

Chapter 3

Climate Change: Global Inequalities and Poverty

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Research indicates a direct correlation between climate change and global poverty. It is also widely accepted that although climate change is primarily the result of developed nations, it is the poorest countries that are expected to suffer the most from its effects. This is a key issue for the UNFCCC, and moving forward, climate change policy will have to take these inequalities into account. This chapter will explore the relationship between climate change policy and sustainable development that addresses global inequities.

Introduction

Over the course of this book, previous chapters have explored the history of international climate change, as well as a broad spectrum of its political, ecological, and social implications. However, a complete history of anthropogenic climate change cannot be told without acknowledging its effects on the most vulnerable, poverty-stricken populations of the world. Why does it matter that we talk about climate change in the context of rich and poor nations? Because it is naïve to say that past actions are irrelevant to the future, especially when climate change is a global issue that has historically been caused primarily by only a few developed nations. It is naïve to think that this small group of industrialized countries (including the United States) should contribute to climate change mitigation in an equivalent manner to developing countries such as India, whose citizens produce only 3% of global greenhouse-gas (GHG) emissions (*1*). For this reason, the conversation on climate change, its causes, effects, and mitigation techniques, must take these inequities into account as we move forward.

According to Gallup's 2016 environment poll, 64% of U.S. adults are now worried a "great deal" or "fair amount" about global warming, with a record 65% attributing warming primarily to human activities (2). These poll results come several months after the pivotal Paris Agreement taking place at COP21, the 21st Conference of Parties of the United Nations Framework Convention on Climate Change (UNFCCC). In an unprecedented consensus of the participating 195 countries, on December 12, 2015, the Paris Agreement set global standards to reduce greenhouse gas emissions and limit global temperature rise to well below 2 °C.

While the Paris agreement represents a significant milestone in combating climate change, the Nationally Determined Contributions (NDCs) outlined in it fail to meet the 2 °C benchmark necessary to prevent catastrophic and irreversible climate change. Furthermore, there are several areas in which it falls short, particularly in regards to the social impacts of climate change on poverty. The UNFCCC synthesis report in advance of COP21 noted that several countries' Nationally Determined Contributions (NDCs) highlighted the link between addressing climate change and development priorities such as social and economic development and poverty eradication (3). While some critics might argue that the resources devoted to combat climate change might be better spent on other social services, many parties' NDCs in fact noted several social co-benefits of addressing climate change, including improvements in air quality, human health, and job creation in adaptation and mitigation procedures—particularly in agriculture and forestry (3).

To put these ideas into context, consider the following. Developing countries suffer 99% of the casualties (deaths) attributable to climate change. At the same time, the 50 least-developed countries of the world account for only 1% of worldwide greenhouse gas emissions attributable to climate change (4). This gross discrepancy cannot simply be ignored as we develop climate change solutions moving forward. In its 4th Assessment Report, the Intergovernmental Panel on Climate Change (IPCC) stated that climate change would have an adverse impact on people's health, safety and livelihoods, with the "poorest people in the poorest countries expected to suffer first and foremost" (5).

