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Patricia Galvao-Ferreira
University of Windsor, Faculty of Law

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Chapter 8

When Climate Adaptation Is Imperative yet Elusive: Guatemala's Test for Climate Justice

Patricia G. Ferreira

The injustice of the whole issue of global warming and climate change lies in the fact that those who have contributed nothing to its genesis will suffer the most from its consequences, because they have the least capacity to adapt to these changes.

—Meles Zenawi, Former Prime Minister of Ethiopia

International discussions on climate justice legitimately emphasize the existential risk that extreme weather events and other natural effects associated with global warming pose to the small island developing states in the Caribbean Sea, the Pacific Ocean, and the Atlantic Ocean, and to the group of least developed countries. In early September 2017, historic category 5 Hurricane Irma illustrated this reality when it left three people dead and destroyed 95 percent of all the buildings in the Caribbean Barbuda, rendering the small island completely uninhabitable for the first time after 300 years of human settlement there (Cockburn 2017). Less visible is the situation of a large number of the socially and economically vulnerable communities in lower middle income developing countries such as Guatemala, to whom climate change poses an equally existential threat, adding to the already existing development challenges discussed in this volume.

Guatemala perfectly illustrates the climate justice paradox: the countries that contributed least to climate change, and have lower financial and technological capacity to implement timely climate action, are often among the most vulnerable to climate impacts. Guatemala has barely contributed to greenhouse gas emissions (GhGs) that cause climate change. Yet the country is suffering from the effects of climate change. In 2005, Tropical Storm Stan caused more than 1,400 deaths, and over one half million affected in Guatemala, 70 percent of whom were indigenous peoples, causing U.S. \$989 million in economic losses. In 2010, tropical storms Alex, Agatha, Frank, and Matthew killed 262 Guatemalans, injured 778, required the evacuation of 243,000 homes, and left another 76,000 homes damaged. Estimates are that 723,000 people were affected in the country, and the economic damage was U.S. \$1 billion only for Agatha (Bosque 2011). Guatemala's Homeland Security Unit for Disaster Reduction reported that in 2015 almost one million Guatemalans were affected by floods and landslides resulting from tropical storms, with 290 fatalities (República de Guatemala 2015a). In 2016, the Dry Corridor in Central America—affecting Guatemala, Honduras and El Salvador—experienced a severe drought that left 1.5 million Guatemalans in need of humanitarian assistance (FAO 2016).

Global warming is expected to continue to intensify extreme weather events, droughts, and floods, risking the livelihoods of millions of Guatemalans. This chapter examines the policy challenges climate change poses to Guatemala and other lower middle-income countries like Guatemala, which contributed very little to the problem, have low financial capacity to address the costs of tackling climate effects, and yet have large shares of their population highly vulnerable to climate impacts. A key strategy for these countries must be to prioritize climate adaptation over climate mitigation, and to get access to sufficient international funds to finance the climate action needed. In 2017, Guatemala is still not fully invested in this strategy. This chapter discusses a political obstacle at the national level and a structural challenge at the international level that are preventing Guatemala from facing the imperative need to prioritize climate adaptation.

I. Guatemala's Climate Change Profile

Parties to the 1992 United Nations Framework Convention on Climate Change (UNFCCC)¹ embraced the principle of common but differentiated

1. United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107, 31 I.L.M. 849.

responsibilities and respective capabilities in the climate regime, signaling their understanding that although states have a common responsibility to adopt actions to mitigate GhGs, and actions to adapt to the impacts of climate change, each state's individual commitments are to be differentiated according to their national circumstances. This differentiation aims to promote international cooperation by guiding a fair allocation of the burdens and the costs of climate action among unequal states. To be equitable, this allocation is to be informed according to markers such as: states' contributions to GhGs that provoke climate change; states' financial and technological capabilities to adopt climate action; states' levels of socioeconomic development; and states' vulnerabilities to climate change impacts (Rajamani 2006).

For a long time, the manifestation of differentiation in the climate regime followed a rigid North-South divide, taking into account developed countries' significant share of contributions to GhGs, their greater financial and technological capabilities to address the climate challenge, and developing countries' need to prioritize actions to reduce poverty and to improve other indicators of socioeconomic development (Ferreira 2016). Under the UNFCCC and the 1995 Kyoto Protocol, only developed countries were legally required to adopt national mitigation policies demonstrating that they were taking the lead in modifying long-term trends in GhGs emissions (UNFCCC, Art. 4.1 and Art. 4.2), while developing countries were to voluntarily adopt national mitigation programs, especially if financially supported by developed countries (Rajamani 2006).

