



# Disrupting the Illicit Market



**Data-Informed Recommendations to  
Eliminate Unlawful Cannabis Commerce**





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# Executive Summary

Cannabis legalization has spread across the United States. As of the publication date of this paper, 38 states have legalized medical cannabis, with 23 of these states having legalized cannabis for adult use. Additionally, seven other states allow cannabidiol (CBD) products to contain small amounts of tetrahydrocannabinol (THC). The number of states that outright prohibit cannabis has dwindled down, along with public and political opposition to cannabis reform. This relaxing of cannabis laws across the country did not happen overnight—over two decades have passed since California became the first state in the nation to permit medical cannabis use. Meanwhile, besides a policy of non-interference in state cannabis matters, the federal government has remained steadfast in upholding decades of cannabis criminalization. Unfortunately, this inaction has come at a cost—a pervasive, thriving, and sometimes dangerous illicit cannabis trade.

This modern evolution of unlawful cannabis commerce comprises two sectors: what this paper will denote as the “illicit” market and the “gray” market. The illicit market refers to activities along each step of the cannabis supply chain that occur completely outside of government-issued licenses, permits, regulations, or legality. The gray market consists of unregulated cannabis activity within the context of decriminalization or legal cannabis markets—activities like product diversion and inversion. While both the illicit market and gray market are critical issues to be addressed, large-scale illicit cannabis activities conducted by organized criminal enterprises—as opposed to small-scale individual actions—result in the most societal harm and warrant the prioritized attention of law enforcement.



It is critical to understand the nuanced causes of pervasive illicit cannabis. The primary determinants of this issue are 1) economic in nature—related to consumer behavior, demand, and market conditions—and 2) driven by public policy—or the lack thereof. Federal inaction on cannabis issues has created a widely varying and inconsistent patchwork of cannabis laws across the nation and is largely to blame for the persistence of the illicit cannabis market.

Given the progression of legalization across the country, political trends, and recent guidance from the Biden administration, a new paradigm in federal cannabis reform is inevitable. Policy changes at the federal level will mark a new era in cannabis legality and set the table for streamlined regulatory standards. Most saliently, federal reform will also usher in new tools and possibilities for combatting the illicit market. In this respect, the purpose of this paper is to provide data-informed recommendations for fighting the illicit market under a new framework of federal cannabis reform. Adoption of the policy recommendations provided at the end of this paper will create much-needed pathways for targeting egregious illicit market actors and allow federal and state regulators, law enforcement agencies, and the regulated cannabis industry to work together toward the shared goal of eliminating the illicit market.

## **Policy Recommendations**

### **1. Interoperable Traceability of Products**

To track the movement of legal cannabis products along the supply chain, both within a state's borders and across state lines, a centralized track-and-trace system or similar national inventory control mechanism must be adopted. A standardized national inventory control system will help law enforcement and other stakeholders identify supply chain inversion and diversion and prevent cannabis from being sold in states that have prohibited cannabis sales.

### **2. Other Data Sources to Rapidly Identify Priority Areas**

In addition to using a national track-and-trace system to identify illicit market activity *within* regulated markets, law enforcement and other stakeholders should look to alternative data sources to identify illicit activity happening outside of legal cannabis markets. Examples include data on ecological changes caused by illegal cultivation sites, instances of human trafficking, and illicit consumer demand identified through national consumer surveys.

### **3. Tax Stamps for Product Legitimacy and Identification**

To help law enforcement, consumers, and licensed cannabis businesses distinguish regulated cannabis products from illicit products, the federal government should consider adopting a cannabis tax stamp system. A cannabis tax stamp can be used as proof of payment of a cannabis-specific tax and can help reduce tax evasion and supply chain diversion and inversion.

### **4. Federal Guidelines to Address Inconsistent State Regulations**

The federal government should establish minimum standards for all aspects of cannabis regulation that concern public health and safety, including laboratory testing, packaging and labeling, manufacturing,

and advertising. These minimum standards should apply to all states with legal, medical or adult-use cannabis programs.

### **5. Federal Task Force for Evolving Trends and Changing Market Dynamics**

A federal cannabis task force comprised of policymakers, regulators, social equity and justice experts, law enforcement agencies, public health experts, and cannabis industry representatives should be established and facilitated by the federal government. Drawing on the diverse expertise and experiences of its members, this national task force should focus primarily on cannabis policy development and allocating resources toward important cannabis-related research.

### **6. Ongoing Federal Guidance on Enforcement Priorities**

The relevant federal agencies, including the Department of Justice and the National Office of Drug Control Policy, must provide frequent and up-to-date guidance to local and state law enforcement agencies regarding the enforcement priorities of the illicit cannabis market and related illegal activities.

### **7. Federal Funding for a Comprehensive Approach**

The adoption of the recommendations above, all necessary components of reducing the illicit market, will require additional federal funding. The adoption of any federal cannabis taxes must ensure that a portion of all revenue is allocated toward comprehensive illicit market enforcement efforts.



# Contextualizing the Problem – The Illicit Cannabis Market

The illegal cannabis trade—pervasive in U.S. states both with and without regulated cannabis marketplaces—undermines all goals of a safe, well-regulated cannabis industry and threatens the health and safety of the general public. Cannabis criminalization created the illicit market—a costly policy failure resulting in the arrest and incarceration of millions without any meaningful cessation of the illegal cannabis trade. The federal government’s current position on cannabis, best described as passive prohibition, is at odds with the majority of states that have legalized medical or adult-use cannabis. This direct conflict between state and federal law enables the illicit market to thrive, creates confusion for law enforcement agencies across the country, and puts communities at risk.

The following paper envisions a new paradigm in which federal oversight replaces prohibition, and states can freely choose how to best regulate cannabis within their jurisdiction and, dependent on evolving laws, across their borders. In addition to exploring the scope and root causes of illicit market activity, this paper provides a framework for the data-informed, targeted enforcement of the most egregious and threatening violations within the illegal cannabis market.<sup>1</sup>

While many of the recommendations in this paper focus on enforcement, there is no singular solution or silver bullet to resolve the illicit cannabis problem in the United States. The illicit cannabis market is multifaceted, primarily an issue of nuanced interplays between economics and policy. Taxation, regulatory requirements, and enforcement all play a direct role in the size of the illicit market. Further, given the international scope and ubiquity of the illegal cannabis industry, full eradication is likely not possible within the next decade. The successful reduction of domestic illegal cannabis commerce requires a coalescence of policy change, intergovernmental collaboration, economic action, and proper resources for enforcement agencies across the country.