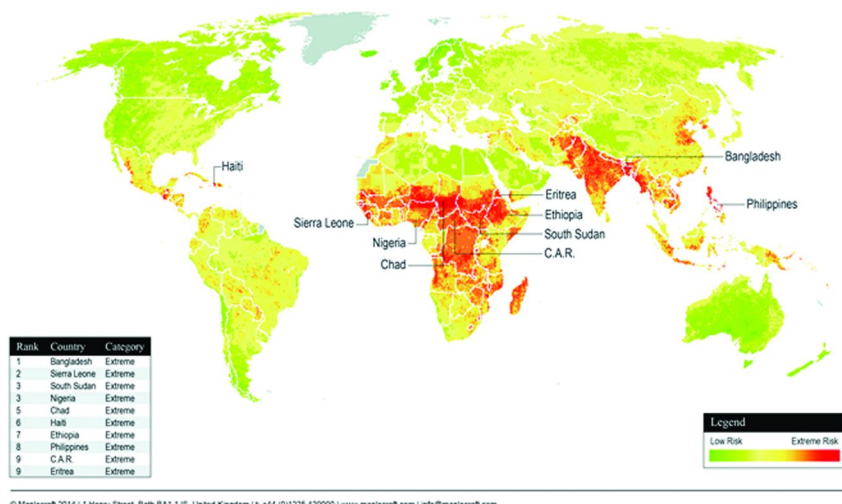
This chapter will provide a broad overview of the interrelationship between global climate change and poverty, including how a spectrum of attitudes regarding climate change can be directly correlated to risk factors in different countries. Moving forward, we can then explore the potential of developing countries to adapt to and mitigate climate change, with a focus on renewable energy as a potential solution. Finally, Asia will be used as a model for closer examination, highlighting case studies of China and Bangladesh to present specific challenges and successes in both climate change and poverty alleviation.

Poverty

Before holistically addressing techniques to combat climate change, it is first necessary to recognize the important social implications of wealth and resource disparities on a global scale. In 2015, the World Bank reported that for the first time ever the percentage of the global population living in extreme poverty (measured as US \$1.90 a day) was set to fall below 10% (6). Other studies have confirmed that the United Nations Millennium Development Goal of halving world poverty will have been reached five years early (7). Global poverty levels have continually and significantly declined in the past century, from 44% in 1981 to 12.7% in 2012, according to data from the World Bank. However, at higher poverty lines (such as US \$3.10 a day), progress has been much slower. Likewise, while poverty rates have declined in all regions of the world, progress has been uneven. In 2012 about 77.8% of the world's "extremely poor" lived in South Asia and Sub-Saharan Africa (8).

In recent years, we have begun to realize the detrimental effects of climate change in the crusade against global poverty. Jim Yong Kim, the World Bank Group President, went so far as to say that "We will never end poverty if we don't tackle climate change." Erratic and more extreme weather patterns, including, but not limited to rising sea levels, tropical cyclones, heat waves, and flooding, are having significant effects on human welfare, particularly in rural populations. According to the World Bank, climate change is likely to reduce agricultural productivity, especially in tropical regions. Because many poorer countries have a greater dependence on agriculture and climate-sensitive natural resources, the increase in climate variability, including more frequent and erratic weather extremes, will only exacerbate existing conditions of poverty in these developing countries (7).

Research has shown that those living below or just above the poverty line are at the greatest risk from climate change due to three factors: exposure, sensitivity, and adaptive capacity. Exposure measures the degree of climate stress upon a particular group, including extreme weather events and the effect of climate change on factors such as populations, resources, and property. Sensitivity measures the degree to which a system will be affected by or respond to climate stimuli. This can be altered by socio-economic changes such as new crop varieties that are more or less sensitive to climate change. Finally, adaptive capacity refers to the ability of a system to adjust to climate change, taking advantage of opportunities and coping with consequences. Factors that contribute to adaptive capacity include wealth, technology, education, institutions, information, infrastructure, and social capital, as well as cultural flexibility. It is also important to note that adaptation can reduce sensitivity, while mitigation can reduce exposure to climate change (9, 10). Impoverished communities, which are typically rural and isolated, do not have sufficient financial and technical capacities to manage the risks associated with climate change (7). Those living in poverty often have greater environmental and health risks as a result of highly, densely populated living areas, proximity to industrial sites, limited access to clean water and sewage treatment, traffic congestion contributing to air pollution, and a lack of access to other basic services (9).



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Figure 1. Climate Change Vulnerability Index, 2015. Reproduced with permission from reference (11).

