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# Climate Security and Instability in the Bay of Bengal Region

Sarang Shidore

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# INTRODUCTION

The Bay of Bengal region is extremely vulnerable to climate change, which could exacerbate and compound risk factors associated with political instability and violence in the coming decades. The four states most likely to be affected by increasing global temperatures are Bangladesh, India, Myanmar, and Thailand. In order to prepare for and mitigate the potentially destabilizing effects of climate change, policymakers should understand the most plausible scenarios for climate change and conflict in the region.

Bangladesh, India, Myanmar, and Thailand are among the world's top ten states most vulnerable to natural disasters, while India is the largest power in the region and is itself highly climate vulnerable.<sup>1</sup> Historically, those four states have faced many of the world's deadliest cyclones.

Climate change increases the damage caused by cyclones, as warmer temperatures enable storms to hold more moisture. Rainfall variability—and the resulting flash floods—as well as rising sea levels contribute to routine flooding, which is especially dangerous for coastal communities. Some of these at-risk coastal areas encompass major, densely populated cities such as Chennai, India; Kolkata, India; Dhaka, Bangladesh; Yangon, Myanmar; and Bangkok, Thailand. Drought and soil deterioration are increasingly leading to food security concerns in Bangladesh, peninsular India, and Thailand, all of which rely on growing rice. Over the next three decades, deadly heat stress conditions are also likely to become more common.<sup>2</sup>

The Bangladesh-Myanmar-North Eastern India corridor is the part of the region most prone to climate-magnified conflict and instability. The likeliest climate-related paths to increased conflict and chaos are

through intensifying natural hazards (particularly cyclones and floods) and the securitization of climate-influenced migration. Though they face many common climate challenges, Bangladesh, India, Myanmar, and Thailand have varying levels of state capacity for disaster relief and human security promotion, with Thailand and India best equipped and Myanmar, wracked by internal instability, the most vulnerable. The Bay of Bengal is also a zone of maritime security and economic competition between the United States and China. India has emerged as a security partner of the United States in recent years largely due to their common rivalry with China. Other geopolitical tensions have increased within the region of late, especially between Myanmar and Bangladesh.

A combination of quantitative and qualitative sources—including conflict and climate vulnerability data, media and scholarly literature, and twenty-two interviews with senior academics, think-tank analysts, and climate and security practitioners and analysts—informed the analysis that follows. Four adverse scenarios focused on Bangladesh, Myanmar, and the region as a whole are outlined to enable policymakers to tailor capacities and responses.<sup>3</sup> Policymakers at the regional and global levels should emphasize cooperative policy approaches to improve resilience, disaster relief capacities, and preventive climate security diplomacy with regional institutions and states.

# CLIMATE CHANGE AND INSECURITY IN THE REGION

While there is not necessarily a direct causal relationship between climate change and armed conflicts or instances of political instability, under certain conditions, the effects of climate change can cause existing social and economic fault lines to widen, increasing the potential for conflict.<sup>4</sup> Literature on climate vulnerability focused on domestic instability and interstate rivalries in the Bay of Bengal region is not extensive, though some studies draw connections between climate change and various conflicts in South and Southeast Asia, including India-China tensions, the India-Pakistan conflict, and water disputes.<sup>5</sup> Migration related to climate hazards in the Bay of Bengal region has, however, drawn significant international attention.<sup>6</sup> The focus on migration is also due to previously overstated concerns about climate change as a primary driver of Bangladeshi emigration.<sup>7</sup> In fact, migration has multiple causes, and climate change tends to play a partial and indirect role.<sup>8</sup> Thus, the “environmental determinism” model of citing climate change as a predominant and current driver of migration is too simplistic.<sup>9</sup> However, in the event of a 1.5–2 °C (2.7–3.6 °F) increase in average global temperatures, climate change could well become a first-order driver of migration flows, especially from low-lying states and regions.

Climate change in the Bay of Bengal can be most accurately understood as a threat multiplier, typically magnifying existing risks of instability and conflict.<sup>10</sup> The Intergovernmental Panel on Climate Change (IPCC) defines climate change risk as the likelihood of hazards (including shocks such as cyclones as well as gradual environmental trends) multiplied by the potential effects of those hazards on the physical and human assets in the surrounding area (known as the exposure of a region).<sup>11</sup> A community’s climate vulnerability is defined by its “propensity or predisposition to be adversely affected” by hazards.<sup>12</sup> When



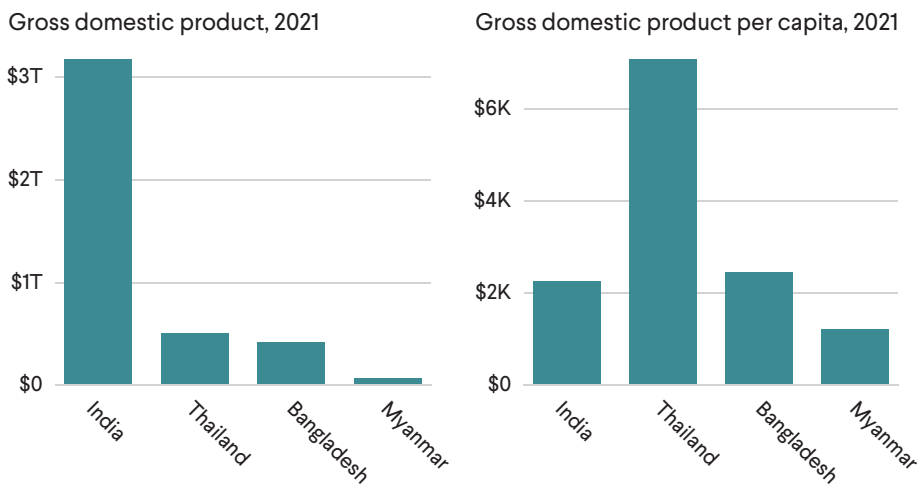
major climate hazards combine with high exposure and high vulnerability in the absence of strong institutions and societal harmony, serious security challenges could arise.

The Bay of Bengal region faces major challenges from climate change including intensifying cyclones, rising sea levels, flooding, drought, and extreme heat. Even at a 1.5 °C temperature rise, deadly heat stress conditions are expected to become more common.<sup>13</sup> Drought is also a concern, especially as most of the population that lives in the Bay of Bengal’s littoral zones is engaged in agriculture. Rice-growing regions—especially in Thailand, Bangladesh, and peninsular India—could be significantly affected by drought or soil deterioration. Climate change is causing increased rainfall variability, which is a major cause of flooding and flash flooding. Rising sea levels threaten the cities of Chennai, Kolkata, Dhaka, Yangon, and Bangkok. Preventing the emergence of security challenges due to climate change should involve early action on adaptation among vulnerable communities, other disaster risk management (DRM) measures, and the adequate provision of humanitarian assistance and disaster relief (HADR) in the aftermath of natural disasters.

While Bangladesh, India, Myanmar, and Thailand are all exposed to substantial climate hazards, they have entirely different levels of economic development (see figure 1). India’s absolute gross domestic

Figure 1

### Bay of Bengal Countries Differ in Economy Size, Wealth



Source: World Bank.

product (GDP) is by far the largest, but in terms of GDP per capita—a metric which can be inversely related to climate vulnerability—Thailand is the most advanced. Bangladesh has recently made remarkable progress to slightly overtake India in GDP per capita. All four countries lie within the “warning” to “alert” range in the Fragile States Index, indicating serious governance and stability problems. Each also has a different local context and, thus, different adaptation needs.<sup>14</sup> In the case of Myanmar, ongoing internal instability following a February 2021 military coup has greatly increased state fragility and put the country at a higher risk of climate change-related insecurity. Bay of Bengal states have significantly improved their disaster response systems over the past two decades, but still suffer from major institutional deficits.

