

**Natural Resource Theft, Huachicol, and Criminal Diversification in the War on Drugs:  
A Green Criminology Approach to Mexico's Criminal Violence**



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**ABSTRACT:**

The War on Drugs in Mexico is a devastating conflict which has taken hundreds of thousands of lives since it began in 2006. Over its eighteen-year duration, however, the character of Mexico's drug cartels, the massive criminal organizations at war with each other and the state, has fundamentally changed. Almost immediately upon the beginning of the War on Drugs, many of these groups adapted to state repression and increased competition with their peers by resorting to eco-crimes including the theft of natural resources, illegal deforestation, and occupation of agricultural lands and water resources. Their more recent takeover of *huachicol*, the local term for petroleum theft, best exemplifies their transformation from drug trafficking organizations to far more diverse criminal orders, especially as one such organization, the Cartel Santa Rosa de Lima, specialized so deeply in *huachicol* that it thereafter only minimally trafficked narcotics. The "professionalization" of eco-crime by the cartels has enhanced their financial capacity to commit violence and increased their desire to hold territory not necessarily important to the drug trade. Recognition of this ongoing transformation, however, has been slow, leaving in place damaging mischaracterizations of the conflict and the criminal organizations and economic incentives underpinning it. Utilizing both empirical findings and theoretical contributions from green criminology, this paper demonstrates the cartels' diversification of their revenue streams to include eco-crime, using *huachicol* by the Cartel de los Zetas and the Cartel Santa Rosa de Lima as a detailed case study. It then comments on the consequences of these transformations for Mexican civilians, the natural environment, the War on Drugs as a policy issue, and the theoretical nature of conflict studies.

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## LIST OF ABBREVIATIONS:

**CJNG:** Cartel Jalisco Nueva Generación (Jalisco New Generation Cartel)

**CSRL:** Cartel Santa Rosa de Lima (Santa Rosa de Lima Cartel)

**DTO:** Drug Trafficking Organization

**FMCT:** Familia Michoacana-Caballeros Templarios (Michoacán Family-Knights Templar)

**Gulf:** Cartel del Golfo (Gulf Cartel)

**OCG:** Organized Criminal Group

**PAN:** Partido Acción Nacional (National Action Party)

**Pemex:** Petróleos Mexicanos (Mexican Petroleum, Mexico's State Monopoly)

**PRI:** Partido Revolucionario Institucional (Institutional Revolutionary Party)

**Zetas:** Cartel de los Zetas (Zeta Cartel)

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## 1. Introduction

### 1.1 One Evening in Tlahuelilpan

A festive atmosphere ruled the early evening of Friday the eighteenth of January, 2019 in Tlahuelilpan, a medium-sized town in the central Mexican state of Hidalgo only one hundred kilometers north of Mexico City. Many townspeople, as well as some friends and relatives from the countryside nearby, had arrived at a field on the outskirts of the municipality carrying “buckets, jugs and garbage cans.” They had all come for the same attraction, a pipeline owned and operated by *Petróleos Mexicanos*, or “Pemex,” Mexico’s public oil monopoly. It had been tapped by oil thieves, known locally as *huachicoleros*, who had left a geyser of fuel that “spewed 20 feet into the air.”<sup>1</sup> The hundreds of locals, almost none of whom could have had any involvement with the *huachicoleros* who had tapped the pipeline the previous night, thronged past soldiers and police warning them of the danger to collect the free fuel gushing forth, a valuable commodity for the residents of rural Mexico. Word had spread on Facebook that the gas, which had faced shortages at Pemex stations in the area, was there for the taking.

Two hours after the crowd first gathered, the geyser of gasoline suddenly exploded. At least 134 died in the inferno.<sup>2</sup> Many bodies were so badly burned by the flames that initial estimates of the death toll were as low as seventy-three, and most identifications relied on DNA.<sup>3</sup> Speaking in Tlahuelilpan the following day, Mexican President Andrés Manuel López Obrador gave a pained promise: “We are going to eradicate that [oil theft] which not only causes material damages. It is not only what the nation loses by this illegal trade, this black market of fuel, but

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<sup>1</sup> Stevenson, “Mexican pipeline explosion kills 73, leaves nightmare of ash,” *Associated Press*, January 20, 2019, <https://apnews.com/article/de055ccb0b9b40e2b8811251fec45fc>.

<sup>2</sup> Emilio Lugo, “Mexican authorities find the bodies of 9 men near pipeline. Fuel theft by gangs is widespread,” *Associated Press*, January 10, 2024, <https://apnews.com/article/mexico-fuel-theft-pipeline-bodies-6336fe84e789ce6481d9b68c5de5c7fc>.

<sup>3</sup> Stevenson, “Mexican pipeline explosion kills 73.”

the risk, the danger, the loss of human lives.”<sup>4</sup> His administration, which had begun the year before, was the first in Mexico’s history to attempt a crackdown on the country’s rampant oil theft, called *huachicol*. Mexico’s war for its own natural resources, however, had already been ongoing for over a decade.

### *1.2 Rationale and Research Question*

Environmental crime has emerged to become a new frontier of criminal expansion and revenue generation in many parts of the world. This activity, also called “green crime” or “eco-crime,” encompasses a host of activities. Most of these involve somehow profiting from lucrative businesses at the expense of the environment, including “tropical timber, endangered species, and natural minerals.”<sup>5</sup> Environmental crime gangs may of course originate in order to profit from illegal extraction, deforestation, and dumping, but larger and more “traditional” criminal organizations have also expanded their portfolios into eco-crime. These groups, from the Italian “ecomafia” to human traffickers in Southeast Asia, may infiltrate new markets in order to “adapt to changing socioeconomic and situational conditions.”<sup>6</sup> In Mexico, attempts to dominate these niches have led to devastating violence. This paper will show that Mexico’s War on Drugs, by fragmenting the country’s drug cartels, created an intensely competitive milieu which induced them to consciously diversify into the alternative profit-streams of environmental crimes. This diversification has fundamentally transformed the cartels into convergent drug trafficking-green crime organizations, deeply altering the structure of the War on Drugs and underpinning much of the violence in Mexico today.

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<sup>4</sup> Stevenson, “Mexican pipeline explosion kills 73.”

<sup>5</sup> Daan P. van Uhm and Rick C. C. Nijman, “The Convergence of Environmental Crime with Other Serious Crimes: Subtypes within the Environmental Crime Continuum,” *European Journal of Criminology* 19, no. 4 (2022), 543.

<sup>6</sup> *Ibid.*



The very term “War on Drugs” is something of a misnomer; it implies, incorrectly, that the violence gripping the country results solely from the drug trade, particularly narcotics’ shipment to the United States. The conflict is well-known, and many scholars have commented on it in traditional terms of security, crime prevention, or counterinsurgency.<sup>7</sup> Alternatively, many discuss the deeper causes and structures of the conflict, its social and economic ramifications, and its discursive elements as practiced by either criminal cartels or the state.<sup>8</sup> Despite this attention, a fatal misconception about the conflict prevails; studies are too narrow, focusing on the drug trade and overlooking or underemphasizing “the diversification of criminal groups beyond traditional illicit activities.”<sup>9</sup> This predilection has led Mexico’s War on Drugs, ironically, to be underresearched.

Incidents like the one in Tlahuelilpan have grown more common as huachicol increases in scope and value. Homicide related to huachicol is also extremely common, resulting in shootouts and bombings killing dozens at a time.<sup>10</sup> Fuel taps are almost constant, leeching tens of thousands of barrels per day, with no end in sight, and no permanent solution. My primary research question is focused on these events’ criminal context: how and why have Mexican drug cartels diversified into petroleum theft, and what implications does this process have for the War on Drugs and the lives of ordinary Mexicans?

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<sup>7</sup> Lisa J. Campbell, “Los Zetas: operational assessment,” *Small Wars and Insurgencies* 21, no. 1 (March 2010).

<sup>8</sup> Howard Campbell, “Narco-Propaganda in the Mexican ‘Drug War’: An Anthropological Perspective,” *Latin American Perspectives* 41, no. 2 (2014), 66; Paul Goldberg, “Cartel Mapping, Narco-Panopticism, and Ecology in Contemporary Mexican Narratives of Drug Trafficking and Violence,” *Chasqui* 48, no. 1 (2019), 108.

<sup>9</sup> Joel Salvador Herrera and Cesar B. Martinez-Alvarez, “Diversifying violence: Mining, export-agriculture, and criminal governance in Mexico,” *World Development* 151 (2022), 10.

<sup>10</sup> “15 dead in shootouts among alleged Mexico fuel thieves,” *BNamericas*, November 1, 2017, <https://www.bnamericas.com/en/news/scores-dead-in-shootouts-among-alleged-fuel-thieves-in-mexico>.

The fact that criminal organizations have diversified into environmental crime is widely acknowledged.<sup>11</sup> That these groups' green crimes create violence is evident. Nevertheless, "there is insufficient theorization on the mechanisms that connect criminal diversification, particularly towards natural resources, to violence."<sup>12</sup> Bridging the theoretical gap between the causes of cartel diversification, the forms that diversification into eco-crime takes, and the quantifiable violence that results from it is the goal of this paper. Sub-questions that shed further light on the topic include what conditions and state actions in Mexico encouraged cartel transformations, which kinds of natural resources are attractive to cartels and why, and whether and to what degree these invasions provoke violence, empirically. My tying this theoretical topic to Mexico is in hopes of benefitting both; the theory may benefit from a single national case (with proper context given), and policymakers studying Mexico may benefit from insights into its grinding and seemingly irresolvable internecine conflict.

All this being said, there exists robust research into the internal conflict in Mexico, which provides a wealth of empirical studies to draw upon. To give these empirical studies a theoretical framework with which to apply their findings in a new way, I use some principles of green criminology. I must emphasize that this paper does not seek to construct its own or wholeheartedly adopt any specific green criminology theory; rather, it deploys ideas not regularly seen in studies of Mexico or conflict studies in general in order to reach all the way, theoretically, from cartel fragmentation to everyday violence, using natural resources and green crime as a medium. Concepts from eco-crime can thus inform a discussion of the motivations and capacities of violent non-state organizations in Mexico in a new and productive way.

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<sup>11</sup> Daan van Uhm, Nigel South, and Tanya Wyatt, "Connections between trades and trafficking in wildlife and drugs," *Trends in Organized Crime* 24 (2021); Chelsea Estancona and Lucía Tiscornia, "From Cocaine to Avocados: Criminal Market Expansion and Violence," UNU-WIDER, September 12, 2022.

<sup>12</sup> Herrera and Martinez-Alvarez, "Diversifying violence," 1.

Several approaches are applicable. Lucía Tiscornia and others describe how climate change and climate stress become analytical tools.<sup>13</sup> So too do natural resource scarcity, control, and access.<sup>14</sup> Most analytically helpful is Daan van Uhm’s idea of the *environmental crime continuum*.<sup>15</sup> This continuum places criminal organizations on a spectrum, from the most traditional organized crime outfits to strictly environmental crime groups. Criminal groups which once devoted themselves solely to drug-trafficking and similar activities, as Mexico’s cartels did, may move along the continuum by diversifying their activities, sharing knowledge with environmental crime groups, and even converging into hybrid organizations or becoming fully transformed eco-crime organizations. The last step in this process is domination, the complete capture of a specific area’s resource or trade line; given cartels’ monopolizing inclinations, applying the continuum directionally makes sense in Mexico’s criminal context. These changes are made in the interest of securing alternative profit sources and, I argue, ensuring institutional durability. While I do not strictly apply the continuum’s framework and stages, it has proven theoretically extremely helpful. The terms “diversify” and “transformation” in this paper align with van Uhm’s meanings, the former referring to movement toward environmental crime and the latter a change into an essentially new criminal organization “in order to adapt to changing circumstances.”<sup>16</sup> These theoretical approaches clarify the chaotic setting of the War on Drugs in Mexico, moving our focus from narcotics alone to the other cartel behaviors multiplying violence in the country and helping to cogently and originally answer the research question.

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<sup>13</sup> Lucía Tiscornia, “How Climate Change Affects Organized Criminal Group Behavior,” *Studies in Comparative International Development* 58 (2023).

<sup>14</sup> Daniel Weisz Argomedo, “Climate Change, Drug Traffickers, and La Sierra Tarahumara,” *Journal of Strategic Security* 13, no. 4 (2020).

<sup>15</sup> Van Uhm and Nijman, “The convergence of environmental crime with other serious crimes,” 544.

<sup>16</sup> *Ibid.*

### *1.3 The State of the Field: Criminal Diversification, Natural Resources, and Conflict*

With these theoretical approaches in mind, we may approach more empirical findings on natural resources and criminal diversification. This diversification is perhaps best known in Italy's "ecomafia," which profits from the intentional dumping of waste or non-fulfillment of environmental regulations.<sup>17</sup> In this study, however, I focus on the theft of natural resources. There is already considerable study on the role of natural resources in provoking armed conflict. Päivi Lujala discusses the connection between the presence and absence of natural resources and the intensity of civil conflicts.<sup>18</sup> Dube and Vargas comment on the impact of commodities prices on violence.<sup>19</sup> And of course, many rationalist scholars see natural resources as a key element of "greed" theories of violent conflict, focusing on economic incentives.<sup>20</sup> Though natural resource theft in conflict zones is thus well-researched, "existing research on the resource-violence connection tends to focus on civil war contexts. In contrast, settings dominated by criminal violence have received far less attention."<sup>21</sup> Mexico is thus an opportune case to address this imbalance, as natural resource crimes result from criminal infiltration rather than rebel land control. Given this lack of scholarly attention, however, I rely on contemporary, usually journalistic rather than scholarly, reports on incidents in Mexico.

With our focus set on organized crime, we may then turn to the actual practices and dynamics of natural resource theft and how they impact internecine violence. Organized violent groups' diversification into natural resource monopolization is well-studied in some specific contexts. Among scholars of economic incentives for violence, Dube and Vargas demonstrated

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<sup>17</sup> Christine MacDonald, "Italy's Eco Mafia," *E Magazine* (March/April 2012), 14.

<sup>18</sup> Päivi Lujala, "Deadly Combat over Natural Resources: Gems, Petroleum, Drugs, and the Severity of Armed Civil Conflict," *Journal of Conflict Resolution* 53, no. 1 (February 2009).

<sup>19</sup> Oeindrila Dube and Juan F. Vargas, "Commodity Price Shocks and Civil Conflict: Evidence from Colombia," *The Review of Economic Studies* 80, no. 4 (October 2013).

<sup>20</sup> Paul Collier and Anke Hoeffler, "On Economic Causes of Civil War," *Oxford Economic Papers* 50, no. 4 (October 1998).

<sup>21</sup> Herrera and Martinez-Alvarez, "Diversifying violence," 1.

over a decade ago the entry by armed groups into industries including coffee, sugar, bananas, palm, tobacco, gold, coal, and oil in Colombia.<sup>22</sup> There is also a large corpus of research on the role of petroleum, though is often preoccupied with secessionist movements.<sup>23</sup> More specifically regarding the Mexican context, a lively discussion of transforming patterns of criminal violence is ongoing, with some sources published significantly after the drafting of this paper had begun.<sup>24</sup> Scholars of green criminology have also specifically highlighted the expansion of violent criminal networks into green crime in Mexico and neighboring countries.<sup>25</sup> Criminal behavior can thus be viewed in light of lucrative natural resource crime opportunities and economic incentives which motivate and, subsequently, maintain organized violence. Cartels target agriculture, water, forests, wildlife, and mining, all of which have been studied. Oil theft in particular is less researched in this criminal context.

This paper is thus not about crime as a social phenomenon in Mexico *per se*. It also is not about the narcoeconomy or illicit economy in general, which is an enormously complex topic influenced by a vast host of factors.<sup>26</sup> Instead, it highlights natural resource theft as a specific pattern of criminal behavior exemplary of broader trends of criminal diversification in reaction to specific, high-pressure conditions. The violent conflicts that result from this eco-crime and its consequently recent transformations in the structures and tendencies of Mexico's organized criminal groups can be viewed in this national, organizational, and theoretical context.

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<sup>22</sup> Dube and Vargas, "Commodity Price Shocks and Civil Conflict," 1385.

<sup>23</sup> Collier and Hoeffler, "On Economic Causes of Civil War."

<sup>24</sup> Martín Macías-Medellín and Aldo F. Ponce, "Strategic Resources for Drug Trafficking Organizations and the Geography of Violence: Evidence from Mexico," *Latin American Politics and Society* (2024).

<sup>25</sup> Livia Wagner, Diana Siller, and Rosalba Landa, "People and Forests at Risk: Organized Crime, Trafficking in Persons and Deforestation in Chihuahua, Mexico," Global Initiative Against Transnational Organized Crime (April 2020).

<sup>26</sup> James H. McDonald, "The Narcoeconomy and Small-Town, Rural Mexico," *Human Organization* 64, no. 2 (2005), 120

#### *1.4 Methodology and Results*

There are several factors which make researching the cartels difficult. First among these is the relative lack of reliable, up-to-date information on the constitution of each group and their areas of operations. The number of recent scholarly works is limited in large part due to this constriction. This dearth forces any researcher to rely largely on government and journalistic reporting, both of which have their own problems. Both the Mexican and United States governments possess considerable civilian intelligence on the cartels, but much of it is deemed sensitive and remains classified. Other scholars have noted difficulties arising from poor availability of Mexican government data.<sup>27</sup> Journalists may publish works reporting on violence or other incidents concerning the cartels, which may then be traced, and some longer, investigative pieces in both English and Spanish are truly excellent works. Nevertheless, Mexican media suffers from an extreme chilling effect when discussing the cartels, as journalists covering their activities are frequently their targets and understandably self-censor details which may put them in danger. Overall, I have still found it necessary to rely on journalism almost as much as or even more so than published scholarly work. It is also worth noting that some of the best reporting in Mexico concerning the cartels' impact on natural resources can be found in business publications.

The second factor which makes discussing the cartels difficult is the very structure of these organizations. Since 2006, the cartels have been highly mobile, holding their "home turf" but frequently expanding far beyond it. According to Dulin and Patiño, "one of the key reasons Mexico's criminal landscape devolved into a state of conflict is the freedom of cartels to move into and claim new territory."<sup>28</sup> Tracing these movements and territorial occupations is important

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<sup>27</sup> Adam L. Dulin and Jairo Patiño, "Mexican cartel expansion: a quantitative examination of factors associated with territorial claims," *Crime, Law and Social Change* 73 (2020), 324.