As developing countries' share of global GhGs emissions grew over time, especially due to the emissions of emerging economies like China and India (Ferreira 2016),² the need for urgent universal climate action became evident. The Paris Agreement has strengthened the common nature of the responsibilities to adopt climate action, with all parties now mandated to formulate, to communicate, and to update their nationally determined contributions (NDCs) to address climate change.³ However, the content of the NDCs is not legally binding, in that their implementation is voluntary. Instead of different levels of binding obligations for all countries with significant emissions and sufficient capabilities, all commitments became voluntary. The new paradigm

2. China and India are currently among the top four global emitters, although only in absolute emissions, as their per capita emissions remain significantly lower than those of developed countries.

3. Obligations of conduct when it comes to preparing and submitting nationally determined contributions are now universal, and do not follow a North-South divide.

is therefore one of self-determined differentiation, whereby each country shall assess its own levels of emissions contributions, financial and technological capabilities, as well as climate change vulnerabilities and development needs (Rajamani 2016).

Developed countries as a group still have the exclusive obligation to provide financial support for climate action in developing countries under the Paris Agreement (Paris Agreement, Art. 9 2015). Yet, with the exception of the least developed countries and small island developing states, which are assumed to need international financial and technological support to cope with climate change impacts, all other developing countries are expected to present self-financed pledges of climate action, based on their national circumstances, as well as their needs for international financial assistance. Guatemala is not among the list of least developed countries or small island developing states, which have priority access to international support for climate action under the climate regime of the UNFCCC. Yet, the national circumstances of Guatemala and other lower middle-income countries also deserve attention from a climate justice perspective.

Low Contributions and Limited Capabilities

Guatemala's GhGs emissions, although growing, have historically been minor, and remain insignificant, as the country is responsible for less than 0.08 percent of total global emissions (Grantham Research Institute 2016). Guatemala ranks in the bottom fifty countries (out of 197) in share of global absolute emissions (WRI 2017). Guatemala's *per capita* GhGs emissions are below average even when compared to other lower middle income developing countries (WRI 2017). Considering such low contributions, Guatemala does not bear substantial responsibility for addressing the problem of climate change without support from those countries responsible for significant emissions, particularly developed countries.

Guatemala also faces limited financial capacity and technological capacity to address the climate change problem it has not created. Due primarily to strong exports of commodities such as coffee, bananas, and sugar to the United States, Guatemala has experienced strong economic growth since 2012, growth above the average for Latin America (World Bank 2017). Guatemala is the largest economy in Central America, with an absolute Gross National Income (GNI) higher than Costa Rica (World Bank 2017). These statistics may give the misleading impression that Guatemala has sufficient financial capacity to address climate change using its own financial resources. This is not the case for various reasons.

First, as the country with the largest population in Central America, Guatemala's GNI per capita is significantly lower than most of its less populous Central American neighbors. Guatemala still ranks 144th in global GNI per capita (out of 216 countries). Second, Guatemala's recent economic growth starts from a low base, below the average of its neighbors, and the economy continues to be highly dependent on a few volatile natural commodities exports to a single market, the United States. Guatemala's export sectors are markedly vulnerable to climate change impacts. Third, Guatemala's government budget to finance public policies is extremely limited. The country features the lowest tax to Gross Domestic Product (GDP) ratio in the Americas, at 12.4 percent, and one of the world's lowest. For comparison, neighboring Honduras collects and spends 15.8 percent of GDP, Costa Rica 21.0 percent, Mexico 29.7 percent, Argentina 32.1 percent, Canada 32.2 percent, and Cuba 38.6 percent. Finally, Guatemala still ranks very low in technological innovation (98 out of 127 countries in a 2017 comparison of global innovation, below the average for Latin America) (Dutta et al. 2017).

Guatemala's High Vulnerability to Climate Impacts

In 2007, the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report defined vulnerability as the "degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes" (IPCC 2007). Located in a narrow strip of land sandwiched between the Pacific Ocean and the Caribbean Sea, Guatemala is one of the world's most environmentally vulnerable countries. Guatemala's territory is famously prone to earthquakes, volcanic eruptions, tropical storms, hurricanes, and droughts. Climate change is expected to intensify the hurricanes, the floods by tropical storms, and the recurrent droughts in Guatemala. In fact, all indications are that Guatemala is already experiencing significant impacts from global warming (República de Guatemala 2015a).

