

## VICTIMS NEED ACCESS TO LEGAL PROTECTION, HEALTH CARE, AND TEMPORARY SHELTER.

and has led to several bilateral agreements aimed at greater cooperation between states in the Greater Mekong region. Beyond Southeast Asia, the Bali Process was set up in 2002 as a platform for dialogue among countries in the Asia-Pacific. Its goal is to raise awareness and build capacity to combat human smuggling, trafficking, and transnational crime. With the transnational nature of human trafficking, both international and regional regimes encourage governments to share information, coordinate policies and efforts to criminalize trafficking offenses, provide mutual legal assistance, protect victims, and prosecute offenders.

### Corrupt officials

Still, huge challenges remain, notably the serious lack of accurate and reliable information on the scale and scope of trafficking, which makes it difficult to measure the effectiveness of anti-trafficking policies. The gap between the legal framework and the enforcement of relevant laws at the national level poses problems as well. Despite political will, law enforcement agencies lack the skills, knowledge, and resources to understand and respond to the evolving complexities of human trafficking. Collusion between corrupt government officials and criminal networks is another severe problem. Traffickers are known to enlist the help of corrupt officials in recruiting victims and moving them across borders. The discovery of mass graves of trafficking victims along the border between Malaysia and Thailand in 2015 is gruesome evidence of such collusion; a Thai general and police officers were among 62 people convicted of human trafficking and other crimes connected with the case, according to news reports.

Finally, victims of trafficking receive inadequate protection and assistance. A common critique of anti-trafficking regimes is that most efforts have focused on criminalizing and prosecuting traffickers, as opposed to preventing the crime and protecting its victims. The focus on criminalization

and prosecution may have increased awareness, but more should be done to prevent trafficking through effective law enforcement and efforts to educate vulnerable groups about its dangers.

Similarly, there must be greater effort to address the needs of victims. In addition to personal safety and security, victims need access to legal protection, health care, and temporary shelter, as well as assistance with repatriation and integration. The UNODC stresses the need to help victims overcome the trauma and stigma associated with trafficking and to build trust in law enforcement, so that victims seek help and cooperate in prosecuting traffickers.

The fight against human trafficking requires better national criminal justice systems to effectively enforce anti-trafficking laws, and these efforts must be part of a broader, multitrack approach that addresses the socioeconomic and political dynamics of trafficking. The complexity of the challenge means it cannot be tackled by any one actor, such as the state, or by focusing only on one aspect of the issue, such as sexual exploitation or forced labor. A comprehensive, more human-centered approach compels us to delve deeper into the other drivers of human trafficking, including poverty, severe exploitation, and political repression. This requires active participation and partnership between government and civil society groups, the private sector, and international foundations. **FD**

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# Boiling Point

One of the most vulnerable regions to climate change is witnessing the world's biggest jump in greenhouse gas emissions

**Amit Prakash**

**T**he Blue Dragon, a small riverfront eatery in Hoi An, Vietnam, serves morsels of local trivia to tourists along with \$2 plates of crisp spring rolls and succulent noodles. On its damp-stained walls, the Blue Dragon's owner, Nam, marks the level of annual floods that submerge this popular UNESCO World Heritage town renowned for its bright-yellow-painted buildings.

Last November, days before presidents and prime ministers arrived in nearby Da Nang for a meeting of the Asia Pacific Economic Cooperation forum, the water level at the Blue Dragon rose to 1.6 meters (5.25 feet) when typhoon-driven rains lashed the city. Patrons scurried to safety as pots and pans floated by.

"Every time we get big rains or typhoons, it floods and everything shuts down for three to four days," says Nam, 65, who goes by one name. "Last year people had to escape in boats because the water was too high."

Typhoons and floods are becoming more intense and frequent as Vietnam and the rest of Southeast Asia bear the brunt of climate change. Long coastlines and heavily populated low-lying areas make the region of more than 640 million people one of the world's most vulnerable to weather extremes and rising sea levels associated with global warming. Governments are under pressure to act quickly or risk giving up improvements in living standards achieved through decades of export-driven growth.

Southeast Asia faces a dual challenge. It not only must adapt to climate change caused largely by greenhouse gases emitted over decades by advanced economies—and more recently by developing economies such as China and India—it also must alter development strategies that are increasingly contributing to global warming. The region's growing reliance on coal and oil, along with deforestation, are undermining national pledges to curb emissions and embrace cleaner energy sources.

## **Economic impact**

Average temperatures in Southeast Asia have risen every decade since 1960. Vietnam, Myanmar, the Philippines, and Thailand are among 10 countries in the world most affected by climate change in the past 20 years, according to the Global Climate Risk Index compiled by Germanwatch, an environmental group. The World Bank counts Vietnam among five countries most likely to be affected by global warming in the future.

The economic impact could be devastating. The Asian Development Bank (ADB) estimates Southeast Asia could suffer bigger losses than most regions in the world. Unchecked, climate change could shave 11 percent off the region's GDP by the end of the century as it takes a toll on key sectors such as agriculture, tourism, and fishing—along with human health and labor productivity—the ADB estimated in a 2015 report. That's far more than its 2009 estimate of a 6.7 percent reduction.



PHOTO: NITOC/HARVEIRO



*Bulldozers clean up a recently constructed road deep in the vast interior of the central Kalimantan jungle, Indonesia.*

carbon dioxide increased faster in Southeast Asia than anywhere else.

