sipri

SIPRI Insights on Peace and Security

No. 2024/02 September 2024

CLIMATE CHANGE ADAPTATION IN AREAS BEYOND GOVERNMENT CONTROL: OPPORTUNITIES AND LIMITATIONS

KAREN MEIJER AND ANN-SOPHIE BÖHLE

SUMMARY

● Areas beyond government control constitute a highly diverse subgroup of fragile and conflict-affected settings. As a result of conflict and weak governance, many of these areas have become more vulnerable to climate change and their communities have been left with limited capacity to respond to changing climatic conditions and extreme weather events. These settings pose unique challenges for external engagement and have, therefore, long been overlooked in adaptation efforts.

This SIPRI Insights on Peace and Security explores both opportunities for and the limitations of climate change adaptation in areas beyond government control. By highlighting the diversity of these settings and the range of possible adaptation measures, the paper proposes a framework with four guiding questions designed to help identify context-appropriate adaptation options.

I. Introduction

Adaptation to climate change in areas beyond government control is a challenging and often overlooked issue. These areas lack or have weak representation of state authority stemming from diverse causes such as geographical or physical conditions, economic constraints, external violence, and ethnic or religious tensions.[1] Some of these areas are peacefully governed by non-state actors who provide civil services.[2] Some are impacted by conflict and violence, creating insecure environments.[3] In others, governance involves a mix of both formal actors and non-state armed groups.[4]

In 2022, about a quarter of the world's population lived in conflict-affected areas.[5] As at July 2023, an estimated 195 million people resided in areas with weak governments that are under the influence of armed groups.[6] Many of these areas are also highly vulnerable to climate change: 24 of the 48 countries identified as being the most exposed to future climate change appeared five or more times on the World Bank's list of fragile and conflict-affected countries between 2014 and 2021.[7] Conflict and weak governance exacerbate people's vulnerability to the impacts of climate change by limiting their

[1] Rotberg, R. I., 'Failed states, collapsed states, weak states: Causes and indicators', ed. R. I. Rotberg, *State Failure and State Weakness in a Time of Terror* (World Peace Foundation/Brookings Institution Press: Washington, DC, 2003).

[2] Caviedes, M. and Caldón, J. D. (eds), *Paz y Resistencia: Experiencias Indígenas desde la Autonomía* [Peace and resistance: Indigenous experiences since autonomy], Colección Autonomía Indígena, 1st edn (Centro de Cooperación al Indígena (CECOIN): Bogotá, 2007); and Mampilly, Z. and Stewart, M. A., 'A typology of rebel political institutional arrangements', *Journal of Conflict Resolution*, vol. 65, no. 1 (Jan. 2021).

[3] Rotberg (note 1).

[4] Loyle, C. E. et al., 'New directions in rebel governance research', *Perspectives on Politics*, vol. 21, no. 1 (Mar. 2023).

[5] United Nations, '"War's greatest cost is its human toll", Secretary-General reminds Peacebuilding Commission, warning of "perilous impunity" taking hold', Press release SG/SM/21216, 30 Mar. 2022.

[6] Bamber-Zryd, M., 'ICRC engagement with armed groups in 2023', International Committee of the Red Cross Humanitarian Law and Policy Blog, 10 Oct. 2023.

[7] Author's analysis based on University of Notre Dame, 'Notre Dame Global Adaptation Initiative: Country Index', [n.d.], accessed 12 Aug. 2024; and World Bank Group, 'Classification of fragile and conflict-affected situations' (lists of fragile and conflict-affected situations from FY14 to FY21), [n.d.], accessed 12 Aug. 2024.

potential to cope with climate extremes and respond to changing conditions.[8] These populations thus need support for climate change adaptation.

Adaptation in areas beyond government control is, however, fraught with obstacles. As well as being difficult to access and unsafe, these areas present risks related to corruption, damage and theft of belongings, and deliberate or accidental destruction of property. Moreover, the volatile and unpredictable nature of these areas means that violence can erupt at any time, interrupting project implementation and leading to increased costs and extended timelines.[9] Consequently, international and national actors with the necessary funds or expertise to implement adaptation actions question the feasibility and safety of working in such settings.[10]

Furthermore, international development finance for climate action typically flows through national government institutions and many international activities require government approval.[11] However—owing to concerns about safety, uncertainties regarding the effectiveness of the interventions, difficulties meeting donor requirements for funding, or political reasons—national governments may be unwilling or unable to engage in adaptation efforts in areas they do not control; that is, they may intend to marginalize communities in these areas or they may fear that adaptation actions would benefit non-state armed groups, materially or through conferring legitimacy.[12] In the latter situation, governments may even block access to and support for these areas, complicating efforts to address climate adaptation needs.