The 2017 Global Climate Risk Index, which analyzes the quantified impacts of extreme weather events worldwide (in terms of fatalities and economic losses), ranked Guatemala among the ten countries most affected by extreme weather events over the last twenty years (Kreft et al. 2017). Initial assessments of climate change impacts, risks, and vulnerability focused chiefly on biophysical elements. Since 2007, however, the IPCC has explicitly recognized that "climate change impacts depend on the characteristics of natural and human systems, their development pathways and their specific locations" (IPCC 2007). The 2014 IPCC Fifth Assessment Report has unambiguously associated climate vulnerabilities to societal risks and economic development pathways

(IPCC 2014). The biophysical vulnerability of a country, dependent on its geographical location, may be either minimized or compounded by economic and social factors. Fluctuations in the economy, ecosystem degradation and unsustainable use of natural resources, and possessing a high number of low-income communities highly dependent on the natural environment for their survival are all socioeconomic factors that compound existing geophysical vulnerabilities (IPCC 2014).

Other chapters of this book have illustrated how Guatemala still faces many challenges to manage its natural resources in a sustainable manner—including forests, water, minerals, and agriculture. By perpetuating unsustainable models of economic development, Guatemala magnifies its vulnerability to climate impacts and risks. In addition, a significant share of Guatemala's population is socioeconomically vulnerable. Guatemala's poverty levels remain exceptionally high, particularly in rural zones and among indigenous communities. Official statistics show that after reducing from 56 percent to 51 percent between 2000 and 2006, poverty levels in Guatemala rose again to 59.3 percent of the population in 2014 (INE 2015). This increase in poverty levels lies in contrast to most other Central American countries and Latin American countries more generally, which have experienced significant reductions in poverty levels in the last decades. Poverty is particularly high among Guatemala's indigenous population, as 80 percent were living below the poverty line in 2014 (INE 2015).

In 2017, the World Food Program alerted that the prolonged droughts and recurrent hurricanes, floods, and landslides that plagued Guatemala in recent years were exacerbating the already fragile livelihoods of low-income Guatemalans, placing the country as one with the highest rates of chronic malnutrition in the world, at 47 percent of population (WFP 2017). The Guatemalan state was already under the moral imperative to create programs and systems to combat poverty and to improve the life conditions of its low-income communities. Climate change has added an extra challenge: the state now needs to create programs and systems to enable their most vulnerable to adapt to the added climatological challenges (to which the country has barely contributed), while still helping the poorest communities overcome the long-standing socioeconomic vulnerabilities.

II. Guatemala's Response to Climate Change

What should Guatemala's fair and appropriate share of global efforts to address climate change be, considering the country's national circumstances

with respect to: contributions to climate change; vulnerability to climate impacts; capacity to adopt climate actions; and development needs? First, and most important, due to high vulnerability of a substantial number of Guatemalans to the impacts of climate change, the country needs to channel its domestic efforts primarily to climate adaptation. Second, because Guatemala continues to contribute only marginally to global GhGs, especially on a per capita basis, climate mitigation efforts should not be a priority, unless they have the co-benefits of improving development indicators that reduce the vulnerability of low-income Guatemalans. As Guatemala has low financial and technological capacity, and high development needs, the country should have access to international climate finance to support its priority adaptation efforts and its mitigation efforts.

In practice, however, two obstacles are preventing Guatemala from treating climate adaptation with the urgency that it deserves. The first obstacle is at the national level, as the political will to make climate adaptation a genuine priority is ostensibly missing. The second is a structural obstacle at the international level, as international climate finance remains scarce, and existing financial flows are biased toward investments in climate mitigation over climate adaptation.

Constructive Engagement

At first sight, Guatemala can be considered as among a group of countries playing a constructive role in the international and national efforts to combat climate change. Guatemala became part of the UNFCCC in 1992, and joined the Kyoto Protocol in 1998. In 2012, Guatemala joined a group of other developing countries that are among “neither the poorest nor the richest,” to create a new negotiating block in the UNFCCC—the Association of Independent Latin American and Caribbean States (AILAC) (Roberts and Edwards 2012). Colombia, Costa Rica, Chile, Peru, Honduras, Paraguay, and Panama are the other members of AILAC, an alliance pushing for more progressive climate action from all parties to the UNFCCC, albeit emphasizing the continuing special responsibility of developed countries. Since then, AILAC countries have been officially building the case for ambitious low-carbon development at the national and international levels (Edwards et al. 2015).