<sup>28</sup> Dulin and Patiño, "Mexican cartel expansion," 316.

for any study of the War on Drugs, including this one, but doing so precisely is extremely challenging. In addition to rapidly moving, cartel territorial holdings are not monolithic or unitary; they may be contested, intermittent, and diffuse. Formal or informal agreements with local politicians or police can create an “interweaving of state and non-state violent organizations in the context of fragmented, overlapping control,” reminiscent of Staniland’s concept of *tacit coexistence* regarding non-state governance.<sup>29</sup> Cartels may also have similar arrangements with each other, operating in the same towns or using shared infrastructure but at different times. To reduce the possibility of arrest, cartels may operate clandestinely, holding safehouses or working in friendly towns. Compounding all of this, the cartels have in general grown more decentralized since the beginning of the War on Drugs, spinning out or incorporating subsidiary organizations to reduce the risk of decapitation by the state. The Cartel de los Zetas in particular succeeded in pioneering this model of “coopting the local criminal groups in their newly conquered territories.”<sup>30</sup> Today, most large cartels have dozens of subsidiaries, and some smaller organizations may vacillate in their allegiance. Finally, cartels frequently fracture and then reorganize, with certain factions acting independently either temporarily or indefinitely. Suffice it to say that creating an actual map of cartel territorial influence (*influence* generally being a more appropriate term than *control*) is exceedingly difficult.

The third is that green criminology is a relatively small field, and its depth, especially when focused on particular countries, is not great. There are many recent resources, and the field and its applicability are growing, but for now there tends to be an emphasis on theoretical works and, when empirical studies are done, on Africa, Southeast Asia, and areas of the United States and Canada populated by indigenous peoples.

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<sup>29</sup> Paul Staniland, “States, Insurgents, and Wartime Political Orders,” *Perspectives on Politics* 10, no. 2 (June 2012), 251.

<sup>30</sup> Dulin and Patiño, “Mexican cartel expansion,” 316.

These difficulties inclined me toward a particular methodology. I originally intended to conduct interviews with locals where possible and applicable, but I decided, given the ethical issue of soliciting responses in a dangerous environment where cartels may seek retribution for even talking to the press or a researcher, not to do so. Some scholars have noted these dangers while still completing interviews and participant observation, but they had more experience, specific area knowledge, and pre-existing contacts than I, which made them confident in their ability to do so productively and safely. Even before the heightened violence and restrictions of the War on Drugs, McDonald found cartels' impact on rural communities "difficult and potentially dangerous to explore... thus it is not surprising that relatively few researchers have openly studied it."<sup>31</sup> Self-censorship by respondents was also a concern.

Consequently, I rely on primary sources including first-hand accounts, video recordings, scientific papers, and government statistics. I also utilize secondary sources including analyses and compilations by journalists, business publications and organizations, non-profits, and government bureaucracies, both Mexican and United States. Finally, I of course extensively reference the literature.

Methodologically, I use two approaches: thick description and case study. The cartels are complex actors, and a thick description is necessary to explain their histories, actions, and motivations in context. I do not delve deeply into the lived experiences of cartel soldiers and collaborators, but I explain their historical milieus and their leaderships' incentives and tendencies. Although they are incredibly violent groups (which, indeed, is a large part of what draws them scholarly attention), it is important to understand the meanings of their actions in their given contexts and, at least for now, not focus only on their aberrant acts of violence. I also thickly detail lived experiences of civilians in the violent contexts of territories with significant

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<sup>31</sup> McDonald, "The Narcoeconomy and Small-Town, Rural Mexico," 115.



cartel influence; this topic is one worthy of more committed research, particularly considering the scale of the impact of eco-crimes I discuss, but civilians were not the focus of this paper. Neither was generating a new set of empirical data; I rely on and incorporate the statistically significant findings of several empirical studies. Rather, this paper is preoccupied with cartels as institutions or organizations, whose leaderships' goals, incentives, contexts, available fields of action, and actual actions regarding natural resources receive the most detailed attention.

This research emphasis explains my use of a case study: the practice of huachicol by the mostly-defunct *Cartel Santa Rosa de Lima*, led by José Antonio Yépez Ortiz, alias “El Marro.” Although my thick description of other eco-crimes by the cartels gives considerable detail on their activities and provides numerous examples which could be used as complete case studies, this example stood out as the best opportunity, with the strongest empirical data behind it, to connect cartel fragmentation and evolution to environmental crime and, in turn, to interpersonal violence. I claim that cartel fragmentation due to intense state repression at the beginning of the War on Drugs destabilized major Mexican cartels' revenue flows. Cartel leaders who were not killed or apprehended chose to diversify their income streams in order to become more institutionally stable, investing in larger racketeering operations and in environmental crimes including invasion of agricultural land and protected forests and theft of water, wildlife, ores, and petroleum. Mexico's drug trafficking organizations have largely diversified into green crime and transformed into environmental actors which habitually profit from eco-crime. The Cartel Santa Rosa de Lima most vividly demonstrates this willingness to commit entirely to green crime to profit and acquire materiel with which to deploy violence. Scholars' and policymakers' misconceptualization of the War on Drugs as a conflict strictly over narcotics has obfuscated the ways natural resources and environmental crimes have transformed drug cartels and fueled the

deaths attributed to a conflict called a “drug war.” The militarized responses of the Mexican and United States governments against the drug cartels have contributed to their diversification and thus their greater resilience, violence, force-projection, and land-hunger, despite nearly two decades of intense and sophisticated state repression. Reimagining the conflict in terms of green crime can lead to better comprehension and outcomes.

### *1.5 Outline*

To that effect, the paper is structured as follows. Section Two is the recent historical context of the War on Drugs in Mexico, with explanations of its key actors, their behaviors, and the milieu of the cartels’ early diversification into environmental crime.<sup>32</sup> This Section thus describes the intense pressures of the cartels’ extremely competitive environment and how state repression led to their fragmentation and favored their diversification. Section Three outlines the way crimes other than their “traditional” activities of drug- and human-trafficking are carried out, beginning with cartel infiltration of legitimate business before extending into an accounting of several active areas of Mexican eco-crime which are well-known in the literature. It thus shows the successful adaptation of dynamic criminal organizations to eco-crime, as well as the pull factors that attracted them to it. Section Four describes huachicol in far lengthier detail, for two reasons. First, the topic is a more recent example of eco-crime in Mexico which is not as well-researched or explained as other green crimes committed by the cartels. Second, where petroleum and petroleum theft are discussed in the literature tends to be in a different context from this one, focusing on inter-state or civil wars rather than criminal violence. Petroleum theft can and should be discussed in the milieu of criminal violence and disorder, and the theoretical approaches of green criminology can be used well to describe it. Section Four also most clearly

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<sup>32</sup> Some may consider the length of this section laborious, but it is necessary.

and empirically demonstrates how eco-crime fuels the violence of Mexico's War on Drugs, using the case study of huachicol. Section Five concludes and offers observations on our understanding of the drug war and the place of green criminology, criminal violence, and economic incentive in conflict studies.

### *1.6 Terminology*

Before beginning in earnest, it would behoove us to establish certain definitions. I utilize two similar terms common in the literature on criminal organizations: *drug trafficking organization* (DTO) and *organized criminal group* (OCG). DTO is the more specific term, while OCG is a catch-all including DTOs and other criminal organizations of smaller size and/or different primary activities. Most literature focused on the Mexican context tends to prefer DTO to OCG, as most works' specific focus tends to be on drug trafficking, but as OCG gives a broader range of actions, it is often more appropriate in this case. In addition, I have chosen to use *huachicol* over the interchangeable *huachicoleo* in order to more clearly differentiate it from *huachicolero*, a person who engages in huachicol, for the benefit of non-Spanish speaking readers. Finally, although I use terms such as *oil* and *fuel* throughout the paper, I favor *petroleum* when speaking about huachicol in general terms in order to both recognize that huachicoleros target petroleum resources in many pre- and post-refinement forms and avoid confusion among readers as to what the differences between specific forms (oil, [natural] gas, and fuel) are.



Figure 1: Mexico and Its States.<sup>33</sup>

<sup>33</sup> Wikimedia Commons, "Map of Mexico, Colored States Filled," [https://commons.wikimedia.org/wiki/Category:Maps\\_of\\_Mexico](https://commons.wikimedia.org/wiki/Category:Maps_of_Mexico).

## 2. Mexico's War on Drugs and Criminal Diversification

### 2.1 *The Mexican Drug Cartels*

Mexico's major illegal drug trafficking organizations are some of the largest, most profitable, and most pervasive criminal enterprises in the world. Their exports of narcotics to the United States alone accounted in 2012 for at least \$6.6 billion in gross revenue, generating an industry likely employing around 468,000 Mexicans.<sup>34</sup> A more recent report from the United States Bureau of Economic Analysis, though not focused specifically on Mexico, found that the country imported \$29.9 billion in illegal drugs in 2017, or 1.3% of total imports.<sup>35</sup> Despite their immense scale and presence, however, even getting a clear picture of their size, income, and number can be very difficult due to the organizations' illegal nature, secretive practices, and constant realignments. Rapid internal changes followed the beginning of the War on Drugs in 2006, as organizations were broken apart or decapitated by the Mexican government. Under immense pressure from drug interdiction and competition from former friends, surviving organizations made strident attempts to expand into other criminal industries as the traditional illegal drug trade became more difficult and less profitable.<sup>36</sup> Cartel fragmentation due to the "Kingpin Strategy" intensified Mexico's criminal violence and pushed cartels toward eco-crime.

Today, the United States Drug Enforcement Administration identifies nine Mexican cartels as most consequential to the international drug trade.<sup>37</sup> The government of Mexico published a broader list near the beginning of President López Obrador's administration, which

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<sup>34</sup> Roxana Gutiérrez-Romero and Mónica Oviedo, "The good, the bad and the ugly: the socioeconomic impact of drug cartels and their violence," *Journal of Economic Geography* 18 (2018), 1315.

<sup>35</sup> Sarah Atkinson, "Toward Developing Estimates of U.S. Imports of Illegal Drugs," U.S. Bureau of Economic Analysis (February 2020), <https://www.bea.gov/system/files/papers/WP2020-2.pdf>, 4.

<sup>36</sup> Herrera and Martinez-Alvarez, "Diversifying violence," 2.

<sup>37</sup> U.S. Drug Enforcement Administration, "2020 National Drug Threat Assessment" (March 2021), 66-68.



**Figure 2: Map of Cartel Influence in Mexico.**<sup>38</sup> The white circle marks Santa Rosa de Lima.

recognized the existence of thirty-seven primary cartels and criminal groups of similar scale.<sup>39</sup> Yet, other sources suggest the complete number could be much higher, and even Mexico's official count acknowledges that it does not name every subsidiary group, particularly of the geographically large *Cartel Jalisco Nueva Generación*, or CJNG. The thirty-seven it identifies are thus joined by dozens of more minor cartels and hundreds of smaller criminal gangs. An International Crisis Group report found that, between 2010 and 2020, at least 543 armed groups existed in Mexico, of which most were devoted to drug-trafficking or other criminal activities;

<sup>38</sup> Adapted from Livia Wagner, Diana Siller, and Rosalba Landa, "People and Forests at Risk: Organized Crime, Trafficking in Persons and Deforestation in Chihuahua, Mexico," *Global Initiative Against Transnational Organized Crime* (April 2020), 14.

<sup>39</sup> Jorge Monroy, "Reconoce gobierno la operación de 37 cárteles del narco, en el país," *El Economista*, May 19, 2019, <https://www.eleconomista.com.mx/politica/Reconoce-gobierno-la-operacion-de-37-carteles-del-narco-en-el-pais-20190519-0035.html>. Translation my own.

205 armed criminal groups existed in 2020, showing both their massive proliferation as well as the chronic instability of Mexico's constantly fragmenting criminal orders, when compared to the total figure.<sup>40</sup> This pattern of criminal fragmentation in Mexico has considerably worsened the country's domestic security situation and will be discussed below.

The cartels most relevant to eco-crime deserve no introduction, but they will receive one anyway for our purposes. One of the oldest and largest is the *Sinaloa Cartel*, the organization of Joaquín "El Chapo" Guzmán, based in northwestern Mexico.<sup>41</sup> It has the largest international footprint and is most adept at penetrating U.S. drug interdiction and dominating American drug markets.<sup>42</sup> This success over its rivals may explain the Sinaloa Cartel's relative disinterest in transitioning to green crime. The converse to Sinaloa in many ways is the *Cartel Jalisco Nueva Generación*, or CJNG. Geographically, it is by far the most dominant within Mexico, with a major presence in twenty-three of Mexico's thirty-two federal entities. It is relatively young compared to its peers, more decentralized, and with a famous "willingness to engage in violent confrontations with Mexican government security forces and rival cartels," especially when compared to the more traditional and established Sinaloa Cartel.<sup>43</sup> It is strongest in central and southern Mexico.

The *Cartel de los Zetas* are a northeastern-Mexican group which split off from the older *Gulf Cartel*, with whom it now struggles for territory. It was once a newcomer known for its willingness to improvise and to inflict spectacular acts of violence on civilians, state officers, and members of rival cartels. *Guerreros Unidos* is based in the southern state of Guerrero and has recently been experimenting in order to keep itself from being crowded out by larger

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<sup>40</sup> International Crisis Group, "Crime in Pieces: The Effects of Mexico's 'War on Drugs,' Explained," accessed May 22, 2024, <https://www.crisisgroup.org/content/crime-pieces-effects-mexicos-%E2%80%9Cwar-drugs%E2%80%9D-explained>.

<sup>41</sup> United States Drug Enforcement Administration, "2020 National Drug Threat Assessment," 66.

<sup>42</sup> United States Drug Enforcement Administration, "2020 National Drug Threat Assessment," 65.

<sup>43</sup> United States Drug Enforcement Administration, "2020 National Drug Threat Assessment," 67.

organizations. Both Gulf and Guerreros Unidos have working relationships with the CJNG. Also from southern Mexico, specifically Michoacán, is the *Familia Michoacana*, with its spinoff and erstwhile rival but now affiliated friend, the *Caballeros Templarios*. Infamous for interference in the civilian industries of Michoacán, the two are now difficult to distinguish from each other. Finally, we have the *Cartel Santa Rosa de Lima*, a minor and now-mostly defunct organization from Guanajuato, in central Mexico, a group built on huachicol but snuffed out before it had the opportunity to develop in size and scope.

Each one of these organizations, despite their beginnings as drug-traffickers, had invested heavily in some form of green crime by 2020, and usually much earlier. To evade state pressure and self-perpetuate their organizations, all the surviving major players have, to a degree, diversified into eco-crime. Historical, economic, and geographical context is necessary to understand the natures and behaviors of these criminal organizations, which have survived and thrived in their extremely competitive environment, shaped by frequent fragmentation as a result of the War on Drugs.

## 2.2 *The History of the War on Drugs*

Although the War on Drugs receives ample attention in Western, and particularly American, media, the sheer scale of the mass death it has caused is rarely fully stated. Since the War on Drugs began in December 2006, at least 250,000 Mexicans have died in it, and at least another 90,000 have gone missing.<sup>44</sup> Further, cartel violence has forced nearly as many from their homes in the worst-affected areas, internally displacing as many as 347,000.<sup>45</sup> In addition,

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<sup>44</sup> Raúl Iglesias Nieto, Pierre Gaussens, and Guadalupe Correa-Cabrera, “Beyond the drug war: violence, forced displacement, and shale gas in northeastern Mexico (2000–2020),” *Crime, Law and Social Change* 15, no. 1 (2023), 1-2.

<sup>45</sup> Nieto, Gaussens, and Correa-Cabrera, 2.



cartels corrupt state institutions and commit spectacular acts of violence to intimidate and control.<sup>46</sup> And of course, they have now turned to extracting the wealth of Mexico's natural and agricultural resources.

The background of Mexico's War on Drugs begins, unfortunately, with the country's democratization in the 1990s. Between 1929 and its first competitive multi-party federal elections in 1994, Mexico lived under the single-party rule of the Institutional Revolutionary Party (abbreviated as PRI, from the Spanish *Partido Revolucionario Institucional*). During this period, "several major drug cartels... coexisted in relative peace and pursued their criminal activities without conflict among themselves or serious confrontation with the state."<sup>47</sup> This is because the PRI's "strong hegemony" allowed cartels to negotiate safe areas of drug cultivation and shipping routes, called *plazas*, with the ostensibly prohibitionist state in exchange for kickbacks and the suppression of visible violence.<sup>48</sup> This large-scale collusion, which allowed every cartel to deal covertly with PRI officials as long as they provided bribes and civic peace, meant the drug-trafficking industry substantial stability under the protection of the police and military. There were occasional spikes in cartel-related deaths among police, narcos, or civilians, but these were very minor compared to those of the past two decades. Further, run-of-the-mill drug trafficking's steady profitability and political protection disincentivized diversification into eco-crime. Huachicol in particular existed, but was not organized.

None of this is to say that Mexico was a peaceful country during the entirety of PRI rule. The country's worst violence, however, was not focused on drugs. Instead, the state waged the

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<sup>46</sup> Roxana Gutiérrez-Romero and Mónica Oviedo, "The Good, the Bad and the Ugly: the Socioeconomic Impact of Drug Cartels and Their Violence," *Journal of Economic Geography* 18 (2018), 1315.

<sup>47</sup> Guillermo Trejo and Sandra Ley, *Votes, Drugs, and Violence: The Political Logic of Criminal Wars in Mexico* (Cambridge University Press: Cambridge, 2020), 1.

<sup>48</sup> Gutiérrez-Romero and Oviedo, "The Good, the Bad, and the Ugly," 1317.

Dirty War (1969-1978) against leftist political actors.<sup>49</sup> The country's "internal enemies" included student activists, traditionally revolutionary peasants, and participants in popular movements, against whom "members of the Mexican military and police, together with paramilitary organizations, carried out of extrajudicial killings, rape, torture, and [enforced] disappearance." Most of these extraordinary actions were done under the aegis of police powers granted by federal drug-control policies aligned with the United States's own "War on Drugs."<sup>50</sup> Grimly, however, these internal political conflicts and the strengthening of the official federal anti-narcotics position foreshadowed the collapse of PRI monopoly rule that would precipitate the War on Drugs as it exists today.

