

# THE U.S. ASIA-PACIFIC REBALANCE, NATIONAL SECURITY AND CLIMATE CHANGE

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# CLIMATE CHANGE, MIGRATION, AND RESILIENCY IN SOUTH ASIA: COOPERATION FOR CLIMATE SECURITY

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Climate change is not a future challenge – it is happening today. This March, U.S. Ambassador to India Rich Verma underlined this point in a speech in Kolkata. Verma warned that India and Bangladesh are already feeling the impacts of climate change, mentioning the 2014 flooding in Jammu and Kashmir, along with floods in Uttarakhand in 2013 and Assam in 2012, which displaced 1.5 million people. “This intersection of climate change, human migration, and governance will present novel challenges for South Asia in the decades to come,” he argued.<sup>1</sup>

Last year, the UN Intergovernmental Panel on Climate Change (IPCC) report on “Impacts, Adaptation, and Vulnerability” made clear that the impacts of a warmer climate will intensify in the coming decades. Asia is experiencing more extreme temperatures and shifts in precipitation due to climate change, contributing to water scarcity and declining food production in many areas. The IPCC report also projects that climate change will exacerbate existing pressure on natural resources and environmental degradation occurring in Asian cities already straining to accommodate rapid urbanization, industrialization, and economic development.<sup>2</sup> A recent report by the Asian Development Bank estimates that South Asia risks losing almost 2 percent from annual gross domestic product by 2050 if fossil-fuel intensive energy consumption goes unchecked.

Addressing the challenge of climate change will be central to ensuring a prosperous and stable Asia in the decades to come. In a speech to the Australian Parliament in November of 2011, President Obama described the U.S. as a Pacific nation, promising that his administration “will play a larger and long-term role in shaping this region and its future.”<sup>3</sup> A few data points illustrate the region’s importance: The 21 Pacific Rim countries of the Asia-Pacific Economic Cooperation (APEC) account for approximately 40 percent of the world’s population, over half of world GDP, and more than 40 percent of world trade. As the IPCC reports, climate change has the potential to greatly impact the livelihoods of this population and its economic productivity. As the United State shifts

its strategic focus to the Asia-Pacific, responding to climate impacts in the region will be key to its development, security, and diplomatic goals.

In particular, South Asia can serve as a case study for the challenges facing the entire region. Higher temperatures, more extreme weather, rising sea levels, increasing cyclonic activity in the Bay of Bengal and the Arabian Sea, and floods in the region's complex river systems will complicate existing development and poverty reduction initiatives. Non-traditional security issues including food, water, energy, and urbanization are at the core of the challenges facing governments and societies in South Asia. Existing tensions along the India-Bangladesh border could present more traditional security challenges if climate change impacts such as floods and storms change or are perceived to change migration patterns across the border. Understanding these scenarios will be vital as the U.S. builds relationships in the Asia-Pacific and integrates climate change across its development, diplomacy, and defense institutions.

## Climate Change, Agriculture, and Urbanization

Roughly 2.2 billion people in the Asia-Pacific rely on agriculture for their livelihoods.<sup>4</sup> Changes in precipitation patterns, more frequent droughts, and the flooding of agriculture lands in this region can therefore seriously undermine basic economic and livelihood security in the region.

India is a prime example, with 70 percent of the population directly or indirectly dependent on farming for their livelihoods.<sup>5</sup> Farming makes up nearly 15 percent of the country's \$1.83 trillion GDP, making drought a huge threat to the overall economy.<sup>6</sup> And the country is vulnerable; the Indian Space Research Organization found that 68 percent of India is prone to droughts, with one-third categorized as "chronically drought prone."<sup>7</sup>

As climate change continues, India's 1.2 billion people face more frequent droughts, floods, more intense heat waves, sea level rise, and stronger cyclones and storm surges.<sup>8</sup> The impacts of climate change could influence existing patterns of internal seasonal and permanent migration. Events in recent years brought the prospect of short- and long-term displacement caused by natural events into stark relief.

In August 2012, the country was in the midst of its second drought in four years, with rainfall 20 percent below average nationwide and 70 percent below average in states like Punjab.<sup>9</sup> Many experts believe the drought was a factor in the July, 2012 blackout that left over 600 million without power. Low rainfall led farmers to irrigate crops with water pumps, drawing more electricity from the grid than usual.<sup>10</sup>

Considering these factors, 2013's monsoon coming one month ahead of schedule was welcome news in parched areas across India.<sup>11</sup> But subsequent flooding left over 71,000 pilgrims stranded in

the state of Uttarakhand, and thousands of others displaced or missing across the region. Dozens of buildings and bridges collapsed in the floods and landslides stranded hundreds. Over 5,700 people were missing and later presumed dead, adding to a certain death toll of 600.<sup>12</sup> A month later in August 2013, floods in Maharashtra killed 20 and displaced 28,000 families, destroying about 50 percent of the crops across 150,000 hectares. The following month, floods in Bihar killed 201 and displaced 6.9 million people.

