
Climate Change, Drug Traffickers and La Sierra Tarahumara

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Climate Change, Drug Traffickers and La Sierra Tarahumara

Abstract

The purpose of this article is to uncover the ways in which climate change will impact indigenous people in contested areas as is the case of the Tarahumara indigenous community in Northern Mexico. The case study takes place on a border that John Sullivan conceptualizes as a “hyperborder” due to the complexity and high level of both licit and illicit trade. Sullivan explains how this border region has been heavily contested as criminals exploit weak governance. After 9/11 the increase of security at the border led drug trafficking organizations to diversify into internal drug distribution which required control over micro-territories. As the drug war extended cartel’s became interested in control over rural areas and specifically those inhabited by indigenous as they are ideal for the cultivation of drugs and serve as strategic corridors for trafficking illegal commodities. The high levels of competition around this “hyperborder” creates a dangerous situation as both criminal groups and the government battle to control it and capture its economic incentives. This case study seeks to unravel how climate change exacerbates competition over land and resources in hyperborder contexts and expose how criminal organizations affect contested areas that are present in several regions throughout Latin America.

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Introduction

A 2014 report created by the United Nations (UN) on climate change and its impact on the poor made headlines worldwide as it concluded that marginalized people are disproportionately vulnerable to climate change. Michael Oppenheimer, a professor of geosciences and international affairs at Princeton University, notes that one of the most dangerous effects of climate change for developing countries is the reduction in crop yields that leads to higher food prices and higher numbers of malnutrition for already disadvantaged people.¹ These results are particularly impactful for indigenous people around the world. Indigenous people represent 5 percent of the world's population, 15 percent of the world's poor, and up to one-third of the world's rural poor.²

This article will uncover the ways in which climate change will affect indigenous people in contested areas, as is the case of the Tarahumara indigenous community in Northern Mexico. Its core point is to show how climate change is injecting more scarcity in the region, such as an increased difficulty in sustainable farming, which will create more conflict. The article uncovers several sources of pressure and competition over the land in this region and notes the ways in which they aggregate with climate change to produce a fatal condition for indigenous communities. The article will first present an overview on the Tarahumara and the overall condition of indigenous people in Latin America. The next section analyzes the impact of climate change in the Sierra Tarahumara and its effects on the Tarahumara. A careful look at the climate change model for the region uncovers the reduction of productive land and increased competition over land in the region. The article will then turn attention to the pressures imposed on the Tarahumara by *caciques* (a local political leader and wealthy landowner) and local business interests that want to take over its land. The last section examines the way drug trafficking organizations create more competition in the region and engage in activities that span from forced displacement of indigenous communities to the forced recruitment of indigenous children. The conclusion examines several problems faced by the Tarahumara and provides policy recommendations.

The case study is representative of several areas across Latin America that face high levels of competition over land and whose indigenous inhabitants are at high risk. The area of study takes place on a border that

John Sullivan conceptualizes as a hyperborder due to the complexity and high level of both licit and illicit trade.³ Sullivan explains how this hyperborder region has been heavily contested as criminals exploit weak governance.⁴ After 9/11, the increase of security at the Mexico-U.S. border led drug trafficking organizations to diversify into internal drug distribution, which required control over micro-territories.⁵ As the drug war extended, cartels became interested in control over rural areas, specifically those inhabited by indigenous people, for they are ideal for the cultivation of drugs and serve as strategic corridors for trafficking illegal commodities.⁶ The high level of competition around this hyperborder create a dangerous situation as both criminal groups and the government battle to control it and capture its economic incentives. This competition affects people who live and own land around the border in several ways, spanning from land displacement to forced recruitment into drug trafficking. This case study seeks to unravel how climate change exacerbates competition over land and resources in hyperborder contexts and expose how criminal organizations affect contested areas present in several regions throughout Latin America.

