The impacts of climate change are increasingly viewed as global security risks, which will have far-reaching implications for both human and renewable natural systems. Most climate–conflict research has focused on East Africa and sub-Saharan Africa. This SIPRI Insights explores and summarizes the findings from a systematic literature review of climate–conflict research on South Asia and South East Asia. Although these regions have been greatly affected by both climate change and conflict, there have only been a small number of rigorous academic studies that focus on the climate–conflict relationship. While this constrains the ability to draw general conclusions, there is context-specific evidence that climate change can have an effect on the causes and dynamics of violent conflict in the region when: (a) it leads to a deterioration in people’s livelihoods; (b) it influences the tactical considerations of armed groups; (c) elites use it to exploit social vulnerabilities and resources; and (d) it displaces people and increases levels of migration. In acknowledging that these mechanisms are often interlinked and more noticeable in some climatic, conflict and socio-economic contexts than in others, the need for more research in both regions is clear.

SUMMARY

- The impacts of climate change are increasingly viewed as global security risks, which will have far-reaching implications for both human and renewable natural systems. Most climate–conflict research has focused on East Africa and sub-Saharan Africa. This SIPRI Insights explores and summarizes the findings from a systematic literature review of climate–conflict research on South Asia and South East Asia. Although these regions have been greatly affected by both climate change and conflict, there have only been a small number of rigorous academic studies that focus on the climate–conflict relationship. While this constrains the ability to draw general conclusions, there is context-specific evidence that climate change can have an effect on the causes and dynamics of violent conflict in the region when: (a) it leads to a deterioration in people’s livelihoods; (b) it influences the tactical considerations of armed groups; (c) elites use it to exploit social vulnerabilities and resources; and (d) it displaces people and increases levels of migration. In acknowledging that these mechanisms are often interlinked and more noticeable in some climatic, conflict and socio-economic contexts than in others, the need for more research in both regions is clear.
used to locate articles in three standard academic databases. In the subsequent selection process, the initially identified articles were filtered by geographical or regional focus, topical relevance and empirical evidence on the complete causal pathways or mechanisms, through a three-stage review process. Both quantitative and qualitative research was included in the analysis. This provided a scientifically sound way to identify and explain the link between climate change and conflict. Moreover, the emphasis on mechanisms has enabled points of intervention to be identified for policy-making that can assist conflict prevention.

Despite the fact that South Asia and South East Asia have been greatly affected by climate change and conflict, the analysis confirms that the links between the two phenomena remain understudied in both regions compared to other regions. While this limits the ability to draw more general conclusions, the analysis below finds that existing research addresses similar categories of mechanisms linking climate change to the risk of violent conflict as those presented in previous reviews of other regions. Nonetheless, there were also noticeable differences between the way these mechanisms play out in the two regions of Asia and in other regions of the world, which is to be expected given their different climatic, conflict and socio-economic contexts. For example, conflicts between herders and farmers, which are a key aspect of the links between climate and conflict in East Africa, are not a relevant feature in South Asia and South East Asia.


6 The mechanisms in this study are derived from the empirical evidence in the articles analysed. As noted above, these categories of mechanisms are similar to those presented in previous studies but vary in how they play out.
The findings from the systematic review reaffirm that policy responses to climate-related security risks need to acknowledge the complexity of the climate-conflict relationship through specific mechanisms, and to be adapted to specific contexts. However, more research is needed to enhance theoretical and empirical understanding of these regions. Breaking down the relationship into mechanisms allows more fine-grained dynamics to be identified, thereby revealing points of intervention and enabling tailored policy responses. This study shows that not enough is known about the climate–conflict relationship in these regions, and emphasizes the need for more research. However, making use of the scarce evidence that does exist, it is possible to say that it is important to emphasize the need for systemic approaches to assessing climate-security risks, in order to ascertain the validity of current responses in other contexts.

II. Contextual background: South Asia and South East Asia

South Asia and South East Asia, two regions characterized by social, political, ethnic and religious diversities, are home to 2.5 billion people (see figure 1).\(^7\) Several countries in these regions experienced rapid economic growth in the 1990s. Today, many middle-income countries such as India, Indonesia, Malaysia and Thailand continue to substantially reduce the number of people living in absolute poverty.\(^8\) Nonetheless, the process of poverty reduction has been slow and uneven. Many countries in both regions face the challenge of growing socio-economic inequality, linked to the unequal distribution of economic resources.\(^9\) In some countries, many religious, ethnic or political minority groups continue to be marginalized by economic and political processes.\(^10\) These groups often reside in rural or unplanned urban areas.

