



Putting climate-induced migration in context: the case of Honduran migration to the USA

Daniel R. Reichman¹

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Abstract

Over the past decade, unauthorized migration from Honduras to the USA has become a topic of pressing international concern and a major factor in the political and humanitarian crisis at the southern border of the USA that has been unfolding since 2014. Untangling the causes of recent Honduran migration requires attending to economic change, political instability, the impact of violence and crime, rapidly changing gender roles, among many other forces that shape migration patterns. Recently, scholars and policy-makers have analyzed the impact of drought in the so-called Dry Corridor of Central America as a major source of migration, particularly among coffee producers who have been hard hit by unprecedented heat and lack of rain in parts of Honduras. Drawing on ethnographic studies of Honduran coffee farmers, this paper will discuss how and if climatic factors can be isolated from other factors to explain recent Honduran migration behavior, in order to move towards a holistic explanation of climate-driven migration.

Keywords Honduras · Migration · Northern Triangle · Dry Corridor · Climate change · Debt · Ethnography

In 2015, migration scholar Elizabeth Ferris asked (Ferris 2015): “How can we responsibly deal with the multi-causal nature of population movements? Can we even talk of “climate change-induced displacement or migration when we know that decisions to move are rarely mono-causal and that the line between “voluntary” and “forced” is often quite blurry?” This is a crucial question in understanding the role played by climate change in recent migration from Honduras to the USA. There are many root causes of Honduran migration, including structural poverty (Pine 2008); economic opportunity and the desire for upward mobility in the USA (Reichman 2011); family reunification (Nazario 2006); increased global interconnection, debt, the dangers of gang violence, and violent crime in general (Clemens 2021a, b); gender inequality, political instability, and corruption

(Frank-Vitale 2018; Frank 2018) and the persecution of Honduran political activists.¹ Behind all of these interrelated factors is the obvious fact that the USA is among the wealthiest countries in the world and it is connected by land to Honduras, a relatively poor country. A significant level of migration between the two countries is therefore inevitable, now that communications technologies intensify the social and cultural connections between communities that were once separated across borders. As of 2020, remittances from migrants abroad accounted for 23% of Honduran GDP (World Bank 2021) and the economic importance of remittances shows no signs of decreasing. In a country in which mobility has become so deeply embedded in social life, how can any single cause be identified as a primary driver of migration? As transnational migrant communities grow in size and become more stable—socially, culturally, and economically—it is unrealistic to think that any incremental policy shift will be able to do much to change the reality of a long-term migratory pattern between Honduras and the USA.

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✉ Daniel R. Reichman
daniel.reichman@rochester.edu

¹ Department of Anthropology, University of Rochester, Rochester, NY 14627, USA

¹ Frank-Vitale and Heidbrink (2021) focus on the U.S. government’s role in producing crime, corruption, and poverty over centuries of involvement in Central America. Frank Vitale’s work has focused on violent crime, poverty, and political dysfunction as the major drivers of recent Honduran migration (Frank 2018, Frank-Vitale and Martínez d’Aubuisson 2020).

Since 2014, the role of climate change, particularly the effect of drought in a region that has come to be known as the “Dry Corridor” of Honduras, has been identified as a major driver of migration from the region, adding yet another factor to the long list of root causes described above. The role of extreme storms, such as Hurricane Mitch in 1998, has long been identified as a major cause of Honduran migration (Barrios 2017; Ensor 2009). However, the impacts of drought and hurricanes on migration are not necessarily the same. The economic consequences of crop failures from drought, for example, can take many years to reveal themselves and they can be extremely localized—affecting farmers more than urbanites, or farmers who grow certain crops more than others. While it is true that different regions of Honduras were affected differently by Hurricane Mitch, it was a nationwide disaster, and no region was left unaffected. While Honduran emigration is a systemic, nationwide phenomenon, drought is not. Therefore, how can we know when migration is truly caused by climate change in the Dry Corridor, in a situation where so many factors will confound simple explanations of cause and effect? At a more general level, how have scholars from across the social sciences sorted out the multi-causal nature of Honduran migration? This paper reviews the literature on Honduran migration to the USA, asking how the role played by climatic factors (particularly drought and extreme storms) has been assessed within the complex interplay of the many other factors that may or may not drive migration.