Each year, Maplecroft, a global risks advisory firm, releases a global ranking calculating the vulnerability of 170 countries to the impacts of climate change over the next thirty years. The 2015 Climate Change Vulnerability Index (CCVI), depicted in Figure 1, was produced using data from 1995–2014. Of the 10 most affected countries during this time period, nine were developing countries in the low income or lower-middle income country group. While most of these countries are located on the African continent, there are two Asian countries, Bangladesh and the Philippines, ranked first and eighth most vulnerable, respectively (11, 12). It is important to note that Africa and South Asia are also home to the vast majority of the world’s poor population, as previously shown. Later we will more closely examine Bangladesh and the role that it and other smaller, economically weaker countries play in global climate change.

Attitudes Towards Climate Change

Taking into account the uneven distribution of the damaging effects of climate change, it is of value to note the similarly uneven distribution of attitudes towards climate change around the world. As depicted in Figure 2, a recent study by the Pew Research Center showed a significant correlation between the level of climate change concern and the carbon dioxide emissions per capita among 40 countries surveyed. Countries with higher carbon dioxide emissions, particularly the United States, had a very low climate change concern score. On the other hand, countries with lower carbon dioxide emissions, comprised mainly of countries in Africa and

Asia, tended to have a higher climate change concern score (13). Furthermore, these countries with higher scores also tend to be developing countries who are at greater risk from the negative repercussions of climate change.

Within the United States, with its disproportionately low level of concern, it is necessary to more closely examine the wide variance in attitudes regarding climate change. In 2016, the Yale Project on Climate Change Communication conducted an audience segmentation analysis examining global warming’s “Six Americas,” six unique audiences within the American public that respond to the issue of climate change differently. As depicted in Figure 3, these six audiences, ordered from most concerned about climate change to least concerned, are alarmed (17%), concerned (28%), cautious (27%), disengaged (7%), doubtful (11%) and dismissive (10%) (14).

High CO2 Emitters Are Less Intensely Concerned about Climate Change

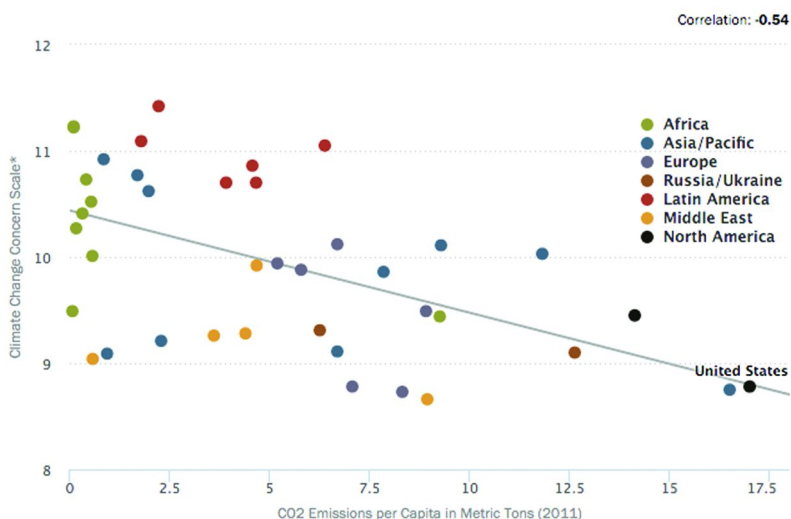


Figure 2. Pew Research Center Global Attitudes Survey, 2015. Reproduced with permission from reference (13).

These and other, similar studies illustrate the wide variance in climate change concern internationally and even within a single country such as the United States. This is important because levels of climate change concern can be directly correlated to the willingness and amount of action being taken to address the problem. Overall, over the past decade, there has been little change, with significant declines in concern in several key economies (such as China). However, as previously shown, in developing countries there have been significant increases in concern consistent with the greater risks faced by these countries (14, 15). Moving forward, these are the countries that must be prepared and given the resources to adapt and survive in the new world of drastic climate change.