As the world heads toward a 1.5–2 °C climb in the global average temperature, the incidence of climate hazards will multiply and their entanglement with conflict will become much more significant. The littoral regions of the Bay of Bengal are among the most at risk in South and Southeast Asia when it comes to climate change.<sup>15</sup> Therefore, it is worth analyzing the specific link between climate vulnerability and the region’s security.

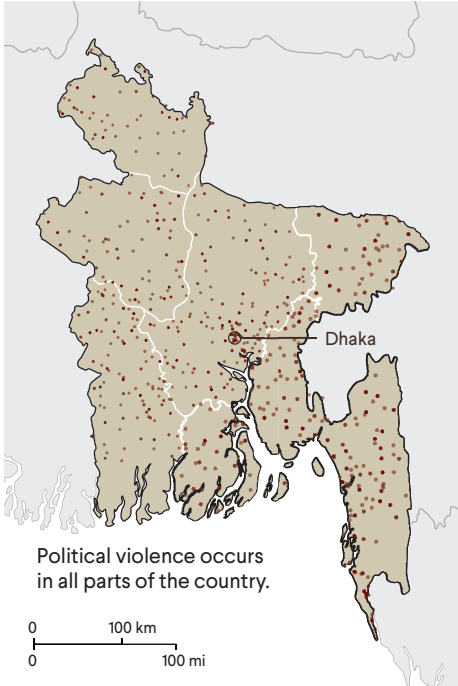
## BANGLADESH

A population of more than 160 million, limited state capacity, and flat, low-lying topography make Bangladesh uniquely vulnerable to the worst security outcomes of climate change. The landscape of Bangladesh is dominated by the world’s largest river delta, where the Ganges, Brahmaputra, and Meghna rivers converge. Its coast has historically been a major site of deadly cyclones.<sup>16</sup> Examples include the Bhola and 2B cyclones of 1970 and 1991, respectively, which killed between 300,000 and 500,000 Bangladeshis.<sup>17</sup> Bangladesh is the site of two-fifths of the world’s storm surges, and sea level rise (SLR) significantly amplifies the destructiveness of floods. Drought is a concern in the west and northwest of the country, and salinity ingress—the encroachment of saltwater into the freshwater supply—is a challenge in the country’s southwest.<sup>18</sup> Climate vulnerability in Bangladesh is generally high across the country, but is particularly high on the shores of its three main rivers, in the coastal south, its southeast (Chittagong district), and the northeastern district of Sylhet (see figure 2).<sup>19</sup> The impoverished communities who live on the sandbars, or “chars,” on Bangladesh’s major rivers are especially vulnerable. They live under the threat of seasonal floods that can wash away their homes.<sup>20</sup>

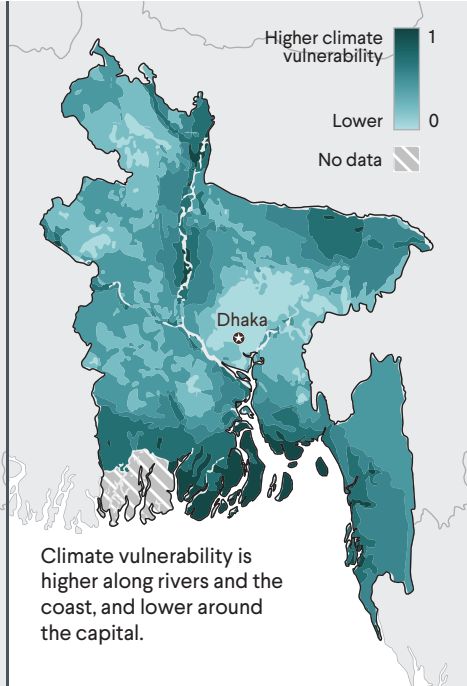
Figure 2

## Political Violence and Climate Vulnerability in Bangladesh

Incidents of political violence with fatalities, Sep. 2017 to Sep. 2022



Climate vulnerability score from Azam et al.



Sources: Armed Conflict Location and Event Data Project; Azam et al., “Identification of Climate Change Vulnerable Zones in Bangladesh Through Multivariate Geospatial Analysis.”

In contrast to Myanmar, the Bangladeshi economy has grown rapidly in recent years due to strong export and manufacturing performance, mainly in textiles. It has recently overtaken India in terms of per capita GDP and is also only slightly behind India in terms of human development indicators (see figure 1).<sup>21</sup>

The 2017 Rohingya expulsion crisis in Myanmar, resulting in a flow of refugees into Bangladesh, created a major challenge for the country’s disaster relief capabilities. Nevertheless, Bangladesh has evolved substantial capacities and plans for responding to complex emergencies, leading to a massive reduction in the loss of life in the wake of natural disasters.<sup>22</sup> For instance, the category four Cyclone Sidr in 2007 led to a

loss of 3,406 lives, in contrast to the hundreds of thousands lost during a weaker storm in 1970.<sup>23</sup> This amounts to a more than one-hundred-fold improvement.<sup>24</sup> The aftermaths of more recent storms with similar intensity to Sidr show a further dramatic decline in casualties.<sup>25</sup> Policy actions taken by the state have given rise to substantive increases in the country's resilience to natural hazards, though the presence of international nongovernmental organizations (NGOs) has been a significant help.<sup>26</sup> Bangladesh has achieved remarkable progress by investing a total of \$10 billion into the operations of small cyclone shelters, the construction of coastal embankments called polders, the cultivation of saltwater-resistant rice variants, attempts to reduce saltwater intrusion, reforestation schemes, early warning and communication systems, and evacuation plans.<sup>27</sup> The government also released a strategy on managing internal displacement in 2021.<sup>28</sup> Global climate experts such as Bangladesh-based Saleemul Huq are also pushing for adaptation funding and loss and damage accountability from wealthier states.<sup>29</sup> Despite these major advances, Bangladesh's institutions still struggle to effectively implement disaster relief plans.<sup>30</sup>

Bangladesh is not facing a major insurgency, though the region surrounding the capital of Dhaka, as well as some southern and eastern regions proximate to Myanmar's Rakhine state, faces significant political violence. Violence between the country's nationalist Muslim and secular political parties and intercommunal clashes are of primary concern. As sea level rise and seawater ingress increase, significantly more Bangladeshis will become displaced from coastal regions and the areas surrounding the country's "megadeltas."<sup>31</sup> Their migration inland is likely to trigger communal violence and land disputes in the southeast and boost recruitment of new migrants into drug trafficking gangs.<sup>32</sup> Bangladeshi migration is overwhelmingly internal; most migrants move to various district capitals or to the country's two major cities, Dhaka and Chittagong, rather than abroad.<sup>33</sup> Migration to India, which was substantial in the 1990s, has become less compelling to Bangladeshis due to economic growth at home over the past two decades. Indian border fencing also serves as a deterrent for migration to India.<sup>34</sup> As slow-onset sea level rise and salinity ingress increase, more citizens will migrate from coastal regions and regions surrounding the country's especially threatened megadeltas due to a combination of factors.<sup>35</sup>

While estimates of climate-related emigration from Bangladesh are difficult to calculate and often overstated, some estimates put the number as high as ten to twenty-six million by 2050.<sup>36</sup> More

conservative estimates still anticipate 3.6 to 13.3 million emigrants.<sup>37</sup> Should climate-magnified security concerns proliferate in Bangladesh, conflict would most likely occur in the country's southeast, adjacent to Myanmar's Rakhine state, and in the east and northeast, in regions bordering India. Hundreds of thousands of Rohingya refugees from Myanmar, currently housed in camps in the southeast of Bangladesh, are also highly vulnerable to climate hazards, even as they are increasingly victims of internecine violence between militant groups.<sup>38</sup>

## INDIA

India comprises a vast diversity of geographies, ethnicities, religions, and economies. It is by far the largest of the four Bay of Bengal countries with a population of over 1.4 billion, which became the world's largest in 2022.<sup>39</sup> Poor disaster planning in the region exacerbates its vulnerability to major weather events, as was revealed when recovery efforts failed to effectively reach some people affected by major floods in 2015 in Chennai.<sup>40</sup>

India is a lower middle-income country with living standards well below those of Thailand but greater than those of Myanmar (see figure 1). Its North Eastern Region is economically disadvantaged, while the peninsular states of Andhra Pradesh and Tamil Nadu are relatively prosperous, with generally higher human development levels and capable state and local governments. India faces multiple risks due to climate change including drought, floods, intense rainfall, cyclones, and sea level rise.

