Strained Stability

Climate Change and Regional Security in Southeast Asia

Perspective

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Esther Babson

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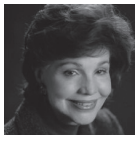

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Climate Security

In this Report:

The consequences of climate change will be multifaceted. Each region of the world will face unique threats that range from extreme weather to rising sea levels to increased drought. These threats will interact with other vulnerabilities to exacerbate existing tensions. Southeast Asia is uniquely vulnerable to the growing threats of climate change. Highly reliant on fishing and often living on the ocean's edge, Southeast Asian coastal communities there will face some of the worst impacts. Their high dependence on the ocean and fisheries, both of which will be seriously affected by climate change, will drive the overall security and stability of the region.

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IN BRIEF

- The coastal communities in Southeast Asia will face some of the worst impacts of climate change with the temperatures predicted to increase up to 6^0 Celsius by the end of the 21st century and sea level rise predicted to displace millions of people and entire countries.
- The secondary effects from climate change will impact community resiliency as increasing ocean temperature and acidity force fish populations, a key source of sustenance and livelihood in the region, to more hospitable waters.
- How communities adapt to the added stress of climate change will determine the future stability and security of the community. Outcomes can be both positive and negative.
- In order to ensure regional stability, Southeast Asia must begin to plan for increased migration and decreased community security. Bolstering community resiliency to these threats will be critical for ensuring stability.

About the Author

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Introduction

Gone are the days when security threats meant inter-state conflict. Globalization means that security threats and solutions cross the globe within minutes. From cyber-attacks to climate change, non-traditional security threats are a growing concern. The world no longer has the luxury of ignoring crises outside of their borders. Because climate change is intangible, it is a uniquely challenging risk. Slow changes and indirect impacts make identifying and addressing vulnerabilities difficult. The consequences of climate change, though, will be profound and multifaceted. Each region of the world will face unique threats that range from rain events to rising sea levels to deeper and longer droughts. These changes will interact with local vulnerabilities to exacerbate existing tensions.

Southeast Asia is uniquely vulnerable to the growing threats of climate change. This region, which includes Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam, is mainly tropical and includes a wide range of ethnicities and religions. While over 40% of the population is Muslim, Buddhism and Christianity are also prominent.[1] The region is highly dependent on aquatic resources, both from fresh and salt water. This, combined with predicted climate changes, will threaten coastal communities' survival. These communities will have to adapt to a changed natural, economic, and societal environment. How they adapt may alter the stability and security of the entire region.

Impacts of Climate Change on Southeast Asia

Impacts vary across the globe. In general, temperatures are rising, sea levels are surging, and storms are becoming increasingly extreme. The Intergovernmental Panel on Climate Change (IPCC) assesses that the ocean is, and will continue to be, a key absorber of much of the additional heat and carbon dioxide (CO_2) caused by climate change.[2] Already, the ocean has "absorbed 93% of the extra energy from the enhanced greenhouse effect and approximately 30% of anthropogenic CO_2 from the atmosphere."[3] As a result, the IPCC predicts that the mean sea surface temperature may increase 3°C by 2100.[4] The absorption of excess CO_2 creates a chemical process that causes water to become increasingly acidic. More acidic water harms the ability of shellfish to form shells and exoskeletons.[5] Changes in oceanic temperature and composition will also impact ocean dynamics causing hypoxic, or oxygen-poor, areas. Warmer waters will support different species of fish, changing the ecosystems which people rely on. These changes in temperature, acidity, salinity, or ocean composition will alter species distribution and survival and, consequently, human security.

A shift of even a few degrees in temperature could devastate local fisheries by undermining the viability of coral reefs, the incubators of the world's fish supply. Over 25% of marine life originates on the reefs built by coral.[6] Today, Asia supports 40% of the world's coral reef area, with the majority located in Southeast Asia.[7] In recent years, high sea surface temperatures have caused major coral bleaching events, killing the coral and devastating the reef.[8] While many fish species can move in order to adapt to temperature changes, coral cannot migrate to cooler or less acidic environments. Any decline in coral reefs will affect fish stocks and the communities dependent on those stocks.