At national level, right after joining the Kyoto Protocol, Guatemala has begun to establish what would become an extensive national institutional and legal framework to address climate change (Grantham Institute 2016). The country charged the Ministry of the Environment and Natural Resources (MARN) with the responsibility to develop national climate strategies,

creating a special internal unit to address climate change under this Ministry in 2001. In 2005 MARN created a “National Clean Development Mechanism Office” to structure Guatemala’s engagement with the Kyoto Protocol mechanism to reduce emissions in developing countries. In 2008, MARN adopted a National Climate Change Program to coordinate national, regional, and local policies to address climate change. In 2009 the Government approved a Climate Change National Policy, setting the guidelines for the creation of national strategies for climate mitigation and climate adaptation. In late 2013, the Guatemalan Congress adopted the Climate Change Framework Law, “to regulate vulnerability reduction, obligatory adaptation to the effects of climate change, and the mitigation of GhGs emissions” (Congreso de La Republica 2013).

In 2014, Guatemala’s National Council of Urban and Rural Development approved the long-term national development plan “K’atun: Nuestra Guatemala 2032,” (República de Guatemala 2014) incorporating climate mitigation and climate adaptation as priority areas in Guatemala’s sustainable development planning for the next decades. Guatemala is rightly proud of the institutional framework it has been able to create, pointing that they were the first country in Central America—and one of the first in Latin America—to create a Framework Law to address climate change.⁴ Without undermining the importance of these achievements, the question is whether these institutional frameworks reflect the right priorities for a country with the climate change profile of Guatemala, and whether they are being effectively implemented.

Inverted National Priorities

Parties to the 2015 Paris Agreement, which will guide global climate action under the UNFCCC going forward, vowed to pursue three goals related to climate change. The first goal is to hold the global average temperature to well below 2°C above preindustrial levels, and to strive to keep the temperature increase to 1.5°C, by undertaking domestic mitigation measures. The second goal relates to climate adaptation, with parties vowing to enhance adaptive capacity, to strengthen resilience, and to reduce vulnerability to climate change at the national level. For that end, countries agreed to assess climate change impacts and vulnerabilities, and to formulate and implement national

4. This fact was emphasized by members of the Ministry of the Environment (MARN) during interviews with relevant stakeholders undertaken by the Study Space Guatemala that prompted this book.

adaptation plans, including prioritized actions considering vulnerable communities, places, and ecosystems. The third goal is to make “finance flows consistent with a pathway towards low greenhouse emissions and climate-resilient development” (UNFCCC 2015).

In the lead up to the Paris Agreement, parties submitted their (Intended) Nationally Determined Contributions—(I)NDCs. (I)NDCs are communications of each party’s self-determined efforts to meet the three global climate change goals, guided by its perception of national circumstances. Guatemala presented its (I)NDC in September 2015, with a preamble emphasizing the high vulnerability of Guatemala and the need for international support for the country to properly address climate mitigation and adaptation. In the substantive part of the (I)NDC, Guatemala pledges an unconditional mitigation target (relying on national financial resources) of reducing GhGs emissions by 11.2 percent below Business as Usual (BAU) scenarios by year 2030, compared to base year 2005.⁵ Guatemala also pledges to further reduce its emissions by 11.4 percent below BAU, conditional on external support. Guatemala’s mitigation pledge is adequate, if not overly ambitious, considering its natural circumstances. The mitigation pledge is reasonably detailed, including sectoral targets and existing and planned institutional frameworks to achieve the mitigation goals. Guatemala’s 2015 Paris commitments to reduce emissions are a continuation of the country’s long-term attention to climate mitigation efforts, despite its low share of global GhGs contributions.

With national resources and international financial support, Guatemala has been actively pursuing climate mitigation initiatives since the 1990s, having created an institutional infrastructure to promote investments in emissions reduction projects, and to establish the requisite legal and technical conditions to attract external investments to mitigation activities in the country (Lokey 2012). Guatemala has undertaken four national inventories of GhGs emissions in 1990, 1994, 2000, and 2005, following IPCC guidelines. In 2003, the government approved a law to create tax, economic, and administrative incentives to promote renewable energy in Guatemala.⁶ The objective was not only to expand energy supply to Guatemalans, to reduce the dependence on import of fossil fuels and to reduce GhGs emissions in the energy sector, but also to

5. When it comes to mitigation, developed countries (required under the UNFCCC to take the lead in climate action) have all pledged some level of economy-wide, absolute emissions reductions targets. Most developing countries, on the other hand, have pledged reductions in emissions intensity, or reductions relative to BAU scenarios.

6. República de Guatemala, *Ley de Incentivos para el Desarrollo de Energías Renovables* (2003).

establish Guatemala as an exporter of renewable energy to Mexico and to the rest of Central America (UNDP 2015/2016). In 2005, the government created the National Clean Development Mechanism Office, to develop policies related to Guatemala's participation in the UNFCCC Clean Development Mechanism for emissions reductions (Grantham Institute 2016). In 2012, the government established a Plan to Expand Energy Generation (2012–2026), with the goal to increase the share of renewable energy—especially hydro and geothermal—to around 80 percent by 2026 (Grantham Research Institute 2016).

