



PATHWAYS OF CLIMATE INSECURITY: GUIDANCE FOR POLICYMAKERS

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INTRODUCTION

The adverse effects of climate change on peace and security, or climate-related security risks, are receiving growing attention in policymaking. Climate change is expected to increasingly undermine human livelihoods and security, with impacts that depend on existing sociopolitical and environmental factors.¹ While climate change *can* contribute to violence and conflict, climate change is not *the only* cause. However, leaving climate and environmental factors out of risk analysis can omit their impact on local, national and even regional security.

The concept of ‘pathways’ can be an important tool to help policymakers navigate the complex relationships between climate change, peace and security, and inform their decision making in conflict-affected and climate-exposed regions.

¹ Adger, W. N. et al., ‘Human security’, eds Field, C. B. et al., *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press: Cambridge and New York, 2014), pp. 755–91.

WHY PATHWAYS?

Thinking of climate-related security risks as pathways between climate change impacts and implications for security can offer policymakers a tool for incorporating local context into analyses of the security and conflict risks of climate change. It can also be used for policy planning in areas such as livelihoods, mobility, resource management or governance.

Debates on the links between climate change and insecurity are often criticized as oversimplifying complex relationships, particularly regarding violent conflicts. Speaking in terms of climate-related security risks allows for incorporating the multiple security impacts of climate change into policy application, and more accurately accounting for when and under what circumstances climate change increases risks of insecurity.²

Using a risk-based approach avoids making strong claims that climate change is a direct cause of human insecurity, and particularly of violent conflict. The analysis of climate-related security risks looks closely at

² Mobjörk, M. et al., *Climate-related Security Risks: Towards an Integrated Approach* (SIPRI and Stockholm University: Stockholm, Oct. 2016).

SUMMARY

● Policymakers are increasingly concerned with the climate-related security risks—the adverse effects of climate change on peace and security.

This SIPRI Policy Brief outlines four interrelated pathways between climate change and conflict: (a) livelihoods, (b) migration and mobility, (c) armed group tactics, and (d) elite exploitation. These illustrate the relationship between short- and long-term environmental changes linked to climate change; their impact on the root causes and dynamics of violent conflict; and the critical role of human action, reaction and inaction in mediating violent outcomes.

As a policymaking tool, pathways help to identify and navigate the political space for mitigating violent conflict. They can support decision makers in navigating these complex relationships in conflict-affected and climate-exposed regions by integrating local context into analyses of the security and conflict risks of climate change. Pathways also help to facilitate policy planning in areas such as livelihoods, mobility, resource management and governance.



intervening factors—including the role of decision making. Research shows the impacts and outcomes of climate change on security are different when couched in different social, political and economic structures and dynamics. This includes the presence and strength of social and political institutions, the vulnerability and resilience of the population, the structure and conflict-sensitivity of existing adaptation programmes, the temporal and spatial dynamics of the climate event or trend, and social attitudes towards those displaced.³ Analysis of climate-related security risks highlights that: (a) the impacts of climate change directly and indirectly affect the entire social–ecological system, not just one part of it; (b) the security challenges of climate change span policy areas such as foreign, defence, development, economic, humanitarian and environmental policies; and (c) the consequences of climate change interact with existing conditions on the ground; so, depending on the local context, the actors and the capacity or decisions to respond to risks, the

³ De Juan, A., ‘Long-term environmental change and geographical patterns of violence in Darfur, 2003–2005’, *Political Geography*, vol. 45 (March 2015), p. 23; Brzoska, M. and Fröhlich, C., ‘Climate change, migration and violent conflict: Vulnerabilities, pathways and adaptation strategies’, *Migration and Development*, vol. 5, no. 2 (2016), p. 197; Ngaruiya, G. and Scheffran, J., ‘Actors and networks in resource conflict resolution under climate change in rural Kenya’, *Earth System Dynamics*, vol. 7 (2016), p. 445; Buhaug, H., ‘Climate–conflict research: Some reflections on the way forward’, *WIREs Climate Change*, vol. 6, no. 3 (Feb. 2015), p. 272; Barnett, J., and Adger, W. N., ‘Mobile worlds: Choice at the intersection of demographic and environmental change’, *Annual Review of Environment and Resources*, vol. 43 (2018), p. 253.