The politics of root causes

It is necessary to provide some political context to explain why the search for root causes has become a topic of major concern in the USA. Over the past decade, unauthorized migration from Honduras to the USA became a key factor in the political and humanitarian crisis which unfolded at the southern border between the USA and Mexico. While there has been a steady flow of unauthorized migration to the USA from Honduras, the abrupt migrant “surges” of 2014, 2018–2019, and 2021 posed ongoing challenges to the Obama, Trump, and Biden administrations. The surges garnered international media attention as symbols of the political, legal, and ethical failures of U.S. immigration policy, which, for decades, has been mired in partisan conflict that has stymied attempts at comprehensive reform. Honduras, which was once marginal to discussions about U.S. immigration, became a flashpoint in this high-profile political debate. Central Americans from the so-called Northern Triangle (Guatemala, Honduras, and El Salvador) now constitute the fastest-growing segment of the unauthorized immigrant population in the USA, and the U.S. government has focused its efforts on new tactics of border enforcement, foreign aid, and

international cooperation to stem the tide of the migration. Since 2014, an unprecedented number of Honduran migrants have been under the age of 18 (and are therefore treated as children under U.S. law) which has added a new level of ethical and legal complexity to an already fraught situation (Heidbrink 2020). The treatment of child migrants in immigrant detention centers under the Trump administration became a human rights scandal that has yet to be resolved.

In February of 2021, U.S. President Joe Biden issued Executive Order 14010, which called for a “comprehensive regional framework to address the causes of migration” from Central America. The order initiated a period of study and analysis, led by Vice President Kamala Harris, which resulted in a plan called the “U.S. Strategy For Addressing The Root Causes Of Migration In Central America” released in July 2021. The report was issued at the very beginning of a new presidential administration, illustrating the political urgency of the migration problem. However, the content of the report shows just how knotty the problem is. The strategy is organized under five strategic pillars: Addressing economic insecurity and inequality; combating corruption, strengthening democratic governance, and advancing the rule of law; promoting respect for human rights, labor rights, and a free press; countering and preventing violence, extortion, and other crimes perpetrated by criminal gangs, trafficking networks, and other organized criminal organizations; and combating sexual, gender-based, and domestic violence (National Security Council 2021, 6). The (somewhat utopian) “Desired End State” is described as “A democratic, prosperous, and safe Central America, where people advance economically, live, work, and learn in safety and dignity, contribute to and benefit from the democratic process, have confidence in public institutions, and enjoy opportunities to create futures for themselves and their families at home” (5).

While climate change is not among the five central pillars of the strategy, it is mentioned throughout the report as a systemic phenomenon that exacerbates the underlying root causes of migration. In her introductory summary of the report, Vice President Kamala Harris writes.

It is in the national security interest of the United States to promote a democratic, prosperous, and secure Central America, a region closely connected to the United States by culture, geography, and trade. COVID-19, extreme weather, and severe economic decline are compounding longstanding challenges in the region, forcing far too many Central Americans to conclude the future they desire for themselves and their children cannot be found at home. They have lost hope and are fleeing in record numbers. Persistent instability and insecurity in Central America have gone on for too long. Poverty and economic inequality, pervasive crime and corruption, and political leaders’ drift toward authoritarian rule have stunted economic growth and diverted critical

resources from healthcare and education, robbing citizens of hope and spurring migration. The worsening impacts of climate change, manifesting as prolonged periods of drought and devastating storms, have exacerbated these conditions and undermined U.S. and international interests. All of these factors contribute to irregular migration, and none of them can ultimately be addressed without honest and inclusive democratic governance that is responsive to the needs of citizens in the region (1).

The report is marked by a tension: it acknowledges the complex, multi-causal nature of migration, yet strives to boil down the causes of migration to a few nameable, measurable factors to set the stage for policy interventions. Hovering above all the single causes identified in the report is “the worsening impacts of climate change, manifesting as prolonged periods of drought and devastating storms” which exacerbate all the other conditions (1).

U.S. immigration law is largely dependent on fixing and naming single causes of migration, and the legal system defines the rights of migrants through assessments of the underlying causes of mobility. Migration that is motivated by violence or political factors is managed through the refugee and asylum framework, which admits people to the country based on evidence that they have a reasonable fear of threat or persecution in their country of origin. Economic migration is managed through (very limited) employment-based visa quotas and seasonal work permits that are allocated by migrants’ country of origin and the demands of particular industries as they are communicated to the U.S. government through lobbyists and industry associations (IT, agriculture, and seasonal tourism being the most important). Migration that is motivated by relations of marriage, kinship, and family is managed through the family-preference or “Green Card” allocation system, which distributes immigrant visas based on familial relationships according to a ranked system of preferences. Migration due to extreme weather events, natural disasters, or violent conflict does not have a defined category of admission, but it is often managed on an ad hoc basis through the Temporary Protected Status (TPS) framework, through which the government assigns a temporary suspension of deportations for unauthorized migrants from particular countries over a designated period of time.