Guatemala has also created a comprehensive institutional framework to formulate and to manage the reduction of emissions from deforestation and forest degradation (REDD+) and the reduction of emissions from other land uses. Together, emissions from land use, including from deforestation and forest degradation, comprise the largest share of current emissions in the country (USAID 2015). Some of the investments in climate mitigation described above have already generated positive results. Guatemala has attracted a considerable number of clean development mechanisms mitigation projects (twenty as of August 2017) for a country of its size (UNEP 2017). Following the adoption of the 2012 Energy Policy, a large number of renewables projects have been developed, including the inauguration of one of the largest solar plants in Central America in May 2014 (the Sibó solar PV plant in the east of the country).

Guatemala has also invested and attracted climate finance investments for the expansion of its hydropower capacity. As some of the hydropower projects have followed a model of implementation without appropriate social and environmental safeguards, this type of renewable energy project has led to instances of social resistance and violent conflicts similar to processes in other economic sectors such as mining (Carbon Market Watch 2015). The concern is that some of these mitigation projects may end up displacing already vulnerable communities from their lands without proper compensation, or disrupting their fragile socioeconomic structures, aggravating the climate adaptation challenges for these communities. The existence of social conflicts associated with climate mitigation projects in Guatemala reflects the fact that the country's attention to climate adaptation and to those vulnerable to climate impacts has so far paled in comparison with the country's active role in climate mitigation.

To be true, Guatemala's climate change laws and policies all mention adaptation as a main concern. The planning and implementation of adaptation action, however, have lagged significantly behind mitigation. In the 1990s there were no programs specifically related to climate impacts in Guatemala. In 2001, Guatemala's First National Communication to the UNFCCC identified a list of national priorities for adaptation (health, water management, forest

resources, food security) based on national initial assessments.⁷ Yet, when it comes to elaborating on priority actions, the First National Communication focused exclusively on mitigation strategies, without developing any detailed adaptation plan (Keller et al. 2011). Eight years later, the 2009 National Climate Change Policy included vulnerability reduction and promotion of adaptation as main objectives, alongside climate adaptation. After listing the key sectors generating adaptation concerns, the policy document failed to indicate any specific action or priorities. Adaptation projects in Guatemala have remained *ad hoc*, in the absence of a comprehensive national adaptation strategy.

The year 2010 was a harsh year for Guatemala, with several tropical storms causing floods that led to fatalities and widespread displacements, besides huge economic costs. Almost one decade after Guatemala's special climate change unit under MARN, and sufficient knowledge of the increased risk of flooding related to tropical storms, the country had undertaken few structural measures at the operational level to prevent the consequences (Bosque 2011). A UN study showed that:

[i]n particular, there have not been sufficient infrastructural projects for flood mitigation such as the construction of levees and the dredging of rivers. Moreover, many of the projects completed to date do not rely on appropriate technical studies that take climate change and variability into account. In some instances, the result is that some projects end up exacerbating problems downstream as well as creating a false sense of security. (Bosque 2011)

This showed the gap between the adoption of legal and policy institutional frameworks, and actual action to address climate change. It also indicated how in practice Guatemala continued to emphasize climate mitigation, which tends to attract more private co-funding and opportunities to generate financial returns, than climate adaptation, which tend to benefit a large number of low-income Guatemalans.

Only in 2013 the Framework Climate Change Law (Ley Marco)⁸ would dedicate a whole chapter to adaptation. Ley Marco mandated that MARN and

7. República de Guatemala, *Primera Comunicacion Nacional sobre Cambio Climático* (2001).

8. Congreso de la República de Guatemala, *Ley Marco para Regular la Reducción de la Vulnerabilidad, la Adaptación Obligatoria ante los Efectos del Cambio Climático y la Mitigación de Gases de Efect Invernadero* (2013).

other governmental agencies develop strategic plans and guidelines to promote adaptation and to manage risks related to climate change. Ley Marco also created a national climate change fund to finance projects that address risk management, adaptation, and/or mitigation. The Fund clearly earmarks 80 percent of the resources to risk reduction and vulnerability management and adaptation. This has been an important institutional safeguard. Notwithstanding, in practice there continues to be significantly fewer advances in climate adaptation than in climate mitigation in Guatemala in the four years since Ley Marco. Guatemala's 2015 (I)NDC is markedly more imprecise in how the country will address climate adaptation, as compared to climate mitigation (República de Guatemala 2015b). The Paris pledge indicates that the country proposes to address climate adaptation in a transversal way in a list of key sectors. The (I)NDC recognizes that Guatemala was still in the process to develop a national system of climate impacts information, a system of early alerts of natural disasters, and methodological guides for risk management, reduction of vulnerability, and resilience enhancement (República de Guatemala 2015b).