Southeast Asia is particularly vulnerable to the effects of climate change due to dependence on subsistence farming, fishing, and lower elevation. Already, temperatures have increased at a rate of .2^0 Celsius per decade since the 1960s with the number of hot days and warm nights increasing within the sub-region of Southeast Asia.[9] Those trends will continue with estimates predicting temperature increases of up to 6^0 Celsius by the end of the 21st century.[10] Sea levels are also predicted to rise, which would endanger up to two thirds of Asia's cities (defined as having 1 million or more inhabitants) and submerging entire countries.[11]

Climate Change and the Impact on People and Communities

The effects of climate change on oceans and coastal environments will destabilize coastal communities in Southeast Asia. Humans will be forced out of their homes, either by rising sea levels, depletion of fish stocks, or repeated extreme weather. For island countries like the Republic of Maldives, the entire country could soon be submerged. For others, the ocean will rise to a level that contaminates fresh water. Still others will suffer as fish migration undermines food security.

Much of Southeast Asia is reliant on the ocean. Fisheries are a primary source of food and income for millions of people and generate billions of dollars for the region.[12] The UN's Food and Agriculture Organization assessed that in 2014, "84% of the population engaged in the fisheries and aquaculture sector was in Asia…and of the 18 million people engaged in fish farming, 94 percent were in Asia."[13] However, growing populations and economies have increased demand for seafood, causing severe overfishing. In the Philippines alone, 10 out of 13 designated fishing grounds are overfished.[14] Combined with the predicted changes in fish stocks due to climate change, the future of Southeast Asian communities is at risk.

A U.S. National Intelligence Council (NIC) commissioned report outlines some of the most vulnerable states in the region. This report found that Vietnam will lose up to 40,000 km^2 of land, devastating coastal fishing communities and inundating rich farmland.[15] Thailand and Indonesia will lose significant land along vital deltas as well.[16] These impacts reach beyond simply harming communities to impacting the very viability of the state. An assessment of the vulnerability of national economies to the impacts of climate change on fisheries found that Bangladesh and Cambodia were the most vulnerable to complete state collapse, due to their lack of institutions and low capacity to adapt.[17] Indonesia and Vietnam are also highly dependent but have seen significant economic growth and increased stability. While strong institutions and economic growth protects them from state collapse, individual subsistence farmers and fishers have no such protection, and may be forced to move.[18] Myanmar, for example, is unlikely to collapse, but is highly dependent on subsistence farming or fishing.[19] Myanmar lacks the infrastructure to support current and future migrating populations. This will put additional stress on already highly populated cities. Whether impacting the entire economy or just local subsistence fishers, changes in the oceans will impact community resilience and lead to a diverse set of outcomes.

Responding to the Threat: Adaptation in Southeast Asia

Planning for the future requires examining and predicting responses to climate stress. Adaptation measures can be broken down into two subcategories: migration and economic shifts. This means that people could either move (migration) or they could change their occupation (an economic shift). While some adaptation measures fall into both categories, these subcategories show a clear split in the strategy needed to survive. A descriptive example comes from fishing communities: some fishermen move away after the fish disappear, while others instead turn to alternative occupations, ranging from small-scale manufacturing to piracy.

Migration is a legitimate and common adaptation mechanism for individuals or communities but can also lead to instability for receiving communities. People migrate for a multitude of reasons and to different degrees; some move internally within a country, others cross national boundaries, while others cross continents. All face varying and uncertain outcomes. In some cases, migration can stimulate economic growth and development as migrant workers help develop the host country. Many migrants send money back to their home families and communities through remittances, driving their home economies.[20] Cases have already been documented of poor Vietnamese fisherman moving from one province to another as off-shore fisheries decline.[21]

A Cambodian fishing village affected by drought. Image credit: Alex Berger / virtualwayfarer / Flickr.

Migration can also lead to instability in areas with weak governance or pre-existing tensions. Lack of employment opportunities, housing options, or food can aggravate tensions between the migrants and existing residents. Without institutions to manage and support the incoming migrants, frustration can boil over.[22] This is particularly likely if the incoming migrants have pre-existing ethnic or social tensions with the host community.[23] Climate change will likely result in increased migration, fueling those underlying tensions. The NIC found that post 2030, "climate change will increase prospects for conflicts within states."[24] Such an outcome is deeply concerning as many Southeast Asian cities already face rapid urbanization with large, diverse urban populations.