In the meantime, the nature of the cartels themselves was changing. Originally devoted primarily to the cultivation of marijuana and opium poppies, "Mexican cartels began to take on a much larger role in the late 1980s, after U.S. government agencies broke up Caribbean networks used by Colombian cartels to smuggle cocaine."<sup>51</sup> The suppression of Colombia's major drug trafficking organizations, the Cali and Medellín Cartels, thus created a new market niche and strong financial incentives for the Mexican organizations to fill the gap left in supplying drugs to the high-income markets of North America and even Europe, where 44% and 33% respectively of illicit drugs are consumed.<sup>52</sup> Their profits rapidly grew, as did their need for political protection for their *plazas*. With greater financial resources, the cartels paramilitarized, enhancing their ability to project force and reducing their dependence on state protection.

It is thus important to emphasize that, despite U.S. pressure on Mexico to cooperate with its own drug-interdiction policies, Mexico's drug war emerged from endemic political,

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<sup>49</sup> Gema Kloppe-Santamaria, "Mexico's Long War on Drugs: Past and Present Failures of a Punitive Approach to Drugs," *Journal of Illicit Economies and Development* 4, no. 2 (2022), 227.

<sup>50</sup> Kloppe-Santamaria, "Mexico's Long War on Drugs," 227.

<sup>51</sup> Council on Foreign Relations, "Mexico's Long War."

<sup>52</sup> Tommy E. Murphy and Martín A. Rossi, "Following the poppy trail: Origins and consequences of Mexican drug cartels," *Journal of Development Economics* 143 (2020), 3.

economic, and cultural factors. Conflict began to spiral upwards as internal factions within the PRI forced the cartels that cooperated with the party to choose sides to ensure their continued protection. The situation further frayed throughout the 1990s as the PRI began to lose local elections to left- or right-wing opposition parties, destabilizing clientelist networks. “This lack of ‘political coordination’ [between local and federal officials] made it more difficult for cartels to carry on working in their plazas and agreed shipment routes.”<sup>53</sup> With this breakdown of coordination between federal and local police and political leaders, especially when the anti-narco National Action Party (PAN, from *Partido Acción Nacional*) controlled municipalities, the protection promised to some cartels by the PRI evaporated. In response, “the cartels went to bloody war over profitable drug trafficking routes” and “battle deaths reached an annual peak of 350.”<sup>54</sup> The fall of local PRI leaders meant the end of the peace between cartels which they had corruptly managed. The decades-old juxtaposition of massive (and very profitable) criminal collusion and official prohibitionism finally gave way, setting the stage for a serious internal conflict provoked by “Mexican governing elites’ own political and economic interests.”<sup>55</sup> The new millennium would only intensify the country’s problems.

The rise of political pluralism on the national level, combined with the consequences of long-standing institutional corruption, caused the final collapse of Mexico’s security situation. In 2000, Vicente Fox of the right-wing PAN and his electoral coalition defeated his PRI opponent for the presidency, ending the world’s then-longest single-party rule.<sup>56</sup> This further disrupted the country’s cartel patronage system, and “by 2005, the death count surpassed the threshold of 1,000 murders... the threshold commonly used to classify a conflict as a case of civil war.”<sup>57</sup>

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<sup>53</sup> Gutiérrez-Romero and Oviedo, “The Good, the Bad, and the Ugly,” 1318.

<sup>54</sup> Trejo and Ley, *Votes, Drugs, and Violence*, 1.

<sup>55</sup> Kloppe-Santamaria, “Mexico’s Long War on Drugs,” 228.

<sup>56</sup> Joseph L. Klesner, “The End of Mexico’s One-Party Regime,” Kenyon College, accessed May 15, 2024, [https://www2.kenyon.edu/Depts/PSci/Fac/klesner/apsa97\\_Table1.htm](https://www2.kenyon.edu/Depts/PSci/Fac/klesner/apsa97_Table1.htm).

<sup>57</sup> Trejo and Ley, *Votes, Drugs, and Violence*, 1.

Despite, or perhaps because of, these striking figures, PAN candidate Felipe Calderón triumphed in the country's 2006 presidential election, continuing the party's anti-narco platform. Facing increasing violence and embarrassed by allegations of vote-rigging and revelations of the strength of the Familia in his home state of Michoacán, in December 2006 Calderón “unexpectedly declared war on drug cartels and deployed the army into their hotspots.”<sup>58</sup> Military personnel would “supplement and, in many cases, replace local police forces he viewed as corrupt.”<sup>59</sup> Though the violence of the War on Drugs would not peak until over a decade later, the conflict as we understand it today had begun in earnest. Approving of Calderón's strong anti-drug response, Washington made overtures to support the effort, and the following year “the George W. Bush administration and the Calderon government launched the Merida Initiative to improve U.S.-Mexico cooperation on security and rule of law issues in Mexico.”<sup>60</sup> The groundwork was thus laid for an aggressive, militarized response to the growing power of Mexico's cartels. With this crackdown, the clientelist relationships which had led the cartels to limit their violence evaporated.

By Calderón's metrics, his War on Drugs was an early success. This fact was due to the so-called “Kingpin Strategy,” by which Mexican planners intended to fight the cartels by killing or capturing their leaders. The organizations seemed so threatening, after all, because they were well-ordered and organized, and similar government actions against mafia structures had succeeded through similar approaches. It was thus assumed that eliminating cartels' leaders would cause them to fall apart, breaking their power and quelling the violence, as well as the drug trade. The Kingpin Strategy was pursued vigorously, and before long “with U.S. assistance,

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<sup>58</sup> Gutiérrez-Romero and Oviedo, “The Good, the Bad, and the Ugly,” 1318.

<sup>59</sup> Council on Foreign Relations, “Mexico's Long War.”

<sup>60</sup> Council on Foreign Relations, “Criminal Violence in Mexico,” February 9, 2024, <https://www.cfr.org/global-conflict-tracker/conflict/criminal-violence-mexico>.

the Mexican military captured or killed twenty-five of the top thirty-seven drug kingpins in Mexico.”<sup>61</sup> The unforeseen secondary impacts of the campaign, however, would be devastating for Mexico’s civilian population.

The problem with the Kingpin Strategy was that it led not to the elimination or surrender of criminal organizations, but to their fragmentation. Decapitated drug cartels rapidly split apart as factions moved, went underground, or vied for control of the organization. These smaller, less stable groups were then more prone to violence against each other. Recent studies show inter-cartel violence to be responsible for more homicides than direct state-cartel confrontations, and municipalities where cartels are present which remain peaceful almost exclusively possess only one cartel, “thus being free of rivals and avoiding confrontations.”<sup>62</sup> Already, the Kingpin Strategy was a destabilizing influence.

Worse, it meant that the state’s campaign against the cartels provoked violence via two parallel phenomena. Direct confrontation between security forces and the soldiers of the cartels was one thing, but “the outbreak of state–cartel wars intensified inter-cartel wars.”<sup>63</sup> Increased evolutionary pressure, so to speak, on the country’s drug trafficking cartels heightened their competition with each other, triggering brutal displays of force as OCGs attempted to gain the upper hand over their peers or assert claims to new territory, whether specifically to the area’s *plazas* or to intimidate the population into collaboration with the acting cartel against its rivals and the state. Intense state pressure and drug interdiction efforts increased the severity of inter-cartel competition at the local level. DTOs, unsure of their futures in the face of intermittent government campaigns and declining drug trafficking revenues, spread their geographical presence and scrambled to secure new sources of revenue in order to secure access to the heavy

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<sup>61</sup> Council on Foreign Relations, “Mexico’s Long War.”

<sup>62</sup> Gutiérrez-Romero and Oviedo, “The Good, the Bad, and the Ugly,” 1325.

<sup>63</sup> Trejo and Ley, *Votes, Drugs, and Violence*, 2.

weapons they needed to survive their hostile new environment. This search led different actors immediately to various forms of environmental crime.

Violence rapidly increased in this milieu. “According to the official government count made by Calderón’s successor, between 2006 and 2012, 70,000 Mexicans were murdered in inter-cartel and state—cartel conflicts.”<sup>64</sup> But in addition to multiplying numerically, the conflict spread geographically. According to one study, “before 2005 drug cartels operated in about 20% of the 2456 municipalities in the country... by 2010, cartels were operating in about 40% of the municipalities.”<sup>65</sup> This physical expansion was in part due to the structure of the state’s efforts. By invading cartel hotzones with superior numbers and firepower, the Mexican government unknowingly encouraged the surviving, smaller organizations to move to new locales with less competition from former friends.

By the election of 2012, violence resulting from Calderón’s War on Drugs had become the key electoral issue. The PRI returned to power that year with the election of Enrique Peña Nieto as president. Peña Nieto campaigned on promises of refocusing the state’s efforts on minimizing violence and promoting public order, rather than specifically targeting the cartels and their leaders.<sup>66</sup> This policy, based on homicide statistics provided by the UN Office on Drugs and Crime, proved to be initially successful. By the end of his administration, however, the bloodletting (per capita) had reached its maximum, with nearly thirty intentional homicides per 100,000 residents.<sup>67</sup> In truth, Peña Nieto pulled back at the worst possible moment, allowing new formations to consolidate their territories and refine their approaches to various alternative

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<sup>64</sup> Trejo and Ley, *Votes, Drugs, and Violence*, 2.

<sup>65</sup> Gutiérrez-Romero and Oviedo, “The Good, the Bad, and the Ugly,” 1316.

<sup>66</sup> Vanda Felbab-Brown, “Peña Nieto’s Piñata: The Promise and Pitfalls of Mexico’s New Security Policy against Organized Crime” (Washington: Brookings Institution, 2013), 1.

<sup>67</sup> The World Bank, “Intentional homicides (per 100,000 people) - Mexico,” <https://data.worldbank.org/indicator/VC.IHR.PSRC.P5?end=2021&locations=MX&start=1990&view=chart>.

criminal industries, including green crime. Invasion of mining, agriculture, forestry, and huachicol all multiplied during his tenure.

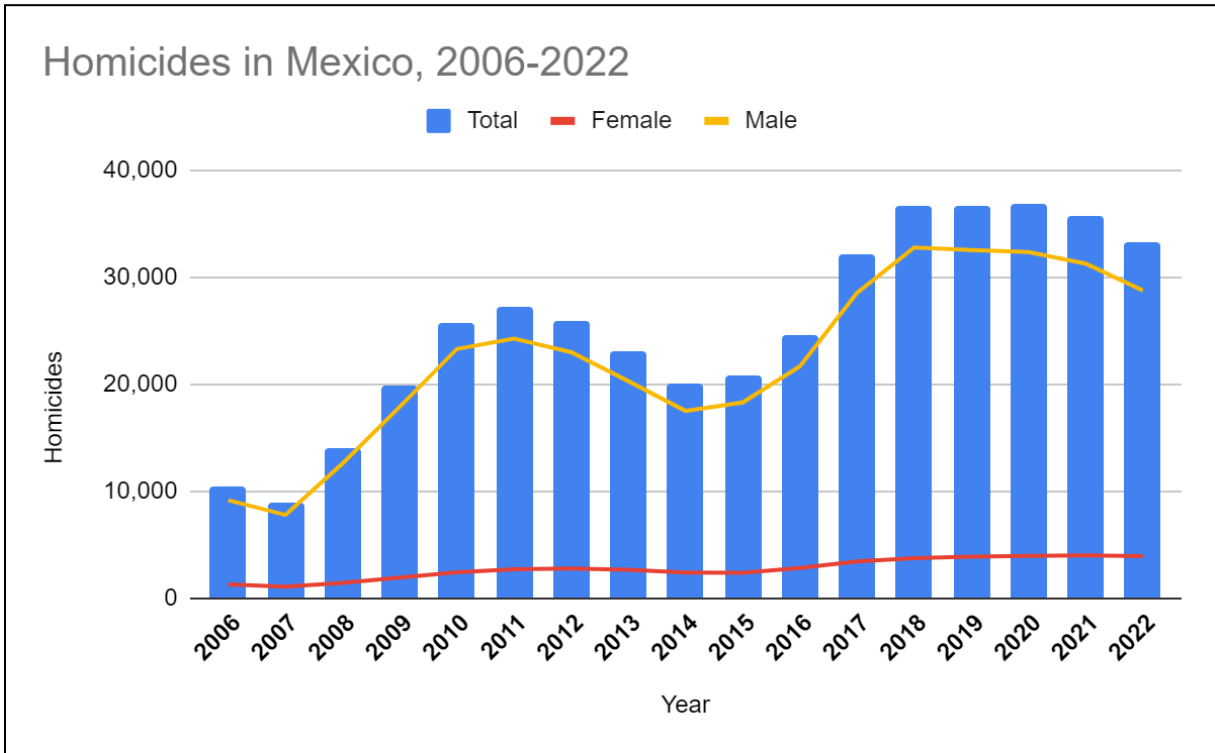


Figure 3: Total Homicides in Mexico, 2006-2022.<sup>68</sup>

Left-wing candidate Andrés Manuel López Obrador swept to victory in 2018, campaigning on the grinding loss of life resulting from the drug war just as Peña Nieto had. (López Obrador is still President of Mexico, an office he will hold until October 1, 2024.) López Obrador also promised myriad changes to the way his country engaged with the conflict. Most famously, he declared a policy of “*abrazos, no balazos*,” or “hugs, not bullets,” a focus on reconciliation and violence prevention rather than continued deployment of force against the cartels. The populist president has tended “to blame drugs and disorder on family breakdown over the border and poverty at home,” seeing the root causes of the cartels’ strength and the violence in general as socioeconomic.<sup>69</sup> The solutions he proposed included “poverty alleviation

<sup>68</sup> United Nations Office on Drugs and Crime, “Intentional Homicide,” dataUNODC, accessed April 1, 2024, <https://dataunodc.un.org/dp-intentional-homicide-victims>.

<sup>69</sup> “Beyond Drugs,” *The Economist*, May 13, 2023, 38.

programs, the legalization of marijuana, and new sentencing guidelines for drug traffickers,” alongside the formation of a new National Guard, a hybrid civilian-military state organ that could take over as leading public security institution from the military and local police.<sup>70</sup> In 2019, López Obrador also decisively ended the official Mexican policy goal of targeting the leaders of the cartels and other OCGs: “[Our strategy] will no longer specifically order the decapitation of criminal groups and cartels,’ but rather will center on the general maintenance of public safety.”<sup>71</sup>

His initially less securitized drug policy, however, did not last. He has expanded the role of the military in policing and created plans to place the National Guard in the army’s command structure, despite a Supreme Court ruling that such a move would be illegal.<sup>72</sup> Meanwhile, “military policing has eroded the treatment of civilians, who face arbitrary detention, rape, and extrajudicial killings.”<sup>73</sup> In particular, he ruthlessly cracked down on huachicol, specifically targeting pipeline theft in the central Mexican states of Guanajuato, Querétaro, Hidalgo, and Veracruz. He initially touted a 90% decrease in huachicol, weathering the violent response by the Cartel Santa Rosa de Lima as he applied intense state pressure against it. By 2022, homicides reduced modestly from their maximum, but they remain significantly higher than at the end of President Calderón’s time in office.

The pattern of candidates running under softer, more socially-inclined drug war policies and resorting after some years to a more traditional prohibitionist approach is not lost on Mexican citizens. In general, however, hard lines retain the most support, especially after upticks in killings. One study centered on the high-violence state of Michoacán found that “respondents exposed to violence in the real world are more frequently angry and more supportive of harsh

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<sup>70</sup> Council on Foreign Relations, “Criminal Violence in Mexico.”

<sup>71</sup> Jorge Monroy, “Reconoce gobierno la operación de 37 cárteles del narco, en el país,” *El Economista*, May 19, 2019, <https://www.eleconomista.com.mx/politica/Reconoce-gobierno-la-operacion-de-37-carteles-del-narco-en-el-pais-20190519-0035.html>. Translation my own.

<sup>72</sup> Council on Foreign Relations, “Criminal Violence in Mexico.”

<sup>73</sup> Council on Foreign Relations, “Criminal Violence in Mexico.”



and vigilante justice.”<sup>74</sup> Unfortunately, such punitive policies, particularly when focused against the leaders of the cartels, only exacerbate the country’s problems, promoting cycles of fragmentation and new violence as the number of armed actors grows and new organizations move into new areas of criminal activity in order to eke out a profitable niche amidst ruthless competition and relentless state pressure. The securitization of the War on Drugs and the intense pressure applied to criminal groups in Mexico has conditioned them to become more violent, elusive, and creative. The Kingpin Strategy precipitated a disaster.

None of this is intended to blame the Mexican government’s policymakers. Its leaders have usually made choices that seemed rational at the time and which were supported by their electorate. But the long-term, unforeseen consequences of these choices have been disastrous. Mexico needs a changed outlook on the War on Drugs and a recognition that the structure and character of the cartels driving it have fundamentally changed. The quantity of drugs seized is not a good metric for the success of government policies. Under Calderón, Peña Nieto, and López Obrador, the county’s OCGs have extended their influence far from their original plazas and invaded strategic sections of Mexico’s plains, forests, and hills in order to control and impound their deposits of precious natural resources. Almost everything in the country is subject to the armed expropriation of the cartels, even its land and water. The transition of the cartels from DTOs to far more diversified criminal orders capable of extending violence to new parts of national life has been startling, and their impact across all aspects of civilian life, rural economies, and the natural environment is pronounced. The extent of this penetration in environmental crimes other than oil theft is the topic of the next Section.

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<sup>74</sup> Omar García-Ponce, Lauren E. Young, and Thomas Zeitzoff, “Anger and support for retribution in Mexico’s drug war,” *Journal of Peace Research* 60, no. 2 (2023), 287.