same climate impact can produce different forms of risks, no risks or indeed collaboration.⁴

Thinking about climate-related security risks as pathways can help to investigate *how* climate change translates into human security risks (including violent conflict) and also *under which conditions* it can do so. The pathways can label the broad processes from climate change to human insecurity that interact with existing conditions, structures and actors.

Researchers sometimes call these processes ‘mechanisms’.⁵ However, recognizing that in everyday usage the term can imply a narrower set

⁴ Downing, S. A. et al., ‘Resilience and sustainable peace: Managing conflict related security and development risks in the Anthropocene’, *Global Resilience Partnership and Guidance for Resilience in the Anthropocene: Investments for Development Background Paper for UN75 Meeting on Multilateral Cooperation to Address Climate Related Security and Development Risks in Africa*, 3–4 Mar. 2020, Dakar; de Coning, C. and Krampe, F., ‘Multilateral cooperation in the area of climate-related security and development risks in Africa’, *Norwegian Institute of International Affairs Report no. 4/2020, Background Paper for UN75 Subregional Meeting on Multilateral Cooperation to Address Climate Related Security and Development Risks in Africa*, 3–4 Mar. 2020, Dakar; van Baalen, S. and Mobjörk, M., ‘Climate change and violent conflict in East Africa: Integrating qualitative and quantitative research to probe the mechanisms’, *International Studies Review*, vol. 20, no. 4 (Dec. 2018), pp. 547–75; Scheffran, J., ‘Climate extremes and conflict dynamics’, eds Sillmann, J., Sippel, S. and Russo, S., *Climate Extremes and their Implications for Impact and Risk Assessment* (Elsevier: Amsterdam, 2019); Moran, A. et al., *The Intersection of Global Fragility and Climate Risks* (United States Agency for International Development: Washington, DC, Sep. 2018); and Koubi, V., ‘Climate change and conflict’, *Annual Review of Political Science*, vol. 22, no. 1 (May 2019), pp. 343–60.

⁵ Mobjörk, M., ‘Exploring the climate–conflict link: the case of East Africa’, *SIPRI Yearbook 2017: Armaments, Disarmament and International Security* (SIPRI: Stockholm, 2017), pp. 287–99.



of outcomes, ‘pathways’ directs attention to the broader processes themselves and the intervening factors that produce climate-related security risks.⁶

A better understanding and evidence base of these pathways is essential for integrating climate-related security risks into policy analysis and for designing effective strategies to prevent or mitigate conflicts potentially associated with climate change.⁷ So, what pathways have been identified in climate–conflict research and what is known about them?

PATHWAYS FROM CLIMATE CHANGE TO VIOLENT CONFLICT

Four interrelated pathways have been identified by analysing research on the links between climate change and conflict. They were initially identified in research on East Africa, but also feature in literature reviews on West Africa, and South and South East Asia.⁸ Together, the four pathways illustrate the relationship between short- and long-term environmental changes linked to climate change and their impact on the root causes and dynamics of violent conflict. These interrelated pathways are: (a) livelihoods, (b) migration and mobility, (c) armed group tactics

⁶ Buhaug (note 3); Seter, H., ‘Connecting climate variability and conflict: Implications for empirical testing’, *Political Geography*, vol. 53 (July 2016), pp. 1–9; and van Baalen and Mobjörk (note 4).

⁷ Vivekananda, J. et al., ‘Climate resilience in fragile and conflict-affected societies: Concepts and approaches’, *Development in Practice*, vol. 24, no. 4 (Aug. 2014), pp. 487–501.