This paper focuses on areas beyond government control impacted by the presence of non-state armed groups. Section II outlines adaptation-related needs and challenges in conflict-affected contexts more generally, while section III looks at areas beyond government control more specifically. Section IV then summarizes the diversity in adaptation measures available. Section V proposes four questions to help characterize a context and identify appropriate adaptation actions. Section VI highlights that to improve the opportunities for climate change adaptation and identify the most suitable adaptation options for these settings, a nuanced understanding of their characteristics is crucial.

It is important to note that the approaches applied for engaging with local communities and non-state armed groups, as well as determining who leads this engagement, are key factors for the successful design and implementation of adaptation projects. However, these factors are beyond the scope of this

[8] Peters, K. et al., *Double Vulnerability: The Humanitarian Implications of Intersecting Climate and Conflict Risk*, Working Paper no. 550 (ODI: London, Mar. 2019); and International Committee of the Red Cross (ICRC), *When Rain Turns to Dust* (ICRC: Geneva, 2020).

[9] Adaptation Fund, *Addressing Climate Change Adaptation in Fragile Settings and Conflict-affected Countries: Lessons Learned from the Adaptation Fund's Portfolio* (Adaptation Fund: Washington, DC, Jan. 2024).

[10] Cao, Y. et al., *Exploring the Conflict Blind Spots in Climate Adaptation Finance*, Synthesis Report (SPARC: London, Sep. 2021); and Reda, D. and Wong, C., *Climate Finance for Sustaining Peace: Making Climate Finance Work for Conflict-affected and Fragile Contexts* (United Nations Development Programme: New York, 2021).

[11] Cao et al. (note 10); and Reda and Wong (note 10).

[12] Bamber-Zryd (note 6); Mena, R. and Hilhorst, D., 'The (im)possibilities of disaster risk reduction in the context of high-intensity conflict: The case of Afghanistan', *Environmental Hazards*, vol. 21, no. 2. (2020); and South, A. and Demartini, L., *Towards a Tipping Point? Climate Change, Disaster Risk Reduction and Resilience in Southeast Myanmar*, Full Report (ActionAid Myanmar: Yangon, 2020).

paper, which focuses on the suitability of different adaptation measures for different contexts.

II. Adaptation needs and challenges in conflict-affected contexts

The need for and challenges of climate change adaptation in areas beyond government control have been recognized under international governance frameworks and encountered in both research and experience on the ground. Article 7, paragraph 6, of the 2015 Paris Agreement states that 'Parties recognize the importance of support for and international cooperation on adaptation efforts and the importance of taking into account the needs of developing country Parties, especially those that are particularly vulnerable to the adverse effects of climate change'.[13] Studies examining the allocation of climate finance have concluded that it does not reach the most vulnerable populations, with fragile and conflict-affected countries tending to be overlooked.[14] This finding contributed to the Declaration on Climate, Relief, Recovery and Peace made at the 28th session of the Conference of the Parties (COP28) to the United Nations Framework Convention on Climate Change (UNFCCC), held in the United Arab Emirates in 2023. This non-legally binding text calls for an 'immediate scale up of enhanced support' for communities in the most vulnerable settings, 'particularly those threatened or affected by fragility or conflict, or facing severe humanitarian needs'.[15]

Nevertheless, examples of climate action in conflict-affected countries are available.[16] Many of these activities are implemented by humanitarian organizations intending to go beyond providing short-term relief by contributing to building longer-term resilience, a concept known as 'resilience humanitarianism'.[17] The International Rescue Committee, for instance, has been working directly with farmers in areas of the Autonomous Administration of North and East Syria where government support is absent to identify seeds that are best suited for the changing climate conditions, thus contributing to improving crop yields and food security even beyond the

[13] United Nations Framework Convention on Climate Change, Paris Agreement, adopted 12 Dec. 2015, opened for signature 22 Apr. 2016, entered into force 4 Nov. 2016.