## Section Highlights

- This paper focuses on the illicit market, which encompasses all illegal commercial cannabis-activity, and the gray market, which includes regulated supply chain inversion and diversion.
- Due to its unlawful and underground nature, quantifying the illicit market is inherently difficult. The size of the illicit market is dependent on many variables, but states with regulated medical and adult-use cannabis programs see a reduction in illicit market activity.
- Although small-scale illegal activity occurs across the country, the majority of the illicit cannabis trade is made up of large, international organized criminal enterprises.

## What Is the Illicit Market?

There are two main classifications of unlawful cannabis commerce: the **illicit market**, and the gray market. For the purposes of this paper, the illicit market refers to the cultivation, manufacturing, distribution, and sale of cannabis without a government-issued license, permit, or approval. Illicit market activity occurs in states with legal and regulated medical and/or adult-use cannabis programs, and states where cannabis is prohibited. The **gray market**, a more nuanced version of illicit trade, refers to the informal or unregulated commercial activity in areas where cannabis is legal or decriminalized. Gray market activity includes *diversion*, where legally grown cannabis is sold through illegal channels, and *inversion*, where illegally grown cannabis is sold at legal, state-licensed retailers. The gray market also includes instances where legal loopholes enable activity that falls outside the spirit and intent of the written law, such as cannabis “gifting” businesses in areas where cannabis is legal, but sales are prohibited.<sup>2</sup>



- 1 While this paper primarily focuses on unlicensed and unlawful commerce occurring outside of state-regulated cannabis markets, illegal activities at the individual level, such as underage cannabis use and impaired driving, are vital concerns for policymakers and law enforcement agencies and should not be diminished. A discussion on law enforcement priorities within the topic of cannabis would be remiss to omit such considerations. As such, this paper follows the release of two reports prepared by the Coalition for Cannabis Policy, Education and Regulation: the first on a [youth-centric prevention framework](#) for cannabis legalization and the second on [driving under the influence of cannabis](#). The central focus of this paper is how enforcement can be developed and optimized through future U.S. cannabis policies.
- 2 Solano, S. (2023, April 19). *Keychains, QR codes and other ‘gifts’ people buy to get pot in D.C.* The Washington Post. <https://www.washingtonpost.com/dc-md-va/2023/04/19/i-71-cannabis-gifting-washington-dc/>

## Estimated Size of the Domestic Illicit Market

The size and scope of the illicit market in America and across the country is methodologically challenging to quantify. The nature of the illicit market itself is intentionally obscure, often underground, and unable to detect origination or final destination. This fact, coupled with the nuances of the legality of products across the United States, makes estimating the volume of illicit activity a futile effort and one with a moving target. The Drug Enforcement Administration seized approximately 5.7 million cannabis plants from U.S. states in 2022.<sup>3</sup> This figure, however, does not comprehensively represent the size of the illicit market at large, as it is for domestic seizures only and is an aggregation of year-end data. Data limited to 1 year, and published a year later, do not effectively show the rapid shifts that the illicit market experiences based on the rate of diffusion of legalization in new states.

To measure the illicit market in real-time and capture anticipated shifts caused by emerging cannabis markets, look to consumer demand. Cannabis Public Policy Consulting, the leading government research-to-practice firm in the United States, issues a quarterly survey to estimate these figures and measure regulated market performance based on consumer behavior and transitions. Below is a heat map from their June 2023 survey, indicating that the size of the U.S. illicit market is, on average, 50% as a function of total cannabis demand.<sup>4</sup>

Importantly, this research uses methodology that classifies demand as illicit or regulated by the self-reported context and source of the cannabis being consumed. For example, cannabis purchased from an unlicensed dealer is classified as illicit regardless of whether or not cannabis is legal in the state. Cannabis purchased at a medical dispensary by consumers who are not registered medical patients is classified as illicit. For states without legal cannabis markets of any kind, all cannabis demand is considered illicit. The illicit market categorization continues for all common sources and scenarios for cannabis access.

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3 United States Drug Enforcement Administration. (n.d.). 2022 final Domestic Cannabis Eradication / Suppression Program statistical report. U.S. Department of Justice (DOJ). <https://www.dea.gov/sites/default/files/2023-04/FY2022%20DCE-SP%20Stats%20%28004%29.pdf>

4 "Cannabis Public Policy Consulting. (2023, June). *Percent of Total Cannabis That is Regulated in the United States* (June 2023). <https://www.cannabispolicyconsulting.com/wp-content/uploads/2023/09/2023-June-RDCOS-Factsheet.pdf>



This type of validated, consumer report research is called empirical research, where data are collected from actual experience as opposed to belief or theory,<sup>5</sup> and may be considered superior to general econometric research that heavily relies on theory.<sup>6</sup> Commonly reported economic studies show an estimation of 80–90% of sales classified as gray or illicit in states like California.<sup>7</sup> Such figures are likely overestimated as a result of not accounting for the complexity of cannabis sourcing and potential policy implications on those sources. For instance, empirical studies identify a plethora of ways to source cannabis and show that consumers often diversify their sources of cannabis. The above heat map indicates that availability of regulated cannabis, be it for purposes of medical or adult-use, plays an important factor on consumers accessing illicit cannabis. It stands to reason that states without legal cannabis markets have more illicit cannabis demand compared to their legal counterparts. However, the fact that illicit cannabis demand prevails within a state does not mean the cannabis products consumed there originate from within the state’s borders. States such as California<sup>8</sup> and Oklahoma<sup>9</sup> have been reported as suppliers for illicit markets across the United States, alongside potential international trade.

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5 Penn State University Libraries. (2023, August 23). *Empirical research in the social sciences and education*. <https://guides.libraries.psu.edu/emp#:~:text=Empirical%20research%20is%20based%20on,than%20from%20theory%20or%20belief>.