This drumbeat of extreme weather events fits existing climate change projections, which predict drastic weather shifts between intense drought and intense rain, destroying crops and undermining rural livelihoods.<sup>13</sup> Displacement from sudden-onset events (flooding, cyclones, and storm surges) can range from a couple of days to a couple of months or even years and result in substantial economic and social cost.

Over the long term, slow-onset climate impacts like changes in precipitation, sea level rise, and land erosion can be just as damaging. During the summer of 2012, drought in some areas of India led to lower crop yields,<sup>14</sup> while excessive rain destroyed other produce.<sup>15</sup> Unpredictable weather, crop failure, and debt led at least 240,000 farmers to take their lives between 1995 and 2009.<sup>16</sup> In March 2014 freak hailstorms and rains destroyed millions of dollars' worth of winter crops in Maharashtra, and a farmers' advocacy group reported that 32 farmers committed suicide in relation to the hailstorms and the lack of prospects for long-term recovery.<sup>17</sup>

A resident of Bay town in Laguna, Philippines, pushes a makeshift raft loaded with wet rice in a flooded rice field. September 2009. [FLICKR / IRRI IMAGES](#)



These climate impacts are not occurring in a vacuum but are interacting with other fundamental social trends like urbanization and the shift away from agricultural production to other economic pursuits. Palagummi Sainath, the rural affairs editor for *The Hindu* and a leading expert on famine and hunger, ties the plight of Indian farmers to the increased urban population reported in the 2011 Census. Sainath argues the Census “speaks of another tragedy: the collapse of millions of livelihoods in agriculture and its related occupations ... the ongoing, despair-driven exodus that this sparked in the countryside.”<sup>18</sup>

Indeed, research in other parts of the world show that even low levels of warming may be driving rural workers in the agriculture sector to urban cities. The IPCC cites research in Brazil that concludes that “dryland Brazil urban migration is very likely due to agricultural income loss.”<sup>19</sup> More research is needed to understand the reasons behind India’s migration trends but analyses reveal that rural-urban migration trends in India are changing and increasing overall. For the first time since 1921, the urban population in India grew more rapidly than the rural population. The share of urban population growth caused by natural increase (i.e. births) decreased from 57.6 percent from 1991-2001 to 44 percent from 2001-2011; other factors, including migration, are contributing more to the growth of urban populations.<sup>20</sup> Migration in search of employment is also on the rise. As climate change impacts industries like agriculture, fishing, and tourism, many traditional rural livelihoods are threatened, potentially shifting the search for economic opportunity to new parts of India and other countries in the region.

Large population growth in suburbs, non-metro urban areas, and other peripheral areas has made it more difficult to determine the real impact of urbanization. Due to stringent regulations and expensive housing and transit costs, the World Bank finds that many of India’s urban poor are forced to live in suburban and peripheral metropolitan communities. Even there, poor migrants may be “forced to live in slums if they cannot afford the formal housing market or cannot access cheaper land and housing on the outskirts of cities because of unreliable and unaffordable urban transport.”<sup>21</sup> These areas are not counted in tallies of the metro urban area, leading to potential undercounting of urban growth, which can impact policy planning and resource distribution.<sup>22</sup>

## The Urbanization Challenge

Looking ahead, projections by McKinsey’s Global Institute show that India’s urban population will grow from 340 million to 590 million over the next 20 years.<sup>23</sup> This dramatic demographic change—and the social opportunities and challenges that it presents—must be considered in the policy debate about climate change, migration, and security in the region. Existing megacities like Kolkata, Mumbai, and Delhi will need to continue strengthening their infrastructure while also building up the suburban and peripheral metropolitan areas in ways that promote inclusive growth. For example, no major city in India provides the majority of its population with continuous water supplies; in contrast, access in Jakarta is 90 percent, in Manila 88 percent, and in Colombo 60

percent. In the seven largest Indian metropolitan areas, 93 percent of households in the urban core have access to drainage but 5 kilometers (or 3 miles) outside the core, the proportion falls to 70 percent.<sup>24</sup>