Rural distress, increased stresses on India's delicately balanced federal structure, and urban and intercommunal violence are the potential flashpoints with the greatest security implications; all are at risk of magnification due to climate change. Climate pathways leading to those security challenges include greater agricultural distress, interstate migration, water disputes between riparian states, natural hazards, and violence magnified by extreme heat waves.<sup>41</sup> A major Indian river that flows into the Bay of Bengal, the Brahmaputra, originates in Tibet, China, and is the site of a growing transboundary water dispute between New Delhi and Beijing.<sup>42</sup> The Brahmaputra's floodplain is home to many impoverished communities, making them more vulnerable to floods and natural hazards.<sup>43</sup>

India has greatly improved its disaster response capacity over the past three decades; natural hazards such as the 2013 Cyclone Phailin and the 2019 Cyclone Fani in the state of Odisha led to the loss of far

fewer lives than would have been expected one or two decades prior.<sup>44</sup> State governments, especially in Odisha and Tamil Nadu, have also been active in this arena. At the national level, India enacted the Disaster Management Act in 2005, which, among other things, created a civilian-led National Disaster Response Force (NDRF) overseen by the home ministry.<sup>45</sup> Though the NDRF, with its twelve thousand relief and rescue personnel, was intended to be India's primary disaster relief agency, it continues to rely greatly on the Indian military when it comes to major natural disaster response.<sup>46</sup> Though India has achieved laudable successes in the past two decades—saving thousands of lives in the wake of natural hazards—there remains space for significant improvements in creating adequate civilian-led structures for relief and rescue. Nevertheless, India is often a net disaster relief provider when it comes to South Asia and its neighborhood.

The littoral states of Odisha and Andhra Pradesh and adjacent Telangana, as well as the northeastern states of Bihar, Manipur, and Assam, are the most climate vulnerable in India's Bay of Bengal region, according to the New Delhi-based Council on Energy Environment and Water.<sup>47</sup> Of the six states, Andhra Pradesh and Odisha have lower levels of political contestations and violence (see figure 3). Assam, Bihar, Chhattisgarh, Jharkhand, Manipur, and West Bengal are the most prone to instability and conflict.

The remote nature of Assam and Manipur relative to mainland India adds to their instability risk. Several active or semi-active insurgencies operate in the states of Assam and Manipur. Assam has recently contended with intercommunal violence between various ethnic and religious groups. Chhattisgarh and Jharkhand are also sites of significant violence due to Maoist insurgencies. Bihar faces leftist militancy and political clashes, and the state of Telangana has experienced consistent left-wing political violence. India is facing the migratory effects of political and ethnic violence in Myanmar. More than forty thousand refugees have crossed into its northeastern state of Mizoram.<sup>48</sup> Despite the national government's directive not to accept refugees, local governments have given them shelter due to ethnic kinship among borderland communities.

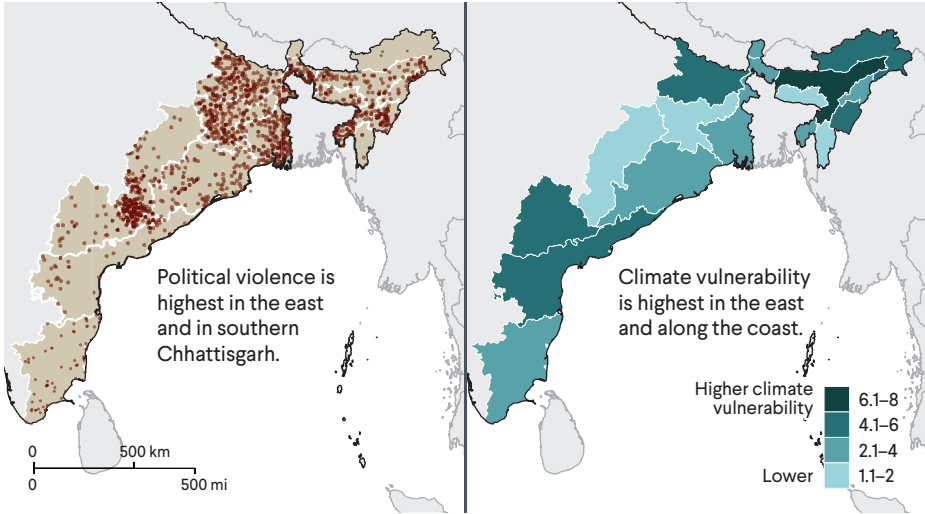
Armed violence and instability are known to increase climate vulnerability, which indicates that zones with both present could see further increases in such vulnerability. In the future, as major natural hazards and intense slow-onset hazards become more threatening, the causal link could also run the other way.

Figure 3

## Political Violence and Climate Vulnerability in India

Incidents of political violence with fatalities, Sep. 2017 to Sep. 2022

Climate vulnerability score from Mohanty et al.



Sources: Armed Conflict Location and Event Data Project; Mohanty et al., “Mapping India’s Climate Vulnerability.”

## MYANMAR

Myanmar, with a population of fifty-five million, is no stranger to severe natural disasters. For example, Cyclone Nargis in 2008 killed 130,000 people, and the unprecedented floods of 2015 were massively destructive. Myanmar ranked second in terms of destruction caused by natural disasters of any country in the world between 2000 and 2019.<sup>49</sup> Myanmar’s climate vulnerability is the highest in four zones, all of which present unique challenges (see figure 4). Its western coast (dominated by Rakhine state) and the Ayeyarwady delta in the south, including the capital of Yangon, are the most vulnerable to major cyclones. Its extensive river basins and coastal areas are subject to flooding. In contrast, its central zone, which stretches north of the delta towards China and includes the Sagaing, Magway, and Mandalay regions, is dry, putting it at high risk for drought and lethal heatwaves.<sup>50</sup> The far southeast

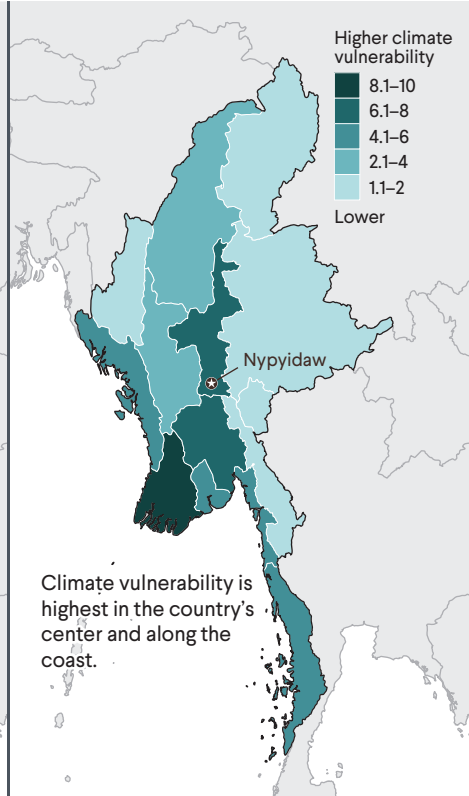
Figure 4

## Political Violence and Climate Vulnerability in Myanmar

Incidents of political violence with fatalities, Sep. 2017 to Sep. 2022



Climate vulnerability score from the Myanmar Ministry of Transport



Sources: Armed Conflict Location and Event Data Project; Myanmar Ministry of Transport, "Myanmar's National Adaptation Programme of Action (NAPA) to Climate Change."