In this complex and diverse setting, livelihood and national security are further affected by climate change.\(^11\) South Asia and South East Asia are experiencing an increase in temperature and sea-level rise, together with an increased prevalence of extreme climate-related events, such as floods, cyclones and droughts. A majority of the population live in rural areas, which makes them vulnerable to climate and environmental change as they rely on

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\(^{7}\) This report follows the United Nations regional definitions: South Asia comprises Afghanistan, Bangladesh, Bhutan, India, Iran, Nepal, Pakistan and Sri Lanka; South East Asia comprises Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Timor-Leste and Viet Nam.

\(^{8}\) For details of the adjusted gross national income per capita and country-specific ‘poverty headcount ratios’ of the World Bank’s middle-income countries, see World Bank, Data, Middle income, 2018, <https://data.worldbank.org/income-level/middle-income>.


income from agriculture and fishing. At the same time, there has been an increase in rural–urban migration. Cities are rapidly expanding and urban planning is struggling to keep up, especially in terms of climate-adaptive schemes and disaster preparedness. For example, South East Asia has one of the longest coastlines in the world, leaving it heavily exposed to sea-level rise and extreme weather events. These affect coastal cities such as Jakarta, Manila, Bangkok and Ho Chi Minh City.

Socio-economic and climatic processes are likely to compound political fragility and ongoing violence. The most common forms of organized violence in the regions are communal conflicts, riots, rebel or insurgent group violence and state violence against civilians. Economic, social and political discrimination combined with poor governance can underscore grievances and promote ideological struggles. In other areas, a combination of the geographical features of the region and lack of governmental reach or support in rural, marginalized areas has been seen to favour insurgent movements.

III. Pathways explaining the climate–conflict link

Despite the fact that several of the countries in South Asia and South East Asia extremely vulnerable to climate change are also affected by conflict, little attention has been paid to understanding the linkages between climate change and violent conflict in these two regions. As noted above, the paucity of current research limits the number of published studies, making it difficult to identify clear regional patterns. This study therefore stresses the need for an improved empirical and theoretical understanding in future, to help explain the mechanisms that link climate change to violent conflict in these two regions.

13 See Brecht, H. et al., ‘Sea-level rise and storm surges: High stakes for a small number of developing countries’, *Journal of Environment and Development*, vol. 21, no. 1 (Jan. 2012), p. 120.
20 The systematic review was based on studies on and in: India (9 studies), Pakistan (1 study), the Philippines (4 studies), Indonesia (3 studies), Bangladesh (3 studies) and Thailand (1 study). The selection criteria were highly specific and rigorous with regard to quality, hence the limited number of studies.
That said, the scarce evidence base that the systematic review has brought to bear provides confirmation of the mechanisms linking climate change to violent conflict identified in other regions, such as the Horn of Africa, as well as some new contextual insights. For example, the analysis provides new understanding of how the effects of rapid-onset disasters, the distribution of disaster aid, and the role and agency of insurgent groups in responding to and coping with climate change affect violent conflict. Moreover, the review reveals interesting nuances in the types of violence linked to climate change; that is, the type of violence appears to depend on the social and political context, rather than any observable climate-related environmental change.

The summary below is structured using four common mechanisms that explain how and when climate-related environmental change can lead to violent conflict. These four mechanisms are used as broad logical pathways to structure the findings on the relationship between climate change and conflict. It is important to emphasize that consideration should also be given to alternative and conflicting explanations. Given the scarcity of existing evidence, no indications were found of additional mechanisms in the region. Nonetheless, absence of evidence is not evidence of absence, thus the need for further research. These mechanisms are often interlinked and relate to both the causes and the dynamics of conflict. However, analysing them separately, as seen below, helps to show the dynamic and multifaceted relationship between climate change and violent conflict, and derive the relevant implications for policymaking and future research.