Importantly, these cities will have to prepare for climate change while simultaneously accommodating a larger population. Cities like Kolkata, Mumbai and Chennai are at high risk of sea level rise, prolonged cyclonic activity, and saltwater intrusion. Migration is often seen as a mode of adaptation to climate change, but the specific context of India's varied climate vulnerability could lead people from one difficult environment to another, either permanently or on circular migration pathways.<sup>25</sup>

Urbanization also poses new resource challenges; studies of future demand may underestimate energy needs, not accounting for higher levels of urbanization and development. The greater the pressure on government, the likelier actors will resort to fossil fuel resources as a quick fix to meet shortfalls. In India this will be coal, as the country has one of the largest reserves in the world. The World Resources Institute found 455 proposed new coal-fired power plants in India, with an installed capacity of 519,396 MW.<sup>26</sup> For India's coal-rich northeastern states, the development of massive coal and hydropower resources has the potential to accelerate economic growth in the entire region. Coal revenue, in turn, will allow for accelerated industrialization, fostered by access to cheap electricity in a historically neglected region.

This is not good news, however, for air pollution. According to the Environmental Performance Index out of Yale University, India's air pollution ranks 174<sup>th</sup> out of the 178 countries ranked. The World Bank reports that air pollution causes more than 116,000 deaths annually and costs the country \$18 billion annually in shortened life spans of productive urban workers.<sup>27</sup> As in the United States during the industrial revolution, unregulated industrialization is taking its toll on lives and economic productivity.

India's development of sustainable energy and climate policies is important not only for the country's own sake. If it manages to cope with the twofold test of high population growth and urbanization, the subcontinent could provide a reference point for many developing nations whose growth models will more closely resemble India's than that of the United States or Germany. Fostering sustainable urbanization that takes climate change into account will provide an opportunity for India to lead the construction of modern urban centers.

Other countries in the region face similar challenges. In Bangladesh, the United Nations estimates that the urban population will more than double to over 100 million by 2050.<sup>28</sup>

By 2020, two-thirds of the member states of the Association of South East Asian Nations (ASEAN) will reside in only five Mega-Urban-Regions (MUR) - Bangkok, Kuala Lumpur-Klang, Singapore, Manila, and Java.<sup>29</sup> The Asian Development Bank estimates that "ASEAN's infrastructure needs

are estimated at \$60 billion a year from 2010-2020 and this is in addition to national projects with significant cross-border impacts such as airports, seaports, and roads to borders.”<sup>30</sup> The ASEAN countries have diverse economies, but their high population densities, coastal areas, natural resources, and rich biodiversity will face vulnerabilities to extreme weather and climate impacts similar to those of India and Bangladesh. Ensuring the strength of the Asia-Pacific as a whole will require understanding of the livelihood security issues brought on by extreme weather events, sea level rise, and changes in temperature and precipitation. This field offers unprecedented scope for U.S. cooperation at the local and regional level.



A crowd waiting for a train at Thane railway station in India. December 2012. [WIKIMEDIA COMMONS / DHARMADHYAKSHA](#)

## Migration and Security

In Bangladesh, the potential for major migration shifts due to climate change impacts is well known to its leadership. At the third Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) Summit in March 2014, Bangladeshi Prime Minister Sheikh

Hasina urged countries “to mobilize collective efforts to monitor, and take a unified stand to seriously consider the adverse impacts of climate change.” She went on to warn that a one degree Celsius rise in global temperature due to climate change would submerge a fifth of Bangladesh, forcing 30 million people to become “climate migrants.”

Numerous studies warn of the potential for mass displacement and migration due to increased frequency of extreme weather events and long-term changes in livelihoods due to drought, sea level rise, and salt intrusion. The IPCC concludes that “climate change will have significant impacts on forms of migration that compromise human security.”<sup>31</sup> To examine these challenges, the Center for American Progress (CAP) began a project examining the nexus of climate change, migration, and security.<sup>32</sup> The project does not assert a simple causal relationship between climate change, migration, and conflict but rather aims to understand the way in which these trends can overlap to increase stress on populations and governments. In December 2012, CAP released a report on South Asia, following studies examining these stressors in other key regions: Northwest Africa, India and Bangladesh, Andean and Amazonian Latin America, and China.

