rise-could-affect-Pacific-nations-fishing-rights (accessed: 10 March 2025)

EmDat, 2016, Annual Disaster Statistical Review 2016: The Numbers and Trends, https://www.emdat.be/sites/default/files/adsr_2016.pdf (accessed 10 March 2025)

FAO, 2023, Biodiversity in Action, https://openknowledge.fao.org/server/api/core/bitstreams/8081962a-4ebe-4930-8a1f-63aab7cb449e/content (accessed: 10 March 2025)

Geomar, 2025, Sea Level Rise is Accelerating! Where is the End of the Line?, https://www.geomar.de/en/discover/ocean-and-climate/climate-change-in-the-ocean/sea-level-rise (accessed: 10 March 2025)

Hoffmann, I., 2021, Declining Biodiversity Threatens Food Security, https://www.welthungerhilfe.org/news/latest-articles/2021/the-loss-of-biodiversity-threatens-world-food-security (accessed: 10 March 2025)

Hurrey, F., 2022, Biodiversity Loss part I: Human Security Implications, https://www.iris-france.org/wp-content/uploads/2022/12/CS2P_biodiversity_loss_part1.pdf (accessed: 18 February 2025)

Internal Displacement Monitoring Centre, 2024, Global Report on Internal Displacement, https://api.internal-displacement.org/sites/default/files/publications/documents/IDMC-GRID-2024-Global-Report-on-Internal-Displacement.pdf (accessed: 10 March 2025)

International Rescue Committee, 2023, How Do Floods Create Humanitarian Crises?, https://www.rescue.org/article/how-do-floods-create-humanitarian-crises (accessed: 24 February 2025)

IPCC, 2018, Special Report on Global Warming of 1.5°C, https://www.ipcc.ch/sr15/ (accessed: 11 March 2025).

IPCC, 2019, Sea Level Rise and Implications for Low-lying Islands, Coast and Communities, https://www.ipcc.ch/site/assets/uploads/sites/3/2022/03/06_SROCC_Ch04_FINAL.pdf (accessed: 10 March 2025)

IPCC, 2019, The Ocean and Cryosphere in a Changing Climate, https://www.ipcc.ch/site/assets/uploads/sites/3/2019/12/SROCC_FullReport_FINAL.pdf (accessed: 12 March 2025)

IPCC, 2021, Climate Change 2021: The Physical Science Basis Summary for Policymakers, https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf (accessed: 24 February 2025)

IPCC, 2022, Climate Change 2022: Impacts, Adaptation and Vulnerability – Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FullReport.pdf (accessed 10 March 2025)

Krichene, H., et al., 2023, The Social Costs of Tropical Cyclones, https://www.nature.com/articles/s41467-023-43114-4 (accessed: 10 March 2025)

Kuenzel, V., et al., 2022, An Early Warning System for Tipping Points in the Climate System, https://www.germanwatch.org/sites/default/files/germanwatch_tipping_points_factsheet_0.pdf (accessed: 10 March 2025)

Martin, M., 2025, UN Approach to Human Security, https://humansecuritycourse.info/module-1-the-concept-of-human-security/un-approach/ (accessed: 10 March 2025)

McDonald M., 2013, Discourses of Climate Security, https://www.sciencedirect.com/science/article/abs/pii/S0962629813000188 (accessed: 27 January 2025)

NATO, 2022, Strategic Concept, https://www.act.nato.int/wp-content/uploads/2023/05/290622-strategic-concept.pdf (accessed: 10 March 2025)

OECD, 2021, Managing Climate Risks, Facing up to Losses and Damages, https://www.oecd.org/en/publications/managing-climate-risks-facing-up-to-losses-and-damages_55ea1cc9-en.html (accessed: 12 March 2025)

OSCE, 2025,Strengthening Responses to Security Risks from Climate Change in South-Eastern Europe, Eastern Europe, the South Caucasus and Central Asia, https://www.osce.org/node/521965 (accessed: 10 March 2025).

Our Shared Seas, 2025, Habitat and Biodiversity Loss, https://oursharedseas.com/threats/threats-habitat-and-biodiversity/#:~:text=Habitat%20and%20Biodiversity%20Loss%20Trends%20*%20Marine,and%20fully/highly%20protected%20zones:%202.7%25%20(May%20202 (accessed: 18 February 2025)

Potsdam Institute for Climate Impact Research, 2024, UN Report: Accelerated Sea-level Rise Poses Significant Risk for Pacific Islands, https://www.pik-potsdam.de/en/news/latest-news/surging-seas-in-a-warming-world (accessed: 14 February 2025)

Saeed, S., 2023, The Impacts of Climate-induced Displacement on Human Security in Pakistan, https://populationandsecurity.com/the-impacts-of-climate-induced-displacement-on-human-security-in-pakistan (accessed: 24 February 2025)

Sauer, I. J., et al., 2023, Not Enough Time to Recover? Understanding the Poverty Effects of Recurrent Floods in the Philippines, https://doi.org/10.21203/rs.3.rs-2911340/v1 (accessed 10 March 2025)

Schäfer, L., 2021, Slow-onset Processes and Resulting Loss and Damage: An Introduction, https://www.germanwatch.org/sites/default/files/FINAL_Slow-onset%20paper%20Teil%201_20.01.pdf (accessed: 10 March 2025)

Scheffran, J., et al., 2012, Climate Change, Human Security and Violent Conflict, https://link.springer.com/book/10.1007/978-3-642-28626-1 (accessed: 22 January 2025)

Schultheiß, L., 2023, Tipping Points and Their Impact on Human Security, https://www.germanwatch.org/en/blog/tipping-points-and-their-impact-human-security (accessed: 24 February 2025)