**Worsening livelihood conditions**

In the research analysed, the focus is on areas where a large part of the population is reliant on resource-dependent income, such as from agriculture or fisheries—a pattern of dependency that is highly visible across both regions. The research suggests that a decrease in livelihood security through a loss of income from agriculture or fishing, or a loss of renewable natural resources such as food and water, can increase the risk of onset and the dynamics of violent conflict. Rainfall shocks, decreases in rainfall or oceanographic changes can negatively affect income channels. This can then reduce the opportunity cost of people participating in illegal income-generating activities or joining armed groups, especially in areas where there is no legal alternative source of income. In some coastal areas of Indonesia, for example, reduced income opportunities from fishing have been linked to an increase in piracy-related activities. In other cases, such as in some areas affected by the Naxalite conflict in India, worsening livelihood conditions have been related to the increased intensity of ongoing civil conflicts, with increased support for rebel or government groups. The same factors have

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21 The summary provides only limited references. For full references see the forthcoming publication by Nordqvist, Krampe and Mobjörk.
24 Eynde (note 18).
been found to increase violent competition over scarce resources in rural areas of Bangladesh.\(^{25}\)

The character of the conflict in these cases is often low-intensity, local and responsive to seasonal dynamics. In addition, the available evidence suggests that increased intensity of ongoing conflicts or igniting new tensions between and within communal groups is not always the outcome of climate-related environmental events. Some studies suggest that the adaptive capacity of groups must be factored into the equation. For instance, climate-adaptive strategies and/or rapid-onset disaster responses in regions dependent on renewable natural resources can sometimes ignite new tensions between and within communal groups over access to these resources, while at other times they do not.\(^{26}\) To some extent, the outcome seems to depend on the climate-adaptive capacity and planning abilities of the local government and institutions. Furthermore, a study on rapid-onset disasters in India found that social cohesion between and within communities can increase after a disaster rather than the disaster causing more tension. The reasons for this, however, are not well understood and need to be addressed in future studies.\(^{27}\)

**Tactical considerations by armed groups**

Several studies show that armed groups, such as rebel groups in the Philippines or the Naxalites in India, can make use of the societal consequences of climate events to gain power in an ongoing conflict. The literature analysed suggests three tactical reasons for this: (a) as a coping strategy to increase food security for the group; (b) as a recruitment tactic; and (c) as opportunistic behaviour. During droughts in agriculture-dependent areas in particular, rebel groups may increase their use of violence against civilians to ensure the group’s own food security. This can be seen among both the Naxalite rebels in India and the Barisan Revolusi Nasional-Coordinate (BRN-C) rebels in Thailand. Both groups violently remove local farmers from their land to ensure enough cropland and agricultural supplies for their own use.\(^{28}\) Furthermore, findings from India show that both rebel groups and government forces find recruitment easier in times of drought or when drought is expected. The risk of violence is especially high in rural areas, where government control is scarce and the local population is dependent on the support or protection of rebels or other armed actors.\(^{29}\)

In relation to rapid-onset disasters such as floods, the findings from the conflicts in the Philippines and Pakistan, for example, show that rebel recruitment or support for insurgency groups can increase. However, this seems to be dependent on the presence and capacity of government actors,

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\(^{26}\) Ayeb-Karlsson (note 25).

\(^{27}\) Slettebak, R. T., ‘Climate change, natural disasters, and post disaster unrest in India’, *India Review*, vol. 12, no. 4 (2013), p. 260.

\(^{28}\) Bagozzi (note 18).

\(^{29}\) Eynde (note 18).
the presence of competing groups and the rebel group’s capacity to recruit.\textsuperscript{30} In Pakistan, for example, increased support for the Islamist group Jamaat-ud-Dawa (JUD) after extreme floods in the Sindh province was only found in areas where the group already had a stronghold or where the government or other non-state groups were not present—and the JUD was able to provide disaster aid and assistance to the local population.\textsuperscript{31} Similar examples were found in the Philippines. On the other hand, disasters can also decrease rebel recruitment, and even increase cooperation between armed groups. For example, in the Philippines the logistics and supply lines of the New People’s Army (NPA) were weakened following typhoons in 2012 and 2013. Instead of focusing on recruitment, the group concentrated on internal (and to some extent external) recovery and reorganization strategies.\textsuperscript{32} However, the long-term effects of such changes in patterns of support or recruitment have not been studied.