As a technique to sort immigrants into discrete legal categories, *cause of migration* is second only to the geographic country of origin as the primary criterion for immigrant admissions to the United States. Therefore, academic analysis of the causes of Honduran migration has direct effects on immigration policy, and scholars of Central America are frequently called upon to make expert witness declarations about the root causes of individual migration decisions in courts in the US. In these settings, the *why* of migration has direct effects of the lives of individuals, families, and communities. As an ethnographer who has studied migration

from Honduras for more than two decades, this demand for causal specificity has always been difficult to accept. I have tended to focus on the multiplicity of forces that drive migration from specific places at specific historical conjunctures. In my own research, based on interviews with migrants and their friends and neighbors in a single Honduran village conducted between 2001 and 2008, I found that individuals rarely pointed to a single factor in explaining their migration decisions. Family, personal aspirations, money, friendships, politics, religion, and personality all came into play in shaping the decision to leave, and describing the complexity of those decisions was the main task of ethnography. My version of root causes was a tangled mess of roots, some deep, some shallow; some easy to pull out of the ground, others buried solid and deep.

Nevertheless, I recognize the limitations of an open-ended, ethnographic approach. The social sciences can identify broad patterns in migration behavior, isolating and measuring the effects of particular causes to explain social facts and these explanations have direct relevance to public policy. As the government’s root causes report shows, Washington produces its own understanding of causality to distribute foreign aid, provide technical assistance to farmers, launch anti-corruption efforts, and give support for programs to end gender-based violence, all in the name of curtailing migration. A tension between complex causality and the political usefulness of root causes therefore ripples through the theory and practice of migration. On the one hand, scholars recognize the complex and multi-causal nature of migratory patterns; on the other hand, activists and policymakers look for identifiable and measurable root causes to shape public policy. In this respect, the attempt to isolate climate-induced migration among an array of other factors reflects a more fundamental social science question about causality itself.

Honduran migration: the long wave vs. short spikes

One way to think about the causes of Honduran comes from economist Michael Clemens (2021a, b) who differentiates between “long waves” and “short spikes.” Long waves are decades-long patterns which “generally arise not from poverty but rather from growing wealth.” As incomes rise and countries become more connected through social connections and communications technology, ever larger numbers of people will migrate. From this perspective, migration is a product of relative prosperity, not desperation, and it is likely to continue regardless of policy interventions. Migration and remittances generate huge gains in income, which lead to more migration over time, creating multigenerational patterns that are not necessarily symptoms of crisis or social

breakdown. On the contrary, these long waves of migration are often caused by economic gains that facilitate more migration from friends and relatives who are supported by successful migrants and who benefit from modern technologies that facilitate connection and movement (paved roads, electricity, and phones, for example). This explanation of migration as a product of economic gains has been put forth by other economists such as Bazzi (2017) but it has rarely been integrated into the work of anthropologists of migration, who often assume that migration from the periphery to the core capitalist countries is a product of poverty or crisis.

In contrast to long-wave migration, Clemens describes “short spike” migration as movement precipitated by crises such as crime waves, political upheaval, or extreme weather events which “force people to flee both direct threats to their lives and indirect threats to their livelihoods.” These forces have frequently been the focus on scholars, activists, and human rights practitioners who describe Honduran migration as a flight from danger, despair, violence, or insecurity. Clemens’ framework nicely captures the tension between the macro-level, systematic drivers of Honduran migration over multiple decades, and the more temporary and localized phenomena which create intense, short-term surges. For example, he has used municipal-level data on homicides to argue for a direct correlation between spikes in violent crime and out-migration (2021).

Climate-induced migration in Honduras could be placed in both categories—long waves and short spikes. A comparison of the changing response to extreme weather events over time shows how interrelated the long-term and short-term patterns of are since long-wave patterns condition the response to short spike events. For example, patterns of inequality shaped by decades of migration will affect which social groups are and are not most vulnerable to extreme storms. A comparison between the social response to two different hurricanes which hit twenty years apart illustrates this point. Located in a narrow isthmus between the Pacific Ocean and Caribbean Sea, Honduras (and the rest of Central America) is prone to intense tropical storms and severe hurricanes between May and October. Two of the most destructive Atlantic tropical cyclones on record, Hurricane Fifi (1974) and Hurricane Mitch (1998) hit Honduras directly. More than 8000 Hondurans were killed during Fifi and 7000 during Mitch. While little has been written about migration in the wake of Fifi, we can reasonably assume that internal migration from rural to urban areas in Honduras was far more common than international migration at that time, because the total numbers of Honduran immigrants arriving to the USA remained extremely low in the aftermath of the storm, while the peripheries of Honduran cities of Tegucigalpa and San Pedro Sula grew rapidly, following the pattern found in other industrializing cities in Latin America in the mid-twentieth century, in which domestic rural to urban

migration was more common than international mobility (Kearney 1986). When Fifi hit in 1974, the international movement was hindered by a lack of infrastructure and communications in Honduras, which had few paved roads, telephones, or viable international travel routes, except within the developed Caribbean coastal regions studied by Nancie González (1988) which experienced an early wave of emigration to the USA, constituted mainly by the Garifuna afro-indigenous population who were disproportionately involved in the maritime trades (especially banana exports) and were therefore far more likely to migrate internationally than mestizo populations in the interior. The Garifuna immigrant community tended to settle in New York City and Florida.²