### 3. The Cartels as Environmental Actors

#### 3.1 *A Monster That Eats Everything it Can*

The use in this paper, as well as in media in general, of terms specifically indicating the cartels' criminality likely conjures in the reader's mind a few particular images. Prolific depictions in film and print media of a "Narco Nation" straddling the northern states of Mexico and the southern expanse of the United States have contributed to the common view of the region's narcos' appearance, speech, and practices.<sup>75</sup> It is thus easy to imagine, visually, the classic narco character, including his machismo, attitudes, and ways of dress. (Of course, many do fit this mold, sometimes by design. Colombia's drug kingpin Pablo Escobar enthusiastically embraced a similar roguish, anti-state persona, even displaying "his own mug shots and photographs where he posed as a famous outlaw."<sup>76</sup>) These images, however, all lend themselves to a "conventional wisdom" which suggests that all criminal organizations, be they "drug cartels, gangs, or mafias... emerge to capture rents from illicit goods sold illegally on informal markets."<sup>77</sup> This heavy emphasis on illicit goods, particularly illegal drugs, is highly reductive, and it undermines our understanding of substantial changes in Mexican cartels' structures and revenue streams and, more generally, the entire War on Drugs.<sup>78</sup>

Evidence is now abundant of criminal actors' engagement with numerous other industries, independent of location or time period. Crucially, these industries have often been innocuous, legal commodities. In the twentieth century, the Sicilian mafia tried to take over the

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<sup>75</sup> Miguel L. Rojas-Sotelo, "Narcoaesthetics in Colombia, Mexico, and the United States: Death Narco, Narco Nations, Border States, Narcochinguazo?," *Latin American Perspectives* 41, no. 2, 223-227.

<sup>76</sup> Aldona Bialowas Pobutsky, "Peddling Pablo: Escobar's Cultural Renaissance," *Hispania* 96, no. 4 (2013), 692.

<sup>77</sup> Estancona and Tiscornia, "From Cocaine to Avocados," 2.

<sup>78</sup> As I will go on to argue, even the term "War on Drugs," as used to describe the current state of civil conflict in Mexico, is reductive and hides its enormous complexity. I use the term in this essay only because it is by far the most widespread one to describe the conflict. That there is no common alternative is unfortunate and, indeed, one of the problems behind discussing and addressing the country's situation.

legitimate lemon and artichoke markets, and Cape Town street gangs moved to seize control of South Africa's abalone production.<sup>79</sup> These agriculturally-focused market takeovers are but one example of OCGs' "shift from 'traditional' criminal activities... to the illegal trade in natural resources."<sup>80</sup> Similar market invasions have included poaching and animal smuggling, illegal logging and mining, and infrastructure construction, as well as "eco mafia" activities leveraging OCGs' willingness to use violence or corruption to profit from illegal dumping, theft of water or critical minerals, and even green energy.<sup>81</sup>

Specific to Mexico, the cartels' tendency to endlessly expand their areas of operation and their infiltration of civilian society is well attested to. Even before the War on Drugs, the "narcoeconomy" was widespread, existing alongside ordinary businesses, especially in rural towns where "the majority of the inhabitants [went] about their daily business and [were] only tangentially linked to this activity."<sup>82</sup> It was a fact in life, one which many rural people engaged with culturally or economically at some points in their lives. Some even participated in the drug trade in the United States before returning home with a nest egg to invest in legitimate businesses like ranching.<sup>83</sup> The outbreak of the War on Drugs, however, fundamentally changed the character of narco-civilian relations and the nature of cartel interactions with the legitimate economy. As discussed in the last Section, cartels after 2006 were pressured to find and exploit alternative revenue streams and newly willing to enact large-scale violence. With their established organizations, force, and presence in rural areas, they quickly sized up and moved into industries vulnerable to their takeover, from small shops to avocados to iron ore. No

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<sup>79</sup> Estancona and Tiscornia, "From Cocaine to Avocados," 2.

<sup>80</sup> Universiteit Utrecht, "Green Criminology and Environmental Crime," accessed July 31, 2024, <https://www.uu.nl/en/research/organized-environmental-crime>.

<sup>81</sup> Christine MacDonald, "Italy's Eco Mafia," *E Magazine* (March/April 2012), 14.

<sup>82</sup> McDonald, "The Narcoeconomy and Small-Town, Rural Mexico," 120.

<sup>83</sup> McDonald, "The Narcoeconomy and Small-Town, Rural Mexico," 119.

business is beneath their notice. “El Narco,” as Mexican author Ioan Grillo put it, is “a monster that eats everything it can.”<sup>84</sup>

The fast pace of this criminal diversification has been going on in Mexico for nearly two decades. It has been encouraged by the intense pressure of the War on Drugs, as well as commodity price shocks and even climate change, and it has posed serious consequences for the environment and natural resources of Mexico. This section will proceed first with a description of OCG extortion of licit industries in general, focusing on the actions of perhaps the primary pioneer in this endeavor, the Familia Michoacana, and explaining the dynamics by which OCGs may diversify in order to gain a competitive advantage over more powerful incumbent cartels. It will then explore scholars’ findings on cartel invasion of agriculture, water, deforestation, wildlife smuggling, and mining.

### *3.2 Extortion of Licit Industry*

The first and perhaps most obvious step for a DTO undergoing diversification into alternative commodities is simple extortion. The classic protection racket is where an organized criminal group makes implicit or explicit threats demanding regular payment in exchange for “protection,” which is primarily safety from the group, though sometimes it may also involve actual services provided, such as protection from rivals or state taxation or regulatory supervision. Such rackets are an extremely common illegal formation across time and space. In Latin America they are well-known in many contexts, such as among the street gangs of El Salvador, where “shop keepers and bus drivers, and, increasingly, other local residents are obliged to pay extortion money (*renta*) to gangs.”<sup>85</sup> Although these Salvadoran gangs are much

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<sup>84</sup> Quoted in “Beyond Drugs,” *The Economist*, 38.

<sup>85</sup> Chris van der Borgh and Wim Savenije, “The Politics of Violence Reduction: Making and Unmaking the Salvadorean Gang Truce,” *Journal of Latin American Studies* 51 (2019), 912.

smaller than Mexico's major drug cartels, hundreds of similar groups still operate in Mexico at the local level. These gangs are often small cells in the orbit of the major cartels.

Penetration of civilian enterprise is common in much of the country. Thorough invasion of these markets, which are vital to civilian livelihoods, often requires chilling displays of force and the willingness to kill for profit. In Guerrero, particularly its capital of Chilpancingo, there has been a concerted effort by organized crime to conquer the legitimate chicken market, from husbandry all the way down the value chain to distribution. In 2022, eight people working in the chicken business were killed in a single week. In one incident, "a group of armed men murdered a chicken distribution businessman in full view of buyers and diners."<sup>86</sup> Price spikes and shortages across Guerrero and as far as the State of Mexico followed due to resulting scarcity and business closures. Such horrifying and spectacular acts of violence are deployed by OCGs to intimidate civilians, with aims of "monopolizing elements of trade lines" and "controlling the entire supply chain."<sup>87</sup> This pattern of almost shock-and-awe behavior in order to enforce compliance is not rare.

In addition, industry takeover is not strictly for the purpose of misappropriating legitimate profits; OCGs have other motivations as well. An example of this secondary motivation is in fishing. Particularly in the northwestern states, the cartels have infiltrated and even come to dominate large-scale fishing operations, both licensed and unlicensed.<sup>88</sup> This operation of course seeks profit from fishing, but the physical invasion of civilian spaces has other advantages. Legitimate businesses can act as camouflage for money laundering or can even provide means of trafficking traditional illicit market items like drugs through hiding them in the

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<sup>86</sup> Isabella Cota, "From chickens to cabs: Drug cartels expand across the Mexican economy," *El País English*, September 21, 2023, <https://english.elpais.com/economy-and-business/2023-09-21/from-lemons-to-cabs-drug-cartels-expand-across-the-mexican-economy.html#>.

<sup>87</sup> Van Uhm and Nijman, "The convergence of environmental crime with other serious crimes," 545-546.

<sup>88</sup> Cota, "From chickens to cabs: Drug cartels expand across the Mexican economy."

exports of legal companies.<sup>89</sup> Conversely, access to smuggling routes which the DTOs already know can provide advantage in entering legitimate industry, bypassing customs and regulations. In this case, organized crime “uses fishing as a screen” for other activities, but its invasion of the sector has also crippled the ability of the state to administer it.<sup>90</sup> This impact is due to the corruption and intimidation which violent OCGs bring with them. There are many other industries which have seen recent infiltration by the cartels, including taxis and even tortillas.<sup>91</sup> No legitimate sector is too mundane for them to diversify into, co-opt, and dominate.

Although the above industries, except for fish, are not natural resources, the cartels’ behavior in infiltrating their legitimate markets is demonstrative, and their tactics and motivations are similar to those behind their diversification into environmental crime. By leveraging their expertise in violence, intimidation, and corruption, they could diversify their activities and revenue streams. The way the cartels have gone about doing so, however, impacts them as organizations in two ways which will become clear and have serious consequences for the pattern of violence in Mexico. First, the “classic image of hierarchical well-structured organized crime specializing in one kind of criminal activity” has given way to a more flexible, reactive, and decentralized approach.<sup>92</sup> Once-centralized cartels may even loosely cooperate with or oversee eco-crime groups which enter their orbit.<sup>93</sup> Second, these industry infiltrations incentivize the OCG to maintain a specific territorial claim where it has a monopolistic ability to deploy force effectively to extract rent payments and protect their market invasions, which are often stationary and require protection both from legitimate competition and state intervention. These kinds of industry takeovers were the earliest diversifications by the cartels, some even

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<sup>89</sup> Van Uhm and Nijman, “The convergence of environmental crime with other serious crimes,” 554.

<sup>90</sup> Cota, “From chickens to cabs: Drug cartels expand across the Mexican economy.”

<sup>91</sup> *Ibid.*

<sup>92</sup> Van Uhm and Nijman, “The convergence of environmental crime with other serious crimes,” 543.

<sup>93</sup> Van Uhm and Nijman, “The convergence of environmental crime with other serious crimes,” 553.

predating the War on Drugs. Their success and profits in them paved the way for far more sophisticated entries into eco-crime sectors such as agriculture, logging, mining, and huachicol, which require greater expertise and a more consistent presence.

It would therefore seem that Mexico's OCGs should be active primarily in areas where they have business interests. And indeed, scholars have found "that the presence of market opportunities conducive to criminal activity is a common characteristic of territories occupied by criminal groups."<sup>94</sup> When they occupy regions with valuable licit industry or natural resources, they do so in order to access these. Some of the strongest control by cartels is thus exerted in rural states such as Guerrero, Michoacán, and Chihuahua, where they may capture entire industries and monopolize the use of force. The cartels tend to be interested in governance, or at least performative community support, only in their home turf, where they recruit and depend on local populations to protect narcos' identities and locations from the state. Elsewhere, cartels like the Familia Michoacana-Caballeros Templarios, Sinaloa Cartel, and Guerreros Unidos seek only to dominate Mexico's natural resources within concentrated areas of violent influence.

This territoriality is for financial and organizational security. Drug trafficking organizations are "business savvy crime groups," expansionist and "monopolistic by nature," which understand the importance of enlarging their areas of operation and remaining flexible.<sup>95</sup> At the same time, they do not expand without purpose. Cartels "are strategic in selecting their areas of operation," focusing only on locales where their profit-making activities are centered.<sup>96</sup> They thus do not occupy territory uniformly, but rather concentrate on the resources which they may loot for revenue. The degree of state repression of the groups, measured by the presence of

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<sup>94</sup> Dulin and Patiño, "Mexican cartel expansion," 320.

<sup>95</sup> Dulin and Patiño, "Mexican cartel expansion," 316.

<sup>96</sup> Dulin and Patiño, "Mexican cartel expansion," 320.

PAN municipal officeholders, is irrelevant to their ability to act in an area.<sup>97</sup> Rather, it is the presence of economically viable industries to capture which both enables and encourages large-scale cartel activity in a region. As Herrera and Martinez-Alvarez argue, “Criminal rule... is facilitated by the control over natural resources including fertile agricultural lands, illegal mining, natural protected areas, and illegal logging.”<sup>98</sup> It is these resources, then, which the cartels pursue, driving the violence of Mexico’s internecine conflict, the War on Drugs.

### *3.3 Agriculture and Cartel Rural Control*

Mexico’s cartels have a pronounced impact on the country’s agriculture and rural ecosystems. This is due to two distinct behaviors. More traditional for the DTOs is the use of cropland by cartels in order to cultivate drug crops, namely marijuana and opium poppies. This cultivation is widespread but is focused in the Sierra Madre mountains, especially the so-called “Golden Triangle.”<sup>99</sup> More recently, OCGs have invaded fields and forests in order to tax their output of *licit* crops, or even to replace woodlands or subsistence fields growing staples like maize with plantations for export-oriented crops like avocados and limes. Such agricultural invasion and displacement is especially common in Michoacán and has been practiced by the Familia Michoacana cartel, and its spinoff affiliate the Caballeros Templarios, almost since the beginning of the War on Drugs.

The social and environmental effects of illicit drug crop cultivation are significant. In general, intensive drug crop cultivation can take up valuable land and water resources while decreasing biodiversity and encouraging ecosystem destruction. The impact of the cartels in

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<sup>97</sup> Dulin and Patiño, “Mexican cartel expansion,” 326.

<sup>98</sup> Herrera and Martinez-Alvarez, “Diversifying violence,” 10.

<sup>99</sup> Deborah Bonello, “How Drug Cartels Moved into Illegal Logging in Mexico,” *Insight Crime*, September 18, 2020, accessed July 15, 2024, <https://insightcrime.org/investigations/drug-cartels-illegal-logging-mexico/>.



some agricultural sectors in Mexico is consequently severe. Drug cartels naturally have considerable expertise in profiting from agricultural enterprises, but these have traditionally been restricted to those necessary in order to manufacture illicit drugs themselves: opium poppies and cannabis, usually in isolated reaches of the Sierra Madre mountains.<sup>100</sup> Smallholding farmers will cooperate with cartels and cultivate drug crops when faced with the right incentives vis-a-vis staples like maize.<sup>101</sup> Intensive cultivation of drug crops, however, can promote violence. Racketeering and outright theft, both of crops and cropland, are rampant. The spread of this violence can even lead smallholders to abandon their agricultural lands altogether.<sup>102</sup> And now, even legitimate crops have fallen prey to their diversification.

Cartels are strongly incentivized by commodity prices to invade the licit agricultural markets that they do. It is likely for this reason that avocados in particular have become the focus of their attention. Prized as “green gold” in many developing economies due to their high export prices, avocados offer a significant potential revenue stream. In addition, Mexico is the world’s largest producer of avocados.<sup>103</sup> Research suggests that the cartels are especially interested in avocados due to the large degree of market control that Mexican exports consequently have, and groups including the CJNG, FMCT, Guerreros Unidos and Los Viagras have all targeted avocado plantations, owners, and growers. Such influence on the global price means they can do what any other market cartel would do: modulate production to control prices and further raise revenues.<sup>104</sup> Such savvy decision-making is only more demonstration of the carefully-designed profit-seeking behavior Mexican OCGs exhibit.

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<sup>100</sup> Monica Medal and Yongmei Lu, “Illegal drug cultivation in Mexico: an examination of the environmental and human factors,” *Cartography and Geographic Information Science* 42, no. 2 (2015), 192.

<sup>101</sup> Oeindrila Dube, Omar García-Ponce and Kevin Thom, “From Maize to Haze: Agricultural Shocks and the Growth of the Mexican Drug Sector,” *Journal of the European Economic Association* 14, no. 5 (2016).

<sup>102</sup> Gabriel Tamariz, “Agrobiodiversity Conservation with Illegal-Drug Crops: An Approach from the Prisons in Oaxaca, Mexico,” *Geoforum* 128 (2022), 306.

<sup>103</sup> Estancona and Tiscornia, “From Cocaine to Avocados,” 9.

<sup>104</sup> *Ibid.*

The sheer physical destruction of people and environments wrought by this activity is massive. Reports over the past decade describe violent confrontations between cartels over the right to tax local production. Some have even forcibly replaced subsistence crops with avocados and threatened locals to continue to work their fields. Often, protected forests will be targeted by the groups and cleared in order to grow drug crops or licit export crops. The *Los Angeles Times* described one such series of events near Uruapan, Michoacán in 2019:

The cartel members showed up in this verdant stretch of western Mexico armed with automatic weapons and chainsaws. Soon they were cutting timber day and night, the crash of falling trees echoing throughout the virgin forest. When locals protested, explaining that the area was protected from logging, they were held at gunpoint and ordered to keep quiet... More than a dozen criminal groups are battling for control of the avocado trade in and around the city of Uruapan, preying on wealthy orchard owners, the laborers who pick the fruit and the drivers who truck it north to the United States... After seizing control of the forest in March, the Viagras announced a tax on residents who owned avocado trees, charging \$250 a hectare in “protection fees.”<sup>105</sup>

This development of localized rural violence, however, has been over a decade in the making. Locals have reacted with outrage and counter-organization to these abuses, most famously with *los grupos de autodefensa de Michoacán*, a loose vigilante formation formed in 2013 to challenge the “domination of criminal groups in that state.”<sup>106</sup> Agriculture, trade, and manufacturing were all impacted as warring cartels attempted to seize control of alternative profit streams.

Limes were another of these valuable export crops, with Mexico as the world’s second-largest producer, and they may have been targeted even sooner. “In the state of Michoacán, the *Caballeros Templarios* moved from illegally taxing lime farmers to taking over

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<sup>105</sup> Kate Linthicum, “Inside the bloody cartel war for Mexico’s multibillion-dollar avocado industry,” November 21, 2019, accessed April 1, 2014, <https://www.latimes.com/world-nation/story/2019-11-20/mexico-cartel-violence-avocados>.

<sup>106</sup> Raúl Ornelas and Sandy E. Ramírez Gutiérrez, “Los grupos de autodefensa en Michoacán,” *De Raíz Diversa* 4, no. 7 (2017), 251. Translation my own.

their lands and regulating production, with the goal of affecting prices. When they attempted to regain control over production, several lime farmers were killed.”<sup>107</sup> It is important, then, to stop and focus on the purpose of this kind of performative violence. It intimidates the civilian opposition and frightens it into collaboration, changing the balance of the choice between cooperating with the cartel and growing crops as demanded and attempting to resist in some way. Ordinary farmers seem to make some form of this rational calculation themselves in response to changing agricultural commodities prices; Dube et al. show that farmers choose to collaborate with cartels by cultivating marijuana instead of maize when maize prices drop too low.<sup>108</sup> Conversely, Mexican drug cartels can invest their manpower in licit crops, instead of poppies and marijuana, when they financially benefit from such a choice. “When there are positive value shocks that make targeting [licit goods] markets valuable, criminal groups will attempt to do so.”<sup>109</sup> And when they do, violence rates spike in municipalities growing those crops after price shocks, *ceteris paribus*. Violence thus multiplies quantitatively in locales where these natural resources become available for capture.