**Elite exploitation**

Some research has found that in the aftermath of rapid-onset disasters, local elites such as influential landowners or corporate entities can take advantage of their political networks to gain control over disaster aid distribution. The evidence suggests that local elites can gain power by controlling who the beneficiaries of aid will be, especially in relation to ongoing local conflicts. For example, government agencies often rely on private sector actors to distribute disaster aid. If this is not properly regulated, there is the increased risk that non-state actors will use the aid to alter power relations in ongoing conflicts. This link was found on the island of Sigocon in the Philippines, where local elites used the provision of aid to favour their own position in a long-standing, ongoing conflict over land.\textsuperscript{33} Furthermore, in Bangladesh vulnerable segments of society are often forced to temporarily relocate when faced with seasonal disasters such as monsoons. In such circumstances, the risk of local elites systematically capturing and claiming land as their own increases. In the Brahmaputra-Jamuna floodplain, for example, rural landlords have used private armies to violently bar people from land they previously occupied. At the same time, these armies often constitute the poor and landless, as local tradition coupled with land scarcity have created a dependency on local elites for land and livelihood.

The risks seem to be higher in rural areas where the local government and the police either favour local elites or have low levels of governance. In the aftermath of rapid-onset disasters, local elites such as landowners can take advantage of disaster aid distribution.


\textsuperscript{31} Siddiqi (note 30).

\textsuperscript{32} Walch (note 30).

An additional pressure comes from the fact that land protection rights are few and patterns of land ownership are unequal in many of the countries in the two regions. This especially affects poorer populations that have few or no ties to local political elites or that are economically and politically marginalized in other ways. However, research into these dynamics remains very limited and the evidence is related to highly specific contexts.

Processes of migration

Some studies have explored the linkages between climate change and conflict through processes of migration. It is crucial to point out that both climate-related migration and its links to conflict are hugely understudied areas, and the reasons that influence people’s decisions to relocate and why conflicts sometimes break out as a result are not sufficiently understood. Some studies in the systematic literature review provide evidence that socio-economic and political factors compound with climate-related environmental change, thereby influencing people’s decisions to move. In Bangladesh, for example, unequal land distribution, poverty and the adverse effects of dams on people’s livelihoods are compounded by climate change, thereby affecting people’s decisions to relocate.\(^{35}\) However, the studies in the review refer only to the contexts of intra-state and interstate migration within, or across the border between, India and Bangladesh—two countries that are ethnically and religiously diverse. In such circumstances, political structures in India can at times allow local (or national) political leaders to enable discrimination against vulnerable displaced groups, through either violent or socio-economic means, for the political and economic benefit of their own state.\(^{36}\)

Furthermore, research also suggests that in this context, interstate and intra-state migration influenced by precipitation shocks increases the risk of riots in the host communities, which are often urban environments. These riots are most prevalent in resource-dependent areas with low levels of socio-political stability. A large influx of migrants can either increase or be perceived to increase livelihood insecurity, or it can reshape the political power dynamics between groups in the host society, especially between religious or culturally diverse groups.\(^{37}\) In Tripura, India, a combination of increased competition over scarce natural resources and a perceived alteration of religious power balances influenced the outbreak of violence between migrants and locals.\(^{38}\) In such instances, elites may take advantage

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\(^{37}\) Bhavnani and Lacina (note 36); and Reuveny (note 35), p. 1.

\(^{38}\) Reuveny (note 35), p. 1.
of ethnic or religious diversity in a society and seek to incentivize inter-religious riots linked to economic grievances.\textsuperscript{39}

IV. Implications for future research and policymaking

In summary, and acknowledging the limited evidence base, what can be gleaned about the linkages between climate change and violent conflict in South Asia and South East Asia? The key finding from the systematic literature review is that knowledge is worryingly limited. In fact, countries such as Pakistan, Myanmar and Afghanistan, which are experiencing climate change and are host to notorious violent conflicts, are underrepresented in academic research. Similarly, the low number of rigorous academic studies that have so far been conducted in the countries and regions of South Asia and South East Asia constrains the ability to draw broader conclusions about the regions as a whole.