[14] Cao, Y. et al., *Embracing Discomfort: A Call to Enable Finance for Climate-Change Adaptation in Conflict Settings*, Policy Brief (International Committee of the Red Cross, ODI, International Council of Voluntary Agencies, MercyCorps, Red Cross Red Crescent Climate Centre, United Nations High Commissioner for Refugees and World Food Programme: London, 2022); Cao et al. (note 10); and International Federation of Red Cross and Red Crescent Societies (IFRC), *Where It Matters Most: Smart Climate Financing for the Hardest Hit People* (IFRC: Geneva, 2022).

[15] The Declaration was developed by the COP28 Presidency in close partnership with an informal advisory group of countries affected by fragility and conflict and key institutions working in these settings. COP28 Declaration on Climate, Relief, Recovery and Peace, [n.d.].

[16] International Rescue Committee, *Seed Security in Fragile and Climate Vulnerable States: System Disruptions and Solutions for Niger, Pakistan, South Sudan and Syria* (International Rescue Committee: New York, Oct. 2023); International Committee of the Red Cross (ICRC) and Norwegian Red Cross, *Making Adaptation Work: Addressing the Compounding Impacts of Climate Change, Environmental Degradation and Conflict in the Near and Middle East* (ICRC/Norwegian Red Cross: Geneva/Oslo, 2023); and Raleigh, C. et al., 'Climate finance and conflict: Adaptation amid instability', *The Lancet Planetary Health*, vol. 8, no. 1 (Jan. 2024).

[17] Hilhorst, D., 'Classical humanitarianism and resilience humanitarianism: Making sense of two brands of humanitarian action', *Journal of International Humanitarian Action*, vol. 3 (2018).

intervention period.[18] Humanitarian organizations, with their experience of working in conflict-affected settings, often understand the context and the challenges of interacting with non-state armed groups. Development actors with adaptation expertise are crucial to identifying and implementing the measures most likely to increase long-term climate-related resilience. Enhanced collaboration between humanitarian organizations and such actors could contribute to reducing climate-related humanitarian needs.[19]

To strengthen the evidence base for 'the effective delivery of climate action in countries or communities affected by fragility or conflict', as called for by the COP28 Declaration on Climate, Relief, Recovery and Peace, and to determine what 'works' in terms of resulting in a sustained increase in climate resilience, a nuanced understanding of different fragile and conflict-affected settings is needed. Areas beyond government control constitute a highly diverse subgroup of these settings, varying in their level of violence and presence of diverse non-state actors, armed and unarmed.[20] Consequently, these areas differ in security and governance.

III. Diversity in areas beyond government control

Areas beyond government control encompass a range of situations, from stable to high-intensity violent conflict. Some areas are anarchic, where robbery and other illicit activities conducted by opportunistic armed groups creates insecurity, while some others are war zones.[21] However, the absence or failure of service delivery by the state does not necessarily mean an area is ungoverned, as non-state actors often step in to fill the void.[22] These non-state actors can be traditional leaders, non-state armed groups or a combination of both. For example, large areas of Somalia are not effectively governed by government authorities but are instead illegitimately controlled by groups such as al-Shabab, which take on some civilian governance tasks, for instance running the judicial and education systems.[23] Such governance can range from well-organized to arbitrary.

Understanding the possibilities for climate adaptation in a particular context requires knowledge of the different types of conflict and patterns of violent conflict, the extent of wartime governance and the diversity of non-state armed groups. Violent conflicts exhibit variation in intensity, actors involved, spatial extent and predictability of eruptions of violence. Applying these indicators to gain an understanding of patterns of conflict can help practitioners determine which adaptation measures may be feasible in a given

[18] International Rescue Committee (note 16).

[19] Vazquez, M., 'Building climate resilience in conflict zones requires less emergency aid, not more', The New Humanitarian, 18 Dec. 2023.

[20] Jackson, A. et al., *Climate Adaptation in No-man's Land: Bridging the Conflict-Climate Gap*, Research Report (Centre on Armed Groups: Geneva, Nov. 2023).

[21] Rotberg (note 1).