⁸ van Baalen and Mobjörk (note 4); and Nordqvist, P. and Krampe, F. ‘Climate change and violent conflict: Sparse evidence from South Asia and South East Asia’, SIPRI Insights on Peace and Security no. 2018/4, Sep. 2018.

and (d) elite exploitation. These are not the only pathways, but are illustrations of when and under what circumstances climate change increases the risk of violent conflicts.

Worsening livelihood conditions

The detrimental effects of climate change on livelihoods can increase the risk of conflict. Worsening livelihood conditions can marginalize affected groups and contribute to escalating grievances. In the absence of income alternatives, there is a greater risk that people use violence to protect or to access dwindling resources.

The adverse effects of climate change on agriculture and livestock mean economic hardships are particularly challenging for groups directly dependent on renewable resources. These impacts can accentuate gender inequalities, particularly in contexts where women’s land rights, livelihood options and participation in natural resource management are circumscribed.⁹ Rapid-onset disasters (e.g. droughts or floods) and longer-term

deterioration (e.g. soil degradation or desertification) can heighten local competition over land, water and other income-generating resources, increasing the risk of communal conflicts. In East and West Africa, herders and farmers sometimes use violence to secure resources when droughts and floods decrease their livelihood security. The longer-

Four pathways from climate change to conflict: (a) livelihoods, (b) migration and mobility, (c) armed group tactics and (d) elite exploitation

⁹ Smith, E. S., ‘Climate change in women, peace and security national action plans’, SIPRI Insights on Peace and Security no. 2020/7, June 2020.



term impacts of climate change on customary grazing zones and migration routes have accelerated clashes over receding land, fodder and water resources.¹⁰

Worsening livelihood conditions and the absence of alternatives can also increase the risk that people are pushed to join armed groups to mitigate their losses. For example, reduced income opportunities from fishing in some coastal areas of Indonesia have been linked to an increase in piracy-related activities.¹¹

Other factors influence the pathway from climate change to livelihood insecurity and violence, including broader security trends that already strain intergroup relations. However, conflict is

not an inevitable outcome of climate change; research has also shown that rapid-onset disasters could increase social cohesion and

even strengthen cooperation.¹² While herder–farmer conflicts are historically common in parts of East and West Africa and the Sahel, weak rule of law and an influx of small arms in these regions have increased the frequency

¹⁰ van Baalen and Mobjörk (note 4); and Obioha, E. E., ‘Climate change, population drift and violent conflict over land resources in northeastern Nigeria’, *Journal of Human Ecology*, vol. 23, no. 4 (2008), pp. 311–24.

¹¹ Axbard, S., ‘Income opportunities and sea piracy in Indonesia: Evidence from satellite data’, *American Economic Journal*, vol. 8, no. 2 (Apr. 2016), pp. 154–84.

¹² Slettebak, R. T., ‘Climate change, natural disasters, and post disaster unrest in India’, *India Review*, vol. 12, no. 4 (Nov. 2013), pp. 260–79; and Gaillard, J. C., Clavé, E. and Kelman, I., ‘Wave of peace? Tsunami disaster diplomacy in Aceh, Indonesia’, *Geoforum*, vol. 39, no. 1 (Jan. 2008), pp. 511–26.

and fatalities of local conflicts.¹³ Diminished capacity to manage local resource tensions or find viable alternative livelihood sources are important factors in the pathways from climatic change to livelihood insecurity to violence. In addition, socio-economic inequality, marginalization and discrimination can heighten the risk of violence and conflict in any context.

This pathway demonstrates that the adverse effects of climate change particularly affect communities directly reliant on natural resource incomes. When affected populations are marginalized from resources, or lack alternative livelihoods, those losses increase the risk of local tensions and sometimes even violence.