Background

Gillette Hall and Harry Anthony Patrinos studied the human development of indigenous peoples in Latin America from 1994 to 2004. Their study provides a summary of the conditions faced by indigenous people in Mexico, Bolivia, Guatemala, Ecuador, and Peru. The study shows the conditions of poverty indigenous people face in these regions and their struggle to recover from economic hardship. In four of the five countries studied, the proportion of indigenous people in poverty remained unchanged. In Mexico, Bolivia, and Guatemala, indigenous peoples' poverty, rates recover at a slower pace when faced with an economic crisis than that of its non-indigenous counterparts.⁷

Even when one looks at the average income of indigenous peoples living in poverty, one finds them to be far below the established parameters for the poverty line.⁸ Health indicators ranging from maternal mortality rates to vaccination coverage reveal systematically worse conditions for indigenous people.⁹ More worrisome is the fact that countries such as Mexico, with relatively low levels of malnutrition nationwide, still face increasing numbers of indigenous child malnutrition.¹⁰ Hall and Patrinos conclude

that indigenous people in Latin America have an increased probability of being poor. In the five countries studied, “being indigenous increased the probability of being poor by 13 to 30 percent.”¹¹ Plentiful research is available on the relationship in Latin America between poverty and indigenous people. There is a need to study, how climate change compounds with other factors against communities? and to trace its effects on the communities’ security as a whole.

The Tarahumara people are an appropriate case study to understand the effects of climate change on indigenous communities as they share its territory with several other indigenous communities such as the Tepehuanes, Pimas, and Guarojíos.¹² The Tarahumara inhabit a section known as the Sierra Madre Occidental that spans through the states of Chihuahua, Durango, and Sonora.¹³ The Sierra Madre Occidental serves as an effective case study because it is an arid area particularly affected by climate change. It is also an area that drug traffickers, industrial farmers, loggers, and self-sustainable indigenous farmers compete over. The Sierra Madre Occidental is fiercely competed over and severe climate change leads to dramatic effects for the Tarahumara community, including food security issues and competition over its land from industrial farmers, loggers, and drug traffickers.¹⁴

Guillermo Mendoza and Emmanuel Garbolino created Climpect, a climate change impact model of the probable evolution of the ecosystem due to climate change in the state of Chihuahua.¹⁵ This model is essential because it detects areas most affected by climate change and provides a reasonable explanation for the increase of competition over the territory in which the Tarahumara reside.¹⁶ Experts in the field of climate change calculate an increase of 0.4 Celsius independent of any actions taken to counteract emissions causing the greenhouse effect, with a number of experts believing it may be as high as an increase of 4 degrees Celsius in the next 60 years.¹⁷ The authors found that from 1975–2015, “clear changes have been noted in the altitudinal patterns of distribution in some of the ecosystems evaluated. These results can be interpreted as a tendency of contraction of the area as a function of climate change.”¹⁸

The ideal conditions for both grasslands and forests in this area are changing. For example, Climpect estimates that by 2050 the natural grasslands optimum area will move up by 117 meters in altitude and the

pine/oak forests' optimal ecological area will move by an estimated 224 meters in altitude.¹⁹ Not all vegetation species will be able to adapt, and the areas with forests and farmable grasslands will decrease in overall size over time. The authors' further note that the "tendency of homogenization of aridity and the simplification of ecological systems" can have devastating effects for biodiversity in the area.²⁰ The results of the climate change impact model for the area under study estimate drastic changes to the overall ecosystem in the area, which helps explain the increase of competition over land and its natural resources in that locale.

Effects of Climate Change

Chihuahua will encounter an especially difficult year in 2019 due to the effects of droughts exacerbated by climate change in the region. The Secretary for Agriculture and Rural Development notes that half of the surface area allotted for the harvest of beans did not occur due to droughts.²¹ This drought has also affected corn harvests, as only 80 percent of the land designated for corn production was usable, and the remaining harvest is at a high risk of collapse due to the lack of rain.²² The lack of rain also represents problems for cattle, for it decreases the availability of cattle to forage.²³ Because of these conditions, the coordinator of legislators for the political party of Morena in Chihuahua warns that over 19,000 indigenous people who mostly practice subsistence farming in the area of study will be at a heightened risk of famine this year.²⁴