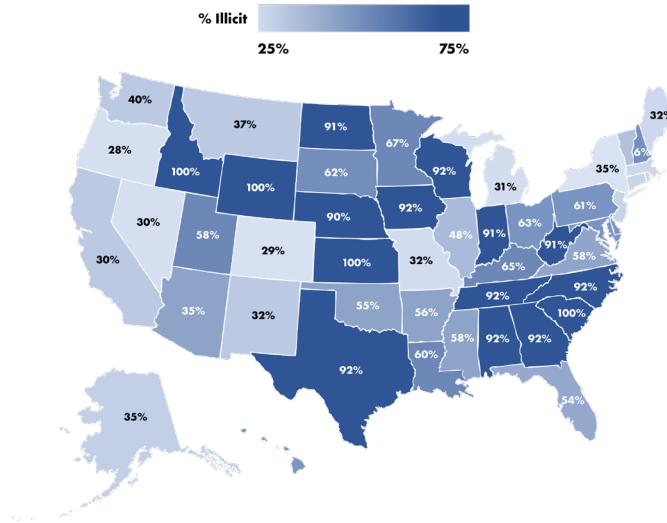
6 Klein, L. R. (1957). The scope and limitations of econometrics. *Journal of the Royal Statistical Society. Series C (Applied Statistics)*, 6(1), 1–17. <https://doi.org/10.2307/2985851>

7 Martin, M. (2021, November 7). 5 years after California legalized weed, the illicit market dominates [Radio broadcast transcript]. In *All Things considered*. NPR. <https://www.npr.org/2021/11/07/1053387426/5-years-after-california-legalized-weed-the-illicit-market-dominates>

8 MJBizDaily Staff. (2023, July 14). *New Mexico yanks cannabis retailer’s license for selling California product*. MJBizDaily. <https://mjbizdaily.com/new-mexico-yanks-cannabis-retailers-license-for-selling-california-product/>

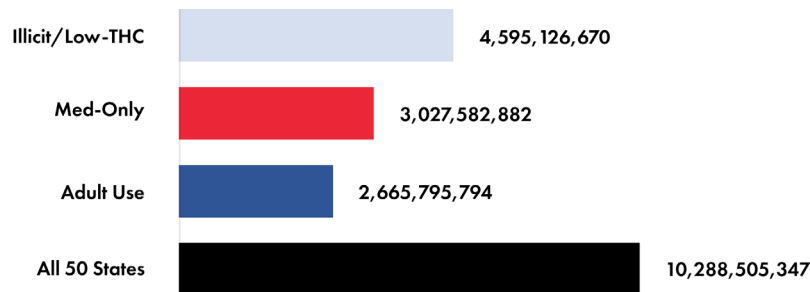
9 Yalch, Garrett. (2023, August 9). *With cheap land and low fees, Oklahoma-grown marijuana fuels the black market in other states*. The Frontier. <https://www.readfrontier.org/stories/with-cheap-land-and-low-fees-oklahoma-grown-marijuana-fuels-the-black-market-in-other-states/#:~:text=Even%20though%20recreational%20marijuana%20has,market%20to%20continue%20to%20prosper>.

**June 2023 RDCOS**  
**% of Total Cannabis That Is Regulated**



As shown in the figure below, these data estimate that over 10 billion grams of cannabis will be accessed by U.S. consumers from the illicit market in 2023. Moreover, the amount of illicit cannabis accessed from states without comprehensive medical or adult-use laws is estimated to exceed the amount accessed in medical and adult-use states by approximately 1.5 billion and 2 billion grams, respectively. It is important to note that these estimates pertain only to accessed or purchased illicit cannabis, not cultivated cannabis. Although even less is known about the supply of illicit cannabis than demand in the illicit market, even the most conservative estimates relative to continued oversupply issues in regulated markets suggest that it is likely that there is two to three times more cannabis being cultivated than the 10 billion grams estimated for demand.

**Estimated 2023 Grams of Illicit Cannabis**  
**By Legal Status in Billions of Grams**



## What Comprises the Illicit Market?

The illicit cannabis market in the United States is multifaceted, dynamic, and comprises many players. Based on the available research, the vast majority of illegal cannabis is assumed to be driven by large, well-funded, and organized criminal enterprises of both domestic and international origin. These large criminal organizations have the resources to cultivate cannabis at a large scale, create resilient distribution channels, and either drive out or directly control smaller operations.

In addition to organized criminal enterprises, the illicit market is propped up by unregulated activities conducted by legal, state-regulated cannabis businesses. These illegal channels are typically characterized as either **diversion**, which refers to legally produced cannabis products redirected from regulated operators into the illicit market for sale, or **inversion**, which refers to illegally produced cannabis products sold at licensed storefronts or legal products from one state sold at a legal storefront in a different state. With interstate commerce prohibited under federal prohibition, inversion is considered illicit despite its legal origination. In the case of product diversion, one study conducted by the National Bureau of Economic Research estimated that in the state of Washington, 11.9% of its legally produced cannabis products were diverted out of state in the period preceding legalization of cannabis commerce.<sup>10</sup> With regard to market inversion, notable instances have occurred as recently as July 2023, when a legal New Mexico cannabis retailer had its state license revoked following the discovered sale of California-produced cannabis products.<sup>11</sup> Given the unlawful nature of inversion and diversion, it is inherently difficult to collect reliable statewide data on the scope of these activities—a problem that can be partially mitigated through robust supply chain tracking.

Illegal and gray market activity characterized as gifting also plays a role in the illicit cannabis market, albeit to a lesser degree. While illegal **gifting** certainly exists outside the scope of regulation and legality, the severity of this activity pales in comparison to large-scale criminal organizations. Especially when considering the often-violent nature of organized crime, it is prudent for law enforcement to focus efforts and associated funding on these organized criminal enterprises.