Emigration from Honduras was so infrequent until the 1990s that the country was more commonly described as a destination country for large numbers of migrants and refugees from other Central American countries (and from the Middle East) (Durham 1979; García 2006). The Soccer War of 1969 was precipitated by the unauthorized migration of more than 200,000 Salvadorans into Western Honduras throughout the 1960s. In the 1980s, Central Americans were attracted to the relatively plentiful arable land in Honduras and its (militarily enforced) stability, in comparison to neighboring countries (Guatemala, Nicaragua, and El Salvador) that were mired in civil war. During the 1980s, Honduras was the site of at least five refugee camps for Guatemalans, Nicaraguans, and Salvadorans fleeing violence in their home counties, particularly the notorious Colomoncagua camp near the Salvadoran border (in what is now called the Dry Corridor) where the Honduran army attacked and killed refugees (including an infant) in 1985, while supposedly in search of guerilla combatants (Medecins Sans Frontiers 2021).

By the time Hurricane Mitch hit in 1998, migration patterns had shifted. A long wave of migration developed in the late 1980s and began to intensify in the 1990s, as Hondurans joined the other Central American communities in the USA that grew rapidly from the late 1980s on, especially after the 1986 Immigration Reform and Control Act gave legal status to millions of previously undocumented immigrants (Reichman 2013). By the mid-1990s, Honduras had become a migrant-sending country rather than a receiving country, and remittances became an important part of the Honduran economy. Hondurans began to emigrate in even greater numbers in the late 1990s, and the devastation from Hurricane

² I do not mean to imply that there was no migration between Honduras and the USA before the 1990s. There was a steady flow of migrants from the North Coast of Honduras to New Orleans, Louisiana throughout the twentieth century. New Orleans was home to the United Fruit Company, and many Hondurans developed relationships through the banana trade that led them to migrate there. The Garifuna community, on the other hand, tended to migrate to Florida and New York City (see Daser (2018)).

Mitch would send thousands of Hondurans “‘walking, swimming and running up north’ unless the United States helps Central America get back on its feet” according to former President Carlos Facussé Flores (Migration News 1998). In late 1998, the U.S. government established Temporary Protected Status (TPS) for approximately 75,000 Hondurans who arrived in the country illegally in the immediate aftermath of the storm, establishing a legal category for migration that was directly caused by severe weather events abroad.

The TPS decision set a precedent for U.S. legislation around “short-spike” climate-induced migration: If one severe weather event led to the mass emigration of Hondurans, then others surely would follow, especially as warming temperatures led to more frequent extreme storms and droughts. Even though TPS was never explicitly framed as a climate-migration policy, the underlying logic was that the hurricane had made conditions in Honduras so dire that it would be dangerous and inhumane to force unauthorized migrants to return. From a policy perspective, however, there was no clear determination of what level of climate-induced destruction would trigger a temporary carve-out within the generally restrictive immigration policy. In the future, how bad did a natural disaster have to be to trigger TPS? And how could the government establish a direct link between a particular “short spike” event and migration behavior, especially in places where there were already long wave migratory circuits? These questions have never been answered, and the continuation of TPS has become a political bargaining chip, because the agreement has been renegotiated biannually for more than two decades, and each renegotiation requires the approval from the U.S. Congress, leaving TPS holders in a state of legal limbo. At no point was this more clear than in 2018, when President Trump attempted to revoke TPS for Hondurans, only to reverse course after facing legal challenges and political pressure.

The net effect of this system is that climate-induced migration from Central America has become politicized within the broader discourse around immigration reform: For advocates of a more open U.S. immigration policy, post-Mitch TPS created a political incentive to highlight the relationship between damaging climatic events and emigration. TPS created a new “side-door” (Zolberg 2006) to allow amnesty for climate-induced unauthorized migration at the precise moment when policies towards virtually all other kinds of immigration became increasingly restrictive, in the wake of the September 11, 2001, terrorist attacks. As the political discourse in the USA shifted towards restricting immigration in the name of national security, naming migration as a “short spike” response to extreme weather events was the only viable path to legalization for Honduran immigrants. However, only Hondurans who resided in the USA as of December 1998 were eligible for TPS, so it applied to a relatively small percentage of the migrant population, people who were in the USA prior

to the storm, and those that left Honduras in the immediate aftermath. TPS was a “short spike” policy that did nothing to address the “long wave,” which grew over decades.