(including Kayin and Mon states and the Tanintharyi region) suffers extreme vulnerability to floods and some cyclone activity.

Myanmar is the least wealthy and most fragile of the four Bay of Bengal states. It is also the only state in the region currently wracked by political violence across most of its territory. In February 2021, the military (known as the Tatmadaw) seized power by launching a violent coup. The coup abruptly ended semi-democratic rule in Myanmar and



led to widespread protests, which triggered a brutal military crackdown. Following the imposition of full military rule, the democratically-elected National League for Democracy coordinated with ethnic minority insurgent groups to establish a shadow government, known as the National Unity Government (NUG), and organize insurgents to fight the junta.<sup>51</sup> Currently, the military lacks control over large swathes of territory, with the NUG claiming control of about half of the country.<sup>52</sup> The western states of Chin and Rakhine, the northern states of Kachin and Shan, and the southeastern Kayin state and Tanintharyi region are sites of major ethnic conflict and insurgency. Myanmar's political woes have been coupled with increasing poverty rates.<sup>53</sup>

The Rohingya-dominated state of Rakhine and the borderlands adjacent to Bangladesh are the most significant climate security hotspots in the country, with Rakhine's Rohingya Muslim minority experiencing mass expulsions and persecution by the Myanmar military since before the 2021 coup. Since the coup, violence has spread to regions in southern and central Myanmar dominated by the majority ethnic group, the Bamar.<sup>54</sup> Few regions of the country are free from consistent violence (see figure 4). The conflict is already leading to spillover, as renewed fighting within Myanmar has spread to areas adjacent to the Indian, Bangladeshi, and Thai borders. Apart from the more than nine hundred thousand Rohingya refugees living in Bangladesh, more than one hundred thousand live in Malaysia. A further ninety thousand refugees have relocated to Thailand (mostly belonging to the Karen ethnic group), and newer refugee flows have been triggered in the aftermath of Myanmar's 2021 coup, with thousands of Burmese from Chin state fleeing to Thailand and India.<sup>55</sup> Authorities there have been reluctant to receive these new refugees and have even pushed some back across the border.<sup>56</sup> In the wake of new fighting between the Rohingya-dominated insurgent Arakan Army and the junta, Bangladesh-Myanmar tensions have been catalyzed by exchanges of fire at the border.

Myanmar's major internal political challenges coupled with its high climate vulnerability makes it especially prone to climate change-magnified security challenges. None of Myanmar's active conflicts were caused by climate change, but as climate hazards grow, intersections between climate vulnerability and armed conflict can lead to a self-reinforcing spiral.<sup>57</sup>

## THAILAND

Thailand, with a population of seventy million, suffered the ninth most damage when it comes to natural disasters globally in the 2000–2019

period. However, in a relative sense, Thailand is the best positioned of the four states in terms of climate security due to its middle-income status and higher state capacity. Climate vulnerability is generally low across most of the country. However, the city of Bangkok and its neighborhood, in addition to provinces in the far south and the far west (proximate to the borders with Malaysia and Myanmar, respectively), are the exceptions (see figure 5).

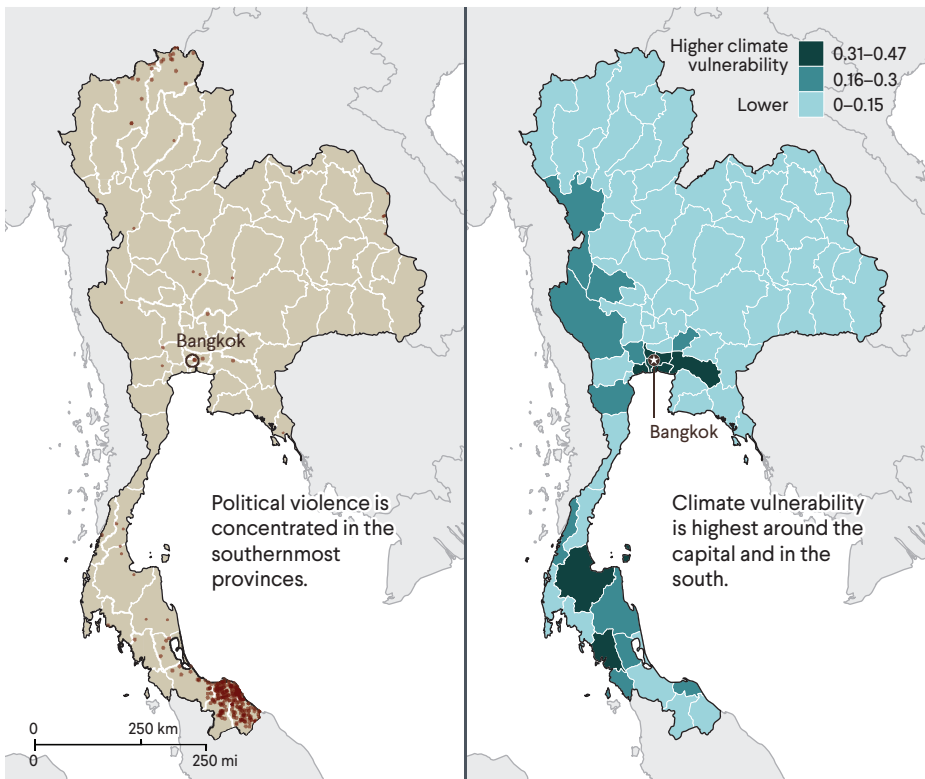
Climate change will cause significant economic losses to sectors such as tourism, industry, and agriculture, the latter mainly due to the

Figure 5

### Political Violence and Climate Vulnerability in Thailand

Incidents of political violence with fatalities, Sep. 2017 to Sep. 2022

Climate vulnerability score from Yusuf et al.



Sources: Armed Conflict Location and Event Data Project; Yusuf et al., “Climate Change Vulnerability Mapping for Southeast Asia.”

effects of climate change on rice cultivation. Thailand is among the world's top three exporters of rice, and rice cultivation is a significant source of employment.<sup>58</sup> The economic effects of natural disasters have already been considerable. Major floods in the country in 2011 damaged or destroyed many large industrial plants and caused \$46 billion in losses.<sup>59</sup> The Asian tsunami of 2004 killed thousands and badly damaged the tourism sector in popular areas such as Phuket. Middle-tier companies were hurt much more than larger ones, which tend to have better connections to government officials and financial institutions.<sup>60</sup> This is one example of how natural disasters can open up existing fissures in society.<sup>61</sup>

The city of Bangkok is greatly threatened by rising sea levels and could be underwater by 2050. Meanwhile, central Thailand suffers from drought vulnerability. Rice yields, the staple source of the country's food security, are likely to decrease each year in the worst future emission scenarios.<sup>62</sup> Extreme heat could make large portions of the country unsafe for outdoor labor by mid-century.