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10 Hansen, B., Miller, K., & Weber, C. (2017, August). *How extensive is inter-state diversion of recreational marijuana?* [Working Paper]. National Bureau of Economic Research. [https://www.nber.org/system/files/working\\_papers/w23762/working\\_papers/w23762.rev0.pdf](https://www.nber.org/system/files/working_papers/w23762/working_papers/w23762.rev0.pdf)

11 Lee, M. (2023, July 13). *New Mexico revokes license of local marijuana retailer for selling cannabis from California*. AP News. <https://apnews.com/article/new-mexico-revokes-cannabis-license-bfbc29bc4488a3462bf160ba83eb4668>

# Causes of the Illicit Market

## Section Highlights

- Successful reduction of the illicit cannabis market requires a balancing act of economic conditions, policy interventions, and targeted enforcement efforts.
- Unenforced federal cannabis prohibition, coupled with the majority of states having some form of legal cannabis, has created an environment where the illicit market thrives in both legal and prohibition states.
- Permissive cannabis laws with relatively unrestricted markets in certain states have enabled illegal operators to hide in plain sight.
- Enforcement efforts will have limited success unless the legal cannabis market can fully meet consumer demand. The legal cannabis industry must meet the preferences and expectations of cannabis consumers with regards to price, accessibility, quality, and other demand-side factors.

## Supply-Side Factors (Policy)

There are many state and federal policies that have allowed the illicit cannabis market to persist and even thrive. These policies, such as unclear enforcement frameworks, contradictory policies across jurisdictions, and varying cannabis regulations from state to state, directly influence the availability of illicit cannabis supply.

### Federal Policy

Among the largest contributing factors to the pervasive illicit cannabis market is the unenforced blanket federal prohibition of cannabis. While state governments across the country have relaxed the criminality of cannabis and authorized commercial activities en masse, the federal government in its current position has created a policy void that has allowed the illicit market to become a feature of U.S. cannabis legalization rather than an exception. In this respect, there are two paths available to the federal government: enforce national prohibition on cannabis or revise federal law to reflect the reality that exists in more than half of the country. As the former is simply untenable in the modern era, in addition to being contradictory to a large evidence base, changes to federal cannabis law are warranted.<sup>12</sup> Continuation of the status quo—indifference and inaction—allows illicit operators to further entrench themselves in illegal activities that harm society.

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<sup>12</sup> Smith, C., & Snider, J. (2022). How federal cannabis legalization can restore police legitimacy and enhance public safety. *R Street Policy Study*, No. 261. <https://www.rstreet.org/wp-content/uploads/2022/07/Final-Study-No.-261.pdf>

## State-Level Policy

Due to the lack of federal oversight and guidance, state-level cannabis policy has become a disjointed patchwork of laws with wide variances. These widespread inconsistencies have ultimately created an environment in which illicit criminal organizations exploit the differences in state laws, fueling unregulated cannabis activities. For example, one state may have more relaxed potency restrictions on cannabis products than its neighboring state, creating the conditions for operators to purchase sought-after cannabis with higher potency from one jurisdiction and illegally sell that product in another jurisdiction where said products are unavailable. Although there are differences between industries, this parallels a common tax evasion scheme within the tobacco industry, wherein individuals purchase tobacco products in a state with lower tobacco taxes and illegally sell them for a profit in states with relatively higher tobacco taxes.<sup>13</sup> Discrepancies in state-level tobacco taxes have inadvertently created an economic incentive for bad actors to sell tobacco products unlawfully and avoid paying taxes.



Consider the example of product track-and-trace systems, which allow state regulators and law enforcement to access records regarding cannabis produced, distributed, tested, and sold. Not all states require track-and-trace systems, and rules vary widely among states that do have this requirement. In a case where a state government has not mandated the implementation of such a system, such as the medical cannabis programs of Maine or both the medical and nonretail adult-use programs of Virginia, the cannabis supply chain becomes permeable, allowing legally produced products to be diverted toward illicit channels, with no traceable records to confirm or deny such diversions. Additionally, some states across the country have established much more permissive cannabis markets with far fewer restrictions, such as Oklahoma or New Mexico. In such instances, markets with uncapped cannabis business licenses can lead to a proliferation of retail storefronts and other businesses up the supply chain. This unchecked spread of cannabis access points—while potentially desirable from an individual business perspective—makes illicit operations much more difficult to identify against the backdrop of hundreds (if not thousands) of licensed places of business.

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<sup>13</sup> [United States Government Accountability Office. \(2011, March\). Illicit tobacco: Various schemes are used to evade taxes and fees \[GAO-11-313\]. https://www.gao.gov/assets/gao-11-313.pdf](https://www.gao.gov/assets/gao-11-313.pdf)



## Demand-Side Factors (Consumer Behavior and Demand)

While supply-side factors are largely policy-oriented, the characteristics comprising demand-side factors are behaviors that drive the consumption of the available products. Importantly, illicit cannabis markets fill the gaps for consumers who live in areas without access to regulated cannabis or find it to be a superior source of cannabis. As long as demand for cannabis exists and is not being met by a regulated market with features desired by consumers, illicit markets will ultimately prevail. However, by studying these demand-side factors in tandem with the employment of targeted enforcement, federal and state policies can attempt to achieve a dynamic where consumers may prioritize regulated cannabis.

Demand-side factors have emerged from decades of human psychological research, including price, delay, effort, quality, and factors associated with perceived punitive consequences. Important to note is that these demand-side factors do not necessarily function independently of each other nor independently of supply-side factors. The following list is in no particular order, and the impact of each factor is context dependent. At a minimum, these demand-side factors should be acknowledged to reach a more comprehensive understanding of the illicit market.

*Price.*<sup>14</sup> Consumer demand is typically price sensitive, meaning that as the price of a commodity increases, the demand decreases. With all other factors being equal, there is little reason to purchase a more expensive item when the same item can be obtained for a lower cost elsewhere. For example, because unregulated operators do not pay cannabis taxes or adhere to expensive regulatory requirements, they can often sell cannabis for less than what is available through licensed dispensaries. This creates a clear incentive for consumers to seek out cheaper products from illicit sources.

*Delay.* A highly replicable trend in consumer demand is that individuals prefer to purchase from alternatives where they can obtain the product more quickly when all else is equal. Take, for example, the common experience of choosing shipping methods when ordering products online. Consumers will readily pay some small monetary amount to “upgrade” to expedited shipping to receive their package sooner (in other words, reduce the delay in receiving the item).