Adding to the complexity of this problem was the June 2009 coup d’etat against President Manuel Zelaya Rosales, which ushered in a period of political upheaval and widespread corruption, which some scholars argue, has led to increased levels of out-migration. Frank-Vitale and Martínez d’Aubuisson (2020) argue that post-coup Honduras was marked by a pervasive culture of corruption and violence, which created a sense of hopelessness and despair among the young and poor, fueling migration, particularly from violent urban areas. Former President Juan Orlando Hernández has been charged in the USA with leading a drug trafficking conspiracy over more than a decade, and he was detained in Honduras and is likely to be extradited to the USA for trial (Associated Press 2022). His arrest was the culmination of a period of systemic corruption, linked to drug trafficking, that befell Honduras after the 2009 coup. Vitale and Martínez d’Aubuisson (2020:563–4) claim that “The neoliberal system coupled with a dictatorial narco-state is personified in Juan Orlando Hernández, and his regime effectively closed off the typical possible avenues towards social transformation. Claiming victory and staying in power despite widespread opposition and a clear electoral loss, left average Hondurans feeling like they could not determine the direction of their country through democratic means.” The link between corruption and migration was made even more strongly in a feature article in the New York Times, in which journalist Sonia Nazario (2019) wrote, “What most pushes people to despair about the country’s future — and ultimately drives them to leave — is corruption, the sense that everything is rotten and unlikely to get better. And it is rocket fuel for migration.”

Without disregarding the cumulative effects of corruption, drug trafficking, and widespread violence on migration behavior, it is important to note that migration levels from Honduras to the USA were quite high before the 2009 coup d’etat and are likely to remain high in the aftermath of the post-coup era. In this respect, the effects of corruption and violence present the same kind of “long-wave/short-spike” problem as climate change. How do we know when out-migration is driven by political upheaval in a country which has historically been marked by political instability, crime, and corruption, and where a sense of disaffection with the status quo is the norm rather than the exception?

The birth of the Dry Corridor

During ethnographic research in Honduras in 2001, 2003, 2004, and 2008, which was the basis of my 2011 book, *The Broken Village: Coffee, Migration, and Globalization*

in Honduras, I never heard the words “climate change” or “dry corridor.” While many rural Hondurans mentioned the impact of Hurricane Mitch on their own migration decisions, the storm was never linked to broader patterns of climate change—it was perceived as a historically bad seasonal hurricane. Hurricane Katrina, which devastated the U.S. city of New Orleans in 2005, led to a major influx of Honduran workers who took part in the reconstruction work (Barrios 2017, Daser 2018; Fussell 2009) but, in that case, the hurricane was a “pull” factor rather than a “push” factor, as it attracted migrants to work in the construction industry as part of the reconstruction effort. As recently as 2008, climate change simply did not play an important part in the discourse around the causes of Central American migration. “Short spike” storms were recognized as the drivers of migration, but they were not linked together into a broader discourse about anthropogenic climate change.

That began to change in 2009, when the term “Dry Corridor” first appeared in the mainstream media after a drought struck parts of Northern Guatemala (BBC News 2009). Somewhat confusingly, the same term was also used in the media around the same time to describe a trade and logistics corridor being proposed to cross Central America as an alternative to the Panama Canal (a dry logistics corridor, as opposed to the “wet” corridor of the canal). By 2016, media reports began to discuss the impact of the 2014–2016 El Niño weather pattern on Central American migration (Watson 2015). The unusual warming of the Pacific Ocean affected cyclone activity around the world, creating both severe storms and extreme drought across the globe. In parts of Central America, it created a severe drought and a near-total absence of seasonal rainfall that small farmers in the hot and dry regions depend on to water their crops. Farmers in the most vulnerable areas experienced crop failure over two consecutive seasons and rising temperatures and humidity were blamed for a damaging outbreak of coffee leaf rust that struck Central America in 2012–2013. While the exact boundaries of the Dry Corridor are imprecise, it generally includes low-lying, arid areas in El Salvador, southern Guatemala, and Western Honduras, areas that lie in the rain shadow of coastal mountain ranges. The link between drought and emigration became widely publicized after a 2017 study by the United Nations World Food Programme (WFP) called *Food Security and Emigration: Why people flee and the impact on family members left behind in El Salvador, Guatemala and Honduras*, which became a milestone in the discourse around the Dry Corridor, mentioned in dozens of news articles that followed. This report stated that 58%, 38%, and 21% of the respective land areas of El Salvador, Guatemala, and Honduras lay within the Dry Corridor (World Food Programme 2017, 7). In Honduras, WFP’s map of the Dry Corridor included the departments of Choluteca, Valle, Intibucá, Ocotepeque, Lempira, La Paz,

Copán, and El Paraíso, all of which are predominately rural, located in the western part of the country, and do not contain a city with a population above 100,000.