In its 2016 Second Communication to the UNFCCC (República de Guatemala 2016), the gap between Guatemala's achievements in climate mitigation compared to climate adaptation so far was also discernible. The chapter on adaptation reported some important recent advances in terms of completing assessments of climate vulnerabilities in key sectors. Yet it basically described a series of "orientations to the design of adaptation measures in Guatemala." The adaptation chapter sets guidelines that are more detailed than in previous documents, and clearly communicate the right intentions. It fails, however, to set explicit targets or measurable goals, or to indicate when Guatemala will complete a first comprehensive national plan on adaptation. Recently a wide range of funders and implementers, from the United Nations Development Program and the World Bank, to bilateral aid agencies and local nongovernmental organizations, have partnered with the government to develop a series of adaptation projects (UNDP 2017). These projects, primarily in the water and agricultural sector, and in coastal zone management and disaster reduction to a lesser extent, remain ad hoc in the absence of a comprehensive national climate adaptation plan in Guatemala.

In contrast, Guatemala's Second National Communication to the UNFCCC includes a chapter on mitigation that describes the creation of concrete initiatives and sets quantifiable goals, while reporting on tangible achievements under "climate mitigation efforts undertaken in Guatemala." Although there have been some improvements in the last few years, Guatemala is still not treating climate adaptation with the impetus that it deserves, considering its

climate change profile. Guatemala's choice of priorities is understandable, albeit not justifiable, because climate adaptation initiatives do not offer significant economic opportunities for Guatemalan and international elites—unlike, for example, large energy production projects. The government of Guatemala needs to make the political decision to prioritize adaptation, and to find the opportunities to create programs that generate the largest co-benefits, in the absence of clear short term economic incentives. Guatemala also must create the conditions to tap into international climate funds, as Guatemala should not shoulder the costs of addressing a problem that it has contributed little to create. Yet Guatemala's experience can also be explained, at least in part, by the perverse structural incentives that the global climate regime has created, which channels existing scarce climate finance toward mitigation action rather than adaptation.

III. The International Structural Challenge

If Guatemala overcomes the domestic political challenge of getting the priorities right, the country still faces an international structural obstacle in the UNFCCC regime—to access sufficient international funds to finance a large-scale national adaptation program. Lack of adequate climate finance from developed countries to cover the costs of climate action in developing countries has consistently been a point of contention in the global climate regime (Rajamani 2016). A second point of contention is that most international climate finance so far has flowed toward climate mitigation, and a very small share has been invested in climate adaptation. Studies show a split between financial flows to climate mitigation and adaptation until the late 2000s of 95:5 (Buchner et al. 2015).

The mitigation bias in climate finance is well recognized. The dominance of mitigation finance is explained as follows (Abadie et al. 2013): (a) mitigation projects offer better perspective to attract cofinance from the private sector than adaptation projects; (b) developed country donors act based on national interest and they have more interest in contributing to reduction in global emissions that affect them, rather than supporting adaptation activities that will have only local or national effects in recipient countries; (c) climate mitigation projects have ancillary benefits, for example, the energy security benefits for substituting fossil fuels for renewables energy; etc. Since 2009, pressure by developing countries and concerned stakeholders in developed countries, civil society, and academic circles led the parties of the UNFCCC to begin addressing the problem of mitigation bias in climate finance.

At the 2009 climate summit in Copenhagen, when the group of advanced economies promised to mobilize \$100 billion per year in climate finance for developing countries by 2020, they vowed to balance the flows between both mitigation and adaptation. This was a first step in both raising the available climate finance in general, and in securing climate finance for adaptation more specifically. Nevertheless, there was nothing to indicate that this balance would mean anything close to 50/50. An OECD report estimates that 77 percent of the 2014 tracked climate finance continued to be allocated toward climate change mitigation objectives, with only 16 percent toward climate change adaptation (less than \$10 billion) and 7 percent to activities that target both climate objectives (OECD 2015). In the Paris Agreement, parties failed to agree on a clear quantified share of climate finance to climate adaptation (Rajamani 2016). There is still a tall challenge facing developing countries that need to tap into international climate finance for adaptation.