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14 Riley, S., Vellios, N., & van Walbeek, C. (2020). An economic analysis of the demand for cannabis: some results from South Africa. *Drugs: Education, Prevention and Policy*, 27(2), 123–130. <https://doi.org/10.1080/09687637.2019.1581139>

*Effort.* The idea of effort as an economic factor is closely tied to the delay factor. Here, consumers will typically choose alternatives that are easier and thus not only less effortful but usually quicker. As another example, imagine the consumer needing a grocery item for a recipe they are cooking. That individual may be more likely to choose a gas station down the street instead of the grocery store farther away, even knowing that the item may be more expensive at the gas station. Choosing the closest gas station instead of the farther grocery store reduces the effort and time it takes to obtain the item.

*(Perceived) Quality and safety.*<sup>15</sup> When other economic factors are equivalent, consumers will prefer higher quality and safer products over less safe, lower quality products. Importantly, the consumer's perception influences the idea of quality and safety, even if the perception does match reality.

*(Perceived) Punitive consequences.* A final demand-side factor is the perceived or actual likelihood of punitive consequences resulting from purchasing from a given retailer. Research in the criminal justice space shows that certainty of punishment is a strong factor in deterring individuals from committing illegal acts (in this case purchasing cannabis from an illicit supplier) while severity of the punitive consequence is less likely to deter such action.<sup>16</sup>

For the consumption of other consumer goods, it can be assumed that, in most cases, there are multiple alternatives from which a consumer can purchase the products (for example, one can shop at Target or Wal-Mart) and can pit these economic factors against one another. However, in the context of the cannabis market, there are restrictions in some of the assumptions, such as whether cannabis is regulated for adult use, regulated for medical use, or illicit in the eyes of the state. Notably, illicit cannabis is less expensive than regulated cannabis. In states without regulated options, but with decriminalization policies that reduce the likelihood of criminal enforcement for purchasing or transporting illicit products, perceived punitive consequences may be low enough that consumers choose the illicit market, or at least diversify sources such that illicit markets still have enough demand to prevail.

Enforcement of illicit cannabis markets is a distinctly different issue from the consideration of supply-side and demand-side factors, yet the two are related. An optimal balancing of both components, bolstered by enforcement, can effectively eliminate the illicit market.

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15 Červený, J., & van Ours, J. C. (2019). Cannabis prices on the dark web. *European Economic Review*, 120, Article 103306. <https://doi.org/10.1016/j.euroecorev.2019.103306>

16 Earnhart, D., & Friesen, L. (2023). Certainty of punishment versus severity of punishment. *Land Economics*, 99(2), 245–264. <https://doi.org/10.3368/le.030521-0024R1>; Chalfin, A., & McCrary, J. (2017). Criminal deterrence: A review of the literature. *Journal of Economic Literature*, 55(1), 5–48. <https://doi.org/10.1257/jel.20141147>

# Why The Illicit Market Is A Problem

## Section Highlight

- The illicit cannabis market is rampant with violent crime and human rights violations, including robbery, murder, and human trafficking.
- Unregulated cannabis products are untested and untracked, putting consumers at risk of serious illness.
- The illicit cannabis market, particularly illicit cannabis cultivators located on public lands, causes significant damage to the environment, including destroying habitats, polluting and diverting protected waterways, using banned pesticides and other chemicals, accumulating thousands of pounds of litter, and killing local wildlife.
- The illicit cannabis market undermines efforts to establish a regulated cannabis marketplace in states with legal medical and adult-use programs and makes up a significant loss of potential revenue for states.

## Public Safety Risks

While small-scale and individually conducted illicit market activities exist, the most serious and prescient threats to public safety involve large-scale domestic and international organized crime groups. Dangers associated with the illicit market can include human trafficking as well as violent crimes resulting from territorial disputes, robberies, and competition between crime groups. Many illicit market operators use human trafficking victims as a source of labor, often preying on foreign nationals and transporting people across the country against their will or under false pretenses to work on cannabis cultivation and processing operations for little to no pay.<sup>17,18</sup>

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17 Soboroff, J., Koss, M., Lee, J., Lozano, A. V., & Heikkila, A. (2022, September 8). *Raids on black market cannabis farms uncover human trafficking victims*. NBC News. <https://www.nbcnews.com/news/us-news/raids-black-market-cannabis-farms-uncover-human-trafficking-victims-rcna46787>

18 Guardian staff and agencies. (2023, July 28). Trafficking victims endured 'horrible conditions' in US illegal drug operation. The Guardian. <https://www.theguardian.com/us-news/2023/jul/28/california-human-trafficking-illegal-marijuana-business>

Many illicit market players operate heavily armed facilities, often with illegal firearms.<sup>19</sup> Due to the criminal nature of these groups, violent crimes such as robbery, assault, murder, kidnapping, and more can occur, all posing serious risks to public safety and law enforcement. In one 2020 incident that took place in California, seven people were killed at an illicit cannabis processing facility that was suspected of being operated by an organized crime group.<sup>20</sup> In another instance, a confrontation at an illegal Oklahoma cultivation site led to the murder of four people.<sup>21</sup> Considering the extreme risk to both law enforcement officers and the general public, enforcement resources should prioritize disrupting and preventing these egregious actors.

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19 Beckley, B. (2010, June). *Keeping safe if you come across a marijuana grow site*. Forest Service, U.S. Department of Agriculture (USDA). [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/stelprdb5167045.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5167045.pdf)

20 Spagat, E., & Blood, M. R. (2020, September 9). *7 killed at large-scale California marijuana operation*. USA Today. <https://www.usatoday.com/videos/news/nation/2020/09/09/seven-killed-illegal-marijuana-farm/5755844002/><https://www.usatoday.com/story/news/nation/2020/09/09/7-killed-california-marijuana-operation/5755674002/>

21 Lenthang, M. (2022, December 5). *Man demanded \$300K before killing 4 Chinese nationals at Oklahoma pot farm, prosecutors say*. NBC News. <https://www.nbcnews.com/news/us-news/man-demanded-300k-killing-4-chinese-nationals-oklahoma-pot-farm-prosec-rcna60096>

## Public Safety Risks

In addition to the well-known threats to public safety, the illicit market poses less-considered yet significant public health risks by providing consumers with unregulated cannabis products of unknown quality and consistency. Bypassing the important cultivation standards and laboratory testing requirements of the regulated market, illicit products have been shown to contain microbial and heavy metal contaminants above accepted limits,<sup>22</sup> which can lead to significant negative health effects for consumers. For example, a 2019 outbreak of e-cigarette, or vaping, product use-associated lung injury (EVALI) cases spread across the country, resulting in the hospitalization of thousands and the death of over 60 individuals.<sup>23</sup> The EVALI outbreak was strongly linked to vitamin E acetate, an additive commonly used in illicit market vape products. Vitamin E acetate is commonly used in skincare products and is generally accepted as safe when digested but can be harmful when inhaled or combusted.<sup>24</sup> While some states ban the use of vitamin E acetate in cannabis vape products, unregulated illicit market products do not always adhere to safety regulations and industry-accepted best practices, putting consumers at serious risk of harm. It is also worth noting that not all states with a regulated cannabis market ban vitamin E acetate in vape products, highlighting the need for federal minimum safety standards for manufactured cannabis products.