The study claimed a direct link between drought, food insecurity, and emigration, concluding that “Adverse climate conditions in the Dry Corridor negatively affect food and nutritional security through declines in the local production of food, as well as a reduced availability of agricultural work opportunities. There appears to be a connection between the appearance of El Niño in 2014 and an increase in irregular emigration to the USA” (16). Oddly, its own study showed an insignificant 1.5% difference between emigration patterns from members of families affected by the drought and similar households elsewhere. Nevertheless, the report concluded that “the correlation between drought occurrence and emigration is positive and the probability of emigrating is higher than that of families who are not from the Dry Corridor.” (16).

An extensive 2018 study on climate change and the Honduran coffee industry stated that “Honduran coffee production is located in the Central American Dry Corridor. The region faces recurrent droughts, excessive rains and severe flooding, affecting agricultural production.” (Bunn et al. 2018: 6). The study used detailed GIS data to predict how different regions of Honduras would be affected by climate change in the future, proposing sustainable agricultural practices to improve the livelihoods of coffee farmers and provide strategies to adapt to climate change. While the study does not connect climate and migration directly, it does mention that declines in coffee prices spurred migration in the early 2000s. In a recent policy brief, Bermeo and Leblang (2021) propose a direct link between climate change and Honduran migration. Using deviations in rainfall over time and data on the local origins of apprehended migrants at the border, they argue that “prolonged droughts in the Dry Corridor are contributing to increased apprehensions,” finding “a strong link between rainfall decreases in a department and apprehensions of family units from that department in the U.S.” (2021:1). While the authors recognize that migration is the “cumulative effect” of multiple causes, this study proposes a strong link between climate and Honduran migration.

Land use, drought, and migration

While it is clear that climate change is affecting migration patterns, claims about the connections between drought and migration in the Dry Corridor could be enhanced by attending to research in anthropology that explores rural land use and household decision-making. As I will detail below, this work provides both historical context and local-level data about migrant decision-making that can help to explain

both the *how* and *why* of migration. Anthropologists have studied the relationship between agriculture and mobility over more than 50 years, and this work provides context about how long-wave patterns affect short-spike decisions. To give one relevant example, a classic study by anthropologist William Durham explored the ecological origins of the Soccer War, a 1969 military conflict between Honduras and El Salvador. When the war broke out, the primary explanation was that it was caused by land seizures by illegal immigrants from El Salvador who “invaded” empty farmland in Western Honduras, in what is now called the Dry Corridor. These Salvadoran migrants were fleeing dire poverty in their home country, which, it was thought, was caused by rampant overpopulation. A 1977 textbook on population ecology described the Soccer War as “a microcosm of what may be in store” for the world “as two grossly overpopulated countries went to war against each other...because of overpopulation and resulting unemployment” (Ehrlich et al. 1977: 908, quoted in Durham 1979:8).

Through a comparative field study of two villages in El Salvador and Honduras, Durham showed that the population pressure in El Salvador was driven by the expansion of agribusiness, particularly cotton, coffee, and cattle for export, which pushed the population onto marginal lands that could no longer support their survival. In the 1960s, Honduras was also beginning to experience a land squeeze due to the expansion of export agriculture (mainly coffee and cattle) but the land scarcity was nowhere near as severe as it was in El Salvador. Honduran agribusiness had mainly been centered in the banana-growing areas of the North Coast, and the interior regions did not see rapid capitalist development until the middle of the twentieth century. Durham’s major claim was that overpopulation was not the primary cause of the Soccer War, contrary to the claims of Paul Ehrlich and others who saw it as a warning sign of conflict that would engulf the world as the “population bomb” detonated. According to Durham, the Soccer War was in fact caused by the uneven expansion of capital-intensive agriculture and the subsequent enclosure of arable land for the rural poor in El Salvador, who then “invaded” Honduras at the precise moment in which it too was beginning to deal with land pressures caused by agricultural expansion. This conflict took place in the same geographical regions that are now defined as the Dry Corridor, and surely the conflict over resources that took place 50 years ago continues to affect patterns of settlement today, given that families were pushed onto arid lands that were only marginally suited to agriculture and highly susceptible to drought.³