This challenge was recently illustrated by a 2016 UNEP Report entitled “the Adaptation Finance Gap,” which assessed the difference between the projected costs of adaptation measures to meet the collective adaptation needs, and projected financial flows to cover these costs (UNEP 2016). First, the UNEP Report concludes that the actual costs of adaptation are likely significantly higher than current projections. In fact, the Report estimates that costs are likely to be two to three times higher than what is currently estimated for the period 2010 to 2030, and four to five times higher than current estimates for the period 2010 to 2050. For example, costs for adaptation in developing countries are now projected to be US\$70 billion to US\$100 billion a year by 2050, while the actual costs under UNEP estimates could reach US\$280 billion to US\$500 billion a year for that period. Even if parties to the UNFCCC were to fulfill their pledges to mobilize the \$100 billion a year to climate finance, and to dedicate a balanced share of this amount to adaptation finance from 2020 to 2025, it would likely not cover current estimates, let alone the new projected estimates by UNEP. The Report presents only an indicative range of costs, based on assessment of literature, as there is no central system to estimate global costs of adaptation. As adaptation costs are increasing, and as they tend to be underestimated, there is a strong possibility that the adaptation finance gap is even higher than the UNEP projections.

With the clear scarcity of funds for adaptation, there are important ongoing debates on how to mobilize additional funds. In principle, all adaptation needs identified in developing countries should eventually receive financial support if requested. The Adaptation Finance Gap Report, however, leads to the inevitable conclusion that even if the total target of the financial pledge is achieved, and adaptation finance reaches US\$50 billion a year, it would

not be enough to cover the conservative projections of adaptation costs in developing countries. That means that Guatemala would have to compete with many other developing countries for scarce climate adaptation finance. The UNFCCC rightly gives priority for least developed countries and small island developing states when it comes to accessing international climate finance for adaptation. This is reflected in statistics that show that, regionally, adaptation finance has primarily been directed to Sub-Saharan Africa (where most of least developed countries are) and Asia and the Pacific (where there are both least developed countries and small island states). The allocation of adaptation finance to Latin America and the Caribbean comes in a distant third (Caravani et al. 2013).

The efforts to raise more funds for climate adaptation will continue, although it is expected that it will take a long time to overcome the bias for climate mitigation, if it is ever accomplished. The message is that only those developing countries able to build a strong case for their need to tap international climate funds for adaptation will be able to break the ceiling. Investing in comprehensive assessments of adaptation needs, priority groups, and economic sectors, and designing national adaptation plans will likely make a difference. Chile, despite being a high-income developing country, has been able to tap into adaptation funds because it has prepared well-elaborated plans that identify the most vulnerable groups and geographic areas in the country.

IV. Conclusion

Guatemala is highly vulnerable to climate change impacts, and contributes very little to causing the problem of global warming. Guatemala should invest primarily in adaptation, and in mitigation only when it brings clear co-benefits for sustainable development in the country, and does not make citizens more vulnerable. To be clear, this is not to say that countries such as Guatemala should be oblivious to their emissions growth, however, insignificant in global terms. Neither to say that developing countries with relatively low emissions should continue to invest in carbon intensive growth strategies. The world needs drastic emissions reductions, and the collective pledges are still not sufficient. All efforts on climate mitigation are needed. Yet these reductions should come first and foremost from developed countries, and second from emerging economies like China, India, and Brazil, with significant and growing emissions, or from high-income developing countries like Chile, with high emissions per capita. Emerging economies and high middle income developing

countries have much greater financial and technological capacity to reduce their emissions in the short run.

The point is to emphasize that Guatemala should not prioritize ambitious mitigation, especially using its own resources. The country should rely on the financial and technological support of developed countries to reduce its emissions contributions.

And most important, highly vulnerable countries with low emissions and limited capabilities, such as Guatemala, should not emphasize mitigation in detriment of the imperative priority of investing their own resources, and to tap into international finance, for climate adaptation. There is a need for stronger commitment from the government of Guatemala to prioritize adaptation, and to make sure that support reaches those vulnerable groups that need it most.

Guatemala should also continue to actively advocate, as part of AILAC, for improvements in the global climate regime to: (a) raise more international climate finance, from both developed countries but also from emerging economies that have growing financial capacity and large GhGs contributions and (b) overcome the bias for climate mitigation by establishing minimum goals for the allocation of funds for climate adaptation, or informal guidelines that encourage financial institutions to channel more resources to adaptation. This is clearly a tall endeavor for a country such as Guatemala, already facing many other developmental challenges. However, Guatemala has already created a strong legal and institutional framework that can help in this quest, and despite the many limitations, the global regime is slowly moving toward greater attention to the adaptation needs of developing countries such as Guatemala.