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22 Botelho, D., Boudreau, A., Rackov, A., Rehman, A., Phillips, B., Hay, C., Broad, K., Crowhurst, P., Cockburn, S., Smith, T., & Balanova, B. (n.d.). *Analysis of illicit and legal cannabis products for a suite of chemical and microbial contaminants*. New Brunswick Research and Productivity Council. <https://businessofcannabis.com/wp-content/uploads/2021/10/Comparison-of-Illicit-and-Legal-Cannabis-Samples-1.pdf>

23 Centers for Disease Control. (2020, February 25). *Outbreak of lung injury associated with the use of e-cigarette, or vaping, products*. U.S. Department of Health & Human Services. [https://www.cdc.gov/tobacco/basic\\_information/e-cigarettes/severe-lung-disease.html](https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html)

24 Blount, B. C., Karwowski, M. P., Shields, P. G., Morel-Espinosa, M., Valentin-Blasini, L., Gardner, M., Braselton, M., Brosius, C. R., Caron, K. T., Chambers, D., Corstvet, J., Cowan, E., De Jesús, V. R., Espinosa, P., Fernandez, C., Holder, C., Kuklennyik, Z., Kusovschi, J. D., Newman, C., Reis, G. B., ... Lung Injury Response Laboratory Working Group (2020). Vitamin E acetate in bronchoalveolar-lavage fluid associated with EVALI. *The New England Journal of Medicine*, 382(8), 697–705. <https://doi.org/10.1056/NEJMoa1916433>



Further, data from Cannabis Public Policy Consulting’s quarterly national survey shows that the risk of cannabis-related harms is higher in states where cannabis is illegal compared to states where cannabis is regulated.<sup>25</sup> Individuals living in states with legal cannabis marketplaces had, on average, older age of first cannabis use, fewer days of past-month cannabis use for those 16–20 years old, and fewer days of driving under the influence of cannabis in the past month. Regulations are essential to ensure consumer products, including cannabis, are responsibly produced and safe for consumption. The lack of regulations and oversight for illegally grown and manufactured cannabis products means safety is not guaranteed, putting consumers at serious risk.

## Environmental Concerns

Illicit cannabis cultivators are responsible for widespread environmental damage. Existing outside the regulated and strictly enforced cannabis market, large-scale illicit operators have no incentives to practice environmentally sound cultivation methods. Common ecological damages that can occur from illicit outdoor cultivation include illegal river and stream diversions, habitat destruction, and soil and water pollution resulting from unsanctioned use of toxic pesticides, herbicides, and other chemicals.

In California,<sup>26</sup> large-scale illicit cultivation sites—typically associated with large international and domestic organized crime groups—are known to be located deep into the forests of public land. Due to the clandestine and remote nature of these sites, local water sources like streams and rivers are commonly diverted and used for irrigation of the cannabis crop. One study found that some California watersheds have had estimated reductions in water flow up to 23% of their annual 7-day low flow, with other watersheds potentially seeing even higher reductions in water flow.<sup>27</sup> These reductions negatively impact downstream commercial agriculture and can be detrimental to wildlife that are dependent on the water sources.

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25 Sofis, M., & Slade, M. (2022). Cannabis legalization & public health outcomes. Cannabis Public Policy Consulting. <https://www.cannabispolicyconsulting.com/wp-content/uploads/2022/11/Cannabis-Legalization-Public-Health-Outcomes-Fall-2022.pdf>

26 Due to a significant majority of illicit cannabis being grown in California, most of the data on the environmental impacts of illegal operations come from the state.

27 Bauer, S., Olson, J., Cockrill, A., van Hattem, M., Miller, L., Tauzer, M., & Leppig, G. (2015). Impacts of surface water diversions for marijuana cultivation on aquatic habitat in four northwestern California watersheds. *PLoS ONE*, 10(3), Article e0120016. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4364984/#:~:text=Our%20results%20indicate%20that%20water,impacted%20of%20the%20study%20watersheds>

Aside from water diversions, illicit cultivators are also responsible for vast amounts of pollution, including waste products and toxic chemicals. In 2012 alone, the U.S. National Forest Service discovered 315,000 feet of plastic hose, 180,000 pounds of trash, and 19,000 pounds of fertilizer across more than 300 illegal cannabis grow sites in California.<sup>28</sup> Criminal groups that conduct these illicit operations are also known to leave behind or dump large quantities of pesticides, herbicides, fungicides, and other chemicals into soil and waterways, poisoning wildlife, contaminating water sources, and potentially resulting in expensive cleanup costs incurred on taxpayers.<sup>29</sup> By targeting law enforcement resources to these large-scale organized crime operations, the most significant and egregious environmental damages from illicit cannabis can be remedied and avoided in the future.