Increasing migration and changing mobility patterns

Climate-related migration is increasingly understood as an adaptation strategy for groups whose livelihoods or survival are jeopardized by the impacts of climate change. Research shows rapid-onset disasters can result in local displacement, but the impacts of gradual climate changes on migration are more diffuse and closely connected to demographic and economic asymmetries.¹⁴ Climate change may influence migratory movement towards areas with better livelihood options, as well as rural to urban migration.¹⁵

¹³ Krampe, F., Scassa, R. and Mitrotta, G., ‘Responses to climate-related security risks: Regional organizations in Asia and Africa’, SIPRI Insights on Peace and Security no. 2018/2, Aug. 2018; and Eklöv, K. and Krampe, F. ‘Climate-related security risks and peacebuilding in Somalia’ SIPRI Policy Paper no. 53 (Oct. 2019).

¹⁴ Barnett and Adger (note 3).

¹⁵ Rigaud, K. K. et al., *Groundswell: Preparing for Internal Climate Migration*

Capacity to manage tensions and alternative livelihood options are critical to the pathways from climate change to livelihood insecurity to violence



Long-distance or cross-border migration have, so far, been explained by factors other than climate change.

Population movements linked with the impacts of climate change can increase the risk of community-based violence and conflict when social, political and economic factors bring migrants into confrontation with other groups.¹⁶ One explanation for why this pathway may lead to conflict is resource competition in the receiving area; changing pastoral mobility patterns are a salient example of this.¹⁷ As climate change alters pastoralists' traditional seasonal migration patterns in East and West Africa, they develop new livestock and agricultural strategies and sometimes 'have ended up in unfamiliar territory in search of pasture and water for their livestock, for example in bordering countries', contributing to land conflicts between herders and farmers.¹⁸

However, the conflict potential of climate-driven migration also depends on social, political and economic contexts in sending and in receiving areas, including attitudes to migrants.¹⁹ Women's mobility may be influenced by sociocultural expectations and,

(World Bank: Washington, DC, 2018).

¹⁶ Reuveny, R., 'Climate change-induced migration and violent conflict', *Political Geography*, vol. 26 (2007), pp. 656–73.

¹⁷ Rigaud et al. (note 15).

¹⁸ Njiru, B. N., 'Climate change, resource competition, and conflict amongst pastoral communities in Kenya', eds Scheffran, J. et al., *Climate Change, Human Security and Violent Conflict: Challenges for Societal Stability* (Springer-Verlag: Berlin, Heidelberg, 2012), p. 516.

¹⁹ van Baalen, S. and Mobjörk, M., *A Coming Anarchy? Pathways from Climate Change to Violent Conflict in East Africa* (Stockholm University: Stockholm, 2016); and Reuveny (note 16).

especially in conflict settings, risks of gender-based violence.²⁰ In fragile or conflict-affected contexts, tensions between migrant and host communities can be worsened by the erosion or replacement of customary mechanisms for dispute resolution, and the loss or displacement of traditional mediators.²¹

Another factor in the pathway between climate-related migration and conflict is when diverse religious and/or ethnic groups meet under difficult or tense circumstances. This is a particular risk in fragile host communities. In-migration can increase—or be perceived to increase—livelihood insecurity for the host population or disturb local power dynamics.²² This also relates to urban migration. When climate change destabilizes rural livelihoods, affected populations may seek safety and alternative incomes in urban areas.²³ Research in India suggests large influxes of migrants following droughts and floods increase the risk of riots in religiously and culturally diverse urban host communities.²⁴

Climate change affects some groups more than others, leading some to seek alternative livelihoods in comparatively resource-rich or economically stable areas. This pathway demonstrates that the conflict potential of migration is contingent on the social, political

²⁰ Sultana, F., 'Gendering climate change: Geographical insights', *The Professional Geographer*, vol. 66 no. 3 (2014), pp. 372–381; and Smith (note 9).

²¹ Eklöv and Krampe (note 13).

²² De Juan (note 3) pp. 22–33; and Koubi (note 4).