Crop shortages directly affect the Tarahumara community, as its main field crops are corn, beans, and squash, and the people use cattle primarily for the production of manure that's used as fertilizer.²⁵ A nutritional survey of 372 Tarahumara indigenous people reveals that their main diet is composed primarily of beans and corn.²⁶ Victor Quintana, the Secretary of Social Development, reported earlier this year that there is a problem of chronic undernourishment in the indigenous communities in the Sierra Tarahumara.²⁷ Quintana establishes a link between the increase in droughts and the lack of food production by the indigenous Tarahumara and other indigenous communities in the area and warns about the risk of increased illness related to a lack of water and food.²⁸ More than 600 Tarahumara Indians from communities around San Juanito marched because of these conditions, demanding support for their communities in

the face of food insecurity.²⁹ This problem is not only limited to the Tarahumara communities, as many other indigenous communities and rural farmers face the same struggles, especially those who practice subsistence farming. In Mexico alone, despite economic development and membership with the Organization for Economic Co-operation and Development, 22 percent of the population lives in rural areas, of which 57 percent practice subsistence farming.³⁰

Malnutrition is rampant in the Sierra Tarahumara. Antonia Chaparro Julián, a Tarahumara woman, narrated her six-hour drive to a hospital in Guadalupe y Calvo in Chihuahua in search of medical attention for her son, Carlos Gabriel, whom doctors found had second-grade malnutrition.³¹ Antonia explained that Carlos' diet consists mainly of beans and soup when available, and they sometimes spend a whole day without food.³² Antonia's land did not produce enough food that year (2012), forcing her to enter domestic work where she struggled to provide for her family.³³ Even in cases of drug cartels recruiting indigenous people, the mention of poverty and hunger is a common theme.³⁴ A hospital accepted Román Valdez Nolasco into its care with a case of acute malnutrition and bronchopneumonia, and his mother, Juana Leticia, blames droughts that hit the Sierra Tarahumara for her son's disease, noting that her other daughter also presented signs of malnutrition.³⁵ Juana Leticia described a normal day in her children's life as one where they do not have breakfast, purchase lunch from the school for three pesos, and only have dinner if there is enough food.³⁶ She discussed how she was not able to grow corn this year, forcing her to buy maseca-powdered flour for 95 pesos, which generally lasted up to four days.³⁷ This example helps illustrate the added costs of poor corn production in the Sierra Tarahumara and its effects on people's food security. The Sierra Tarahumara is one of Mexico's most impoverished regions, making it especially susceptible to climate change and droughts.³⁸

The general hospital in the capital of Chihuahua claims that 18 children died from malnutrition in 2012, but doctors say that number is higher and hidden by the government. The government can do this by relabeling causes of death from malnutrition to tuberculosis, pneumonia, anemia, or a serious respiratory infection, diseases generally caused or exacerbated by malnutrition. Alondra Vega Carrillo, is hospitalized October 31, 2012 for malnutrition at ten months old. On her transfer papers to another

hospital, they changed her diagnosis to a case of severe anemia. The same occurred to Sergio Corrales Chaparro, who was under two years old when admitted in the hospital for third-degree malnutrition. His diagnosis in the documentation changed to anemia and gastroenteritis.³⁹

Even with governmental efforts to bury the statistics on malnutrition in Chihuahua, the UN Children's Fund annual report on Mexico exposes how chronic malnutrition affects two out of every ten children under five years old living in rural areas.⁴⁰ *Instituto Nacional de Estadística y Geografía* (INEGI), the state department in charge of statistics in Mexico, shows Chihuahua has the third-highest mortality rate from diarrhea for children under the age of five.⁴¹ The fact that Chihuahua is recorded to be in sixth place of states with the least amount of poverty only showcases the ongoing inequality faced by indigenous people in Chihuahua.⁴² These statistics paint a picture of Chihuahua as a duality of being one of the states in Mexico with the least amount of poverty. Yet, it has some of the highest mortality rates for children in general and one of the highest rates of mortality caused by diarrhea, a disease generally associated with malnutrition. The fact that malnutrition affects one out of every four children in a Mexican indigenous household is even more telling about its disproportionate impact.⁴³ Low crop yields are not the only problem the Tarahumara indigenous face due to climate change, as it has also intensified competition over the Tarahumara's land.