[22] Mampilly, Z. C., *Rebel Rulers: Insurgent Governance and Civilian Life during War* (Cornell University Press: Ithaca, NY, 2011).

[23] Eklöw, K. and Krampe, F., *Climate-related Security Risks and Peacebuilding in Somalia*, SIPRI Policy Paper no. 53 (SIPRI: Stockholm, Oct. 2019); and Mubarak, M. and Jackson, A., *Playing the Long Game: Exploring the Relationship between Al-Shabab and Civilians in Areas beyond State Control*, ODI Report (ODI: London, Aug. 2023).

context.[24] Fragmented settings with fluctuating territorial control and lacking formal or informal institutions set the scene for unpredictable situations in terms of violence and complicate on-site engagement. For example, many aid workers left the Mopti area of Mali owing to its insecurity.[25] In contrast, in the lower-conflict setting of Bangsamoro Autonomous Region in the southern Philippines, which was formerly governed by the Moro Islamic Liberation Front (MILF, a separatist armed group), international organizations were able to engage on-site and partner with MILF on climate resilience initiatives owing to the predictability of the situation.[26]

In addition to understanding the types and patterns of violent conflict, it is crucial to understand the diversity of non-state armed groups. These groups include rebel groups, militias, private military groups and organizations led by warlords, and they are heterogeneous in their interests, structures and degree of control in an area.[27] Importantly, multiple non-state armed groups may be present in an area.[28] This presents a further risk to stability because these groups may fight one another. Some groups may respect human rights and civilian infrastructure, while others may engage in systematic destruction as an act of opposition. Research from disaster risk reduction initiatives indicates that groups with a supportive relationship to the population and stable control can be beneficial for building resilience.[29] Armed groups with political objectives for autonomy or independence may be open to collaboration to gain legitimacy.

Understanding the organizational structure of non-state armed groups can help identify their key decision makers. Centralized groups, characterized by clearly defined rules and strong hierarchies, typically have top leaders as the main point of contact.[30] In contrast, decentralized and community-embedded groups tend to reflect local power dynamics, wherein village leaders can be influential figures, as seen in the Sungusungu group in rural Tanzania.[31] These actors may be responsive to community needs and norms, making them potentially open to enabling the implementation of adaptation measures.

[24] Raleigh et al. (note 16); and Walch, C., 'Disaster risk reduction amidst armed conflict: Informal institutions, rebel groups, and wartime political orders', *Disasters*, vol. 42, no. S2 (Oct. 2018).

[25] Swedish International Development Cooperation Agency (Sida), *Humanitarian Crisis Analysis 2024: Mali* (Sida: Sundbyberg, Mar. 2024).

[26] Walch (note 24); Abuza, Z. and Lischin, L., *The Challenges Facing the Philippines' Bangsamoro Autonomous Region at One Year* (United States Institute of Peace: Washington, DC, June 2020).

[27] Schneckener, U., *Spoilers or Governance Actors? Engaging Armed Non-State Groups in Areas of Limited Statehood*, SFB-Governance Working Paper Series no. 21 (Research Center (SFB) 700: Berlin, Oct. 2009).

[28] Raleigh et al. (note 16).

[29] Walch (note 24).

[30] International Committee of the Red Cross (ICRC), *The Roots of Restraint in War* (ICRC: Geneva, June 2018).

[31] Lyammouri, R., Thomas, J. and Van Metre, L., 'Community-based armed groups: A problem or solution?', United States Institute of Peace, 22 Feb. 2022; and Agbiboa, D. E., *Origins of Hybrid Governance and Armed Community Mobilization in Sub-Saharan Africa*, Community Based Armed Groups Series (RESOLVE Network: Washington, DC, Oct. 2019).

Table 1. Categories of climate change adaptation measures and indicators with which to assess their suitability for use in areas beyond government control

	Indicator			
Category	Off-site implementation feasibility	Vulnerability to theft, damage and destruction	Compatibility with local conditions	Resource distribution impacts
Hard ('grey') infrastructure	Depends on geographical setting	High vulnerability	Low compatibility	Likely
Nature-based solutions ('green' infrastructure)	Unlikely	Neutral	High compatibility	Unlikely
Climate-smart agricultural practices	Unlikely	Low vulnerability	High compatibility	Unlikely
Early warning systems	Feasible in part	Low vulnerability	Neutral to high compatibility	Unlikely
Natural resource management and dispute resolution committees	Likely	Low vulnerability	High compatibility	Unlikely
Training related to aspects of adaptation	Likely	Low vulnerability	Neutral	Unlikely

Note: Scores can be adjusted once the scale of a measure and its context are better understood.