Nonetheless, the studies reviewed confirm previous analyses and show that, under certain circumstances, climate change increases the risk of conflict. Moreover, this study demonstrates that the four mechanisms identified in previous reviews of the climate–conflict linkage are also at play in the context of South Asia and South East Asia, albeit with notable differences. Climate-related environmental change influences violent conflicts when: (a) it negatively affects people’s livelihoods; (b) it influences the tactical considerations of armed groups in ongoing conflicts; (c) elites exploit social vulnerabilities and resources; and (d) it displaces people and increases migration in vulnerable and highly vulnerable natural resource-dependent contexts.

Due to the limited amount of rigorous empirical research on the climate–conflict linkage in South Asia and South East Asia, \textit{more research will be indispensable} to refining understanding of how climate change might increase the risk of violence and under what circumstances it is likely to do so. As violent conflicts are multi-causal, context-specific and develop over time, further research is essential not only to address knowledge gaps, but also to enable a more refined understanding of the applicability and adequacy of different response mechanisms in diverse contexts. To this end, it is important to analyse and compare regions that, despite being vulnerable and highly exposed to climate change, are able to peacefully mitigate such stressors.

Nonetheless, there are \textit{relevant lessons to draw from the available research}. The climate–conflict linkage primarily plays out in contexts that are already vulnerable to climate change, and where income is highly dependent on agriculture and fishing. Therefore, it is important to support the development of alternative sources of income, to increase the coping capacity of communities to manage temporary losses of income and to strengthen communities’ resilience in order to mitigate conflict risks. Various scholars have made suggestions that this might entail insurance schemes that smooth

Future research should address resource management, conflict prevention and disaster risk reduction in an integrated manner

out the annual income of vulnerable populations, a reduction in income sensitivity to climate conditions, legal reform and improved land rights, drought preparedness programmes and agricultural assistance. Previous programmes, such as food assistance programmes, have been followed by either a decrease or an increase in violence at different periods of implementation, as they are likely to alter the power relations in a community. The dynamics of violence following the implementation of projects need to be considered when policy responses are planned. The research therefore points to the need to develop conflict-sensitive analyses when designing and implementing disaster risk management and climate programming.

In conclusion, the underlying review illustrates the interplay between different mechanisms that link climate change and conflict. To further understand the relationship and advance policy guidance on how to mitigate conflict risks, future research should address resource management, conflict prevention and disaster risk reduction in an integrated manner. Future research needs to contribute in the following three key areas.

1. **Addressing spatial and temporal differences.** The impacts of climate change are expected to increase over time, but many climate-related disasters are seasonal and affect the dynamics of conflicts differently throughout the year. In addition, few studies address urban contexts despite increased urbanization and the vulnerability of urban centres in the region.

2. **Making use of contextual understanding.** Climate change and conflict events have different effects on different societies. It is therefore crucial to understand these context-specific differences in order to enable tailored responses. These should include local and marginalized communities. To provide contextually adequate responses that empower vulnerable groups, it is important to assess the needs, vulnerabilities and resilience of affected communities.

3. **Taking account of institutional capacity and governance.** The transnational character of climate change provides new challenges, but also increased relevance, for institutions and organizations. Where institutional capacity is low, there is an increased risk that aid will be mismanaged and the risk of conflict after a climatic event increases. It is therefore important to analyse how local, national and regional institutions are developing their ability to deal with these risks.

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40 See Gawande, K. et al., ‘Renewable natural resource shocks and conflict intensity: Findings from India’s ongoing Maoist insurgency’, *Journal of Conflict Resolution*, vol. 6, no. 1 (Jan. 2017), p. 140; Axbard (note 23); and Bagozzi (note 18).
42 Ayeb-Karlsson (note 25).
44 Uson (note 33).
Other publications on climate change and risk

**Responses to climate-related security risks: Regional organizations in Asia and Africa**
SIPRI Insights on Peace and Security
Florian Krampe, Roberta Scassa and Giovanni Mitrotta
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PERNILLA NORDQVIST AND FLORIAN KRAMPE

CONTENTS

I. Introduction 1
II. Contextual background: South Asia and South East Asia 3
III. Pathways explaining the climate–conflict link 4
   Worsening livelihood conditions 5
   Tactical considerations by armed groups 6
   Elite exploitation 7
   Processes of migration 8
IV. Implications for future research and policymaking 9

Figure 1. Regional map of South Asia (dark blue) and South East Asia (light blue) 2

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