### Energy mix

Energy demand will grow as much as 66 percent by 2040, predicts the Paris-based International Energy Agency (IEA). Coal alone will account for almost 40 percent of the increase as it overtakes cleaner-burning natural gas in the energy mix. That poses a risk to the Paris Climate Agreement's goal of limiting the average global temperature gain to 2 degrees Celsius above preindustrial levels. All 10 countries that make up the Association of Southeast Asian Nations (ASEAN) signed the Paris Agreement.

"At the present rate, Southeast Asia, coupled with India and China, could wipe out gains from energy efficiency and emissions reductions elsewhere in the world," says Srinivasan Ancha, the ADB's principal climate change specialist.

Demand for coal is partly driven by the fuel's relative abundance and its low cost compared with oil, gas, and renewable energy. Coal-fired power plants are also easier to finance than renewable energy projects. Indonesia is the world's fifth-largest coal producer and its second-largest net exporter, while Malaysia and Thailand are the eighth- and ninth-largest net importers, IEA data show.

The region could shift to a "new climate regime" by the end of the century, when the coolest summer months would be warmer than the hottest summer months in the period from 1951 to 1980, says a 2017 study by the ADB and the Potsdam Institute for Climate Impact Research. In the absence of technical breakthroughs, rice yields in Indonesia, the Philippines, Thailand, and Vietnam could drop by as much as 50 percent by 2100 from 1990 levels. Hotter weather is also pushing tropical diseases such as malaria and dengue fever northward to countries like Lao P.D.R., where they were formerly less prevalent.

While the region's greenhouse gas emissions have been low relative to those of advanced economies in per capita terms, that is starting to change, largely because of its increasing reliance on coal and other fossil fuels. Between 1990 and 2010, emissions of

Reliance on coal is projected to grow: Vietnam's coal-power capacity under active development is the third largest in the world after China's and India's, according to a March 2018 report by environmental groups, including the Sierra Club and Greenpeace. Indonesia and the Philippines rank fifth and tenth, respectively.

### Vanishing forests

Deforestation is another major source of greenhouse gases. In Indonesia and Malaysia, home to the world's largest forestlands, trees are cut down to make way for farms to feed growing populations and for the production of pulp and paper and palm oil, which are big sources of export revenue. Deforestation accounts for almost half of Indonesia's emissions—more than fossil fuels, though these are fast catching up.

Clearing forests in peatlands and peat swamps poses additional problems. Draining peat swamps releases thousands of tons of carbon dioxide trapped in each hectare of soil. The problem is compounded when farmers burn the dry peat, releasing the gas more quickly. Smoke from such fires has repeatedly choked neighboring Singapore and Malaysia since 1997; emissions from the most recent incident in 2015 exceeded those of the entire European Union, according to Reuters.

Rapid economic growth and urbanization are contributing to climate change while also magnifying its impact. Migrants from rural areas flock to cities, which emit more heat. New construction in floodplains blocks waterways, leaving cities more vulnerable to floods. And the more cities grow, the greater the damage from increasingly frequent floods and storms.

"You have to unravel the impact of climate change, which is certainly there, and economic development and population growth," says Marcel Marchand, a Hanoi-based expert in flood risk management. "The impact of a flood or storm is now generally more than in the past. That is not only because there are more hazards, or because hazards are more severe, but also because there are more people, and cities are becoming bigger."

Marchand is advising on a \$70 million internationally funded project that will provide more timely warning of floods to the residents of Hoi An. He attributes flooding, in part, to the construction of reservoirs in catchment areas upstream, which has changed river flows. The reservoirs become overwhelmed by extreme rainfall events, and excess water released downstream floods Hoi An and nearby Da Nang.

Both cities are growing fast as a tourism boom attracts migrants seeking work. A decade ago, Da Nang, Vietnam's fourth-largest city, had just one luxury resort. Now it boasts almost 90 four- and five-star hotels, many of them dotting the 30-kilometer coastal road to Hoi An. The flow of workers is swelling Da Nang's population, which is forecast to surge to 1.65 million by 2020 from 1 million today, according to World Bank estimates.

## *The more cities grow, the greater the damage from increasingly frequent floods and storms.*

While tourism creates jobs, related infrastructure development also indirectly contributes to coastal erosion that makes the area more vulnerable to storm surges and rising sea levels. The shoreline along Hoi An's popular Cua Dai Beach receded by 150 meters in the years from 2004 to 2012, according to a report prepared by the Quang Nam provincial People's Committee. Floodwalls and sandbags have become eyesores for vacationers.

"In the last two decades the rainfall pattern has changed and increased significantly," says Phong Tran, a technical expert at the Institute for Social and Environmental Transition-International (ISET-International), which works with several Vietnamese cities to develop climate resilience.

### Dry spells

Phong worries that rising sea levels, along with prolonged dry spells, will cause salinity intrusion and hurt agriculture in the fertile Mekong Delta, one of the world's most densely populated areas. The delta is Vietnam's food bowl, producing more than half of its rice and other staples and over 60 percent of its shrimp, according to the Manila-based ADB.

Some 70 percent of Vietnam's population lives along its 3,200-kilometer coastline and in the low-lying delta. Other Southeast Asian nations are similarly vulnerable.

Indonesia has one of the world's longest coastlines at 54,700 kilometers. In the Philippines, which has 36,300 kilometers of coastline, 20 typhoons on average make landfall yearly, with increasing destructiveness. Cambodia, Lao P.D.R., and Thailand are also affected by storms and excessive rain, as well as by heat extremes that take a toll on agriculture and human health.