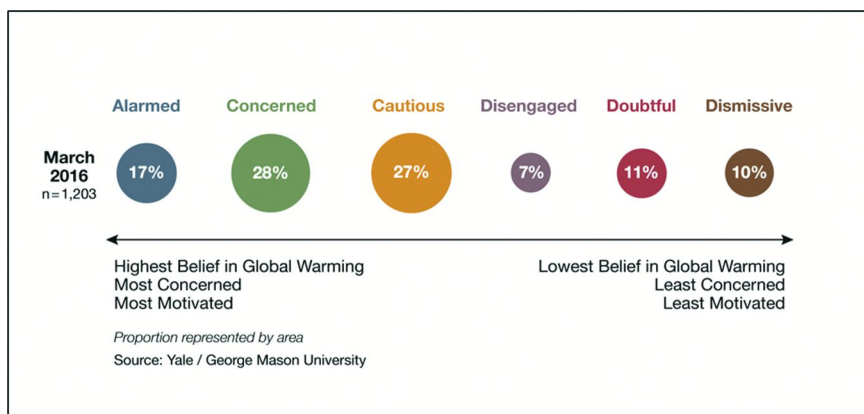


Figure 3. Yale Project on Climate Change Communication's "Six Americas," 2016. Reproduced with permission from reference (14).

Adaptation and Mitigation

The extent to which climate change will impact poverty, both throughout Asia and across the world, is directly tied to the ability of populations both to adapt to and mitigate its effects. There are several factors that can impact the ability of a society to successfully adapt. These include autonomous adaptation, such as the ability to freely migrate or switch occupations, policy-induced adaptation, typically through government action, the distribution of resources, such as land and labor, and the role of rural households as consumers and producers of food (7).

A primary mechanism by which the UNFCCC has proposed to support climate change adaptation and mitigation projects is the Green Climate Fund, first established at COP15 in 2009. The Green Climate Fund is one mechanism by which the global goal of raising \$100 billion by 2020 is to be met. As of December 2016, 43 governments had contributed \$10.3 billion (16). Other mitigation programs, including REDD+ and carbon taxing, which are addressed in other chapters, have seen limited success.

At COP21, while the focus of negotiations remained primarily on financial mechanisms for adaptation and mitigation, the meeting also served as an avenue for the exchange of skills and ideas between governments, NGOs, and other interest groups. During a panel hosted by the U.S. State Department, city leaders from around the world, including Copenhagen, Denmark and U.S. cities Oakland, California, and Kotzebue, Alaska, shared their experience and best practices for adaptation and mitigation strategies at the city level. This is especially significant, as 50% of the world population currently lives in cities, and this is expected to rise to 67% by 2100. In addition, cities are an ideal testing ground for new practices and adaptation strategies. As highlighted by panelist Maija Lukin, a councilwoman in Kotzebue, cities and local leaders can't always wait for funding or direction from the international or even national level to combat climate change. In the case of Kotzebue, a small coastal city with a population of

just over 3,000, coastal erosion, diminishing sea ice, and a lack of food security all prompted immediate local action. After petitioning for support from the state and national government, the community secured funding for the Shore Avenue Project, which made significant improvements to mitigate coastal erosion and prevented the city from being swallowed by the ocean.

While the problems Kotzebue faces are challenging, it is by no means a poverty-stricken city by global standards. However, it does represent an extremely remote area that is disproportionately affected by climate change, like many poor countries around the world. Kotzebue's initiatives to adapt and mitigate climate change in their own community represent the work taking place in other areas around the world. As each community faces their own challenges, particularly in poorer areas, national and international policy must support local initiatives by allowing as much flexibility as possible.