Secretariat of the Pacific Regional Environment Programme, 2023, Sea Level Rise Threatens the Existence of Marshall Islands, https://www.preventionweb.net/news/sea-level-rise-threatens-existence-marshall-islands (accessed: 10 March 2025)

Servicestelle Friedensbildung Baden-Württemberg, 2024, Menschliche Sicherheit, https://www.friedensbildung-bw.de/fileadmin/friedensbildung-bw/redaktion/bilder/Friedensbildung_AKTUELL/FriBi-AKTUELL-MenschlSicherheit-BF.pdf (accessed: 22 January 2025)

Simmonds, 2021, Evidence on the Costs of Floods in England and Wales, https://www.gov.uk/flood-and-coastal-erosion-risk-management-research-reports/evidence-on-the-costs-of-floods-in-england-and-wales#summary (accessed: 24 February 2025)

SIWI, 2021, Security Implications of Climate Change Impacts on the Ocean, https://siwi.org/latest/security-implications-of-climate-change-impacts-on-the-ocean (accessed: 10 March 2025)

Southern African Development Community, 2024, Southern Africa Drought: SADC and Humanitarian Partners Call for Scaled-up Assistance and Collective Disaster Mitigation Strategies, https://www.sadc.int/latest-news/southern-africa-drought-sadc-and-humanitarian-partners-call-scaled-assistance-and (accessed: 12 March 2025)

UN Trust Fund for Human Security, 2025, Human Security Milestones and History, https://www.un.org/humansecurity/human-security-milestones-and-history (accessed: 24 February 2025)

UNFCCC, 2018, Loss and Damage Online Guide, https://unfccc.int/sites/default/files/resource/Online_guide_on_loss_and_damage-May_2018.pdf (accessed: 10 March 2025)

United Nations Development Programme, 1994, Human Development Report 1994, https://hdr.undp.org/content/human-development-report-1994 (accessed: 10 March 2025)

United Nations, 2023, Climate Change: Induced Sea Level Rise Direct Threat to Millions around the World, Secretary General Tells Security Council, https://press.un.org/en/2023/sc15199.doc.htm (accessed: 14 February 2023)

UNOCHA, 2024, Southern Africa: El Niño Regional Humanitarian Overview, September 2024, https://www.unocha.org/publications/report/mozambique/southern-africa-el-nino-regional-humanitarian-overview-september-2024 (accessed: 12 March 2025)

Von Uexkull, N., et al., 2016, Civil Conflict Sensitivity to Growing-Season Drought, https://doi.org/10.1073/pnas.1607542113 (accessed 10 March 2025)

WFP, 2024, WFP Philippines 2024 Typhoon Season, Situation Report #7, https://reliefweb.int/report/philippines/wfp-philippines-2024-typhoon-season-situation-report-7-24-december-2024 (accessed: 11 March 2025)

WHO, 2024, Drought in Southern Africa Health Analysis, https://reliefweb.int/report/angola/drought-southern-africa-angola-botswana-lesotho-malawi-mozambique-namibia-zambia-zimbabwe-public-health-situation-analysis-phsa-14-october-2024 (accessed: 12 March 2025)

WMO, 2025, January 2025 Sees Record Global Temperatures despite La Niña, https://wmo.int/media/news/january-2025-sees-record-global-temperatures-despite-la-nina (accessed: 10 March 2025)

WMO, 2025, Tropical Cyclone, https://wmo.int/topics/tropical-cyclone (accessed: 10 March 2025)

World Economic Forum, 2025, The Global Risks Report 2025, https://reports.weforum.org/docs/WEF_Global_Risks_Report_2025.pdf (accessed: 24 February 2025)

World Weather Attribution, 2023, Human-induced Climate Change Increased Drought Severity in Horn of Africa – World Weather Attribution, https://www.worldweatherattribution.org/human-induced-climate-change-increased-drought-severity-in-southern-horn-of-africa (accessed 10 March 2025)

World Weather Attribution, 2024, El Niño Key Driver of Drought in Highly Vulnerable Southern African Countries, https://www.worldweatherattribution.org/el-nino-key-driver-of-drought-in-highly-vulnerable-southern-african-countries (accessed: 12 March 2025)

World Weather Attribution, 2024, Climate Change Key Driver of Catastrophic Impacts of Hurricane Helene That Devastated Both Coastal and Inland Communities – World Weather Attribution, https://www.worldweatherattribution.org/climate-change-key-driver-of-catastrophic-impacts-of-hurricane-helene-that-devastated-both-coastal-and-inland-communities (accessed: 10 March 2025)

Worldbank, 2024, Honduras, https://climateknowledgeportal.worldbank.org/country/honduras/vulnerability (accessed 10 March 2025)

WPS, 2025, WPS Global Early Warning tool January 2025 Quarterly Analysis, https://waterpeacesecurity.org/info/global-tool-update-jan-2025 (accessed: 24 February 2025)

Authors: Lisa Schultheiß, Vera Künzel, and Rixa Schwarz

Edited by: Germanwatch e. V.

Suggested citation: Schulheiß, L., Künzel, V., Schwarz, R., 2025, Escalating Threats: How Climate Change Increasingly Affects Human Security, www.germanwatch.org/en/93087.

Download this document at: www.germanwatch.org/en/93087

March 2025

Germanwatch e. V.
Office Bonn
Kaiserstrasse 201
D-53113 Bonn
Phone +49 (0)228 / 60 492-0, Fax -19
Website: www.germanwatch.org

Office Berlin
Stresemannstrasse 72
D-10963 Berlin
Phone +49 (0)30 / 5771 328-0, Fax -11
Email: info@germanwatch.org

Financially supported by Bread for the World. Responsibility for the contents lies with Germanwatch.