Thailand endured political instability under the populist government of Thaksin Shinawatra in the early 2000s. Since the 2014 coup, the military has largely stabilized the situation. Despite this, political violence is still common in the far south, which is also the most climate vulnerable part of Thailand (see figure 5). The Barisan Revolusi Nasional, an Islamist secessionist group, continues to carry out attacks against civilian and government targets in southern regions.<sup>63</sup> The violence has led to a total of 7,300 deaths and 13,600 injuries since 2004.<sup>64</sup> The relative stability in central and northern Thailand is, however, not guaranteed to last. Renewed fighting in Myanmar's Kayin state has forced thousands of new refugees into Thailand, mostly members of the minority Karen ethnic group. Deep divides within the Thai polity also persist. Former Prime Minister Thaksin's Pheu Thai party remains popular in the north and northeast of the country and appears to be making a national comeback as of a May 2022 election, despite significant opposition across Thailand.<sup>65</sup>

Nevertheless, Thailand is relatively well positioned on climate security among the Bay of Bengal states. However, its economy will be increasingly challenged by extreme heat, cyclones, falling agricultural yields, and rising sea levels. Threats to rice cultivation and exports will grow, putting farming livelihoods at risk. Thailand could also become a much greater magnet for refugees in the region if Myanmar's situation continues to worsen.

# SCENARIOS FOR REGIONAL INSTABILITY

In the Bangladesh-Myanmar-North Eastern India corridor, extreme climate vulnerability and a high risk of natural disasters often exist alongside political instability (see figure 6). The entanglement of the two issues will greatly increase in the event of a 1.5 or 2° C climb in global temperatures by the 2050s. While the eventual outcomes of this entanglement are not entirely predictable, the following four scenarios can act as policy planning guides to ensure greater regional resilience and planning to meet the security challenges from slow- and fast-onset hazards.

## *MYANMAR MELTDOWN*

The first scenario is the magnification of Myanmar's domestic conflict due to climate change. A climate shock such as a severe cyclone would likely increase the pressure on Myanmar's already unstable government. Alternatively, a combination of several smaller natural disasters and compounding, slow-onset climate events—particularly sea-level rise in coastal provinces—could have the same effect. The agricultural consequences of current drought conditions in central Myanmar are already reducing livelihood opportunities, triggering displacement, and providing recruits for insurgent groups. In the most affected areas, including Rakhine State, Ayeyarwady Region, Sagaing Region, and Bago Region, escalating extremism, surging poverty, and internal displacement could lead to a political crisis. Any of these potential crises could lead the military government to lose control over more territory as its capacity and legitimacy weaken, permitting current insurgencies to spiral. Spillover effects such as increased refugee flows could create opportunities for interstate clashes, especially at the Bangladeshi

Figure 6

## The Bay of Bengal Region



border. Refugees could also travel along sea routes from Myanmar to other coastal states in the region.<sup>66</sup>

An influx of refugees into India, Thailand, and Bangladesh would greatly stress the three countries, exacerbating local ethnic tensions and giving a boost to emerging insurgencies, especially in India. If Sino-Indian relations deteriorate further, China could be tempted to support insurgencies in India's most unstable states.<sup>67</sup> The worst-case outcome would be a military dispute drawing in Bangladesh, China, India, and Myanmar.

Of all four scenarios, Thailand will be most challenged by this scenario, with major refugee flows and the spillover of armed conflict affecting its border regions and its major tourist zones, all while climate change continues to directly harm Thailand's coastal economy and agricultural industry. Coupled with domestic tensions in Thailand and the intensification of insurgencies in its southern provinces, spillover from Myanmar is especially dangerous. Preventing or coping with this

scenario will require major improvements to HADR readiness and concerted efforts by major powers and regional institutions to tamp down interstate tensions in the region resulting from potential state failure in Myanmar and exacerbated by climate change.

### *EMBATTLED BANGLADESH*

A second potential climate security concern in the Bay of Bengal is driven by the possibility that Bangladesh becomes increasingly beset by climate change and unable to cope over the next fifteen to thirty years. An outflow of climate migrants from Bangladesh could be triggered by either a series of major natural disasters or slow-onset effects such as agricultural and coastal degradation in a context of stalled economic growth and growing domestic division. Though Bangladesh has been reasonably stable politically for more than a decade, the potential for political unrest remains a distinct possibility.

Bangladesh is also facing increasingly severe economic headwinds. Though GDP and human development metrics have shown impressive growth, most employment creation has been in the informal sector.<sup>68</sup> Exports have grown, but the import content within these exports has grown faster.<sup>69</sup> The COVID-19 pandemic has stressed vulnerable populations greatly, and climate change could cause the economy to stall well before the country reaches middle-income status.

At the high end of estimates, climate migration from Bangladesh could reach fifteen to twenty-five million by 2050. A fraction of these migrants would cross into India, providing fodder for a deeper construction of anti-migrant politics and increased interstate tensions between India and Bangladesh. India's northeastern states are faced with major flooding and drought, which will be magnified by China's planned construction of a major dam on the Brahmaputra River. Instability in India's North Eastern Region could escalate further if Bangladesh were to fail to accommodate for climate change. Preventing this scenario requires intergovernmental and external actors to aid Bangladesh to the maximum possible extent to cope with its climate challenges and facilitate continued economic growth in the country. India would also need to contain its anti-migrant politics to manage this scenario.

### *BANGLADESH BOOMING*

Bangladesh's success story in combating climate change is the main driver of this third scenario. This success would be due to a combination

of continued economic growth and greater commitments to strengthening community resilience and national HADR capacity. Thus, though climate hazards increasingly wrack the country, Bangladesh could be able to stay a step ahead of them and even emerge as a provider of solutions in the Bay of Bengal region.

However, Myanmar's instability is likely to increase in this scenario, magnified by climate change. This instability will continue to produce flows of refugees to Bangladesh, India, and Thailand. North Eastern India continues to muddle along with lower levels of growth and industrialization. This could induce a counterintuitive migration of low-income Indians, alongside displaced populations from Myanmar, into Bangladesh. (According to Bangladesh, Indian migrants are already present in the country.)<sup>70</sup> Bangladesh will continue to be challenged. It will need to manage migrant arrivals due to its relative success while coping with its own still-considerable climate problems. Even if Bangladesh sees success with adaptation efforts, urbanization of the population will present its own challenges; Dhaka and Chittagong will struggle with unchecked growth.

Though all four Bay of Bengal states are stressed in this scenario, Bangladesh and Thailand could emerge as zones of relative stability, making them viable regional leaders for adaptation, conflict stabilization, and HADR efforts. Though Bangladesh significantly outpaces India in this scenario in terms of its adaptive capacity and economic growth, India still remains an important regional actor due to its sheer size and considerable HADR capacities.

## WALLED WOES

The fourth scenario would result from states turning inward to greater isolationism as a result of the damaging effects of climate change and struggles with governance issues. Growth would greatly decline or stall across the region, and international actors would have to work directly with individual states on climate security rather than regional organizations, which would be mostly paralyzed and much less effectual. Without deep regional cooperation, countries would have poorer coping abilities and therefore worse economic futures.

Since all four states are struggling to cope with the entangled effects of climate disasters and security challenges, climate migrants would have no clear and attractive destination state. This would likely result in minimal cross-border migration, though large-scale internal migration would remain a major phenomenon. Interstate cooperation would

Table 1

## Climate Security Scenarios

Scenario	Key hazards	States at risk	Leaders
<b>Myanmar Meltdown</b>	Cyclones, floods, drought	Myanmar, Bangladesh, Thailand	ASEAN, China, India
<b>Embattled Bangladesh</b>	Cyclones, floods, SLR	Bangladesh, Myanmar, India	BIMSTEC, India, United States, Singapore
<b>Bangladesh Booming</b>	Cyclones, floods, drought	Myanmar	BIMSTEC, India, Singapore
<b>Walled Woes</b>	All	All	United States, China, Singapore

be low, leading to suboptimal economic integration and climate problem-solving in the Bay of Bengal region.