This connection is the crucial one between eco-crime, organized criminal behavior, and violence: where natural resources may be profited from, properly positioned OCGs like Mexico’s cartels will seek to enter or even dominate their market. Scholars have found that in situations like these, “when group competition is high... increased violence is likely.”<sup>110</sup> Criminal groups deploy violence against civilians to ensure collaboration, the state to limit repression, and rival OCGs to monopolize the illegally tapped resource. With profits from drug crop cultivation falling in the face of intense interdiction, alongside rising prices of natural commodities and cash

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<sup>107</sup> Estancona and Tiscornia, “From Cocaine to Avocados,” 24.

<sup>108</sup> Dube, Garcíá-Ponce, and Thom, “From Maize to Haze.”

<sup>109</sup> Estancona and Tiscornia, “From Cocaine to Avocados,” 31.

<sup>110</sup> Tiscornia, “How Climate Change Affects Organized Criminal Group Behavior,” 45.

crops for export, the cartels have transformed their agricultural practices to adapt to these circumstances. It is also important to note the cause of some of these changes, as “price increases resulting from climate-driven scarcity create incentives for criminal groups to capture new markets, and the production and/or distribution of a given commodity.”<sup>111</sup> Anything whose scarcity will worsen due to climate-related stress is thus also ripe for cartel takeover, demonstrating the connection between organized crime and climate and conflict research.

### *3.4 Water, Illegal Logging, and Wildlife Smuggling*

More typical eco-crimes traditionally seen as unrelated to cartel activity must now be viewed in the context of their expansion. There is already ample evidence of cartel entry into several of these green crime industries, targeting all manner of natural resources.

The queen of these resources is water. Access to sufficient water for people and agriculture is delicate in much of Mexico. Although some parts of the country are filled with verdant jungle, others are arid or semi-arid, and even wetter parts may have difficulty accessing enough fresh water for large-scale irrigation and human consumption in metropolises like

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<sup>111</sup> Tiscornia, “How Climate Change Affects Organized Criminal Group Behavior,” 30.

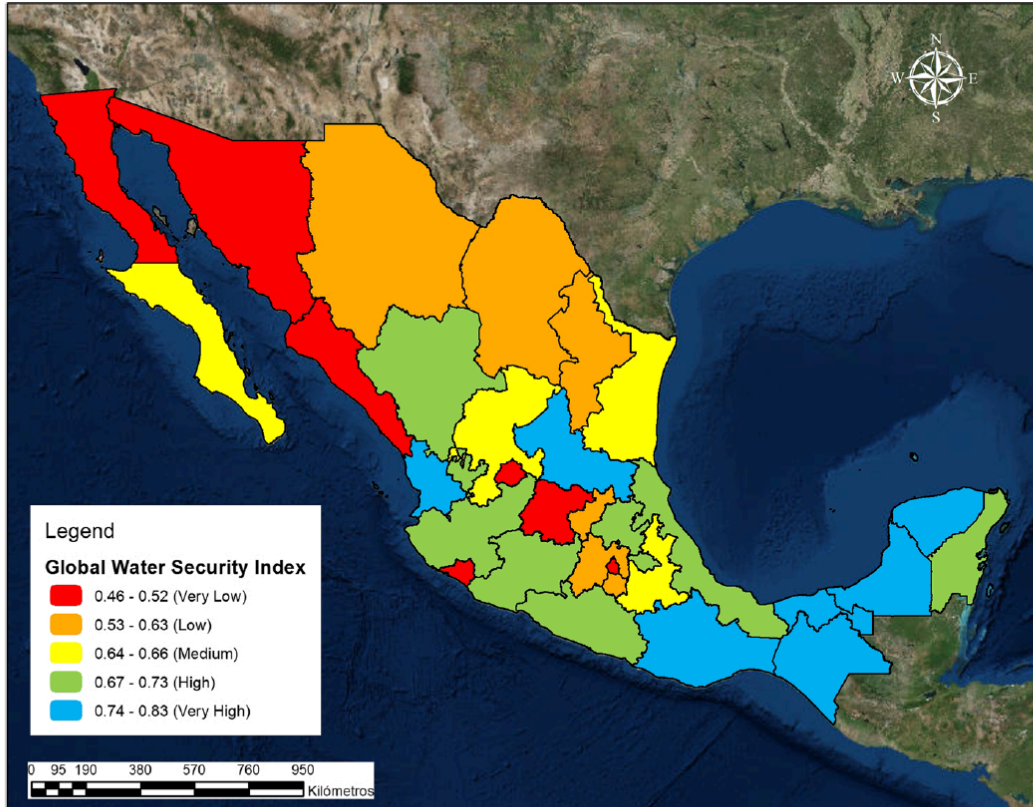


Figure 4: Water Security by State.<sup>112</sup>

Mexico City. Concerned with both increasing profits and accessing any natural resource for their own use, cartels “use their comparative advantage in coercion” to secure it.<sup>113</sup> This is what has happened to the water resources in Mexico’s northwest, the vast Chihuahuan Desert. The Sinaloa Cartel, despite its greater profits from drug trafficking and greater conservatism in investing in environmental crime, is the primary perpetrator, seizing communal reservoirs and taxing their use. As one Sinaloa operative admitted, “water is now a valuable asset for us, and as it becomes more scarce, the more we will fight to make sure we have enough.”<sup>114</sup> Rural Chihuahua is often bone dry, and life in the desert depends on massive monsoons’ filling lakes, reservoirs, and streams. During droughts, even the narcos often lose their crops, let alone poor subsistence

<sup>112</sup> Felipe I. Arreguin-Cortes, “State level water security indices in Mexico,” *Sustainable Earth* 3, no. 9 (2020), 9.

<sup>113</sup> Tiscornia, “How Climate Change Affects Organized Criminal Group Behavior,” 30.

<sup>114</sup> Quoted in Luis Chaparro, “The Sinaloa Cartel Is Controlling Water in Drought-Stricken Mexico,” *VICE World News*, September 20, 2022, accessed June 30, <https://www.vice.com/en/article/4ax479/mexico-sinaloa-cartel-water>.

farmers in the area, many of whom are indigenous. But in scarcity, the ever-entrepreneurial Sinaloa Cartel saw an opportunity.

Using water trucks, pipelines, and an army of lookouts, the cartel is siphoning water from lakes, rivers, and creeks in the mountains of the northern state of Chihuahua. The business model is twofold: The cartel wants to keep its own weed and poppy fields irrigated, and it wants to be the broker that supplies water to farmers, hotels, and other local businesses that have been left dry.<sup>115</sup>

It was the first time there had been heavy rains in nearly ten years. The year before, Chihuahua reported almost 100% crop failure, and over 80% failure in staples like maize and beans, leaving locals destitute.<sup>116</sup> The mass theft was protested by some, but once again, the deployment of force in form of kidnappings and torture demoralized and extinguished the opposition. And as climate change's effects become more significant, competition, and violence, over such vital resources as water will worsen, and in a milieu that is generally understood simply as criminal violence over the narcotics trade in a larger "War on Drugs." For this reason, it is important that conflict studies incorporate natural resource theft and environmental crime into its suite of theoretical tools.

Damage to liminal agricultural lands due to climate stress is not the only environmental degradation the cartels have exploited. The issue of illegal logging has already been raised above in the context of agriculture, but the practice goes far beyond clearing land for crop cultivation. Illegal logging is a thriving business all on its own in Mexico. In Chihuahua, the Sinaloa Cartel frequently slashes and burns forests in order to clear land to clear the ground for opium poppies and marijuana.<sup>117</sup> In addition, the actual industry of illegal logging is exceptionally common, constituting as much as 70% of the logging in Mexico. Such frequency of criminal acts

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<sup>115</sup> Chaparro, "The Sinaloa Cartel Is Controlling Water in Drought-Stricken Mexico."

<sup>116</sup> Luis Murillo, "Reportan pérdidas de casi un 100% en cultivos de la región sur," *El Sol de Parral*, May 24, 2021, accessed July 31, 2024, <https://www.elsoldeparral.com.mx/local/reportan-perdidas-de-casi-un-100-en-cultivos-de-la-region-sur-sequia-lluvias-productores-cosecha-autoconsumo-noticias-parral-chihuahua-6752316.html>.

<sup>117</sup> Wagner, Siller, and Landa, "People and Forests at Risk: Organized Crime, Trafficking in Persons and Deforestation in Chihuahua, Mexico," 33.

inevitably invites infiltration by the cartels, who possess an advantage in any black market dealings, especially those involving smuggling and money laundering. In this way, Sinaloa in particular can make up lost revenue. “Over the last 10 to 15 years, the price of opium gum dropped by over 80% due to the distribution of new synthetic drugs,” leading the cartels to aggressively enter the logging industry to restore their income.<sup>118</sup> And although the cartels have essentially always been involved in illegal logging, only after this most desperate market entry did violence multiply as a result. For the cartels to have a passing interest in some industry is one thing; for them to consider its revenue vital is quite another. Invasion of the logging industry also provides cartels an opportunity to smuggle, just as the fishing industry did. There are accounts of drugs being smuggled inside hollowed lumber.<sup>119</sup>

This combination of illicit commodities is shared across many of them. No illegal product is too lowly for them to transport while already in the business of smuggling drugs; this factor is yet another one inclining them toward green crimes. As said above, no criminal enterprise, including “cactus rustling,” is too small for their attention. And like every other green crime, cartel entry brings violence. In 2020, Mexican authorities found eight men dead, likely killed during “an encounter between rival gangs, possibly between the Sinaloa and Tijuana cartels, over territorial access to Cedros, but possibly also over the extraction (or right of extraction) of *D. pachyphytum* [cactus] plants. The first body was found alongside six containers filled with harvested *D. pachyphytum* from Cedros.”<sup>120</sup> It’s a small example, but it makes the point; cartels which have fragmented or faced loss of revenue enter green crime sectors where profits may be

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<sup>118</sup> Wagner, Siller and Landa, “People and Forests at Risk,” 35.

<sup>119</sup> Van Uhm and Nijman, “The Convergence of Environmental Crime with Other Serious Crimes.”

<sup>120</sup> Jared D. Margulies, *The Cactus Hunters: Desire and Extinction in the Illicit Succulent Trade* (Minneapolis, University of Minnesota Press, 2023), 209.



made using their proficiencies in holding territory and deploying violence. Even cacti are an attractive option to organized crime pursuing profit by this type of territorial influence.

Similarly, endangered fauna are targeted. While the practice of smuggling large animals is more common in other countries, isolated instances of cartel thefts of living creatures are documented. Usually they are curiosities or delicacies from an endangered species. One primary offender in this area is the FMCT, which exports through the Pacific port of Lázaro Cárdenas in Michoacán. The Sinaloa Cartel participates as well, using its international smuggling network via Sonora and Baja California to sneak animals or animal parts abroad, it did in 2019 to transport “rare and expensive [swim] bladders from the *totoaba* fish destined for Asia.”<sup>121</sup> Cartel proficiencies in criminal activities like violence and smuggling can thus be easily transferred into many environmental crimes, reducing the costs required and therefore further incentivizing diversification. Interestingly, this port and these smugglers reveal, once again, the connection between green crimes and other alternative forms of criminal revenue as van Uhm and others describe; Lázaro Cárdenas is also the epicenter of the illegal mining industry in southern and central Mexico.

### *3.5 Mining and Minerals*

Natural resources deep under the earth are not safe from Mexico’s criminal organizations either. Once again, this fact is due to the cartels’ perceived need to diversify and the ease with which their expertise can be adapted to these green crimes. Despite the greater technical challenge of accessing these resources, the Familia Michoacana and the Caballeros Templarios have profited from the illegal export of iron ore since the early days of the War on Drugs, with the first major events reported in 2010. Given the capital and time that would be involved, they

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<sup>121</sup> Van Uhm, South, and Wyatt, “Connections between trades and trafficking in wildlife and drugs,” 440.



don't do any mining themselves. They make their profit in two ways. First is the taxing of legitimate enterprises, as "mining profits are siphoned by the Templars and other criminal groups at different points along the commodity chain: extraction, transportation, processing, storage, and shipment. Most commonly, mining companies are taxed for every ton of extracted minerals."<sup>122</sup> Second, demonstrating a more significant co-optation of the industry, the cartels may even load ore onto ships owned by their laundering corporations and ship it directly to buyers overseas. They have so significantly co-opted the civilian minerals industry in Mexico that they are occasionally able to conduct it themselves. The quantity of ore stolen is staggering. "In April of 2014, the departure of 68,500 tons of iron was stopped" by federal authorities.<sup>123</sup> A later report by Mexico's National Chamber of the Iron and Steel Industry (*Canacero*) found that as much as ten million tons of ore had been sold by cartel operators to Chinese corporations, with a value in excess of \$1 billion.<sup>124</sup> Such massive losses represent a huge blow to the civilian industry, with nearly 50% under "criminal control"; some reports even suggest that iron ore became the main source of income for the Templars.<sup>125</sup> FMCT penetration of the iron industry was reduced after 2014.<sup>126</sup> Even so, violence, threats, and intimidation exploded at the sites of extraction of these resources and in neighboring municipalities. Mine operators who refuse to cooperate have been tortured and killed. Those who collaborate, whoever, find protection from labor unrest and environmental regulations and are able to inflict significant environmental damage by taking advantage of the cartels' ability to deploy violence. The relatively ubiquitous presence of cartel soldiers near civilian mines is due to an unfortunate alignment in Mexico's geography. The Sierra Madre mountains are where cartels hold the most ground in order to cultivate their drug

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<sup>122</sup> Herrera and Martínez-Alvarez, "Diversifying violence," 10.

<sup>123</sup> Ornelas and Ramírez Gutiérrez, "Los grupos de autodefensa en Michoacán," 256. Translation my own.

<sup>124</sup> Ornelas and Ramírez Gutiérrez, "Los grupos de autodefensa en Michoacán," 257. Translation my own.

<sup>125</sup> Herrera and Martínez-Alvarez, "Diversifying violence," 10.

<sup>126</sup> Mining Engineering Magazine, "Armed police deployed to help protect mining companies; Threat of kidnapping and extortion is high at mines in Mexico" (November 2020), 14.

crops, and their remote reaches are where state police and military forces are least likely to go. The Sierra Madre are also Mexico's gold and silver belt. So close to centers of cartel power and so far from state supervision, the theft of these resources is a growing problem.

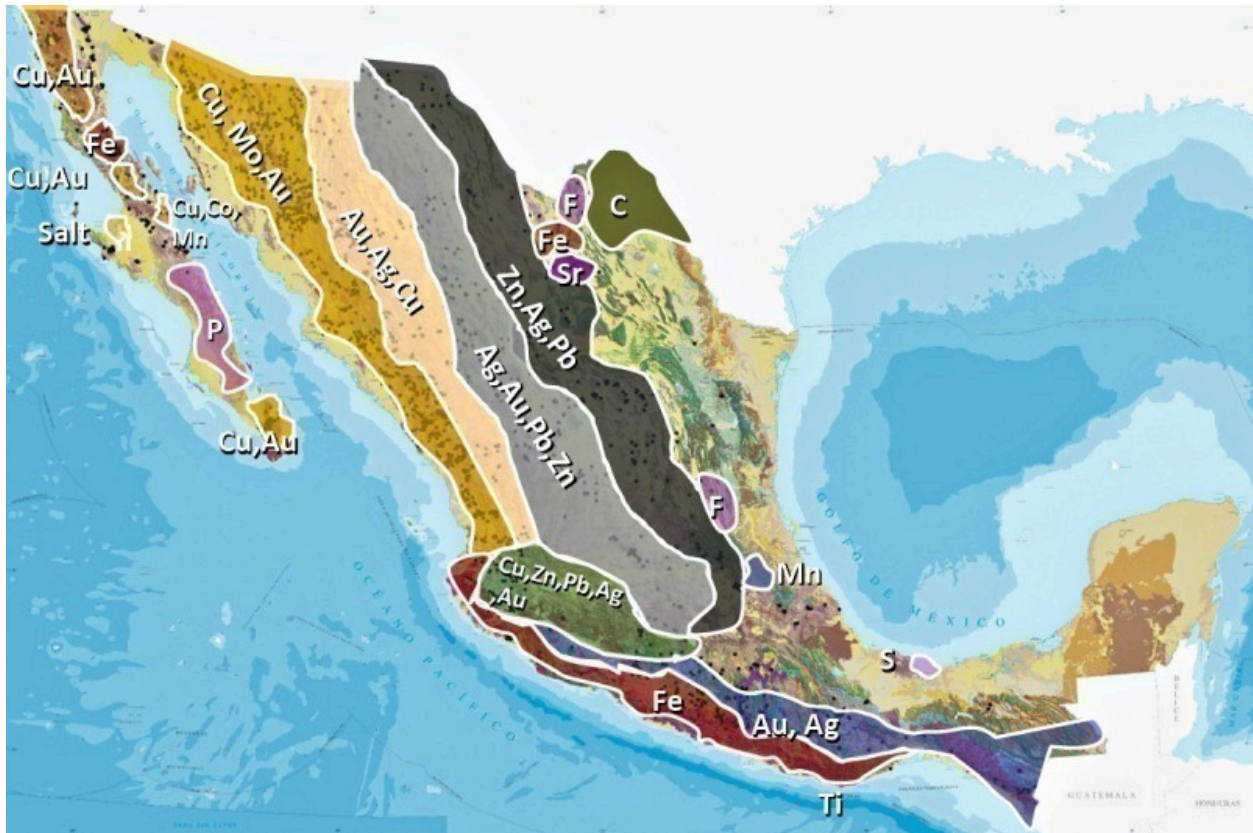


Figure 5: Mineral Deposits in Mexico.<sup>127</sup>

Note the heavy presence of gold (Au) and silver (Ag) in the northwest, as well as iron (Fe) in the south.

Cartel theft of gold and silver began almost immediately after the War on Drugs did.

“From at least 2007, drug trafficking organisations started to get involved in tapping profits from the trade.”<sup>128</sup> As will be discussed in greater detail in the next section, it comes as no surprise that the Zetas were the first to target these mines, terrorizing their workers and blackmailing management. “In 2010, armed robbers thought to be linked to the Zetas invaded [the northern

<sup>127</sup> Mexican Geological Survey, image published in Joachim Harder, “Overview of the mining industry in Mexico,” AT Mineral Processing, accessed July 28, 2024, [https://www.at-minerals.com/en/artikel/at\\_-1568308.html](https://www.at-minerals.com/en/artikel/at_-1568308.html).