For those who remain in their fishing communities, the situation may be even more challenging. In the South China Sea, tensions are already high. Climate change will lead to fish migrating farther north into areas China claims as their Exclusive Economic Zone (EEZ).[25] Furthermore, the increased buildup by the Chinese military of the Spratly Archipelago has increased incidences between Chinese patrols and Vietnamese fishing boats.[26] As the fish stocks deplete, individuals will need to find alternative sources of income and sustenance. Transitioning to farming is one possible solution depending on whether the inland community is resilient to future changes. As glaciers melt and dams rise along the Mekong River Basin, downstream communities such as Vietnam's "rice basket" region will face increased stress and potential declines in production as rainfall becomes more variable worldwide.[27] Today in Vietnam, a major drought combined with sea level rise has drawn more salt water inland, impacting both rice farming and fishing.[28] This is a classic example of climate change impacting multiple sectors and undermining community security.

Even if arable land exists, transitioning to farming could increase competition over land, leading to conflict between groups in a region rife with deeply rooted religious and ethnic differences. Myanmar is particularly at risk due to the current humanitarian crisis after the Myanmar government's ethnic cleansing and subsequent fleeing of the Rohingya population.[29] Cambodia is also vulnerable to instability due to the rapid expansion in agriculture without the proper tools in place to promote efficiency and sustainability of the already declining soil quality.[30]

Another alternative for the remaining communities is livelihood diversification by transitioning to small manufacturing operations or selling goods, tenuous as it may be. Some communities may not have the natural or economic resources to support such a change but there have been success stories where families successfully adapted to changed economic environments.[31] Diversification benefits the entire community by expanding industry and providing new services.

Undermining Stability: Transnational Security Threats

In addition to the legitimate coping mechanisms, more sinister alternatives exist. Southeast Asia is home to one of the primary shipping choke points in the world: The Strait of Malacca.

Up to 120,000 ships travel the strait every year, including tankers carrying about 80% of all oil imported by China and Japan.[32] Off the coasts of Malaysia and Indonesia, corruption is common and law enforcement is overstretched, making piracy low risk and high reward.[33] In 2017, the International Chamber of Commerce reported at least two hijackings in the region and dozens of attempted or successful boardings, making Southeast Asia the region with the highest rate of piracy in the world.[34] The region is ripe for an increase in attacks. Fishing communities already have access to vessels and instability on land can spill into the sea.

The Strait of Malacca. U.S. Energy Information Agency image.

Terrorism is another potential threat. Terror organizations are not new to Southeast Asia. The well-known 2002 Bali bombings were the beginning of a series of attacks in Indonesia from 2002-2009. After 2009, improved counterterrorism capabilities and rivalry among extremist groups led to a decline in attacks with no major urban terrorist incidents until a resurgence of violence in 2016 under the Islamic State in Iraq and Syria (ISIS) banner.[35] Joseph Chinyong Liow, Dean and Professor of Comparative and International Politics at Nanyang Technological University Singapore, testified before Congress arguing that, "ISIS has emerged as the single expression of the (terrorism) threat, in part, because of the speed with which it has gained popularity in the region."[36] Still, he noted that while the developments are concerning, the threat should not be overstated as so far no ISIS aligned group has "developed the capacity to mount catastrophic, mass casualty attacks in the region." While the process of radicalization is far from definite, increased ungoverned space allows criminals and terrorists to recruit and flourish. The impacts of climate change may open new territory to these groups.

Preparing for the Future of Climate Change in Southeast Asia

Climate change presents a direct threat to livelihoods and security in Southeast Asia. Climate change's ability to act as a threat multiplier makes dangerous outcomes more likely. The IPCC recognizes that climate change may "exacerbate current socioeconomic and political disparities and add to the vulnerability of Southeast Asia."[37] Such an outcome would destabilize a region critical to global trade. In addition, there is concern that "the framing of climate change as a Western-generated phenomenon creates the potential for major anti-Western backlashes over virtually any climate change-induced crisis that arises in the region."[38]

Building resiliency and response capacity are critical to preparing for and combatting the impacts from climate change. Migration policies and protections must be improved in preparation for the inevitable increases in migration both internally and internationally. This requires both defining who are "climate refugees" and how to manage the influx of future migrants.

There also needs to be increased monitoring and coordination to combat piracy and terrorism in the region. High levels of distrust inhibit intelligence sharing and operations. Without communication, unsavory actors can sneak through surveillance gaps. Recent efforts have been made to bolster coordination on anti-piracy between once-rivals Indonesia and Malaysia.[39] In addition, six Southeast Asian countries agreed to an intelligence sharing pact to combat Islamist militants.[40] Both are positive steps in the right direction

Ultimately, the key for managing these threats is capacity building. If the community has the resources to prepare and respond, they are far less vulnerable to instability or terrorist recruitment. Solutions exist but it is critical to develop local capabilities and resiliency to avoid the worst impacts of climate change.

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