The UNFCCC has traditionally addressed issues of adaptation and mitigation in developing countries through the Warsaw International Mechanism for Loss and Damage, first established at COP19 in 2013. At the Paris climate talks, developing countries, particularly small island developing states and least developed countries, fought strongly to include significant discussion of loss and damage in the Paris Agreement. While establishing consistent funding remains a challenge, small projects such as one funded through the Africa Solidarity Trust Fund have found success. Farmers in six African island nations (Cabo Verde, Comoros, Guinea-Bissau, Mauritius, Sao Tome and Principe, and Seychelles) are benefitting from a \$1.5 million initiative on training and knowledge exchanges on producing and marketing nutritious, easy-to-grow, climate-smart food. In addition to increasing the countries' agricultural capacities, the project also aims to reduce issues of malnutrition and poverty in the region. By combining global support and local initiatives, this project presents a framework to prepare developing nations to adapt and mitigate the realities of climate change while simultaneously addressing longstanding issues of inequality and poverty (17).

Renewable Energy

One mechanism of adaptation and mitigation that will be extremely important in combatting climate change and offsetting future greenhouse gas emissions is renewable energy. Energy is also an essential component of economic development and poverty alleviation, as highlighted in the United Nations Millennium Development Goals. In order to effectively balance these goals of ending energy poverty and promoting sustainable development, renewable energy must be employed (18).

For the past few decades in developing countries, the energy needs of poor people have been largely met through petroleum-based liquid fuels and extensions of the electric grid, fueled primarily by fossil fuels and hydropower. This is primarily due to government subsidies and the widespread global availability of these resources, as well as the depletion of more traditional fuel sources like firewood. While this has sufficed in more developed areas, it still leaves out people in remote areas, or even urban slums, due to high costs or lack of access.

It is also important to note that most of the fossil fuels and technologies used by these developing countries are imported. Of the 47 poorest countries in 2004, 38 were net importers of oil, and 25 imported all of their oil (18).

The argument for renewable energy is supported by real-world experience. In rural areas, traditional electricity grid extensions are simply not practical or economical. Studies by the International Energy Agency have shown that renewable energy technologies in developing countries, while reducing carbon dioxide emissions at the same rate as in developed countries, actually have a lower associated cost due to their cost-competitiveness in decentralized energy areas. These technologies can also extend reliable energy access to the approximately 1.5 billion people in rural, developing areas without traditional grid access (19).

Projects in many developing countries have shown that renewables can directly contribute to poverty alleviation by providing necessary energy for businesses and jobs. Furthermore, renewable technologies can make indirect contributions to alleviate poverty and increase the standard of living by providing energy for activities such as cooking, heating, and lighting. This, in turn, contributes to increased education, decreased health risks, and other positive benefits in local communities (18).

An argument against renewable energy sources in developed countries is that they are not continuously available and are subject to variable weather conditions (no wind, sun, etc.). However, it is important to note that people using traditional energy sources in developing countries are often already faced with unreliable energy delivery systems where daily outages are common, so this argument against renewable energy is less relevant in poor countries. Still, in the future it will be necessary to improve energy storage and distribution practices worldwide to alleviate some of these problems.

In order for renewable energy to be effectively employed, especially in developing countries, it is first necessary to switch subsidies from fossil fuels to renewable technologies. In particular, in order to maximize the benefits for local communities, programs should focus on small, off-grid projects in rural, underdeveloped areas. Furthermore, as previously emphasized for all adaptation and mitigation practices, it is necessary to exchange not only financial capital, but also technology information in order to accelerate the spread of renewable energy technologies, particularly in developing countries where this knowledge may be limited or nonexistent. Therefore, significant time and financial investments need to be made specifically for this technology development, transfer, and education (19).

Asia

While climate change is clearly a global problem requiring global solutions, it can be useful to focus on specific regions in order to form a better assessment of concrete actions that can be taken to mitigate climate change at a regional or local level. Asia is a key area of interest for climate change researchers and policymakers, due to its recent rapid industrialization and growth. In addition, the geographical location of many Asian countries, particularly island and coastal

nations, make them especially at risk from global climate change (12). As previously stated, data from the World Bank shows that the uneven progress in global poverty decline has significant regional components (8).