<sup>128</sup> Oxford Analytica, “Mexico: Fragmenting cartels will focus on mining,” *Oxford Analytica Daily Brief Service*, May 13, 2015, 2. Accessed January 26, 2024, <https://www.proquest.com/wire-feeds/mexico-fragmenting-cartels-will-focus-on-mining/docview/1680468453/se-2?accountid=7118>.

state of] Zacatecas's La Colerada [*sic*] mine and lifted 150 bars of silver with a value of 3 billion dollars."<sup>129</sup> Brutal intimidation is used to extract the information that will help the cartels or their affiliates steal raw gold; "In February [of 2015], unknown gunmen abducted four residents connected to Canadian Torex Gold Reserves' Guerrero project. A month later armed men kidnapped four... employees at the Los Filos mine, also in Guerrero. Three of the four were found dead and showed signs of torture."<sup>130</sup> Mines and mine workers are thus frequent victims of cartel extortion and violence as they seek valuable commodities easy to sell internationally.

Mining corporations, however, are not always simple victims in this. They may proactively seek to make arrangements with the cartels in order to protect their investments from attacks and work stoppages engineered by the cartels, or they may make overtures to fund local *autodefensa* groups.<sup>131</sup> They may even form combinations with cartels, in exchange for payments. The danger of operating in Mexico has convinced many mining corporations either to avoid operating in cartel-influenced areas or enter with a plan on how to placate them, making their natural resource theft even easier and more profitable. The Mexican government has responded to these problems by cracking down and soothing investors' fears with a new, specially trained company of mine guards.<sup>132</sup> Nevertheless, cartel activity remains high. Although violence has been decreasing since 2019, including in mining-heavy states like Guerrero, the cartels still inflict violence and intimidate workers. One mine in the silver belt closed in August of that year, citing "concerns over the health and welfare of its workforce."<sup>133</sup> Even if violence diminishes, it is important to highlight that the cartels will not withdraw from environmental

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<sup>129</sup> Oxford Analytica, "Mexico: Fragmenting cartels will focus on mining," 2.

<sup>130</sup> Oxford Analytica, "Mexico: Fragmenting cartels will focus on mining," 2.

<sup>131</sup> Oxford Analytica, "Mexico: Fragmenting cartels will focus on mining," 2.

<sup>132</sup> Mining Engineering Magazine, 14.

<sup>133</sup> BNamericas Analysis, "Security weighing on mining in Mexico's Guerrero state," *Business News Americas*, August 29, 2019, accessed March 31, 2024, <https://www.bnamericas.com/en/analysis/security-weighing-on-mining-in-mexicos-guerrero-state>.

crimes. Even if drug trafficking were to become vastly more profitable, they likely would not abandon their natural resource theft operations, which have proven to be durable diversifications of their portfolios making them more stable organizations better able to self-perpetuate in the face of state repression.

In addition, as in the case of iron ore, gold and silver mines may habitually violate Mexico's environmental standards under the protection of cartels they cooperate with, especially in the northwest of the country. The Mexican public and government are becoming "more aware of the environmental impacts of the mining industry."<sup>134</sup> But with cartel involvement, managing the issue becomes exceptionally difficult, further demonstrating the environmental character and impacts of recent cartel expansions, as well as the structure of incentives both for the cartels and for mining corporations who consider cooperating with them.

The cartels' broad presence across numerous industries dependent on natural resources shows just how significantly they have transformed since the early days of the War on Drugs. The emergence of violence in all these industries is a consequence of OCG entry into them, as have been economic stagnation and internal displacement to escape the violence. But how quantifiable this violence is remains difficult to study in many of these industries due to their large temporal and geographical distribution, as well as the presence of confounding variables, not least of which is the presence of drug trafficking itself. The next Section will explore huachicol, perhaps Mexico's most prominent environmental crime, and its specific impact on the lives (and deaths) of people around it.

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<sup>134</sup> Gordon Feller, "Mining Operations in Mexico: Canada voices concerns over Mexico's energy and mining policies," *Canadian Mining Journal* (December 2023/January 2024), 28.

#### 4. Huachicol, the CSRL, and the Violence of DTO Diversification

##### 4.1 *Huachicol and the Evolution of Mexico's Cartels*

In the past, huachicol was embedded in Mexico's rich history of social banditry, as bands of locals struck opportunistically to seize small amounts of fuel from Pemex, which was seen as the creature of a central government that fundamentally neglected the small towns of Mexico's immense hinterlands. As one journalist put it:

In the past, your typical huachicoleros were small bands of grimy outlaws, largely harmless Robin Hoods who operated quietly and earned the goodwill of the people by handing out free buckets of gasoline and sponsoring parades and festivals in poor villages. Accordion ballads celebrated the huachicolero lifestyle, and huachicoleros even got their own patron saint, El Santo Niño Huachicol, a kind of Christ child depicted holding a siphon and a jerrycan.<sup>135</sup>

Many huachicoleros continue some of these traditional practices, selling fuel below market rates or even distributing it for free on special occasions to cultivate loyalty among the communities in which they operate.<sup>136</sup> Any scholar of Mexico's cartels, however, would note the similarity of this strategic charity to drives carried out by major DTOs including the Sinaloa Cartel, Gulf Cartel, and CJNG, as they did during the Covid-19 pandemic.<sup>137</sup> This comparison is a rich one, since today's modern huachicol has completely transformed from its roots. It has been appropriated and professionalized by the major cartels seeking to diversify their revenue streams.

Huachicoleros are not picky; the "industry" is largely opportunistic. Enterprising oil thieves will indiscriminately target "raw oil, gasoline, diesel, and other hydrocarbons found in major pipelines throughout Mexico."<sup>138</sup> Some have been so bold as to even target Pemex

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<sup>135</sup> Seth Harp, "Blood and Oil," *Rolling Stone*, September 6, 2018, accessed February 8, 2024, <https://www.rollingstone.com/culture/culture-features/drug-war-mexico-gas-oil-cartel-717563/>.

<sup>136</sup> Laura Y. Calderón, "Huachicoleros on the rise in Mexico," Justice in Mexico at the University of San Diego Department of Political Science and International Relations, May 30, 2017, accessed April 1, 2024, <https://justiceinmexico.org/huachicoleros-rising-mexico/>.

<sup>137</sup> Redacted, "Narcos aprovechan coronavirus en México para repartir despensas y pelear territorio," April 20, 2020, accessed June 15, 2024, <https://www.infobae.com/america/mexico/2020/04/20/narcos-approvechan-coronavirus-en-mexico-para-repartir-despensas-y-pelear-territorio/>.

<sup>138</sup> Calderón, "Huachicoleros on the rise in Mexico."

platforms and tankers in the Gulf of Mexico, stealing hundreds of thousands of gallons of crude oil or refined fuel at a time.<sup>139</sup> Modern huachicol is only a new example of this process of criminal diversification, one which provides an excellent case study by which to demonstrate the process of criminal groups' transformation into convergent drug trafficking-eco crime organizations. Huachicol also clearly shows that the shocking violence committed by these OCGs is not in conflict with or irrelevant to their diversification into convergent drug trafficking-environmental crime organizations; rather, it has been an instrumental part of that transition.

#### *4.2 A New Frontier in Criminal Diversification*

The theft of strategic resources like iron and gold from the Earth's crust leads us perfectly back to the newly professionalized criminal industry of huachicol. Unlike in the case of several of the resources described in Section 3, harvesting petroleum from the ground and refining it so as to be useful to households and industry is a highly capital-intensive process. At first glance, then, this activity would seem difficult to take over for DTOs. Unfortunately, the physical structure of the network needed for refining and transporting petroleum products makes it vulnerable to attack. Since the War on Drugs began, the number of illegal fuel taps, such as the one in Tlahuelilpan in 2019, has grown exponentially, as shown in Figure 6. The rise in violence since 2007 can be seen alongside it, although scholars disagree on whether there is a causal relationship between the two values.<sup>140</sup>

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<sup>139</sup> Manuel Espino, "Fuel thieves raid Pemex platforms on high seas," *El Universal*, January 2, 2019, <https://www.eluniversal.com.mx/english/fuel-thieves-raid-pemex-platforms-high-seas/>.

<sup>140</sup> Edgar Franco-Vivanco, Cesar B. Martinez-Alvarez, and Ivan Flores Martinez, "Oil Theft and Violence in Mexico," *Journal of Politics in Latin America* 15, no. 2 (2023), 218; Giacomo Battiston et al., "Fueling Organized Crime: The Mexican War on Drugs and Oil Thefts," *Marco Fanno Working Papers* 286 (2022), 1.



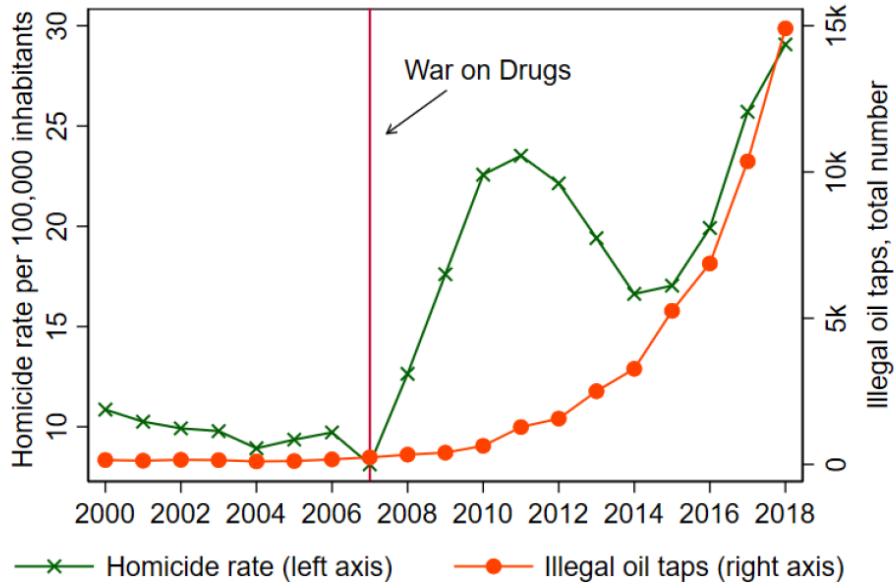


Figure 6: Homicides and Illegal Oil Taps in Mexico<sup>141</sup>

While stealing oil from public or private producers is nothing new, not even in Mexico, in recent years its massive scale, professional execution, concurrent violence, and collateral impact on the environment and rural economies have demonstrably created a new colossus of criminal enterprise with serious ramifications.

In order to explore them, we will first take a view of the structure of oil extraction in Mexico, especially Pemex and the refineries and pipelines of its technical infrastructure. We will then account for huachicol's professionalization by the then-upstart Zetas in the northern states of Mexico. This story will also demonstrate the passage from state repression to criminal fragmentation and diversification, to eco-crime. Finally, we will use the Cartel Santa Rosa de Lima, including its structure, methods, and conflict with the CJNG, as a case study for the complete diversification of criminal enterprise in Mexico away from drug trafficking and that transformation's quantitative effects on OCG behaviors, including physical violence. The impact of these actions on Mexico's people and natural environment will follow, alongside a discussion of government response to (and culpability in) the huachicol epidemic. This case study,

<sup>141</sup> Battiston et al., "Fueling Organized Crime," 2.

alongside the above exploration of other eco-crimes, will show that the very conceptualization of how to deal with DTOs in general must change in order to address oil theft in Mexico.

#### *4.3 Pemex and the Petroleum Industry in Mexico*

It is easy to overlook the importance of the petroleum industry to Mexico, as the country simply does not have the petro-state reputation of many others, and it is not a member of OPEC, the Organization of Petroleum Exporting Countries. Nevertheless, Mexico is a major oil producer. Pemex is the 10th-largest oil-producing entity on Earth, and since 1988 has been the 8th-largest generator of greenhouse gas emissions, ahead of major fossil fuels players including Shell, BP, and Chevron.<sup>142</sup> And as a public monopoly, the company is responsible for a significant portion of the country's budget; "the Mexican federal government collected 1,481 billion pesos [around \$80 billion] in oil revenues in 2022."<sup>143</sup> In the past, Pemex has generated as much as "a third of [Mexico's] total government revenues."<sup>144</sup> This massive revenue, however, has made the company a target for the corruption and violence that the cartels have brought to other industries in their quest to diversify their income streams, especially the price of oil remains above its pre-pandemic levels.

Instead of harvesting crude oil from the ground as the Caballeros Templarios exploited raw minerals, huachicoleros steal it directly from Pemex. By far the most common way of doing so is by tapping the company's mid-stream pipeline infrastructure, which is essential for transporting crude products to refineries and, subsequently, fuel to market. Crude oil pipelines are concentrated in southeastern Mexico near the largest oil fields, but pipelines for refined fuel

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<sup>142</sup> Paul Griffin, "CDP Carbon Majors Report 2017," Carbon Majors Database and Climate Accountability Institute (July 2017), 8.

<sup>143</sup> Statista, "General budget revenues of central government in Mexico from 2018 to 2022, by source," <https://www.statista.com/statistics/1255381/mexico-government-finance-revenue-by-source/>.

<sup>144</sup> Battiston et al., "Fueling Organized Crime," 6.



are widely distributed. Unfortunately, “the dimensions of the network and the relative lack of recent investment have made it quite vulnerable to attacks by criminal organizations.”<sup>145</sup> Illegal pipeline taps have been reported in twenty-six of Mexico’s thirty-two federal entities.<sup>146</sup>

The protocol of the thefts, then, is simple. First, a pipeline is identified which is close enough to the surface (or simply above-ground) that it is accessible; in addition, the pipeline should be isolated enough that it can be tapped without notice by the Mexican military. Second, the huachicoleros must tap the pipeline while petroleum is actually being pumped through it; they may pay or threaten Pemex officials or refinery employees to reveal when this is.<sup>147</sup> Third, the tap is made, which may take days for the authorities to notice, providing a window for fuel to be stolen and poured into large barrels for transport. Fourth and last, the barrels are driven away on trucks. Once stolen, petroleum can be fenced by private fuel distributors knowingly or unknowingly collaborating with the huachicoleros.<sup>148</sup> In 2018, this simple formula generated losses for Pemex of an obscene 66.3 billion pesos, or \$3.4 billion, prompting a harsh response from the then-new López Obrador administration.<sup>149</sup> His measures were initially successful; “Pemex Chief Executive Octavio Romero said that fuel theft had fallen to an average of 11,500 barrels per day (bpd) in the first quarter of the year, from more than 74,000 bpd in early December,” saving Pemex 12 billion pesos, or \$635 million.<sup>150</sup> Much of this plan was targeted in

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<sup>145</sup> Franco-Vivanco, Martinez-Alvarez, and Martínez, “Oil Theft and Violence in Mexico,” 222.

<sup>146</sup> *Ibid.*

<sup>147</sup> Gabriel Stargardter, “Mexico’s drug cartels, now hooked on fuel, cripple nation’s refineries,” *Reuters*, January 24, 2018, accessed February 8, 2024, <https://www.reuters.com/investigates/special-report/mexico-violence-oil/>.

<sup>148</sup> Karin Dilge, “Huachicoleo Surges as a Growing Threat in Mexico,” *Mexico Business News*, January 23, 2024, accessed March 19, 2024, <https://mexicobusiness.news/oilandgas/news/huachicoleo-surges-growing-threat-mexico>.

<sup>149</sup> “Huachicoleo: The art of stealing fuel in Mexico,” *Mobility Plaza*, September 24, 2019, accessed February 8, 2024, <https://www.mobilityplaza.org/news/23059>.

<sup>150</sup> “Mexico president says plan to counter fuel theft saves 12 billion pesos,” *Reuters*, April 23, 2019, <https://www.reuters.com/article/us-mexico-fuel/mexico-president-says-plan-to-counter-fuel-theft-saves-12-billion-pesos-idUSKCN1RZ1Y1/>.



**Figure 7: Soldiers Seize Stolen Fuel from Huachicoleros.<sup>151</sup>**

central Mexico, as the nascent CSRL and the large CJNG, who had feuded intensely over access to pipelines in the state of Guanajuato. Levels of fuel theft have since rebounded as oil prices recovered after the Covid-19 pandemic, but the practice is more widely distributed.

But this entire story could not have happened without their specific historical context. Huachicol's profitability, broad geographic distribution, and enormous popularity among criminal organizations owe themselves to the innovations of one cartel in particular, which dramatically increased the practice's efficiency and scale. This group was the Zetas, an especially violent and capable organization in Mexico's northeast.

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<sup>151</sup> Calderón, "Huachicoleros on the rise in Mexico."

#### 4.4 Zetas, Inc.: The Entrepreneurs of Modern Huachicol

The Zetas, born as a sub-group of the Gulf Cartel, are a perfect example of how a drug trafficking organization which is dynamic, decentralized, and violent can expand its revenue streams into new areas, including environmental crime. Their rise also, not coincidentally, exemplifies the hazards of the Kingpin Strategy. By their last days as a unified entity in the mid-2010s, the Zetas had massively diversified their criminal revenue streams, integrating smaller gangs and experimenting with forms of environmental crime new to large cartels.

The Zetas were based in Tamaulipas, the northeastern Mexican state bordering Texas to the north and the Gulf of Mexico to the east. Its location gives it “a natural position to play a key role in drug trafficking and human smuggling going north into the United States and in arms trafficking going south into Mexico.”<sup>152</sup> Tamaulipas is also home to the Burgos Basin, one of Mexico’s largest petroleum fields. The state also enjoys a rich port infrastructure and eighteen land ports of entry into the United States.<sup>153</sup> These geographical features make it a desirable place to engineer a well-organized drug trafficking entity.

This entity was the *Cartel del Golfo*, or Gulf Cartel. The organization that would become the Gulf Cartel emerged in the border city of Matamoros during the 1930s, where it first ran illegal liquor into the United States under Prohibition. It thus possessed considerable expertise in smuggling, which it soon extended to “cigarettes, clothing, cars, machinery, and electronic devices.”<sup>154</sup> Interestingly, the organization proved itself an early example of the criminal diversification at issue, as after Prohibition ended the group took advantage of its existing institutional infrastructure to expand into gambling, prostitution, and car theft, which were outside its original “portfolio.” It also established a strong network of political patronage to

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<sup>152</sup> Guadalupe Correa-Cabrera, *Los Zetas, Inc.* (Austin: University of Texas Press, 2017), 15.