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28 California Council of Land Trusts. (2017, January). Environmental impacts of illegal marijuana cultivation. Conservation Frontiers, 6.1. [https://www.calandtrusts.org/wp-content/uploads/2014/03/CCLT\\_Frontiers6.1.2017\\_final.pdf](https://www.calandtrusts.org/wp-content/uploads/2014/03/CCLT_Frontiers6.1.2017_final.pdf)

29 Watts, G. (2022, August 3). Police: Over 10,000 lbs of illegal marijuana and evidence of human trafficking on grow site near Sprague River. KDRV-TV Newswatch 12. [https://www.kdrv.com/news/police-over-10-000-lbs-of-illegal-marijuana-and-evidence-of-human-trafficking-on-grow/article\\_434634ec-1367-11ed-9656-333f30718f73.html](https://www.kdrv.com/news/police-over-10-000-lbs-of-illegal-marijuana-and-evidence-of-human-trafficking-on-grow/article_434634ec-1367-11ed-9656-333f30718f73.html)

## Undermining A Legal Market

Just as important as the serious public health, environmental, and safety concerns is the fact that the illicit cannabis market prevents a safe, regulated cannabis marketplace from fully taking root. For example, although California legalized adult-use cannabis in 2016, regulated sales only account for 66% of the total cannabis market.<sup>30</sup> Federal prohibition has led to a robust underground cannabis industry that many consumers are comfortable navigating, giving state lawmakers and regulators in legal states the unique challenge of shifting consumption toward the regulated industry. Considering illicit cannabis operators do not adhere to the often expensive and cumbersome taxation, track-and-trace, packaging, and laboratory testing requirements that legal cannabis businesses do, products found on the illicit market can be significantly cheaper for consumers. Because of the lower prices and ubiquity of unregulated cannabis, licensed operators face notable difficulties competing with the illicit market and managing a viable business. This tough and unfair competition forces many licensees to shutter their businesses and, in some cases, may even lead to licensed operators turning to the illicit market.

## Loss of Tax Revenue for Local and State Governments

States with regulated medical or adult-use cannabis sales lose a significant amount of potential tax revenue to the illicit market every year. For example, New York is estimated to lose millions in potential tax revenue due to illegal cannabis sales while the state works to prop up the legal cannabis industry.<sup>31</sup> Cannabis taxes help fund critical programs and initiatives—often intended to target the externalities associated with cannabis use—such as health care, substance use disorder prevention and treatment programs, law enforcement, wildland restoration, public schools, research, social equity programs, and public awareness campaigns. Displacing the illicit market and shifting consumption to the regulated cannabis industry could result in millions of additional tax dollars for local and state governments every year.

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30 TO BE ON WEBSITE SHORTLY

31 Finley, L., (2023, June 22). *NY to lose States with regulated medical or adult-use cannabis sales lose a significant amount of potential tax revenue to the illicit market every year. For example, New York is estimated to lose millions in potential tax revenue due to illegal cannabis sales while the state works to prop up the legal cannabis industry. Cannabis taxes help fund critical programs and initiatives—often intended to target the externalities associated with cannabis use—such as health care, substance use disorder prevention and treatment programs, law enforcement, wildland restoration, public schools, research, social equity programs, and public awareness campaigns. Displacing the illicit market and shifting consumption to the regulated cannabis industry could result in millions of additional tax dollars for local and state governments every year. millions in cannabis tax revenue due to illegal market.* Spectrum News NY1. <https://www.ny1.com/nyc/all-boroughs/news/2023/06/22/ny-to-lose-millions-in-cannabis-tax-revenue-due-to-illegal-market>

# Current State of Cannabis Enforcement

## Section Highlight

- Enforcement of the illicit cannabis market varies widely between states where cannabis is legal and states where cannabis is prohibited.
- Although cannabis is still an illegal Schedule I substance, the enforcement of cannabis-related crimes is not a priority of the federal government.
- The Cole Memo led to confusion among law enforcement agencies across the country with respect to enforcing cannabis-related crimes.

## How Is Enforcement Currently Conducted in Legal States?

In states with regulated medical or adult-use cannabis markets, the primary modes of enforcement become licensing and oversight from state regulatory agencies. These regulatory agencies often create specialized enforcement teams tasked with inspecting legal cannabis operations and investigating any reports or discoveries of unsanctioned activities. In the example of Michigan, the state's Cannabis Regulatory Agency contains an Enforcement Division tasked with, among other responsibilities, "[ensuring] licensees remain in compliance with the acts and rules for a successful and safe industry for all" and "[investigating] complaints of noncompliance with the statutes and administrative rules that are filed against licensed marijuana businesses."<sup>32</sup> Generally, these enforcement activities occur outside the criminal code and deal primarily in fines and other business-related penalties, such as license suspension or business closure. The pursuit of criminal charges is usually reserved for the most egregious illicit activities and must involve law enforcement with varying jurisdiction. This interagency collaboration requires robust stakeholder outreach and engagement to ensure effective communication and the use of appropriate procedures.

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32 Cannabis Regulatory Agency. (n.d.). *Enforcement division*. State of Michigan. <https://www.michigan.gov/cra/sections/enforcement-division>

In California, the state's Department of Cannabis Control's enforcement team "focuses its investigations on large-scale operators and criminal enterprises engaging in unlicensed distribution, manufacturing, retail, and indoor cultivation while supporting local and state law enforcement partners with outdoor unlicensed cultivations..."<sup>33</sup> In the unique case of California, where criminal enterprises are notorious for operating outdoor cultivation sites deep into forested public land, state and local law enforcement work closely with federal partners like the U.S. Forest Service to find and eradicate these illicit operations. These partnerships result in increased access to data and easier location of illicit operations. For example, the U.S. Forest Service recently developed new tools to help law enforcement locate illegal cultivation sites.<sup>34</sup> Law enforcement access to legal home cultivation data in regulated states can also allow for more efficient enforcement. In the case of Hawaii, designated law enforcement officers have constant access to an online verification system to inform them of the legal registration status of home-based cannabis grows.<sup>35</sup> Having access to various data sets or information generally allows enforcement to be conducted efficiently where cannabis may be contextualized as legal.

## How Is Enforcement Currently Conducted in Illicit States?

In states without regulated markets, commercial cannabis activity is illegal, and enforcement via the state's criminal code remains the primary method of dealing with illicit operations. In most cases, police utilize a variety of tools as standard practice for discovering illicit cannabis activities. Citizen/informant tips are often used as the basis for receiving a search warrant for a property, or in some cases suspects may consent to property searches. In the case of indoor cultivation, utility bills with abnormally high electricity use are often indicators of illicit grows. In some areas, law enforcement has begun to use thermal-sensing drone and helicopter technology to spot abnormal heat signatures that may result from cannabis grow lights inside a building.<sup>36</sup>

Enforcement in states that have not legalized cannabis is conducted through legal avenues that have been used for decades. An arrest is made of the suspect(s), and the judicial system adjudicates any potential criminal charges and any subsequent convictions under state criminal codes.