Regional organizations lose influence in this scenario. For instance, the influence of the Association of Southeast Asian Nations (ASEAN) over Myanmar would decline even more. Myanmar's insurgencies could either lose steam or successfully defeat the central government. If the junta is defeated, the various components of the NUG could see an opportunity to carve out their respective ethnic states. At its most extreme, this could cause a breakup of Myanmar into multiple states. Thailand can be expected to do relatively better in this scenario, given its larger state capacity.

The four scenarios illustrate the magnitude of the climate-security challenge in the region, the overcoming of which is in most cases beyond the national capacity of any one of the states (see table 1). Thus, cooperative options for addressing the climate crisis that are regional or international in nature should be prioritized, as they have the greatest potential to enhance climate security in the Bay of Bengal region.



# COOPERATIVE POLICY OPTIONS

Cooperative approaches to manage climate security challenges can be undertaken at the regional, interregional, and international levels. Several organizations at all three levels are candidates to lead in providing policy options. Of the bigger states, the role of the United States is crucial in many of these, as will be the contributions of China and India. Bangladesh, Thailand, and Singapore can also contribute significantly.

## REGIONAL ORGANIZATIONS

The Bay of Bengal straddles South Asia and Southeast Asia, which have historically been characterized by two separate regional security complexes. Thus, regional organizations are not well-positioned to tackle common threats in the Bay of Bengal's littoral states. Traditionally, South Asia's security dynamic has only minimally involved Southeast Asia, and vice versa. This is reflected in the existence of separate regional organizations.

The South Asian Association for Regional Cooperation (SAARC) is made up of South Asian states and was founded in 1985, while ASEAN has represented most of Southeast Asia since 1967. SAARC has been essentially paralyzed since 2016 due to elevated India-Pakistan tensions that culminated in a major military clash in February 2019.<sup>71</sup> India's relationships with other South Asian states are comparatively stable, though tension over the growing presence of China continues to limit the potential of cooperation.<sup>72</sup>

In contrast, ASEAN has evolved to become a far more effective and integrated organization.<sup>73</sup> In 2011, ASEAN established the Coordinating Centre for Humanitarian Assistance on Disaster

Management (AHA Center).<sup>74</sup> It has organized relief missions for Typhoon Haiyan in the Philippines, the 2012 Myanmar earthquake, and other climate disasters.<sup>75</sup> The ASEAN Defense Ministers' Meeting, known as the ADMM-Plus forum, provides an opportunity for international cooperation between the defense ministers of ten Southeast Asian states and eight major foreign powers.<sup>76</sup> ASEAN has the potential to cooperate more deeply with South Asian countries on governance initiatives.<sup>77</sup> Such cooperation would allow ASEAN to work towards meeting climate security needs for the entire Bay of Bengal region, including nonmember states in South Asia. However, ASEAN's singular focus on Southeast Asia and its strained relationship with Myanmar constrain its role as a major climate security actor in the Bay of Bengal region. The limitations of regional organizations enhance the importance of interregional structures in finding solutions.

## *INTERREGIONAL COOPERATION*

Several interregional organizations and mechanisms exist in the Bay of Bengal region, some of which could play a particularly useful role in climate security.

### *Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation*

The most relevant interregional organization in the region is the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC).<sup>78</sup> It was founded in 1997 in Bangkok with four

original members (Bangladesh, India, Sri Lanka, and Thailand).<sup>79</sup> Myanmar joined later that year, and Nepal and Bhutan joined in 2004. The organization was relatively inactive until 2016, when India initiated more frequent summits and greater streamlining of its charter and policies. BIMSTEC has now held five summits and has organized its activities into seven pillars, with a separate member state assigned to lead each pillar.<sup>80</sup>

The BIMSTEC charter makes a reference to climate change under the rubric of peace and stability in the Bay of Bengal region.<sup>81</sup> Thus, climate security is implicitly included in its charter. The organization has conducted two disaster management exercises, most recently in 2020 in India.<sup>82</sup> In recent years, the organization's focus has been on developing bottom-up, community-based approaches to disaster risk management.<sup>83</sup> Considering its membership, BIMSTEC is the organization best positioned to tackle climate security challenges in the Bay of Bengal. Also contributing to its potential efficacy, complete consensus is not required for BIMSTEC members to act on a particular issue. The organization operates on a three-plus-one principle, under which three members can initiate action as long as a fourth supports the move, even if other members do not wish to participate or do not show explicit support.<sup>84</sup> This principle can allow members to overcome paralysis that could otherwise prevent joint climate action if, for example, tensions between Bangladesh and Myanmar increase.

Despite its potential, BIMSTEC faces multiple challenges that it will have to overcome in order to emerge as a serious climate security provider. First, the crisis in Myanmar has created major rifts in its neighborhood, threatening the unity of BIMSTEC (as it has of ASEAN). Myanmar-Bangladesh border tensions are high, and a limited war cannot be entirely ruled out.<sup>85</sup> Malaysia and Indonesia have also taken a tough stand against Myanmar's military junta.<sup>86</sup> Myanmar lies within the zone of greatest climate security concern in the Bay of Bengal, and political alienation from powerful states and groups in South and Southeast Asia does not bode well for its participation in climate security initiatives.

Furthermore, BIMSTEC lacks the financial capacity to emerge as a forum for positive-sum cooperation. Its organizational budget of roughly \$200,000 is far lower than, for example, ASEAN's budget of \$20 million.<sup>87</sup> Member state representatives to BIMSTEC are of ambassadorial rank, below the ministerial rank that would boost more decisive action.<sup>88</sup> The institution does not yet have sufficient autonomy to propose innovative policy options.<sup>89</sup> BIMSTEC's long record of

sluggishness (despite its recent spike in activity) has also created a path dependence that will be hard to overcome.

Finally, smaller states have concerns that India could play a disproportionate role in BIMSTEC; proposals to include more Southeast Asian states were not favored by India at the organization's founding.<sup>90</sup> BIMSTEC's security pillar (which encompasses counterterrorism, climate change, and energy) is to be headed by India without any term limits, according to the organization's new charter.<sup>91</sup> It should be noted, however, that BIMSTEC's recent energization has largely been a product of India's leadership.

### *Indian Ocean Rim Association*

The Indian Ocean Rim Association (IORA) describes itself as an “inter-governmental organisation aimed at strengthening regional cooperation and sustainable development within the Indian Ocean region through its 23 Member States and 10 Dialogue Partners.”<sup>92</sup> Bangladesh currently chairs the association. The IORA includes practically all littoral states of the Indian Ocean ranging from South Africa in the west to Australia in the east. France is the only non-littoral member by virtue of its territories in the Indian Ocean. Notably, especially given its extreme climate vulnerability, Myanmar is not a member state of IORA. Disaster risk management, which encompasses preparation, mitigation, and recovery capabilities for natural hazards such as tsunamis and earthquakes, is one of IORA's eight priority areas. The IORA aims to strengthen “partnerships between governments and institutions to strengthen [disaster risk management] through the development of joint training programmes, sharing of experiences and best practices, building capacity and enhancing the technical capabilities within the region.”<sup>93</sup> It has held training exercises on early warning systems and geospatial technologies and evolved guidelines for HADR operations. India is currently chair of the IORA's Core Group on DRM. It hosted the First Experts Group Meeting on DRM in 2021.<sup>94</sup>

### *Singapore Regional HADR Coordination Center*

The Singaporean government established the Changi Regional HADR Coordination Center (RHCC) in 2014, focused on military-to-military cooperation to combat natural disasters.<sup>95</sup> The RHCC has a wide set of partner states including Thailand and India in the Bay of Bengal region as well as the United States, Australia, China, and France,

among others. Liaison officers from all partner states work together, coordinating relief missions and intervening directly upon the request of disaster-affected states.