IV. Diversity in climate change adaptation actions

Climate adaptation refers to any action that reduces the impact of climate change on society and ecosystems.[32] Many different types of adaptation measures can be identified; these target either exposure or vulnerability to climate change, or they develop the capacity to support the reduction of exposure or vulnerability.[33] Exposure-reducing measures include hard infrastructure (also referred to as 'grey' infrastructure); nature-based solutions (also referred to as 'green' infrastructure); and early warning systems for extreme events that help people keep themselves, their livestock and their assets safe. Vulnerability-reducing measures include climate-smart agricultural practices such as the introduction of climate-resilient seeds or livestock breeds; non-climate-dependent livelihood options; insurance; and anticipatory cash transfers that help people quickly recover after climate shocks. The establishment of natural resource management and dispute resolution committees can support the identification of peaceful solutions to temporal or structural resource scarcity in communities. Training can support exposure-reducing and vulnerability-reducing measures but also constitutes a measure in itself, because it teaches people how to cope with or respond to climate extremes.[34]

[32] The definition of adaptation in human systems is 'the process of adjustment to actual or expected climate and its effects in order to moderate harm or take advantage of beneficial opportunities'. See Pörtner, H.-O. et al. (eds), *Climate Change 2022: Impacts, Adaptation and Vulnerability*, Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (Cambridge University Press: Cambridge, 2022), p. 5.

[33] Biagini, B. et al., 'A typology of adaptation actions: A global look at climate adaptation actions financed through the Global Environment Facility', *Global Environmental Change*, vol. 25 (Mar. 2014); and Simpson, N. P. et al., 'Adaptation to compound climate risks: A systematic global stocktake', *iScience*, vol. 26, no. 2 (Feb. 2023).

[34] Biagini et al. (note 33).

As with humanitarian and development actions, adaptation actions must align with local priorities and capacities and should cause no harm—an outcome that is more easily realized for some measures than for others. Instances exist where adaptation efforts inadvertently increased conflict or inequality.[35] This paper identifies four aspects that influence the suitability of a measure for implementation in or near conflict-affected areas: (*a*) the extent to which preparatory work for or implementation of the measure can be conducted outside the conflict-affected area; (*b*) the vulnerability of the measure to destruction or theft; (*c*) the compatibility of the measure with local interests, capacities and resources; and (*d*) the degree to which the measure results in a redistribution of resources and vulnerabilities or benefits particular groups in society (based on, e.g., gender, livelihood, age or ethnicity) and thus could create or worsen tensions. Each aspect is discussed in more detail in the remainder of this section. Table 1 summarizes the main categories of measures and indicators with which to assess their suitability.

Off-site implementation feasibility

When conflict-affected areas are inaccessible or unsafe for project implementers, it may be possible to conduct preparatory work for or implement measures outside those areas yet still reach vulnerable communities. Doing so may not be an option for measures that involve the development of local infrastructure or delivery of materials, but in specific settings there may be opportunities for off-site activities. For example, in the case of a river flowing through a conflict-affected area, measures to reduce floods and droughts can potentially be taken by altering upstream dam operations or managing other infrastructure or catchments differently. Dam operation is often associated with negative downstream impacts and potential conflicts.[36] However, dams can play a role in regulating water flow to mitigate the impacts of climate change if they are managed to meet downstream demands. Early warning systems, another measure that can largely be developed outside conflict-affected areas, allow for forecast-based actions and have shown some positive evidence of effectively supporting communities.[37] However, ensuring that warnings reach 'the last mile' can be challenging if, for example, communication infrastructure is lacking, which may be the case in remote, conflict-affected regions.[38] Training related to, for example, climate-resilient agricultural techniques, natural resources management and ecosystem-based approaches can be conducted outside conflict-affected areas.