Asia is a key player in international climate change negotiations and has played a critical role in the COP meetings over the past twenty years. At COP15 in Copenhagen, Asian countries—China in particular—were largely blamed for the failure to reach a significant treaty. Through a series of backroom deals, conducted away from the media spotlight, China purposefully undermined the negotiations. For example, it was China’s representative who insisted on removing the industrialized country targets, previously set as an 80% cut by 2050. Collaborating at times with India (another developing Asian country), China successfully removed most of the binding language of the agreement, including a 2020 peaking year in global emissions and a long-term target of 50% emissions cuts by 2050. By doing so, China, with an economy strongly dependent on cheap coal at the time, was able to negotiate a deal that did not limit its economic growth while simultaneously placing the blame on the United States. This is not to say that climate change was not an issue for China at the time. Rather, they recognized the issue, but instead chose to prioritize growth and becoming an international superpower (with significant negotiating power) (20).

Since 2009, and in part as a result of their actions at Copenhagen, climate change has become a much more serious issue for Asian countries. In recent years, China, India, Japan, and Korea have consistently ranked in the top ten countries for carbon dioxide emissions per capita, with China recently surpassing even the United States. At the same time, these countries began to feel the effects of increased emissions. In China, rampant air pollution has forced city shutdowns as air pollution contributed to more than 670,000 deaths in 2012. Importantly, even other, less-developed countries in Asia have also felt negative repercussions. For example, in the Philippines, Typhoon Haiyan in 2013 offered a preview of the increase in natural disasters that the highly vulnerable nation can expect as a result of climate change (21).

On a more optimistic note, the primary concern of Asian countries in 2009, that cutting emissions was synonymous with cutting their growth potential, no longer holds true. India has rapidly expanded its use of solar, and China is leading the world in employing renewable energy technologies. Peaking emissions is no longer a burden, but rather an opportunity, particularly for businesses, to ensure greater energy security, affordable supplies, and recognized leadership internationally (21).

At COP21, the Philippines took on a new leadership role as a large Asian developing nation. As the chair of the Climate Vulnerable Forum, a coalition of 43 countries pushing for the inclusion of the 1.5°C goal as opposed to the 2°C, the Philippines was critical in advocating for language of loss and damages to assist countries unable to adapt to climate change. Thanks to their leadership, the Climate Vulnerable Forum, and in particular the Small Island Developing States (SIDS) of the Pacific Ocean, played a much more prominent role at COP21 than at any previous meetings (21).

It is outside the scope of this chapter to address each of the unique challenges that both poverty and climate change pose in different countries around the world

(or even in Asia alone). However, the following two case studies, of China and Bangladesh respectively, offer insight into two very different Asian countries. While relatively close geographically, they have contributed to—and been affected by—climate change in very different ways. This provides interesting perspectives on how we can address climate change moving forward so that countries on both ends of the spectrum benefit.

Case Study: China

It is impossible to discuss climate change in Asia, or even the world, without recognizing the significant and growing role of China as both a contributor and policy leader. Adding further complications to this topic is the contentious, and at times contradictory, positions of the Chinese government regarding the importance of climate change and their willingness to make the necessary mitigating changes.

In per capita emissions, the latest data from the World Bank (2013) shows that the United States far exceeds China (16.4 to 7.6 metric tons per capita). However, in 2011, China surpassed the United States in total carbon dioxide emissions from the consumption of energy (i.e. fossil fuel burning). Since then, China's carbon emissions have increased rapidly alongside its economic development and population growth. Compared to its 2.7 metric tons CO₂ per capita in 2000, China emitted 6.71 metric tons CO₂ per capita in 2011 (22). In 2014, China was responsible for 27% of global emissions, and its per capita emissions surpassed those of all the 28 European Union member states combined (23, 24).