Thus far, the RHCC has mainly tackled storms and floods, including in Malaysia in 2014, Nepal in 2015, and Laos in 2018, as well as the tsunami in Indonesia in 2018.<sup>96</sup> The Nepal operation was its largest thus far, with Singapore's military and international partners participating. The RHCC is also equipped to respond to droughts.<sup>97</sup> India and Thailand are partner states, and the RHCC conducted an exercise with Bangladesh in 2019.<sup>98</sup> The RHCC has pioneered a new command-and-control software tool that eases information sharing and coordination for HADR operations.<sup>99</sup> It aims to increase its relationships beyond regional militaries to include NGOs and relief organizations.<sup>100</sup>

### *Other Organizations*

Other interregional organizations also have the potential to play a role in meeting the climate security challenge in the Bay of Bengal. The Indian Ocean Naval Symposium (IONS), is a consortium of Indian Ocean littoral states organized by India in 2008.<sup>101</sup> It brings together the navies and coast guards of twenty-eight member states with the aim of meeting maritime threats, including those from climate change and natural hazards. India seeks to be the central power in IONS, whose wide membership brings together states as diverse as Iran, Saudi Arabia, South Africa, and the United Kingdom.<sup>102</sup> IONS conducted a HADR exercise involving fifteen states in March 2022.<sup>103</sup>

The Quad is a four-nation informal grouping comprising Australia, India, Japan, and the United States. Its second phase, after a long hiatus, began in 2017. Since 2021, the Quad's summits have occurred at the highest levels of member states. The Quad's focus, though not stated explicitly in its communiqués, is on competing with and countering China. Past statements have centered on providing public goods to the region, including climate security resources, though its record of delivery has been poor thus far.<sup>104</sup> The four states have however made most progress in military coordination to counter China with increasingly sophisticated military exercises on an annual basis, despite the Quad's official claim that hard security is not part of its agenda.<sup>105</sup> Some ASEAN states have expressed unease with the advent of the Quad.<sup>106</sup> The Quad has potential to play a useful role if it sticks more closely to its declared focus on provision of public goods and improves its delivery performance.<sup>107</sup>

The Heads of Coast Guard Agencies Meeting (HACGAM) is an informal forum of coast guards of twenty participant states.<sup>108</sup> It includes all four Bay of Bengal states as well as Australia, China, Indonesia, and Japan, among others. Japan initiated the grouping. HACGAM is a lower-profile grouping whose informality could provide it with agility to tackle climate-magnified disaster-readiness challenges.<sup>109</sup>

## COOPERATION WITH MAJOR POWERS

Major powers currently influential in the Bay of Bengal, namely the United States, China, and India, have all played a role in combating the climate change-related security challenges in the region. The United States has been highly active in the region. An early example was the U.S.-led Operation Sea Angel to aid Bangladesh following the 1991 cyclone. The operation was almost entirely sea-based, U.S. troops carried few arms, and operations were conducted in cooperation with the U.S. Agency for International Development (USAID) and the government of Japan. China provided a small contingent as well.<sup>110</sup>

A significant moment for U.S. involvement in HADR in the region was the Asian tsunami of 2004, after which the United States worked with the Indian and other militaries in the region to provide relief to thousands of victims. USAID has played a significant and beneficial role in the region for decades, especially in Bangladesh, and continues to maintain its presence in the region.<sup>111</sup>

China's participation in "disaster diplomacy" in the region is more recent.<sup>112</sup> Beijing's contributions have included the creation of the South-South Cooperation Assistance Fund in 2015 and a significant increase in funding for the UN Refugee Agency since 2017.<sup>113</sup> China and ASEAN signed an agreement on disaster management in 2014, which included more than \$8 million in Chinese support for ASEAN, including its AHA Center.<sup>114</sup> Meanwhile, India seeks to become the primary actor in the Bay of Bengal and Indian Ocean regions when it comes to HADR activities; it has participated in numerous bilateral and multilateral HADR exercises and disaster management missions, including a 2019 mission in the wake of Cyclone Idai in Mozambique.<sup>115</sup>

Cooperation between the United States and China is essential to manage the most adverse scenarios. Such cooperation seems unlikely in the current Cold War-like conditions, but its potential is nevertheless worth exploring. The United States sees China as its primary rival in South and Southeast Asia, particularly in the maritime dimension. The Joe Biden administration has acknowledged potential for cooperation

with China on climate change, but meaningful cooperation has been scant in recent years. Bilateral dialogue on climate action was regrettably ended by China following House Speaker Nancy Pelosi's (D-CA) visit to Taiwan in August 2022, though these conversations have now resumed in the wake of the Xi Jinping-Joe Biden meeting in Indonesia during the 2022 Group of 20 (G20) summit.<sup>116</sup>

Bangladesh, India, Myanmar, and Thailand have varied relations with the United States and China. Bangladesh has traditionally had a stronger relationship with the United States, though ties have become somewhat strained recently.<sup>117</sup> China's presence in Bangladesh has grown significantly, even as its rival India has improved its own relations with Bangladesh over the past decade. U.S. treaty ally Thailand has drifted away from Washington and closer to Beijing in recent years, though it retains considerable ties with the United States.<sup>118</sup> Post-coup Myanmar has been sanctioned by the United States and criticized by ASEAN. India is a close U.S. partner when it comes to countering China. India has, however, been uncomfortable with prioritizing climate security, arguing that climate is primarily a development issue.<sup>119</sup>

HADR is one of the few areas of U.S.-China military-to-military cooperation in recent years under the U.S.-China Disaster Management Exchange (DME), an annual exercise that began in 2005.<sup>120</sup> The DME is a forum for the two militaries to exchange knowledge and build best practices to prepare for natural disasters in other countries. For example, the fifteenth DME in 2019 simulated responses to a major volcanic eruption through a tabletop exercise with fifteen American and fifteen Chinese participants. Medical aid, search and rescue, environmental assessment, and debris clearance were among the simulated responses.<sup>121</sup> The sixteenth DME in 2020 centered on planning multinational coordinated response scenarios to climate change-magnified shocks including flooding, typhoons, and pandemics.<sup>122</sup> As described previously, Singapore's RHCC promotes HADR activities involving partners well beyond Southeast Asia including the United States, China, India, and Japan, who are members. Another Asian platform for U.S.-China HADR cooperation is the annual Cobra Gold exercise. Hosted by Thailand and typically involving multiple countries, the exercise includes Chinese and American contingents, as well as Singapore's RHCC. Chinese troops are restricted to the relatively limited HADR component of the exercise.<sup>123</sup>

# RECOMMENDATIONS

Given the transnational nature and massive scale of the threat posed by climate change in the Bay of Bengal region, limiting its harms will only be possible with international cooperation. For policymakers in the United States, boosting adaptation financing, championing Bangladeshi leadership, and supporting regional actors such as BIMSTEC are the most promising options. Greater U.S.-China HADR coordination, in partnership with Singapore and the Bay's littoral states, would greatly improve recovery capacity in the aftermath of future disasters. The following are policy recommendations, chiefly for the U.S. government, for tackling the Bay of Bengal's climate security challenges.

## **The United States should prioritize adaptation and loss and damage financing in the Bay of Bengal region.**

The focus of the United States in international climate negotiations and action has been overwhelmingly on mitigation activities, while adaptation often gets the short end of the stick. Of the total climate finance dispensed internationally (of which the United States contributes less, relative to its GDP, than several other wealthy countries), only a quarter is dedicated to adaptation.<sup>124</sup> The Secretary General of the United Nations has encouraged member states to spend half of all available climate funding on adaptation.<sup>125</sup> Investing in adaptation is critical, as it is a vital part of preventive measures that save lives and reduce the much higher costs of later HADR operations in the wake of climate-magnified natural hazards. When it comes to loss and damage, the principle of liability and compensation (that high-emission states are obliged to compensate climate change-related losses in vulnerable states) is not embraced by the United States.<sup>126</sup> The Climate Vulnerable Forum, a coalition of low-income and highly climate-vulnerable



states including Bangladesh, strongly pushed for loss and damage to be addressed more meaningfully.<sup>127</sup> Ultimately, the United States agreed to support a separate financing facility for loss and damage at the twenty-seventh Conference of the Parties to the UN Framework Convention on Climate Change (COP27). However, the fund will now need to be financed adequately.