[35] Atteridge, A. and Remling, E., 'Is adaptation reducing vulnerability or redistributing it?', *WIREs Climate Change*, vol. 9, no. 1 (Jan./Feb., 2018); Eriksen, S. et al., 'Adaptation interventions and their effect on vulnerability in developing countries: Help, hindrance or irrelevance?', *World Development*, vol. 141 (May 2021); and Black, R. et al., *Environment of Peace: Security in a New Era of Risk* (SIPRI: Stockholm, May 2022).

[36] Dabelko, G. D. et al. (eds.), *Backdraft: The Conflict Potential of Climate Change Adaptation and Mitigation*, Environmental Change and Security Program Report vol. 14, no. 2 (Woodrow Wilson International Center for Scholars: Washington, DC, 2013).

[37] Levine, S. et al., *Anticipatory Action for Livelihood Protection: A Collective Endeavour*, Working Paper no. 580 (ODI: London, June 2020).

[38] Wagner, M. and Jaime, C., *An Agenda for Expanding Forecast-based Action to Situations of Conflict* (Global Public Policy Institute: Berlin, Sep. 2020); and International Committee of the Red Cross (ICRC), *Weathering the Storm: Reducing the Impact of Climate Risks and Environmental Degradation on People Enduring Armed Conflicts* (ICRC: Geneva, Nov. 2023).

Vulnerability to theft, damage and destruction

Physical infrastructure, equipment and material needed for adaptation can be stolen, damaged or deliberately destroyed during conflict by government forces or non-state armed groups. For example, in Sudan, hostilities resulted in the destruction of existing water-related infrastructure, and in South Sudan, non-governmental organizations reported that aid material such as food, vehicles and fuel was stolen during outbreaks of conflict.[39] Destruction of civilian infrastructure constitutes a violation of international humanitarian law. Certain adaptation measures, or the infrastructure, equipment and material involved, are more prone to destruction or theft than others. Physical infrastructure such as dams, dikes, and irrigation inlets and canals are particularly susceptible to damage and being rendered ineffective. Pumps and other equipment, and even seeds, can be stolen and sold by armed groups. In Somalia, al-Shabab destroyed communication infrastructure and wells.[40] The Islamic State of Iraq and the Levant used critical infrastructure as a tool of violence, taking control of or destroying pipes, dams and wells.[41] Measures such as the establishment of community-based resource management and conflict resolution committees are less prone to these types of risk.

Compatibility with local conditions

Some measures to counter the impacts of climate change are more easily maintained at the community level than others. While implementing locally appropriate measures is important for climate action in all settings, it becomes crucial in situations where conflict may erupt and external assistance and supply of materials may be difficult to obtain.[42] Climate-smart agricultural practices such as the adoption of local climate-resilient crop varieties provide examples of measures that do not require a significant amount of external assistance after introduction (see e.g. the seed security project of the International Rescue Committee mentioned in section II above).[43] The operation of pumps and maintenance of infrastructure are, in contrast, examples of measures that may be more challenging to continue owing to limited know-how and equipment available on site. Some measures, such as early warning systems, involve various means of communicating with beneficiaries and thus may be dependent on computers, mobile phones or radios, which, in turn, depend on network coverage, electricity or batteries. The OKP-RESCOM Sahel project found that local mechanisms for building resilience to climate change are not sufficiently understood and used by external actors, leading to initiatives that create a dependency on external aid.[44] To avoid this situation, external actors can build on existing local initiatives,

[39] Humanitarian Action, 'Water, Sanitation and Hygiene (WASH)', 21 Dec. 2023; and Oxfam International, 'Violence fuels South Sudan's humanitarian crisis', Press release, 28 July 2016.

[40] 'Al-Shabaab sets 7 villages on fire, blows up wells in Hiran region', Goobjoog, 8 Aug. 2022.

[41] United Nations, Security Council, Counter-Terrorism Committee Executive Directorate (CTED), *Physical Protection of Critical Infrastructure against Terrorist Attacks* (CTED: Mar. 2017).

[42] Adaptation Fund (note 9); and Salzinger, M. and Desmidt, S., *Climate Change and Conflict in the Central Sahel: A Shared Responsibility to Support Local Resilience*, Discussion Paper no. 336 (European Centre for Development Policy Management: Maastricht, Mar. 2023).

[43] International Rescue Committee (note 16).