It is no secret that China has benefitted significantly from its use of “dirty” carbon energy sources, including a significant amount of coal. From 1980 to 2006, China's GDP grew by 9.5% per year, powered largely (67%) by energy produced from its large coal reserves. At one point in 2006, China was opening as many as two additional coal-fired power plants each week, and today it remains the largest consumer of coal in the world. However, to its credit, China's CO₂ emissions, while continuing to grow, have increased by only 5.4% per year. As a result, their carbon intensity (carbon emission per unit of GDP) decreased over that time period, as shown in Figure 4. An important reason for this was a government emphasis on energy efficiency, driven by the large population and limited resources of the country (24).

The government's push for cleaner energy sources was in part influenced by international pressures. China was a signatory to the Kyoto Protocol in 2007, but as a developing nation, it was not required to reduce its emissions. However, since then, pressure from within the country has also risen, especially as Chinese citizens have begun to feel the effects of dirty energy production firsthand, particularly in their air and water. In January 2013, the smog in Beijing contained a concentration of hazardous particles 40 times the level deemed safe by the World Health Organization (WHO). In 2015, severe air pollution resulted in shutdowns of schools, traffic, and manufacturing. In addition, water contamination and overuse, as a result of industry pollution and negligent farming practices, have led to shortages in about two-thirds of China's cities (25).

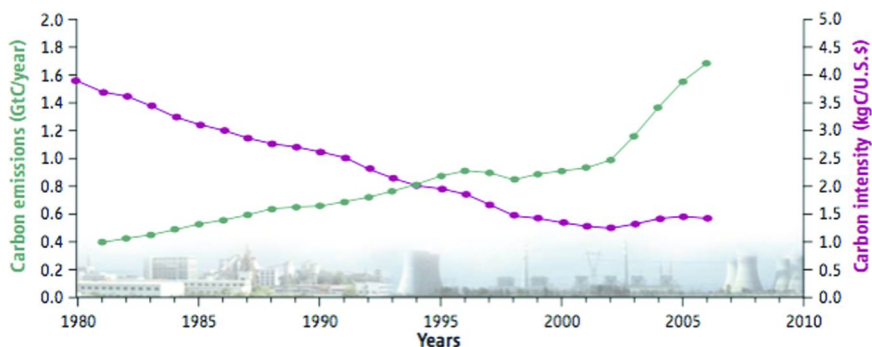


Figure 4. CO₂ emissions and carbon intensity for China from 1980 to 2006. Reproduced with permission from reference (24).

After passing the United States as the world’s largest emitter in 2007, China issued its first Climate Change Program. This was followed by a national carbon-trading scheme in 2008 that promoted investments in carbon capture systems. In 2010, for the first time, China led the United States and all other major countries in green energy markets, with private investments of \$34.6 billion in 2009 (26). With significant growth in wind, solar, nuclear power, and cleaner coal technology, China’s carbon dioxide emissions are expected to peak around 2030 (27). This is in accordance with China’s pledge at COP21, but emissions may peak earlier, depending on new policy and implementation.

The problem remains that thus far, China’s attempts to mitigate its own contribution to climate change, while important first steps, are insufficient. China has a mixed record, rapidly undergoing significant economic and industrial growth, utilizing both “dirty” and (more recently) clean energy sources to do so. It now faces the negative repercussions of its actions and can serve as an example for other developing countries, that they may emulate the best, clean practices for economic growth.

Case Study: Bangladesh

While much attention was focused on Asia’s emerging world leaders, China and India, smaller Asian countries still made their voices heard, both in the negotiations and in other venues at COP21. A prime example of this was Bangladesh, which in 2015 was ranked as the country most vulnerable to climate change in Maplecroft’s Climate Change Vulnerability Index (11). As a country that is already facing the negative effects of climate change and has consequently been forced to make significant changes, Bangladesh offers a unique perspective on techniques of adaptation.