²³ Rigaud et al. (note 15).

²⁴ Bhavnani, R. R. and Lacina, B., 'The effects of weather-induced migration on sons of the soul riots in India', *World Politics*, vol. 67, no. 4 (Oct. 2015), pp. 760–94.



and economic context, which includes how migration and migrants are perceived. Together, these factors show the importance of analysing the causes and possible effects of population movements in sending and receiving areas, and how different actions influence the outcomes.

Tactical considerations by armed groups

While climate change can increase the risk of violent conflict breaking out, it could also affect the dynamics of ongoing hostilities. Research shows climate change can affect the strategic decisions and tactics of armed groups in at least three ways: (a) when they use coping strategies to reinforce group food security, (b) when they use the strain of climate-related impacts to boost

recruitment and (c) when they adapt behaviour to opportunistically capitalize on climate pressures. When climate change

affects the availability of natural, human and other resources, armed groups change tactics accordingly. This is evident when armed groups make tactical decisions to gain access to natural resources, particularly in productive lands and during scarcities, or when their recruitment pool expands due to climate-related disasters and/or livelihood losses.²⁵

Al-Shabab demonstrated how armed groups use tactics to ensure their access to resources, following a drought in the early 2000s. The group seized parts of southern Somalia, occupying sparse green areas of land, exploiting farmers

²⁵ Nordqvist and Krampe (note 8).

and the lush soil to generate income for the insurgency and consolidating its stronghold in the region.²⁶ The impact of livelihood losses on armed group membership is seen in the Middle East, where al-Nusra Front and the Islamic State recruited heavily from Sunni Iraqis discontented by government responses to issues linked to climate change, including diminished agricultural productivity and food insecurity.²⁷

Research also finds that the impact of climate-related disasters on armed group recruitment and support is contingent on factors including the presence and capacity of government actors and competing groups.²⁸ Armed groups can use the impacts of climate change to position themselves as alternative service and relief providers where governments are weak or unresponsive, as seen in the case of al-Shabab in Somalia and Jamaat-ud-Dawa in Pakistan.²⁹ A wide range of factors determine the capabilities and considerations of armed groups, including 'strategic ambitions and objective constraints such as geographical distance, terrain, infrastructure, military strength and the spatial distribution of resources'.³⁰ As with other

²⁶ Heaton, L., 'The making of a climate outlaw', *Foreign Policy*, 6 June 2017; and Eklöv and Krampe (note 13).

²⁷ King, M. D. 'The weaponization of water in Syria and Iraq', *Washington Quarterly*, vol. 38, no. 4 (2015), pp. 153–69.

²⁸ Walch, C., 'Weakened by the storm: Rebel recruitment in the wake of natural disasters in the Philippines', *Journal of Peace Research*, vol. 55, no. 3 (Feb. 2018), pp. 336–50; and Siddiqi, A., 'Climatic disasters and radical politics in southern Pakistan: The non-linear connection', *Geopolitics*, vol. 19, no. 4 (Aug. 2014), pp. 885–910.

²⁹ Eklöv and Krampe (note 13); and Siddiqi (note 28).

³⁰ Detges, A., 'Close-up on renewable resources and armed conflict, the spatial logic

The conflict potential of migration is contingent on the social, political and economic context, including how migration and migrants are perceived



pathways there is no causal link between climate change and armed group activities, but there can be an impact on the dynamics of ongoing hostilities—either negative or positive. In some cases, rapid-onset disasters have decreased armed group recruitment or even increased cooperation with authorities.³¹

Although the long-term effects of climate change on armed group tactics are not sufficiently understood to draw final conclusions, it is clear this pathway is highly context specific. A range of variables, including government and institutional responses to local needs, can intercept the pathway from climate pressures to armed group tactics.