**The United States and India should support Bangladesh’s emergence as leader for climate action in the Bay of Bengal region.**

Bangladesh’s geography is at the fulcrum of the Bay of Bengal, and in terms of climate hazard, Bangladesh is one of the most threatened states in the region. Its government has long embraced the concept of climate security. Bangladesh has recently taken huge strides in climate adaptation and DRM. It hosts the BIMSTEC secretariat and major centers of climate research including the International Centre for Climate Change and Development and the Centre for Bay of Bengal Studies.<sup>128</sup> Bangladesh also has uniquely positive relationships with India, the United States, and China, and hosts many international donors and aid organizations such as USAID. The United States, with USAID at the forefront, and India should further support Bangladesh to act as a node of climate knowledge and policy in the region in the adaptation and DRM arenas. This includes more widely disseminating Bangladesh’s approaches to DRM, which have been recognized as an international best practice, forging deeper research links with its institutes on adaptive practices on coastal habitats and saltwater-resistant agriculture, empowering it more within BIMSTEC and other regional forums, and centering its climate institutes in regional collaborations and events on climate security.

**The United States and China should increase climate cooperation activity in the Bay of Bengal by working with regional organizations and initiatives.**

The United States and China, along with India, are the biggest powers in the Bay of Bengal due to the reach of their militaries and their strong economic ties with states in the region. Though U.S.-China climate dialogue has resumed, any hope for the expansion of the DME appears to be slim for the foreseeable future. However, such cooperation is essential for solving the climate crisis and would greatly aid the Bay of Bengal region in meeting its challenges. South and Southeast Asia, including the Bay of Bengal, provide an ideal lower-profile space for the United States and China to deepen their currently minimal

habits of cooperation, even if indirectly. With the exception of India, all states in the region have positive relations with China. The United States and China should greatly deepen their climate dialogue (especially on HADR activities) through their joint participation in inter-regional organizations and initiatives. Such a dialogue would be likely to attract less criticism than any higher-profile bilateral initiatives, drawing less hostility among anti-engagement constituencies in both countries toward each other. Singapore's RHCC is a suitable site for communication between the United States and China. Expanding the currently minimal HADR activities involved in Thailand's Cobra Gold exercise or extending the reach of BIMSTEC through a "BIMSTEC-Plus" arrangement are also potential collaborative pathways.

**Singapore should facilitate greater collaboration between the United States and China on regional climate security initiatives.**

Singapore is not a Bay of Bengal littoral country. However, Singapore's RHCC is a vital center for HADR activities that have involved the Bay of Bengal states. The RHCC counts the United States and China in its membership, enhancing its capabilities. The organization should increase the integration of the Bay of Bengal states in HADR activities by coordinating directly with BIMSTEC and its member states. More broadly, Singapore provides a stable environment with excellent institutions for regional states, including those currently at odds, to form habits of collaboration and knowledge exchange. The United States and India both have excellent relations with Singapore. They should encourage Singapore to play a greater role in the region on two fronts: through HADR with the RHCC's increased involvement and as a site for knowledge exchange and dialogue on climate security.

**BIMSTEC should adopt additional reforms that enhance its capacity and internal equity and aim to emerge as the central organizational actor on climate security in the Bay of Bengal region.**

As the only international organization spanning all states in the Bay of Bengal littoral, BIMSTEC is the natural candidate to lead climate security efforts in the region. Currently, dominant member state India does not officially accept the climate security approach. However, climate adaptation, DRM, and HADR activities (when planned with sensitivity to state sovereignty)—the three vital components of climate security solutions—are readily embraced in New Delhi. Bangladesh, where BIMSTEC's secretariat is located, accepts the policy framework

of climate security and has taken an affirmative role in UN debates on the issue.<sup>129</sup> The first major step is for BIMSTEC to emerge as a serious player from what was a mostly moribund organization until 2016. The internal reform process, prodded by India, has begun, but much still remains to be done. The completion of the reform process is a prerequisite for other actions such as enlarging engagement with other significant actors in the region and emerging as a solutions leader in the Bay of Bengal on climate security. BIMSTEC can be strengthened by substantially increasing its budget and raising the level of diplomatic representation from each state to a more senior rank from the current ambassadorial level. Its activities should be evenly split between adaptation and HADR coordination. To respond to concerns about India's disproportionate weight in the organization, creating rotating chairs with term limits for each of its seven pillars of action should be considered. This could engender greater buy-in and contributions from smaller member states. By virtue of its size, India will inevitably be "first among equals" in BIMSTEC. India can both further its own interests and contribute to climate security by inducing greater commitments from its smaller neighbors. BIMSTEC, being a "local" actor, is best positioned to tackle adaptation and DRM activities in the Bay of Bengal region. Adaptation and DRM projects require gradual, ongoing work involving significant local and community participation components. This implies the direct involvement of not just national governments but also the administrations of federal states or territories in each of the littoral countries. BIMSTEC could also be expanded to a "BIMSTEC-Plus" format to include other major powers. ASEAN has taken this path through mechanisms such as ADMM-Plus and the ASEAN Regional Forum in order to strengthen and formalize Southeast Asia's ties with major world powers. A "BIMSTEC-Plus" grouping could include powerful actors already involved in the region's affairs such as the United States, China, Indonesia, Japan, Malaysia, Vietnam, and ASEAN.

# CONCLUSION

The highly populated and economically challenged region of the Bay of Bengal demands greater focus from regional and international actors to ensure the stability and viability of the states and societies of the region as the effects of climate change escalate. Coping with these challenges is beyond the capacities of individual states in the region, especially as the world heads toward a 1.5 to 2°C temperature increase. Regional, inter-regional, and international cooperation is essential to generate solutions. Such cooperation needs to be pursued. There is no time to lose.

# ENDNOTES

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# APPENDIX

Below is an anonymized list of twenty-two expert interviewees. Interviews in the United States, Bangladesh, India, and Singapore were conducted in-person, while interviews with Australian, French, and Swedish experts were conducted remotely.

<b>Interviewee number</b>	<b>Location</b>	<b>Description</b>
1	Sydney	Senior disaster risk academic
2	Stockholm	Senior migration analyst
3	Singapore	Senior security scholar
4	Singapore	Senior climate analyst
5	Dhaka	Senior security analyst
6	Dhaka	Senior climate analyst
7	Mumbai	Senior water policy academic
8	Dhaka	Senior climate scientist
9	New Delhi	Senior security analyst
10	Dhaka	Senior political science academic

<b>Interviewee number</b>	<b>Location</b>	<b>Description</b>
11	New Delhi	Senior security analyst
12	Dhaka	Senior economics academic
13	Dhaka	Former senior South Asian diplomat
14	Singapore	Senior military officer
15	Singapore	Military officer
16	Singapore	Senior HADR scholar
17	Paris	Senior security analyst
18	Singapore	Senior HADR scholar
19	Singapore	Senior International Relations academic
20	Washington, DC	Senior Asia analyst
21	New Delhi	Senior executive, environmental think-ta
22	Washington, DC	Senior security analyst



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*Cover photo: People on a boat navigate the aftermath of a flash flood in the Goainghat subdistrict of Sylhet, Bangladesh, in 2022.*  
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