Caciques and the Tarahumara

Indigenous Tarahumara communities have long fought to protect its land, but as climate change reduces its area to log and farm, the competition has turned violent. Logging companies in this region disregard regulations that ban the cutting of old growth forests that, combined with drought, have destroyed Tarahumara crops.⁴⁴ The Baldenegros are a family of Tarahumara Indians who have paid the ultimate price for denouncing illegal loggers in their territory and for their effort to regain lost indigenous agrarian rights. *Ejidots* are a form of communal farming supported by the Mexican state after the Mexican revolution. The negotiations over the North American Free Trade Agreement resulted in the constitutional change to liberalize land tenure, and as a result, *ejidos* lost state subsidies out of pressure to sell its land, which resulted in a rural crisis.⁴⁵ The drug cartels in turn took advantage of this crisis and began

recruiting indigenous people actively.⁴⁶ In 1953, *el ejido colorados de la virgen* formed, which included several communal Tarahumara farmers.⁴⁷ In 1993, the Commission for Mixed Agrarian Farming and a powerful *cacique* named Fontes Lugo worked together to exclude almost all of the Tarahumara from the *ejidos* and immediately began to log in its territory.⁴⁸ This was the last straw for Isidro Baldenegro, who began to denounce the abuse of the commission and the *cacique*.⁴⁹

Isidro's father Julio Baldenegro was assassinated in 1986 for denouncing illegal logging and fighting for indigenous agrarian rights.⁵⁰ The Tarahumara's concern with illegal logging is rooted in the fact that illegal and unmeasured logging exacerbates the effects of climate change, as it causes less precipitation and a loss of humidity in the soil used to harvest crops such as corn and beans.⁵¹ Isidro was illegally detained and arrested, and his work as an environmentalist earned him the Goldman Environmental Prize.⁵² After several threats, Isidro died at the hands of his assassin January 15, 2017.⁵³ The Human Rights Commission of the United Nations condemned his death. Tragically, fifteen days later, another Tarahumara environmentalist, Juan Ontiveros Ramos, is murdered.⁵⁴

Drug Traffickers Diversify

One cannot narrow competition over land to *caciques* and its exploitation of the forests, large infrastructure projects, tourism, and mining that pollutes the soil and water; these only serve to compound the negative effects of climate change and exacerbate the competition over land and resources in the area.⁵⁵ Drug trafficking organizations further aggravate the situation as they also seek to expand control over the Sierra Tarahumara. "[In the] first half of 2017, 52 assassinations and hundreds of non-consenting displacements of indigenous families in the Sierra Tarahumara took place."⁵⁶ The southern part of the Tamahumara's territory is part of the Golden Triangle of Mexico, which is an area known to have the highest concentration of marijuana and poppy fields in the country and has long been under the rule of the Sinaloa Cartel.⁵⁷ The Golden Triangle includes portions of the state of Sinaloa, Durango, Sonora, and Chihuahua.

Enrique Desmond provides a framework that describes the relations and interactions between criminal organizations, the state, and violence.

Desmond describes collaborative governance as a type of regime under which armed group forms have relatively cooperative relations with the state apparatus and guide many state actions in its area of control.⁵⁸ Desmond explains how communities under this type of regime experience low levels of public violence, as cartels are more likely to resort to targeted violence and high levels of informal control.⁵⁹ The author also notes how civic organizations under these regimes have little space for independent action, and electoral politics are popular targets as these organizations seek to consolidate dominance over the regions.⁶⁰