[44] The RESCOM Sahel project is part of the Orange Knowledge Programme (OKP), which is funded by the Ministry of Foreign Affairs of the Netherlands. RESCOM Sahel focuses on generating know-

recognizing and reinforcing local capacities to empower local communities to build resilience. An example of such an initiative is the one Karen civil society actors are implementing in Myanmar to support farmers in adapting to climate change by helping them establish seed banks and teaching them innovative planting methods.[45]

Resource distribution impacts

When adaptation measures result in a redistribution of vulnerabilities or increase (perceived) inequalities among groups in society (based on e.g. gender, livelihood, age or ethnicity) they can create or worsen tensions. Large-scale infrastructure, which is often hard infrastructure, has this impact. For instance, flood protection measures can increase flood risk downstream; dams for water storage and weirs that reallocate water can exacerbate water shortages for some by increasing supply for others; and large infrastructure projects can require the relocation of groups of people, block pastoralist migration routes or disrupt ecosystem processes that support livelihoods.[46] Other measures that require access to conflict-affected areas involve fewer distribution issues; for example, planting trees and other vegetation to prevent erosion and desertification or shifting to more climate-resilient crop varieties and livestock breeds can benefit the people implementing the measures without harming others. Establishing a local resource management committee for making joint decisions on how to manage water shortages during a drought is also unlikely to cause tension or increase inequality. It should be noted, however, that even when measures do not negatively affect certain groups, they may still be perceived as unfair if they benefit only a subset of society. An inclusive approach is needed—especially in conflict settings—to understand and mitigate potential tensions.

V. Framework for supporting the identification of suitable adaptation measures in areas beyond government control

This section proposes a framework consisting of four guiding questions that may be helpful in identifying the most suitable climate change adaptation measures for a particular context. Rather than being a blueprint for selecting specific adaptation actions, the questions are intended to inspire consideration of different adaptation options and foster the understanding

ledge about the interlinkages of climate change and security issues and strengthening the resilience of communities. Salzinger and Desmidt (note 42).

[45] South, A., *Conflict, Complexity and Climate Change: Emergent Federal Systems and Resilience in Post-Coup Myanmar* (Regional Center for Social Science and Sustainable Development, Chiang Mai University: Chiang Mai, 2023).

[46] Di Baldassarre, G., Castellarin, A. and Brath, A., 'Analysis of the effects of levee heightening on flood propagation: Example of the River Po, Italy', *Hydrological Sciences Journal*, vol. 54, no. 6 (2009); Baird, I. G. et al., 'The downstream impacts of hydropower dams and indigenous and local knowledge: Examples from the Peace–Athabasca, Mekong, and Amazon', *Environmental Management*, vol. 67, no. 4 (Apr. 2021); Richter, B. D. et al., 'Lost in development's shadow: The downstream human consequences of dams', *Water Alternatives*, vol. 3, no. 2 (2010); Swatuk, L. A. et al., 'The "boomerang effect": Insights for improved climate action', *Climate and Development*, vol. 13, no. 1 (2021); Atteridge and Remling (note 35); and Krampe, F., Smith, E. S. and Hamidi, M. D., 'Security implications of climate development in conflict-affected states: Implications of local-level effects of rural hydropower development on farmers in Herat', *Political Geography*, vol. 90 (Oct. 2021).

that more possibilities for adaptation may be possible than what many actors initially suppose. The questions are a starting point—field research is necessary to comprehensively understand each setting, including the characteristics and priorities of local communities.

What is the type and level of conflict, and which areas can safely be accessed?

In areas beyond government control marked by active violent conflict and high contextual volatility—as for example in areas of Nigeria, Palestine and Sudan—security risks for personnel, aid equipment and infrastructure are significantly heightened.[47] Implementing long-term adaptation strategies in these areas is difficult as the focus may be on survival rather than adaptation. Off-site adaptation may be the best option. When access is possible, it is important to focus on measures that (*a*) are less prone to theft, damage or destruction and (*b*) do not require long implementation times (thus, infrastructure may not be suitable, as it might have to be abandoned before it is finished).

What is the level of governance, and who governs with what interests?