Sources

Abadie, Luis M., Ibon Galarraga, and Dirk Rübelke, *An Analysis of the Causes of the Mitigation Bias in International Climate Finance*, 18 Mitigation and Adaptation Strategies for Global Change 943 (2013).

Buchner, Barbara et al., *The Global Landscape of Climate Finance 2015*, Climate Policy Initiative (2015).

Bosque, Lilian Y., *Climate Change and the Protection of Guatemalan Marine-Coastal Ecosystems*, UN Division for Oceans Affairs and the Law of the Sea (2011).

Caravani, Alice et al., *Climate Finance Thematic Briefing: Adaptation Finance*, Climate Fund Update (CFU) (2013).

- Carbon Market Watch, *Santa Rita: CDM Hydro Dam in Guatemala—The Need for Safeguards in Climate Finance Flows* (2015).
- Cockburn, Harry, *Hurricane Irma: For the First Time in 300 Years, There Is No One Living on the Island*, *The Independent*, Sept. 15, 2017.
- Congreso de la Republica de Guatemala, *Decreto Número 7/2013, Ley Marco para Regular la Reducción de la Vulnerabilidad, la Adaptación Obligatoria ante los efectos del Cambio Climático y la Mitigación de Gases de Efecto Invernadero* (2013).
- Dutta, Soumitra et al. (eds), *The Global Innovation Index 10th Edition: Innovation Feeding the World*, Cornell U., INSEAD, and WIPO (2017).
- Edwards, Guy et al., *A Fragmented Continent: Latin America and the Global Politics of Climate Change*, MIT (2015).
- Ferreira, Patricia G., *From Justice to Participation: the Paris Agreement Pragmatic Approach to Differentiation*, in Randall Abate, ed. *Climate Justice: Case Studies in Global and Regional Governance Challenges*, West Academic (2016).
- Food and Agriculture Organization of the United Nations (FAO), *Dry Corridor Central America, Situation Report* (June 2016).
- Grantham Research Institute on Climate Change and the Environment (Grantham Research Institute), *Guatemala Country Data* (2016).
- Instituto Nacional de Estadística Guatemala (INE), *ENSMI* (2015).
- Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) (2007).
- Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) (2014).
- Keller, Marius et al., *Review of Current and Planned Adaptation Action: Central America and Mexico. Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Mexico and Panama*, International Institute for Sustainable Development (IISD), Adaptation Partnership, 143 (2011).
- Kreft, Sönke et al., *Global Climate Risk Index 2017: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2015 and 1996 to 2015*, Germanwatch Nord-Süd Initiative eV (2017).
- Lokey, Elizabeth. *Renewable Energy Project Development under the Clean Development Mechanism: A Guide for Latin America*, Routledge (2012).
- OECD, *Climate Finance in 2013–14 and the USD 100 Billion Goal: A Report by the OECD in Collaboration with Climate Policy Initiative* (2015).

- Rajamani, Lavanya, *Differential Treatment in International Environmental Law*, Oxford University Press, 2006.
- Rajamani, Lavanya, *The 2015 Paris Agreement: Interplay between Hard, Soft and Non-Obligations*, 28 *Journal of Environmental Law* 337 (2016).
- República de Guatemala, *Politica Nacional de Desarrollo K'atun Nuestra Guatemala 2032* (2014).
- República de Guatemala, *Boletín Informativo 4115*, Coordinadora Nacional para Reducción de Desastres (2015a).
- República de Guatemala, INDC (2015b), <http://unfccc.int/2860.php>.
- República de Guatemala, *Segunda Comunicacion Nacional sobre Cambio Climatico* (2016).
- Roberts, Timmons, and Guy Edwards, *The Latin American Climate Negotiating Group: The Greenest Shoots in the Doha Desert*, Brookings Institute (2012).
- United Nations Development Fund (UNDP), *Informe Nacional de Desarrollo Humano (INDH)* (2015/2016).
- United Nations Development Program (UNDP), *Climate Change Adaptation Guatemala* (2017).
- United Nations Environment Program (UNEP), *The Adaptation Finance Gap, a Report by UNEP* (2016).
- United Nations Environment Program (UNEP), Center on Energy, Climate and Development, *CDM/JI Pipeline Analysis and Database* (2017).
- United Nations Framework Convention on Climate Change (2015), Adoption of the Paris Agreement, 21st Conference of the Parties, Paris: United Nations.
- USAID, *Greenhouse Gas Emissions in Guatemala* (2015).
- World Bank, *The World Bank In Guatemala* (2017).
- World Food Program (WFP), *Guatemala* (2017).
- WRI, *CAIT Climate Data Explorer* (2017).