Exploitation by elites and resource mismanagement

Local conflicts, rather than civil wars, are a more likely outcome of environmental degradation due to climate change. However, this pathway shows small-scale tensions can increase the risk of broader conflict when exploited by elites—individuals or groups with relative wealth, privilege, power or influence. Rapid-onset disasters can tie local resource conflicts to broader insecurity when local elites use instability to advance their control over resources, further their strategic aims or seek alliances with national elites to strengthen their position in local conflicts.³²

After rapid-onset disasters, landowners and corporate entities can use political networks to gain control over aid distribution, with evidence suggesting local elites

accrue power and legitimacy by controlling who receives aid, especially in conflict-affected areas. Research in South Asia shows elites can exploit disasters like floods or droughts by occupying lands of displaced groups, demonstrating a link with the climate-migration pathway.³³ In the Brahmaputra–Jamuna floodplain people are sometimes temporarily forced to relocate during seasonal weather fluctuations like monsoons, and rural landlords have used private militias to violently bar people from returning to their land.³⁴

Elites can also exploit vulnerable populations for political aims, especially in ongoing conflicts. In the outbreak of war between northern and southern Sudan in the early 1980s, the conflict interacted with local community divisions and strains from recurring droughts in the preceding decade. Livelihood insecurity and long-standing community conflicts fed the recruitment of marginalized local groups into government forces and the Sudan People's Liberation Army. This was the case of the Rezaigat camel nomads in Darfur, who had been marginalized from resource access due to water scarcity and drought.³⁵

Governmental and institutional presence and response to local needs mediate the influence of climate change on armed groups' tactics

of pastoralist violence in northern Kenya', *Political Geography*, vol. 42 (2014), pp. 59–60.

³¹ Gaillard et al. (note 12).

³² van Baalen and Mobjörk (note 19).

³³ Nordqvist and Krampe (note 8).

³⁴ Zaman, M. Q., 'Social structure and processes in char land settlement in the Brahmaputra–Jamuna floodplain', *Man*, vol. 26, no. 4 (Dec. 1991), pp. 673–90.

³⁵ Suliman, M., 'Civil war in Sudan: The impact of ecological degradation', *Contributions in Black Studies*, vol. 15, no. 1 (1997), pp. 99–121; and Mohammed, A., 'The Rezaigat camel nomads of the Darfur region of western Sudan: From co-operation to confrontation', *Nomadic Peoples*, vol. 8, no. 2 (2004), pp. 230–40.



These examples show local governance as an intervening factor in the pathway from climate change to elite exploitation to conflict. When rural areas lack government presence, or where government actors favour some groups while marginalizing others, the risk of conflict increases. In West

African and South Asian cases, land protection rights and land ownership laws are also important factors, where marginalization

has an outsized impact on poorer communities, making them more vulnerable to exploitation, which can cause or intensify violent conflict.³⁶ Women from marginalized groups are therefore doubly exposed to climate change impacts and their violent social outcomes.³⁷

As with the other three pathways, the existing evidence of elite exploitation of climate change impacts is tied to specific contexts. But, more generally, this pathway highlights the need for incorporating the potential roles that elite groups can play in climate-exposed and conflict-affected regions, with significant impact on possible social outcomes.

APPLYING THE PATHWAYS APPROACH TO POLICYMAKING

These four pathways highlight the critical role of human action, reaction and inaction in mediating the possible violent outcomes of climate change. As a policymaking tool, pathways help to identify and navigate the political space for

mitigating violent conflict. They can help policymakers incorporate short- and long-term processes into their risk analysis and situate their responses in local contexts.

The following guidance on how to use the pathways approach targets policymakers at three levels: country/operational level, governmental/donor level and multilateral level.

Country/operational level. In countries that experience climate change and political fragility, policymakers can use the pathways approach in analysis, programming and reporting on climate-related security risks. Pathways can help policymakers at this level to integrate climate-related security risks into existing country analysis and reporting, including on conflict issues and trends. In-country experts can also use pathways to develop priorities for short-term programming, for example identifying and strengthening relevant local dispute mechanisms and dialogue initiatives. Policymakers in the field can also report on climate-related security risks in diplomatic and policy discussions at different levels, contributing to developing longer-term strategic priorities tailored to local specificities.