Understanding the governance structures in place and which actors represent community interests is key for effective adaptation. A wide range of governing situations exist, including those in which non-state armed groups engage in or allow governance in the interest of communities, providing potential entry points for climate adaptation. Adding a climate dimension to existing governance structures may enable faster and more effective adaptation. The more stable an area is, even if de facto governed by non-state armed groups, the stronger the possibility for on-site implementation of adaptation measures.

What is the relationship between the governing non-state armed groups and communities?

If non-state armed groups in control of an area aim to govern and maintain a good relationship with communities, they will be more likely to enable adaptation that benefits these communities. In such situations, the risk of intentional damage to infrastructure or appropriation of equipment and goods brought into the area will be lower.

What is the risk of non-state armed groups benefiting from climate adaptation projects?

Non-state armed groups may benefit from both appropriation of goods and legitimacy gained through demonstrating good governance and interacting with international actors. And while not directed towards the armed groups in control, they may benefit from the funding, materials or know-how

[47] Raleigh, C. and Kishi, K., 'ACLED Conflict Index: Ranking violent conflict levels across the world', Armed Conflict Location and Event Data, [n.d.], accessed 24 July 2024.

associated with implementing adaptation projects.[48] This could damage the reputation of the donor and implementing organization and potentially lead to a loss of credibility. The risk of benefitting non-state armed groups can be mitigated by promoting community-based adaptation initiatives and partnerships with civil society organizations wherever possible. Therefore, it is important to understand how adaptation strategies influence local dynamics and how they could improve the legitimacy of the formal government.

VI. Conclusions

Implementing climate change adaptation measures in areas beyond government control involves numerous challenges. Conflict often results in increased costs, extended timelines and disruption of activities, meaning more resources and time are needed to complete projects. However, examples of climate action and disaster risk reduction provide evidence that reaching and supporting communities in these areas is possible. This SIPRI Insights on Peace and Security has proposed a framework for identifying the suitability of adaptation measures for different conflict-affected contexts. An improved, nuanced understanding of the heterogeneity in areas beyond government control and the variety of adaptation actions available could contribute to enhancing the climate resilience of more, highly vulnerable, people.

[48] Clements, A. J., 'Overcoming power asymmetry in humanitarian negotiations with armed groups', *International Negotiation*, vol. 23, no. 3 (2018).

SIPRI INSIGHTS ON PEACE AND SECURITY NO. 2024/02

CLIMATE CHANGE ADAPTATION IN AREAS BEYOND GOVERNMENT CONTROL: OPPORTUNITIES AND LIMITATIONS

KAREN MEIJER AND ANN-SOPHIE BÖHLE

CONTENTS

I. Introduction 1
II. Adaptation needs and challenges in conflict-affected contexts 3
III. Diversity in areas beyond government control 4
IV. Diversity in climate change adaptation actions 6
Off-site implementation feasibility 7
Vulnerability to theft, damage and destruction 8
Compatibility with local conditions 8
Resource distribution impacts 9
Table 1. Categories of climate change adaptation measures and indicators with which to assess their suitability for use in areas beyond government control 6
V. Framework for supporting the identification of suitable adaptation measures in areas beyond government control 9
What is the type and level of conflict, and which areas can safely be accessed? 10
What is the level of governance, and who governs with what interests? 10
What is the relationship between the governing non-state armed groups and communities? 10
What is the risk of non-state armed groups benefiting from climate adaptation projects? 10
VI. Conclusions 11

ABOUT THE AUTHORS

Dr Karen Meijer (Netherlands) was a Senior Researcher in the SIPRI Climate Change and Risk Programme, specializing in international cooperation and development. Her primary interests include effectiveness of governance and international finance targeting sustainable and equitable use of natural resources.

Ann-Sophie Böhle (Germany) is a Research Assistant in the SIPRI Climate Change and Risk Programme. She holds a Master's Degree in Climate Change Management. Her primary research interests include the climate-conflict-nexus and environmental peacebuilding. Her focus is on climate finance targeting fragile and conflict affected states.

This paper is a deliverable of Mistra Geopolitics, which is funded by the Swedish Foundation for Strategic Environmental Research (Mistra).

STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE
Signalistgatan 9
SE-169 72 Solna, Sweden
Telephone: +46 8 655 97 00
Email: sipri@sipri.org
Internet: www.sipri.org