A similar pattern has also been described in other parts of Honduras. Catherine Tucker conducted extensive ethnographic research in La Campa, Lempira, in the heart of the Dry Corridor. She showed how the expansion of coffee agriculture drove up land prices and “exacerbated land

scarcity” for the poor (Tucker 2008:138). In his study of the small village in the Department of Comayagua, William Loker describes how “environmental degradation is a problem of the wealth-generating choices preferred by the wealthy” (2004:64). He argues that the expansion of cattle raising and coffee production made arable land scarce (or drove up prices in land). As agricultural revenues increased, the poor became landless or were pushed onto marginal terrain that could not support them. This process was made even worse when a large hydroelectric dam flooded much of the best farmland in the area. Landless people worked as seasonal workers on coffee farms at higher elevations. Following Durham (1995), he describes this process as a “feedback loop of capital accumulation, impoverishment, and environmental degradation.” (65) The central claim of the anthropological scholarship on land use in Honduras is that the effects of floods, storms, and other environmental events are exacerbated by structural inequalities. As capital accumulation pushes the poor onto smaller or more precarious living situations, they become more vulnerable to disaster and participate in environmental degradation while trying to survive on marginal lands. This process intensifies as agricultural profits increase.

The coffee boom and the Dry Corridor

Previous research has established that changes in land use can intensify the pressures that lead to migration, and this can be exacerbated by drought. This is directly relevant to the present day, because of the rapid expansion of coffee farming that took place in the Dry Corridor between 2010 and 2017, a period in which Honduras moved up from ninth to sixth-largest coffee-producing country in the world by volume (and the largest producer in proportion to population size). Total production nearly doubled from 4.3 million bags in the 2010/2011 crop year to 7.5 million bags in the 2017/2018 crop year (International Coffee Organization Trade Statistics). Compared to other Central American countries, Honduran coffee is produced by fewer large landowners and more family farmers. Eighty-four percent of Honduran coffee is grown by small to medium-size producers, employing nearly 100,000 families around the country (USDA 2020). During the beginning of the boom period, prices paid to growers increased to unprecedented levels, more than doubling between 2009 and 2012 and reaching levels of over \$2/lb in 2011, a nearly 400% increase

³ Reichman (2011, 2013) showed that Honduran migration in the early 1990s was facilitated by connections with Salvadorans (through marriage and business relationships) that had migrated to Honduras during the years before the Soccer War.

from record low prices a decade earlier. This expansion led to a tremendous increase in incomes in coffee-producing regions, which drove up the cost of land and labor dramatically. Farmers were making more money, buying more land, planting more coffee, and paying their workers more. Some of this boom can be attributed to improvements in agricultural techniques that increased yields per hectare, but the major cause of the rise in production is an increase in the amount of land planted with coffee, which grew from about 250,000 ha in 2010 to 310,000 ha in 2016, an increase of about 24% in 6 years, in a region that already faced land pressures and had impoverished families living on marginal land. In the Copán and Lempira, two departments in the Dry Corridor, coffee production grew by 30% over only 1 year between the 2015/2016 and 2016/2017 crop years (IHCAFE). As prices increased, more and more land was put into production for coffee, especially in low-lying areas that were not well suited for coffee. This expansion of export agriculture was occurring in a place that had seen intense conflict over arable land for more than 50 years. Nowhere was this increase greater than in the Western region of Honduras, much of which is located within the Dry Corridor. Some of the most productive and successful coffee-growing municipalities in the country are in the departments of Copán, Ocotepeque, Lempira, La Paz, and Intibucá. This region was also combined into a single “branded” region of origin called Honduras Western Coffees through an international marketing program from the Honduran Institute of Coffee (IHCAFE), a marketing campaign which increased its profile on global export markets. This combination of rising prices, increasing volume of land in production, and rising international reputation pushed the prices of coffee land up, leading farmers in marginal areas to try their luck planting coffee, which was earning record prices year after year.

Coffee requires a lot of rain to thrive, so it is somewhat surprising that coffee-growing regions would be included within the Dry Corridor. Some of the arid regions of the Dry Corridor, such as the departments of Valle and Choluteca, are not places where much coffee is grown, but the other areas of the Dry Corridor are places where weather and soil conditions vary dramatically due to elevation. Low-lying areas are hot and have acidic soils, middle elevations are pine forest, and higher elevations are wet cloud forests which are perfectly suited for coffee. This creates a vertical movement of workers from low altitudes to high altitudes during the coffee season. It is common for poor families to live on the dry low-lying areas and rely on a mix of economic activities to generate income (Loker 2004). When coffee prices are high, any land that could be planted with coffee will be, and subsistence crops (normally the small farmer’s “insurance policy” in times of a crash in the coffee market) will only remain in marginal, dry areas. When the droughts

caused by the El Niño of 2014 hit, these subsistence crops failed, leading to hunger and desperation for the poor farmers that relied on them.