Representing Bangladesh, Dr. Saleemul Huq spoke at COP21 about the best practices his country has adopted as they adapt to climate change. A significant problem that Bangladesh faces as a coastal country is sea level rise, which has led to other problems such as soil salinity, river siltation, and erosion. Because

Bangladesh is primarily an agricultural society, these ecological changes have significant social ramifications. These include an increased vulnerability to natural disasters, migration, and changes in land use. For example, because of the increased soil and water salinity in regions where people used to grow rice, farmers have been forced to switch to more saline-resistant strains. At the same time, in order to offset some of their losses and make the best of the situation, some farmers now cultivate rice-shrimp in the same areas as rice, creating another source of food and income.

Bangladesh also represents a unique approach to adaptation that places emphasis on both industrial development and the preservation of a rural lifestyle. While Bangladesh is a largely agricultural country, its capital city, Dhaka, ranks among the top 20 cities globally in exposure to extreme climate. Most residents in the region have migrated to the city and are economically poor, working as unskilled laborers. As a result of rising land and housing prices, this group, making up almost 30-40% of the population, has been forced into squatter settlements. In these high-density settlements, 91% of structures are comprised of corrugated iron (CI) sheets, which gain and radiate more heat than other building materials. These high heat-gaining and emitting materials, which allow little airflow for ventilation, exacerbate the exposure of residents to the significant direct and indirect impact of temperature variability (9).

This example demonstrates how the urban development of high-density housing as a result of economic poverty creates conditions that can exacerbate the hazardous effects of climate change. In their analysis of this region, Jabeen and Guy emphasize the need for “fluidity,” implying flexibility towards a variety of technological solutions for local challenges. Studies have shown that traditional adaptation planning has focused on regulatory frameworks and “design formulas” that rarely fulfill the needs and preferences of a particular community. With a more fluid model, more suitable to the unprecedented climate reality of the future, sustainable development must rely on alternative pathways rather than fixed ones (9).

An example of this kind of flexibility in sustainable development is Bangladesh’s implementation of renewable energy over the past several years. In 2007, an estimated 40% of the country’s population had no access to electricity. Recognizing this issue, with support from the World Bank, the government introduced the solar home systems (SHS) project to provide electricity to households with no grid access. Since 2009, more than 50,000 systems have been added per month, reaching 3 million households in 2014, with projections of 6 million households by 2017. Thanks to the SHS program, the Bangladeshi government is working towards universal electricity access by 2021, just a decade since the project was first proposed (28). This success serves as a positive example of climate change adaptation and mitigation practices that simultaneously improve a country’s standard of living, particularly among its poorest citizens.

Both the struggles and successes of Bangladesh offer valuable lessons for similar developing countries adapting to and mitigating climate change. Obviously, identical practices will not work in every country around the world, which presents the need for specific, tailored strategies that take into account the resources and voices of local communities. However, consistent international

support from organizations such as the World Bank will remain a key component of successful adaptation and mitigation projects across local and national platforms.

Conclusion

In summary, climate change is a global problem largely due to the actions of developed nations. However, it is the poorest people in poorer, developing nations who are expected to suffer the most from its negative impacts. This can be seen most prominently in Asia, where many of the countries most susceptible to climate change are located, including Bangladesh and the Philippines. At the same time, Asian countries such as China and India have seen rampant growth in the past decade using both renewable and non-renewable energy sources. As a result, these emerging world powers, as well as smaller countries in Asia, have taken on greater leadership roles and made their voices heard at international meetings such as the annual UNFCCC COPs.

Adaptation and mitigation practices have had both successes and shortcomings, as seen in the examples of China and Bangladesh. Future work must take into account the drastic differences in geography, culture, and economic inequalities among developing nations when considering global policy solutions. Furthermore, there must be an exchange not only of financial capital, but also ideas, leadership, and new technologies in order to simultaneously address issues of both climate change and poverty worldwide.

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