The CAP report on South Asia brought the risks and opportunities into stark relief, providing a test case in how climate impacts, migration, and security concerns can overlap in potentially destabilizing ways. The Brahmaputra River that runs from the Indian border state Assam to Bangladesh will likely see more frequent flooding, impacting agriculture and livelihoods on the border and potentially displacing people more frequently. The IPCC reports that in the aftermath of extreme weather events, temporary displacement and reconstruction can lead to a perceived increase in migration.<sup>33</sup> Perceived and actual changes in Bangladeshi migration across the India-Bangladesh border has caused conflict in the past and could therefore be a potential tension point as climate change worsens. The issue of unauthorized Bangladeshi immigration has been a prominent political and social issue in Assam since the partition of India but has more acutely impacted local and regional politics in recent decades. In 1979 a group called the All Assam Students’ Union began a campaign against unauthorized Bangladeshi immigrants in Assam, who they believed were changing the state’s demographics and gaining political influence. The All Assam Students’ Union demanded that the names of unauthorized immigrants be taken off the electoral rolls before the next election. The campaign led to violence across the state, with Bengali-speaking Muslims indiscriminately targeted as illegal Bangladeshis. On February 18, 1983, fighting broke out in the district of Nellie between villagers and those seen as unauthorized immigrants, with an estimated 2,000 people – mostly Muslims – killed.<sup>34</sup> The massacre led to wide condemnation and forced the government to enact new immigration policies to quell tensions.

Violence over migration has continued on a small scale in Assam since then, but tensions boiled over in August of 2012, when members of the Bodo tribe and the Muslim community clashed over the building of a mosque. The clashes resulted in close to 100 deaths and the displacement of over 400,000 people, who fled to relief camps in the area.<sup>35</sup> As the conflict escalated, members of the Bodo tribe and certain politicians began to blame the incident on the increasing number

of unauthorized Bangladeshis in the region.<sup>36</sup> In the following days, rumors spread that Muslim groups were planning attacks on Assamese residents living in other parts of India, particularly in the southern cities of Bangalore and Chennai. Thousands of people native to the Northeast Indian region boarded overflowing buses and returned to the region. In the days following the conflict, many in Assam resorted to public demonstration and protests against proposals demanding the identification and deportation of unauthorized immigrants from Bangladesh, similar to the fervor during the 1980s Assam movement.

The actual numbers of unauthorized immigrants in the region are disputed and very difficult to track down. The situation in Assam reveals, however, the potential for even perceived unauthorized immigration to stoke tensions. As the region faces more frequent flooding, drought, and extreme weather events, it will be vitally important to understand the social and economic tensions that temporary and long-term displacement can have in border regions. It is also a signal to the U.S. to shift its thinking about security in the region to a comprehensive strategy that integrates climate change into its defense, diplomacy, and development goals.

## Moving Forward

The United States has the opportunity work with countries in the region to jointly address the challenges of climate change, including migration and displacement. Hurricane Sandy, record-breaking droughts, heat waves, and extreme weather have shown that the impacts of climate change are a globally shared burden. In 2014 alone, the U.S. had 60 presidential major disaster declarations from extreme weather linked to climate change, including nine events that each inflicted \$1 billion in damage.<sup>37</sup> U.S. cities like New York and Miami face extreme weather in ways that are similar to those of Asian megacities such as Dhaka, Mumbai, and Manila. Drought-stricken farmers in California and Maharashtra may have much to learn from each other. Bringing together lessons and smart strategies from both sides of the Pacific on climate impacts should be a centerpiece of the U.S. strategy in the region.

The State Department, USAID, and Pacific Command have already begun integrating climate change into its strategies. Commander of the U.S. Pacific Command Admiral Samuel J. Locklear III identified climate change as the biggest security threat to the region's security.<sup>38</sup> Addressing climate as a security threat will require an innovative approach involving long-term development strategy, disaster relief, and climate resilience capacity building.

For this approach to be effective, more research and resources are needed to understand how climate change will impact economies in the region and tensions along borders, both internal and external. The case of Assam provides a snapshot of the immigration issues facing the region. The potential exists for an informed policy conversation about climate-driven challenges and conflict,

and how they relate to common global interests. This debate must extend beyond policymakers to include representatives from think tanks, civil society, and academia. Climate impacts and related displacement will increasingly uncover the importance of domestic politics and popular diplomatic engagement with emerging democratic powers.

The United States has, however tenuously, recognized and attempted to address this transformation, as evidenced by President Obama's outreach to Asian partners and his speeches in Cairo, Ankara, and Rio de Janeiro. For the United States this is an opportunity to build new strategic relationships and reshape the international system to face the challenges of the coming decades.

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