<sup>153</sup> Correa-Cabrera, *Los Zetas, Inc.*, 17.

<sup>154</sup> Correa-Cabrera, *Los Zetas, Inc.*, 18.

protect itself, compromising municipal and state governments. By the 1980s, the flow of narcotics through Tamaulipas incentivized the group to reorient as a drug cartel, which it did successfully. As its lucrative trade routes attracted rivals, however, Gulf's leadership sought to create an armed wing able to protect its business interests, worth \$20 billion annually by the end of 1995.<sup>155</sup>

In the late 1990s, this formation was constituted: the Zetas. Gulf chief Osiel Cárdenas Guillen wanted the best, soldiers able to defeat the "Federation" of rival drug traffickers aligned against him. Demonstrating the depth of its ability to corrupt state institutions, the Gulf Cartel initially recruited thirty-one members of the *Grupo Aeromóvil de Fuerzas Especiales*, "elite airborne Special Forces who [were] trained for the purposes of locating and apprehending drug cartel members."<sup>156</sup> After drug kingpin Cárdenas Guillen was extradited to the United States in 2007, however, the Zetas rapidly increased their own autonomy. This ultimately led to a violent break from the Gulf Cartel in early 2010.<sup>157</sup> Exceptional violence resulted in Tamaulipas and neighboring Nuevo León, again showing the carnage resulting from criminal fragmentation.

Upstart criminal organizations like the Zetas, however, no matter how well-led and well-equipped, begin locked out of existing criminal and patronage networks. This means that they "have lower profit margins from drug-trafficking, so they may have a comparative advantage in other criminal sectors, such as large-scale oil thefts."<sup>158</sup> Similarly to any other competitive market, newcomers to organized crime must innovate more extensively in order to expand over established competitors. The Zetas' decentralized structure gave them an advantage in this, as they worked in loosely-connected cells and rings and easily specialized local groups,

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<sup>155</sup> Correa-Cabrera, *Los Zetas, Inc.*, 20.

<sup>156</sup> Campbell, "Los Zetas: operational assessment," 56.

<sup>157</sup> Correa-Cabrera, *Los Zetas, Inc.*, 33.

<sup>158</sup> Battiston et al., "Fueling Organized Crime," 2.

including smugglers and huachicoleros. The Zetas' area of operation rapidly expanded north into the U.S. and south into Central America, connecting with and incorporating less-organized and smaller criminal bands.<sup>159</sup> The Zetas also built a reputation for a willingness to hold valuable plazas at any cost, and areas where they operated, even when they still cooperated with the Gulf Cartel, “experienced a dramatic increase in drug-related violence.”<sup>160</sup> The Zetas' penchant for seizing territory and communicating their presence through spectacular violence led to an upward spiral in drug-related homicides in 2005 and 2006, likely contributing to the Mexican government's initiation of the War on Drugs in the first place. Regardless, it is clear that splinter factions like the Zetas must find alternative revenue streams and stake their claims to prestige and territory in the face of incredibly powerful opponents in order to survive in their competitive criminal niche.

Their success in and style of innovation, even while enduring state repression, demonstrated their profit-minded, almost corporate organizational character. Forced to differentiate themselves from the Gulf Cartel, with whom they were bitterly at war after 2010, The Zetas pioneered a “model to inflict terror and violence with the aim of extending their control over larger territories.”<sup>161</sup> This aim was not senseless or ideological, however. As one Zeta operative said, “We also have rules. We're like a business.”<sup>162</sup> Although the Zetas most certainly still trafficked drugs, they also desired to cement physical control over large areas and extract rents from them. Their degree of control enabled them to expand the size of their criminal portfolio to include various new activities.<sup>163</sup> In particular, it is worth noting that this behavior laid the foundation for diversification into eco-crime. Their behavior of monopolizing territorial

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<sup>159</sup> Campbell, “Los Zetas: operational assessment,” 60-61.

<sup>160</sup> Correa-Cabrera, *Los Zetas, Inc.*, 23-24.

<sup>161</sup> Correa-Cabrera, *Los Zetas, Inc.*, 35.

<sup>162</sup> Quoted in Correa-Cabrera, *Los Zetas, Inc.*, 56: “Nosotros también tenemos reglas. Somos como una empresa.”

<sup>163</sup> Campbell, “Los Zetas: operational assessment,” 70-71.

control has precedent in the literature on green criminology, as some scholars have found that “criminal organizations seek to enhance their control over municipalities with access to revenues from natural resources.”<sup>164</sup> The Zetas’ attention in this regard quickly turned to oil and gas extraction, whose operations in Tamaulipas and the neighboring states of Nuevo León and Veracruz were worth billions of dollars annually.

They quickly turned to securing these petroleum resources. As the War on Drugs carried on at full steam, increasing Zeta losses on their numerous smuggling routes into the United States, they began to seriously target Pemex. Midstream pipelines also stretched through Tamaulipas from Mexico’s primary refining areas in its central regions to the United States. The Zetas, as well as rivals like the Gulf Cartel, were thus incentivized to “try to gain access to [these] key infrastructures to increase their economic benefits and achieve tactical advantages” over each other.<sup>165</sup> Hitting the state unprepared, their profits ballooned, and the size of their criminal networks expanded to keep up with the volumes they stole. As early as 2009, their corrupt impact was being felt even in the United States, where they “used false import documents to smuggle at least \$46 million worth of oil in tankers to unnamed U.S. refineries.”<sup>166</sup> Illegal taps on pipelines rose substantially from their 2001 level of 132 annually, but did not surpass 500 per year even in 2010, despite the profits huachicol was bringing in for the Zetas and the Gulf Cartel, who had quickly followed the Zetas’ example.

Despite these modest levels, however, these two criminal organizations showed that their existing “assets” of the capacity to utilize violence and control rural territory could be effectively transitioned to a criminal industry that was new to Mexico. Combined in particular with the

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<sup>164</sup> Herrera and Martinez-Alvarez, “Diversifying violence,” 11.

<sup>165</sup> Macías-Medellín and Ponce, “Strategic Resources for Drug Trafficking Organizations and the Geography of Violence: Evidence from Mexico,” 1-2.

<sup>166</sup> “Feds Bust Mexico-U.S. Oil Smuggling Scheme,” *CBS*, August 10, 2009, <https://www.cbsnews.com/news/feds-bust-mexico-us-oil-smuggling-scheme/>.



Templars' successes in appropriating agriculture and mining, the stage was set by the early 2010s for the full flowering of widespread cartel-controlled oil theft and the violence it would bring in Mexico's central states, the refining heart of the country.

#### *4.5 Black Gold, Blood Red: The CSRL, the CJNG, and the War for Central Mexico's Oil*

In 2019, Mexico's homicide rate fell from its peak the year before to 31,688. The state with the most that year, however, was a surprise: Guanajuato.<sup>167</sup> Although violent homicide had been steadily rising in the state since the War on Drugs began, 2017 marked the beginning of an entirely different level of internecine violence. From 207 homicides in 2006 and 1,096 in 2017, killings exploded to 2,609 in 2018.<sup>168</sup> They reached 3,211 in 2019.<sup>169</sup> This stunning peak in homicides at fifty-four per 100,000 coincided with two other factors. The first was an oil price shock of nearly 25%.<sup>170</sup> The second, likely more crucial one was the outbreak of open war between the Cartel Santa Rosa de Lima (CSRL) and the CJNG in October of that year.<sup>171</sup> The CSRL, already very much transformed into an eco-crime organization, attempted to completely dominate the region's oil theft racket. This move had shocking consequences for Guanajuato and its adjacent states in terms of resource theft, environmental degradation, and sheer human cost.

Although the Zetas had already fractured by this point, their expertise in intimidating petroleum industry workers, stealing fuel from pipelines, and misappropriating hydrocarbon transportation infrastructure had only spread. The primary leader of the CSRL perfectly

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<sup>167</sup> Gerardo Reyes Guzmán, Abraham Sánchez Ruíz, and Perla Esperanza Rostro Hernández, "Guanajuato: A Struggle to Control Oil Theft," *Academic and Applied Research in Military and Public Management Science* 20, Special Edition (2021), 53.

<sup>168</sup> Fabrizio Lorusso, "Guanajuato: Tendencias de la Violencia, las Desapariciones y los Homicidios," *Perspectivas locales y federales sobre la inseguridad*, Observatorio sobre Desaparición e Impunidad en México, 47.

<sup>169</sup> Guzmán, Ruíz, and Rostro Hernández, "Guanajuato: A Struggle to Control Oil Theft," 53.

<sup>170</sup> Guzmán, Ruíz, and Rostro Hernández, "Guanajuato: A Struggle to Control Oil Theft," 54.

<sup>171</sup> Redacted, "¿Cuándo y cómo surgió el Cártel de Santa Rosa de Lima?," May 3, 2019, <https://www.eluniversal.com.mx/nacion/seguridad/cuando-y-como-surgio-el-cartel-de-santa-rosa-de-lima/>.

demonstrates this horizontal transfer of skills. His name is José Antonio Yépez Ortiz (alias *El Marro*, “the Sledgehammer”), and he likely began his criminal career as a Zeta.<sup>172</sup> After serving a brief prison sentence, he transferred to the south of the country and joined a gang of huachicoleros in Guanajuato in 2014.<sup>173</sup> After the much larger and more established CJNG “moved into Guanajuato in 2015 to steal oil for themselves,” many of these groups united, coalescing into the CSRL.<sup>174</sup> Yépez Ortiz assumed leadership of the cartel in 2017 and “declared war” on the CJNG soon after.<sup>175</sup> His conflict with the local cells of the CJNG centered on an industrial corridor around the major Pemex refinery at Salamanca, Mexico’s fourth-largest.<sup>176</sup> The two cartels’ intense competition precipitated shocking bloodshed in the state by 2019 and peaked in 2020 with 4,940 homicides.<sup>177</sup> (At least 2,934 were “organized crime-related.”<sup>178</sup>) The municipalities of Salamanca, León, and Celaya were most severely affected, accounting for nearly 40% of them.<sup>179</sup> Note the figures below, including the extremely high homicide rate in the southern municipalities of Guanajuato, which are intersected by major pipeline infrastructures available to be tapped.

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<sup>172</sup> Guzmán, Ruíz, and Rostro Hernández, “Guanajuato: A Struggle to Control Oil Theft,” 57. Sources debate this point; Jones and Sullivan argue that it is more convincing that Yépez Ortiz was originally a member of the CJNG, but others point to his arrest record and other factors as evidence of connections to the Zetas.

<sup>173</sup> Guzmán, Ruíz, and Rostro Hernández, “Guanajuato: A Struggle to Control Oil Theft,” 57.

<sup>174</sup> Chris Dalby, “Mexico’s Santa Rosa de Lima Cartel Risks Burning Too Bright, Too Fast,” February 15, 2019, <https://insightcrime.org/news/analysis/mexicos-santa-rosa-de-lima-cartel-el-marro/>.

<sup>175</sup> Redacted, “¿Cuándo y cómo surgió el Cártel de Santa Rosa de Lima?”

<sup>176</sup> Nathan P. Jones and John P. Sullivan, “Huachicoleros: Criminal Cartels, Fuel Theft, and Violence in Mexico,” *Journal of Strategic Security* 12, no. 4 (2019), 9.

<sup>177</sup> Statista Research Department, “Number of reported cases of homicide in Guanajuato from 2018 to 2023,” *Statista*, July 5, 2024, accessed July 28, 2024, <https://www.statista.com/statistics/1477203/number-of-homicides-in-guanajuato-mexico/>.

<sup>178</sup> Laura Y. Calderón et al., “Organized Crime and Violence in Mexico: 2020 Special Report,” Justice in Mexico (July 2020), <https://justiceinmexico.org/wp-content/uploads/2020/07/OCVM-2020.pdf>, 49.

<sup>179</sup> Guzmán, Ruíz, and Rostro Hernández, “Guanajuato: A Struggle to Control Oil Theft,” 61.



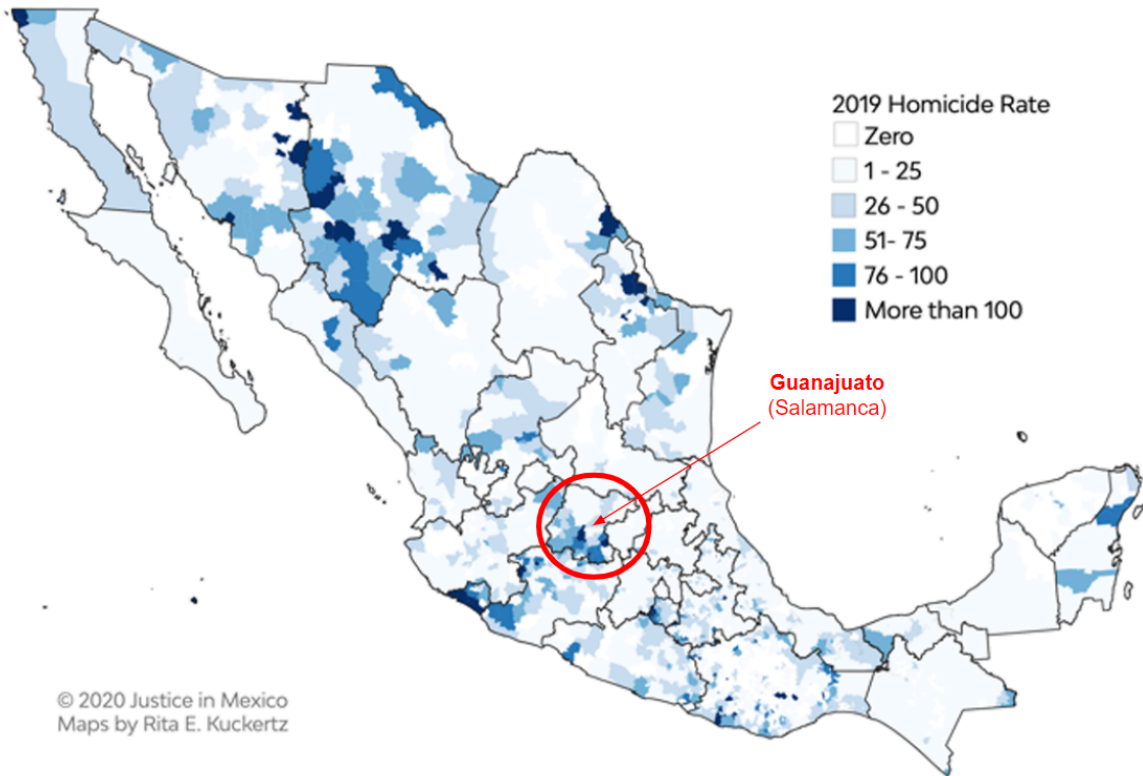


Figure 8: Mexican Municipal Homicide Rate per 100,000 in 2019<sup>180</sup>

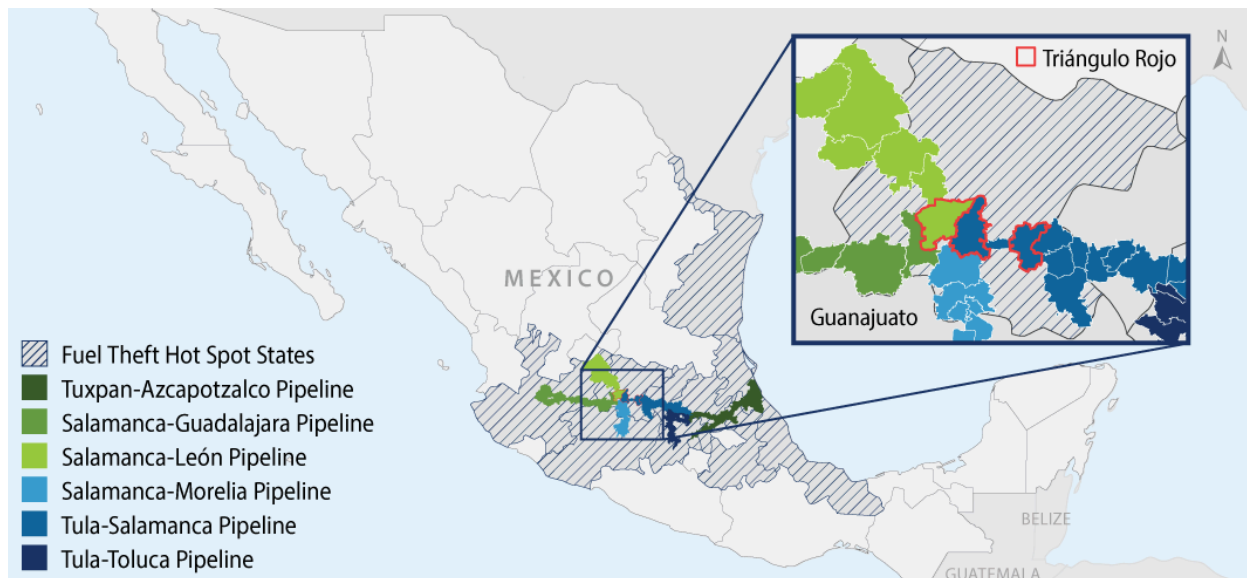


Figure 9: Major Pipelines of Central Mexico<sup>181</sup>

<sup>180</sup> Adapted (in red) from Calderón et al., “Organized Crime and Violence in Mexico,” 10.

<sup>181</sup> Adapted from Amanda Lopez, “Tracking Cartels Infographic Series: Huachicoleros: Violence in Guanajuato Over Control of Illicit Petroleum,” National Consortium for the Study of Terrorism and Responses to Terrorism at the University of Maryland, accessed March 31, 2024, <https://www.start.umd.edu/tracking-cartels-infographic-series-huachicoleros-violence-guanajuato-over-control-illicit>.

The region became so dangerous that it earned the name “the Bermuda Triangle.”<sup>182</sup> The CSRL was relatively small but cohesive and disciplined, and the small towns in which it recruited were strongly supportive of the group. These critical factors, as well as creative use of weapons such as IEDs, led to early successes against the CJNG during 2017 and 2018, and it rapidly expanded, even making preparatory moves into the nearby states of Querétaro and Hidalgo.<sup>183</sup> With its expansion, strength, and local identity, the group began to see the region’s fuel resources in an almost proprietary manner.