A new feedback loop? Agricultural expansion, migration, and debt

Another major “long-wave” transformation in Honduran society, largely caused by the availability of cash from remittances, is the availability of credit to rural families. As Stoll (2010, 2013) and Heidbrink (2019) have shown in Guatemala, households are now taking on debt to finance migration, and this debt is simultaneously a cause and consequence of migration. Stoll (2010, 2013) drew on long-term ethnographic research in Nebaj, Guatemala, to show how migration to the USA drove up prices for land and labor in a rural Mayan community. This inflation, in turn, led more people to borrow money from relatives and local money-lenders (including microlenders funded by international aid organizations) to pay for migration. Unauthorized migration, via smugglers, became a profitable investment funded by borrowed money. When these migrants and their families could not repay their loans, more family members were compelled to migrate to pay off pre-existing debts, creating what Stoll describes as a Ponzi scheme, that inexorably pulled more migrants into its web.

More recently, Laura Heidbrink (2019:264) affirmed the importance of debt-driven migration, arguing:

Debt-financed migration entails the assumption of monetary debt to finance irregular movement across international borders. While, historically, individuals or families secured loans from family and friends, increasingly, they now turn to high-interest loans from unregulated or loosely regulated institutional actors, such as prestamistas (moneylenders), notaries, cooperatives, and banks, using land, homes, vehicles, or goods as collateral. Families face interest rates ranging from 2.5 to 15 percent, compounded monthly; thus, if deported, remigration may be the only viable means of debt repayment. What results is a cycle of migration and deportation, each attempt compounding the conditions that instigated migration in the first place, while at the same time enhancing the vulnerability of migrants by compelling them to travel along less secure migratory routes, using increasingly predatory smuggling networks.

While the problem of debt is most severe in Guatemala, where smugglers prey on remote indigenous communities who live close to the major smuggling routes (Galemba 2018), the general pattern described by Heidbrink and Stoll applies throughout the region. The 2017 World Food

Programme (14) study asked families to describe how they were affected by emigration. The most common response, by a wide margin, was “We have acquired debt” across respondents from all three countries. This illustrates a major shift in how rural families adapt to hard times. Families that have the means to support a migrant will do so, others will go into debt to pay for migration. Subsistence farmers will rely on remittances to purchase food in times of scarcity, and severe events (like droughts or storms) will pull more people into this pre-existing system. Thus, the old “feedback loop” in which agricultural expansion led farmers to migrate to marginal lands that were vulnerable to natural disasters, has been replaced by a new “feedback loop” in which debt-financed international migration is a way for households to respond not only to poverty and insecurity, but also to an inflationary “boom” caused by previous waves of migration. Faced with a “short spike,” such as a drought or hurricane, this pattern will only intensify.

Conclusions: The long and short of climate-induced migration

Let me return to the original question that I quoted at the beginning of this essay: “How can we responsibly deal with the multi-causal nature of population movements?” One benefit of ethnography is that it captures the multiple, inter-related forces that shape migration decisions. This emphasis on multi-causality makes it difficult to draw a connection between a discrete variable (such as deviation in rainfall levels) and migration decisions. However, policy interventions require a more direct attribution of cause and effect, so, in practical terms, there are clear limits to the explanatory power of ethnography as a tool for policy intervention. Nevertheless, I believe that paying attention to the anthropological scholarship highlights the mutually constitutive or dialectical relationship between root causes that might otherwise be treated as discrete causal forces. For example, it is clear that “long-wave” patterns of migration condition the effects of “short spikes” across the population. Remittance economies drive up the price of land and labor and make migration easier. When a temporary shock hits, households will be differently affected based on their position within the migration and remittance economy. Historically, the adaptive strategies available to farmers have changed dramatically, as migration becomes a common life-choice.

To give another example, the expansion of the coffee economy can be both a cause and an effect of climate-induced migration. As I found in my own work, high coffee prices generate income gains that can fund migration in the event of a short-term drop in prices. In this circumstance, migration is simultaneously caused by economic growth (over the long term) and crisis (over the short term). Given

this scenario, perhaps it is a mistake to shape policy interventions around uncausal explanations of migration. If climate, economics, politics, and security are always intertwined in the real world, is it realistic to sort migrants into discrete categories for the purposes of immigration law? In the case of “short spike” migration, maybe it is the most effective way to enact immigration reform (at least in the USA) but it does nothing to address the long-wave flows that are likely to persist into the future. When migration is explained through a fixed, measurable, and nameable cause, it becomes easier to manage and regulate. However, “long-wave” migration, caused by decades-long patterns of mobility, global interconnection, and cultural integration require very different kinds of policy frameworks. The role of any one set of forces, from climate change, to violence, to political instability—becomes subordinate to the fact of mobility itself. In this scenario, the term “climate” in climate-induced migration may need to be expanded to include cultural climate, political climate, economic climate, etc., in short, a climate of migration.

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