The regime of collaborative governance fits the state of Chihuahua, which endured a power struggle between the Juarez and the Sinaloa cartels in 2008.⁶¹ The Chihuahua government ordered a deployment of federal troops into the region in 2007, leading to the fragmentation of security forces as both cartels became suspicious of one another.⁶² By the end of 2011, homicide rates in Chihuahua significantly decreased as the Sinaloa Cartel finally gained control over the state and formed a pact with the weakened Juarez Cartel.⁶³ Once a cartel consolidates itself in the state, it quickly gains control over the political process and security forces and is able to form a de facto power in several municipalities where the Tarahumara live.⁶⁴ This control over the Tarahumara municipalities allows drug cartels to engage in the forcible recruitment of young indigenous children into drug trafficking, land dispossession, and the mandatory cultivation of poppies by entire indigenous communities.⁶⁵ UN Special Rapporteur on indigenous Rights Victoria Tauli-Corpuz completed a ten-day tour around Mexico in which she reported how “in areas affected by organized crime and the production and trafficking of drugs, the only choice left to young indigenous people is to join these groups or be tortured, disappeared, or killed.”⁶⁶ Tauli-Corpuz also denounced several cases in which criminal groups and sometimes military and state authorities allegedly removed indigenous communities from its land with violence to clear the way for logging and mining projects.⁶⁷

Isela Gonzáles, coordinator for the Alianza Sierra Madre (Sierra Madre Allegiance), which works with Tarahumara communities, notes how in 2011 drug cartels moved further into Tarahumara territory to farm its illegal crops.⁶⁸ She discussed how several indigenous families she worked with were harassed until they left their land, and those who refused to migrate received threats and those who did not leave died.⁶⁹ The Mexican

Commission in Defense and Promotion of Human Rights released a report that reflects the magnitude of violent displacement of indigenous communities in Mexico and how 60 percent of the 20,390 people forcibly displaced from its land in 2017 were indigenous.⁷⁰ A specific example of this is Vicente and his daughter, who had to move into the city because their land was taken over to cultivate poppy.⁷¹ When he refused and denounced cartel members, he learned from a distant relative who was dating one of the cartel members that they had placed a \$1,000 price on his head.⁷² The data on homicides in 2017 shows that over 2,000 murders took place in this area, which has fewer than 250,000 inhabitants.⁷³ Another example of mass displacement occurred in the summer of 2016, when the cartel took over the town of Basihuare, stole the funds from the towns' *ejido*, and razed the corn and bean fields to plant poppies.⁷⁴

Los Salazar, known as the military arm of the Sinaloa Cartel in Chihuahua, recently engaged in the mandatory recruitment of young indigenous teenagers.⁷⁵ Local indigenous leaders who tried to oppose these cartels had to pay with their lives, as is the case of a leader from Guadalupe y Calvo who died for resisting the forced recruitment of indigenous children in his community.⁷⁶ Silvino Cubesare was a competition runner who, like many other Tarahumara, had to traffic drugs for the cartel due to poverty and hunger.⁷⁷ The border patrol eventually caught Silvino and took him into custody, but continuous economic pressures led him a few years later to work for the cartel again, and he was barely able to escape the border patrol.⁷⁸ This case illustrates how even Silvino, who has the talent to run at a professional level and in better circumstances could attract tourism to the area to train others or even compete at a higher level, fell into a situation where the only way to survive was to work for the cartel.

Back in mid-2013, drug traffickers took advantage of indigenous people, particularly the Tarahumara, due to their popular long-distance running abilities, to smuggle drugs from Mexico to the United States.⁷⁹ Experts indicate an increase in the Sinaloa Cartel's use of Tarahumara runners to smuggle drugs because of its physical resilience to cover long distances; however, due to severe droughts, these indigenous people are extremely vulnerable and desperate for any opportunity to make a living.⁸⁰ The U.S. district court for the Western District of Texas, the public defender's office in Alpine, Texas, and the law office of Don Marribon in Las Cruces, New Mexico report, "between 2010 and 2015, the number of Tarahumara

indigenous people detained at the border doubled from 50 to 100 detainees.”⁸¹

Violence caused by the drug war in Mexico over the past decade is responsible for the death of over 200,000 people.⁸² As a result, cartels have experienced sporadic shortages of labor leading to a reliance on forced recruitment for the most dangerous and low-paying jobs the cartel needs to fill.⁸³ Juanito, a Tarahumara Indian, decided to smuggle drugs across the border for the down payment of a pair of New Balance shoes.⁸⁴ This particular case illustrates the vulnerability of these indigenous communities, who are willing to risk its lives over a pair of new shoes. Ken del Valle is another lawyer who claims to have several dozens of similar cases of Tarahumara indigenous people convicted of smuggling drugs over the border in 2016.⁸⁵ Randal Gingrich is the executive director of Tierra Nativa, a nonprofit that works with Tarahumara communities and provides them with legal support. Gingrich claims that through his work with these communities, found one in eight indigenous communities living in the Sierra Tarahumara are involved in some way with drug cartels.