This view, however, set the CSRL on a collision course with the state as fuel taps ballooned, violence spread, and popular anger simmered. By January of 2019, President López Obrador had already stated his intentions of addressing this massive spike in violence and the disruption of fuel access and prices it caused and sent the army to crack down on huachicol by patrolling petroleum infrastructure. That was when a *narcomanta*, a public written message ostensibly from the CSRL, appeared threatening the President with violence if he refused to withdraw these men.<sup>184</sup> Despite the CSRL leader’s claim that the message was a false flag, it struck a nerve with the administration, which launched operation “Golpe de Timón” with the aims of limiting the power of the CJNG in Guanajuato, crushing the CSRL, and ending their bloody turf war.<sup>185</sup> Simultaneously, the CJNG struck back, hard. In late 2019, it targeted “the Villagrán Police Station, local officials in León, Celaya, and Irapuato, and state authorities working in Public Security and the Antinarcotics Unit,” killing over a dozen state agents thought

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<sup>182</sup> La Silla Rota, “¿Quiénes son los líderes del Cártel Santa Rosa de Lima y Cártel Jalisco Nueva Generación detrás de la violencia en Guanajuato?,” *La Vanguardia MX*, August 30, 2018, <https://vanguardia.com.mx/noticias/nacional/quienes-son-los-lideres-del-cartel-santa-rosa-de-lima-y-cartel-jalisco-nueva-generacion-KMVG3409333>.

<sup>183</sup> Dalby, “Mexico’s Santa Rosa de Lima Cartel Risks Burning Too Bright, Too Fast.”

<sup>184</sup> Dalby, “Mexico’s Santa Rosa de Lima Cartel Risks Burning Too Bright, Too Fast.”

<sup>185</sup> Redacted, “Cuatro claves para entender la operación ‘Golpe de Timón,’” *La Silla Rota*, July 24, 2019, <https://lasillarota.com/guanajuato/estado/2019/7/24/cuatro-claves-para-entender-la-operacion-golpe-de-timon-192914.html>.

to be cooperating with the CSRL.<sup>186</sup> Under irresistible pressure, the CSRL folded over the next year; its soldiers were arrested or killed, and its access to its huachicol-based revenue was cut off. Yépez Ortiz was arrested in August 2020.<sup>187</sup>

Crucially, the clear defeat of the CSRL in 2020 also marked the end of Guanajuato's most violent period. Within a year, homicides dropped by over 25%.<sup>188</sup> More importantly, casualties in the three municipalities most afflicted, Salamanca, León, and Celaya, dropped the most, showing that the rest of the violence in the state can be differentiated, to a degree, from the deaths specifically caused by huachicol and demonstrating its quantitative impact on the incidence of violence. But this is not all we can determine empirically about huachicol's impacts. Pipeline taps ballooned amidst the violence, and scholars have shown strong correlations between huachicol by the CJNG, CSRL, and other actors and homicides in terms of proximity to pipelines, refineries, and major roads.<sup>189</sup> Franco-Vivanco, Martinez-Alvarez, and Martínez painstakingly show a statistically significant relationship of 1.6 homicides per 100,000 inhabitants for each standard deviation of increase in oil prices.<sup>190</sup> They also find a strong correlation between the presence of pipelines and the spillover of violence into adjacent municipalities where most of their activities are centered, acting "strategically to avoid higher presence of state forces around pipelines."<sup>191</sup> Once again, these organizations are clever and adaptive, and they tend to respond effectively to evolutionary pressures. The violence they inflict is strategic, not cultural, and the CJNG's ability to hold onto the huachicol industry in Guanajuato is both due to its force and its ability to avoid excessively provoking armed response.

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<sup>186</sup> Calderón et al., "Organized Crime and Violence in Mexico," 50.

<sup>187</sup> "José Antonio Yépez Ortiz, alias 'El Marro,'" *InSight Crime*, April 22, 2020, <https://insightcrime.org/mexico-organized-crime-news/jose-antonio-yepes-ortiz-alias-el-marro/>.

<sup>188</sup> Statista Research Department, "Number of reported cases of homicide in Guanajuato from 2018 to 2023."

<sup>189</sup> Guzmán, Ruíz, and Rostro Hernández, "Guanajuato: A Struggle to Control Oil Theft," 62-64.

<sup>190</sup> Franco-Vivanco, Martinez-Alvarez, and Martínez, "Oil Theft and Violence in Mexico," 225.

<sup>191</sup> Franco-Vivanco, Martinez-Alvarez, and Martínez, "Oil Theft and Violence in Mexico," 231.

It must also be emphatically asserted that the Cartel Santa Rosa de Lima was indeed an environmental criminal organization. Under Yépez Ortiz's direction, as well as his predecessor's, the CSRL diversified so wholeheartedly into huachicol that it barely trafficked drugs anymore; it was an entirely transformed criminal organization, an eco-crime outfit. When he delivered a video message threatening the CJNG, it was for making pipeline taps on his turf.<sup>192</sup> Taps in Guanajuato, as well as neighboring Querétaro and Hidalgo, skyrocketed as the CSRL grew, but there is no evidence of greater drug trafficking. And when Yépez Ortiz lashed out at the state for the arrest of his family and inner circle in early 2020, he ordered the (unsuccessful) bombing of the Salamanca refinery.<sup>193</sup> The CSRL's focus on huachicol was so complete that every piece of its self-identification and all of its vital interests were tied to it. Yépez Ortiz's declaration of war on the CJNG was a gambit, an effort to secure total domination, to "reshape their features in order to infiltrate a new criminal market."<sup>194</sup> This market was huachicol in Guanajuato and central Mexico as a whole. Expansion into the frequently-tapped areas of Hidalgo and Veracruz would have been only natural.

And yet the CSRL's war was a disaster for the organization. Of the hundred soldiers that Yépez Ortiz stood beside when he challenged the CJNG, none seems to still be fighting.<sup>195</sup> If eco-crime is a profitable choice growing more prominent in Mexico, then why did this huachicol-centered organization fail so completely on its home territory? First, it was outgunned by the much larger CJNG. Second, its aggressive posture and rhetoric, perhaps combined with clever manipulation by the CJNG, made it the focus of a much more targeted anti-narco campaign than any applied against any other cartel in the country. Especially given López

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<sup>192</sup> Dalby, "Mexico's Santa Rosa de Lima Cartel Risks Burning Too Bright, Too Fast."

<sup>193</sup> Susy Buchanan, "Pemex refinery in Guanajuato target of failed bomb attack," *Mexico News Daily*, June 25, 2020, <https://mexiconewsdaily.com/news/pemex-refinery-in-guanajuato-target-of-bomb-attack/>.

<sup>194</sup> Van Uhm and Nijman, "The convergence of environmental crime with other serious crimes," 545.

<sup>195</sup> Redacted, "El Marro' ya está en el penal del Altiplano," *La Silla Rota*, August 2, 2020, <https://lasillarota.com/guanajuato/estado/2020/8/2/el-marro-ya-esta-en-el-penal-del-altiplano-240602.html>.

Obrador's promises to address huachicol in the area, the CSRL was, politically speaking, in the wrong place at the wrong time. Third, ironically, it was so "diversified" that it gave up the large-scale drug trafficking which remains the most important interest of most of Mexico's cartels. So while diversification into environmental crime and natural resource theft is a beneficial behavior, the CSRL conversely demonstrates why this is the case: a criminal organization with a diversified revenue stream is more mobile and resilient than a monovalent, specialized one.

Huachicol has come a long way from its roots as a peasant act, a simple one of rebellion. In its modern form, it is quite the opposite; it is based on control of land, towns, and access to public petroleum infrastructure. According to Correa-Cabrera:

"When analyzing the patterns of armed conflict, extreme violence, and potential resource extraction after energy reform, we could claim that Mexico's war has not been a war on drugs but a war for the control of territory—an area that is rich in hydrocarbons. Dominating these regions would assure the domination of most of the supply chains in Mexico's energy sector. Mexican [transnational criminal organizations], such as the Zetas, the Knights Templar, and CJNG, began establishing control over many of these zones."<sup>196</sup>

And while Correa-Cabrera never mentions the CSRL, its war with the CJNG and the lives it cost in southern Guanajuato have placed it in this company. With statistically significant findings connecting the invasions of these cartels to death with quantifiable increments based on distance from fuel pipelines and oil price, we reach the natural conclusion that huachicol is indeed a form of environmental crime, possibly now the most significant in Mexico. Huachicol is an eco-crime localized to where petroleum infrastructure moves the resource vulnerably close to the surface, and OCGs diversifying into it will attempt to seize and hold strategic territories, creating intense violence as they assert their claims over locals, the state, and competitors.

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<sup>196</sup> Correa-Cabrera, *Los Zetas, Inc.*, 159.

## 5. Discussion and Conclusion

### *5.1 A New Way of Viewing Mexico's Cartels: Answering the Research Question*

With the end of this story, we have seen the methods by which cartels have diversified into petroleum theft and other eco-crimes, as well as the financial and institutional incentives that led them to do so. These transformations have changed the character of the War on Drugs and impacted the country's conflict and civilian life in distinctive ways.

The Mexican cartels have typically been understood strictly as organized crime elements focused on the drug trade and battling each other and the state primarily for control of drug corridors. My intention in writing this paper was to show that this view, although not completely incorrect, is woefully incomplete. The cartels are not simply drug traffickers with modest intrusions into other criminal enterprises such as extortion and human trafficking. Rather, they are multivalent, almost omnibus criminal formations which have shown themselves to possess both the means and the desire to invade and eventually dominate other legitimate and illegitimate industries, particularly in the "sector" of eco-crime. The simplistic view of cartels as drug trafficking organizations alone has thus become a more serious and consequential mischaracterization over time as cartel transformations deepened between 2006 and today.

The trend of criminal diversification in this way is not new, even in Mexico, where the predecessor to the Gulf Cartel ran rum long before hauling cocaine. But the degree to which Mexico's cartels have wholeheartedly transformed their primary revenue streams and thus their own fundamental organizational structures over the course of the War on Drugs is striking. This process's impact on the country has been enormous. In particular, cartels' new need to seize and hold large geographical areas stands out, as many now aim to control territory in order to profit from their natural resources instead of merely commanding strategic roads and ports for the drug

trade. With such fundamental shifts in character and SOPs in place, understanding either how the cartels affect the livelihoods of ordinary Mexicans or how to construct policy to address their influence necessitates a reconceptualization of who they are and how they now prefer to operate. Huachicol clearly demonstrates their transformation and its impact. Whether carried out by the Zetas in Tamaulipas or the CSRL in the “Bermuda Triangle,” the organized mass-theft of petroleum resources from the Mexican public sphere increases prices of a vital commodity, damages the natural environment, and sows quantifiable increases in violence against civilians. Other eco-crimes have similar effects on agriculture, forestry, and other essential sectors. All of these after-effects have geographically spread from the Drug War’s original hotspots to new areas as cartels chased the profit streams made available by natural resources in these specific locales, expanding the conflict zone and fueling fear and pessimism about the country’s future.

### *5.2 Implications for Policymakers*

The implications of this for a policymaker seeking to reduce the violence of the War on Drugs are many. The first regards the incentive structures of the cartels themselves, which are, in this context, nearly exclusively profit-driven. Local grievances against the federal government or outsiders more generally may play a role in the dynamics and, more specifically, in the self-presentation of some cartels such as the Familia Michoacana-Caballeros Templarios and CSRL, but stated grievances do not always become behavior. Specifically, they are simply exploited by these criminal organizations and used as tools. The role of narcocultura and “huachicultura” in encouraging noncompliance with law enforcement is an interesting social phenomenon worthy of study, but in these contexts it is transparent that cartels exploit and then, in turn, foster these cultural practices as a strategy, not as sincere organizational aims. The

CSRL's cynicism in this matter is particularly clear, given its leader Yépez Ortiz's northern Mexican origins.

The cartels must be understood, then, in terms of what they want and how they self-strengthen. They desire access to profitable criminal markets. But these do *not* stop at drug trafficking, or even traditional peripheral activities like kidnapping and extortion. No industry where their ability to exercise force gives them an advantage is safe from their consideration, no matter how important that industry is to Mexico and the civilian population. Protecting access points to valuable natural resources and making it difficult for corporate actors to collaborate with the cartels can insulate industries like mining and petroleum from their influence. More extensive and effective ways of managing their influence should be studied in this milieu, with the recognition of eco-crime as a driving motivator and their ability to control access to natural resources as a crucial sign and source of cartel strength.

Most importantly, however, the clear implication from this study is that Mexico's War on Drugs is a conflict fundamentally mischaracterized and misunderstood by most observers. These organizations are motivated by profit-seeking, and that much is well understood, but their creativity and willingness to diversify must be appreciated. Regardless of how the conflict in Mexico is framed by any one scholar, whether as a civil war, a police action against organized crime, or an instance of non-state political orders (to name a few), it is no longer a War on Drugs, fought by the government; it is a War on the Environment (and public access to it), fought by the cartels. To correct our view, we must keep a view of the conflict's economic foundations, which now broadly include natural resources from food crops and fish to cactus and forests to iron ore and petroleum.



### 5.3 Implications for Conflict Studies

Green criminology has shown itself in the Mexican case to be a relevant and timely addition to the field of conflict studies. Here it has been able to theoretically bridge the gaps between more broadly accepted empirical phenomena in the War on Drugs, including criminal fragmentation, takeover of certain resources and industries, and specific patterns of violence. What else this heightened attention to environmental crime shows, however, is that the mobile, brutal, and entrepreneurial cartels are driven, primarily, by “greed,” rather than “grievance.” Apparent loyalty to or affiliation with a specific region or town is immaterial; especially when discussing eco-crime, where the same local communities cartel operatives identify as affiliated or under their protection are most emphatically *victims* of cartel behavior, focusing on these dynamics of grievance and distinctiveness is accepting cartel propaganda as pre-existing social facts, ignoring the body of research showing them to be intensely profit-seeking organizations.

In addition, we may make a more theoretical, general contribution, which is threefold. First, conflicts, especially where natural resources are at stake, may quickly complexify from their initial impetuses (regardless of what they may be) as armed groups target the available revenues offered by those resources, which may aid in their self-perpetuation. The original purposes or structures of these groups may change, and they may move their areas of operations to concentrate on regions where natural resources are extracted and refined or agricultural commodities are grown. We would do well to expand this literature with more specific analyses on how potential access to natural resource revenues impacts armed groups’ presence, resilience, and behaviors in varying situations of state stability and considering a variety of resources.

Our second contribution is more general: eco-crime presents a lucrative diversification opportunity for armed groups. Environmental crimes, especially the theft of natural resources,

cannot be studied in a vacuum apart from other, more traditional behaviors by violent armed groups. Agricultural lands, dense forests, and ore-rich hills offer non-state entities substantial incentives to change their behavior in order to expropriate their resources' revenues from whosoever may legitimately profit from them (or, in the case of protected areas, from the natural patrimony of humanity). These revenues then enable further transformations by the group and increase its capacity to carry out violence against other groups, the state and its agents, and the civilian population. Consequently, OCGs must be evaluated in terms of their diversification into eco-crime. Green criminology in the context of violent internecine conflicts should not be isolated from more mainstream conflict studies, and environmental crimes need to be understood as part of a set of behaviors and strategies utilized by armed groups. Their study should not be relegated to a cadre of scholars of ecocide.

Our third contribution is less a specific finding and more an observation for the entire field of conflict studies. The cartels teach us a great many points to consider concerning armed criminal groups. A crucial one is on the nature of armed groups' incentives toward violence. The cartels are moved by profit motive. The history of these organizations demonstrates this fact, from the Gulf Cartel to its rebellious affiliate, the Zetas, who pioneered organized huachicol. These transitions were to chase profit and fund greater capacities for violence, which in turn enabled future exploration of other revenue sources. When other armed groups, such as the Familia Michoacana, encountered the Zetas, they often termed themselves *Matazetas*, Zeta-killers, in order to gain popular support. But this attempt was no humanitarian act; support for OCGs gives them a tactical advantage, able to move troops more freely, extract rents with less resistance, and avoid state repression while allowing it to focus on their rivals. Armed groups like the cartels may thus adopt official reasons to justify these moves, whether framed

ideologically or as reasonable escalation against rivals or the state. The massive prevalence of *narcomantas* demonstrates their desire to communicate externally. Ultimately, however, for scholars to recognize these sentiments as genuine, even primary, motivations, is to simply accept their word at face value. It is not unreasonable to believe that the CJNG and the FMCT hate the Zetas, nor is it unreasonable to believe that many civilians prefer their presence to their enemy's. But it *is* unreasonable to believe that the CJNG violently seized access to oil infrastructure in Guanajuato because they hate the Zetas, or because the government is corrupt, or because they're looking out for *el pueblo*. The narratives of grievance such organizations propagate while stealing a country's natural resources for themselves are exactly that: narratives, stories. They are designed, like any good propaganda, to tap into existing frustrations and anger. Their modern expressions post-date the financial incentives that spur the criminal groups to action in the first place. Even organizations which begin with sincere ideological aims soon prioritize their own self-perpetuation, which, for criminal formations, inevitably requires force, and they supply this force by extracting revenues wherever they can. Eventually, this pattern of profit-seeking and violent self-perpetuation takes over, as happened in Mexico with the *Autodefensas* of Michoacán. This observation applies generally, and not just to Mexico; considerable research on the FARC and ELN in Colombia demonstrate similar reversions to profit-mindedness. Originally, they smuggled drugs; now they also commit large-scale eco-crime.

Good practice in conflict studies should be to focus on what is physically real, such as acts of violence and natural resources. To provide the most useful and relevant information to countries struggling with internecine conflict and NGOs attempting to mitigate or prevent it, scholars of conflict studies cannot become too focused on violence's framing, discourse, and narratives of historical grievance and distinctiveness. These are interesting topics worthy of

study. Nevertheless, they are not, in my view, at the roots of conflicts, particularly conflicts between states and organized criminal groups. It should be the province and duty of scholars of conflict studies to identify the economic circumstances and group ability to deploy violence which preface criminal insurgencies. The capacity of organized non-state groups to perpetrate acts of violence, in terms of revenues and materiel, is the root on which we should focus. In light of the profits gleaned from commercial export agriculture and mass extraction of natural resources, the study of eco-crime becomes a crucial part of this story. Green criminology may therefore aid scholars in determining where conflicts and societies are heading and, hopefully, in finding solutions to issues as serious as Mexico's War on Drugs.

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\* *Journalists writing articles about cartel activities in Mexico often have their names removed from them for their own safety.*