Governmental/donor level. At the government and donor level, pathways can support policymakers' coordination across policy areas, identify holistic policy responses to climate-related security risks and build responses that are couched in local contexts. The four pathways demonstrate that policy responses to climate-related security risks require the input of different policy communities. For example, the migration and

Local governance, government presence and treatment of different groups, is key to the pathways from climate change to elite exploitation to conflict

³⁶ Nordqvist and Krampe (note 8); and van Baalen and Mobjörk (note 19).

³⁷ Smith (note 9).



mobility pathway encompasses policy areas including livelihoods and development policy, migration and security policy, and resource and environmental governance. Governmental/donor policymakers are well placed to coordinate short-term responses and longer-term strategies across silos, through cross-departmental collaboration and knowledge sharing; for example in climate-sensitive joint analyses and coordinating actions in the field. Combining the expertise of different policy communities can also support the prioritization of climate security at the governmental/donor level. Here, policymakers can use the pathways concept to advocate for context-sensitive responses to climate change impacts on human security, by engaging with and incorporating country/operational level analysis into longer-term strategic priorities, and through bilateral and multilateral diplomatic channels.

Multilateral level. Analysing the pathways of climate-related security risks is equally relevant for policymakers in multilateral organizations. This tool can contribute to strengthening global strategies for addressing long-term climate priorities, as well as support political frameworks for targeted short-term interventions. In the long term policymakers at the multilateral level will play a key role in advocating for global standards in responding to multifaceted climate-related security risks, including bringing together multiple policy communities for comprehensive responses. For example, strengthening local livelihood

resilience to climate change impacts will draw on livelihood security policies and also sustainable development and environmental protections, as well as requiring a new lens for viewing migration and mobility patterns. Policymakers in multilateral organizations can also use the four pathways to advocate for context-specific responses to climate-related security risks in short-term interventions. For example, in climate-related humanitarian missions in fragile contexts, multilateral organizations can use the pathways analysis to identify key actors at the local, national and regional levels. Pathways can also help to identify entry points and coordination platforms for relevant specialized agencies in peacebuilding, migration or food security.

The negative impacts of climate change on peace and security will require concerted and comprehensive responses from various levels and fields of policymaking. The complex interactions, the impacts on human security and the increasing risk of violence and conflict require tools to support policymakers in analysing and identifying entry points for interventions that can reduce the risk of insecurity in climate-exposed and fragile regions. The pathways approach serves as a starting point for strategic policy engagement around these complex relationships.

Pathways can help policymakers incorporate short- and long-term changes into their risk analysis and situate policy responses in local contexts



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ABOUT SIPRI'S CLIMATE CHANGE AND RISK PROGRAMME

The predicted impacts of climate change are becoming increasingly visible. Environment and climate-related risks—including extreme weather events, water scarcity and the failure to adapt and mitigate climate change—are among the top risks the world faces. Policymakers, researchers and the public increasingly recognize the need to address climate-related security risks through cooperation and dialogue.

SIPRI's work on climate change and risk provides reliable insights on how climate-related security risks evolve and how they are interlinked and interact with different social, political and economic processes. SIPRI researchers also analyse how different policy organizations are responding to these risks and provide advice on conflict-sensitive adaptation, mitigation strategies and how international efforts for sustaining peace can be achieved.

SIPRI's Climate Change and Risk Programme is involved in a number of cross-cutting research themes, exploring topics such as gender, and issues such as food security, energy security and the Anthropocene. The Programme also looks closely at institutional responses in organizations such as the African Union, the European Union and the United Nations. The research takes place within the frameworks initiatives like the Stockholm Climate Security Hub and the Environment of Peace.

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