Conclusion

Climate change is drastically changing the ecosystem and the optimum ecological area of the Sierra Tarahumara. These alterations have resulted in severe decreases in food production in the area, in particular corn and beans, which are the main form of sustainable farming for the Tarahumara Indians. The alterations caused by climate change have also exacerbated competition in the area over land and natural resources. As less land can sustain forests or farms, different groups seek to take over indigenous territory in the region, including, but not limited to, that of the Tarahumara. The Tarahumara Indians who denounce these problems face threats, arrest, and assassination. On the other hand, the drug cartels also seek to expand its control over the Sierra Tarahumara to continue to produce illegal crops and take advantage of the vulnerability of indigenous communities in the area, recruiting them to farm, smuggle, and kill others in some cases. Climate change creates an impossible situation for these indigenous communities, whose food insecurity grows yearly due to more frequent and prolonged droughts. The increased pressures of a modernizing state mainly concerned with tourism and infrastructure projects exclude indigenous communities, powerful *caciques* want to

expand its farmland and logging rights, and drug traffickers in need of land and labor, who are responsible for the current dire situation of these indigenous communities.

Tarahumara communities are in a hyperborder region, which exacerbates the competition over land and places people in a vulnerable position where cartels can easily recruit them for its illegal enterprises. The establishment of what Desmond refers to as collaborative governance in Chihuahua reinforces the cartel's dominance over this region, producing cases in which the security forces and government are complicit in the forced displacement of indigenous people off its land. Government collusion does not produce much public violence but relies more on the use of targeted killings, such as those of indigenous activists, and the expansion of low-visibility violence.⁸⁶ Low-visibility violence is dangerous for democratic institutions as it is accountable for the spread of corruption across security forces and the government.⁸⁷ The models for climate change in this area predict worsening conditions, which will likely lead to higher levels of competition and conflict in the Sierra Tarahumara.

Policy solutions for this problem need to focus on the highly competitive nature of these hyperborder areas as well as the collaboration between organized crime and the state. It is necessary to implement anticorruption measures throughout the different levels of security forces and governance across the state. Durán notes how corruption investigations generally result in mass firings.⁸⁸ In-depth investigations of these crimes are necessary in order to understand how these networks of corruption operate and spread. It is also important to include strategic planning in order to increase systems of accountability and oversight. Community policing can also make a difference in the way communities relate to security forces and help fight corruption and abuse by security forces in the region.⁸⁹ The government plays an important role in trying to make those displaced by violence invisible.⁹⁰ The creation of a strong trans local network that can organize civil organizations and shed light on what occurs in small rural communities such as those in the Sierra Tarahumara and that support one another is also an important step to offer additional protection to these indigenous communities.⁹¹

The analysis of climate change and its effects on the region can better prepare regions like the Sierra Tarahumara for droughts and food

insecurity in the future. Models that track alterations deriving from climate change in these regions can help allocate resources such as water more efficiently and can help regulate the effects on indigenous communities. The focus on climate change in areas of drug cultivation also unveils a serious challenge for cartels that will be facing more pressure to find new land to cultivate on and for the communities in the area fighting to survive. Legal economic opportunities are paramount for populations near hyperborder regions that face immense competition for survival. The Tarahumara's athletic ability could become an attraction for runners and tourists that want to learn more about the Tarahumara and its way of life. To attract tourism and sustainable investment in the region, the state needs to reestablish its sovereignty and fight the impunity that has led to a state of collaborative governance with criminal organizations in Chihuahua.

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