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33 Department of Cannabis Control. (2022, July 21). *California cannabis enforcement efforts help protect people, the environment, and the legal market*. State of California. <https://cannabis.ca.gov/2022/07/california-cannabis-enforcement-efforts-help-protect-people-the-environment-and-the-legal-market/>

34 Banegas, D. E. (2018, July 20). *Pot farms pose serious risks to forests, wildlife and human health*. Forest Service, USDA. <https://www.fs.usda.gov/features/forest-service-scientists-do-some-serious-sleuthing-detect-illegal-marijuana-grow-sites>

35 Medical Cannabis Registry Program. (n.d.). *Law enforcement*. Department of Health, State of Hawaii. <https://health.hawaii.gov/medicalcannabisregistry/law-enforcement/>

36 Metcalfe, J. (2013, October 16). *This heat-sensing helicopter can find your illicit marijuana-grow house*. Bloomberg. <https://www.bloomberg.com/news/articles/2013-10-16/this-heat-sensing-helicopter-can-find-your-illicit-marijuana-grow-house>



## How Does Federal Guidance or Lack Thereof Influence Enforcement?

Federal regulation of cannabis dates back to the early 20th century, though the official prohibition of cannabis coincides with the broader War on Drugs and the passing of the Controlled Substances Act of 1970. The classification of cannabis (written as “marihuana”) as an illegal Schedule I substance—the strictest category reserved for substances believed to be highly addictive and have no medical use—is still the law of the land today. What has changed, however, is how the federal government prioritizes the enforcement of cannabis-related crimes.

Historically, the Department of Justice has worked with local and state law enforcement agencies to enforce the Controlled Substances Act and drug-related criminal activity, including cannabis. Given the limited resources of the federal government, state and local law enforcement groups have played an outsized role in investigating and prosecuting regional lower-level cannabis crimes, such as illegal possession or small-scale illicit sales. In 2013, former Deputy Attorney General James Cole issued a memorandum delineating cannabis enforcement priorities of the U.S. Department of Justice (DOJ) and declaring that state-regulated cannabis programs not in violation of the DOJ’s enforcement priorities (i.e., preventing cannabis from crossing state lines) are not of prosecutorial importance.<sup>37</sup> In other words, the federal government would not go after state-licensed cannabis businesses or consumers if they adhered to the DOJ’s current enforcement priorities. This memorandum, colloquially known as the “Cole Memo,” did not grant permission for states to legalize cannabis or engage in cannabis commerce but instead served as a guide for state attorneys general and law enforcement agencies regarding the enforcement of federal cannabis prohibition. The Cole Memo simply outlined the cannabis enforcement priorities of the federal government and encouraged state enforcement agencies to follow suit.

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<sup>37</sup> Cole, J. M. (2013, August 29). *Guidance regarding marijuana enforcement* [Memorandum for all United States Attorneys]. Office of the Deputy Attorney General, DOJ. <https://www.justice.gov/iso/opa/resources/3052013829132756857467.pdf>

The Cole Memo brought clarity to states with legal cannabis programs and the burgeoning cannabis industry, but it simultaneously created confusion for law enforcement agencies trying to navigate the widening gap between state and federal law. As cannabis enforcement was deprioritized by the DOJ, the role of local and state law enforcement became increasingly unclear. Muddying the waters even more, the Cole Memo was rescinded in 2018 by former Attorney General Jeff Sessions under the Trump Administration.<sup>38</sup> Although the revocation did not result in a swift crackdown on state-regulated cannabis programs, evidenced by the 38 states with legal medical or adult-use cannabis, it did exacerbate the confusion surrounding the role of local and state law enforcement agencies in enforcing cannabis-related crimes. Despite a 2022 directive from President Biden to the Attorney General and the Secretary of Health and Human Services to review the scheduling of cannabis, a lack of clarity for local and state law enforcement persists.<sup>39</sup>

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38 Office of Public Affairs. (2018, January 4). *Justice Department issues memo on marijuana enforcement* [Press release]. DOJ. <https://www.justice.gov/opa/pr/justice-department-issues-memo-marijuana-enforcement>

39 The White House. (2022, October 6). *Statement from President Biden on marijuana reform*. <https://www.whitehouse.gov/briefing-room/statements-releases/2022/10/06/statement-from-president-biden-on-marijuana-reform/>  
(For Callout Box) Cole Memo Enforcement Priorities

## Cole Memo Enforcement Priorities

- 1. Preventing the distribution of marijuana to minors;
- 2. Preventing revenue from the sale of marijuana from going to criminal enterprises, gangs, and cartels;
- 3. Preventing the diversion of marijuana from states where it is legal under state law in some form to other states;
- 4. Preventing state-authorized marijuana activity from being used as a cover or pretext for the trafficking of other illegal drugs or other illegal activity;
- 5. Preventing violence and the use of firearms in the cultivation and distribution of marijuana;
- 6. Preventing drugged driving and the exacerbation of other adverse public health consequences associated with marijuana use;
- 7. Preventing the growing of marijuana on public lands and the attendant public safety and environmental dangers posed by marijuana production on public lands; and
- 8. Preventing marijuana possession or use on federal property.

## Recommendations for Improved Enforcement Upon Interstate Commerce

The following section provides a framework and recommendations for a smart, data-informed, and collaborative approach to the enforcement of the illicit cannabis market in the United States. Given the rate of diffusion of legalization, compounding political pressure, and directives from President Biden, a future federal state of cannabis is inevitable and the needs of law enforcement to prevent and eradicate the illicit market must be prioritized. As such, instead of focusing on curbing demand for unregulated cannabis, this paper encourages the targeted enforcement of the most egregious actors that pose serious risks to public health and safety. Eliminating the illicit cannabis market requires a multifaceted approach, one that leverages technology and data and relies on the collaboration between law enforcement agencies, policymakers, and the regulated cannabis industry.

### Recommendation #1: Interoperable Traceability of Products

As described throughout this paper, illicit markets prevail in states with or without legal cannabis markets. However, legal states have the advantage of product traceability within their regulated cannabis infrastructure to monitor the products moving throughout their licensed system and identify indicators of products moving out of (diversion) or toward (inversion) their licensed system. Upon the federal authorization of interstate commerce, enforcement will inevitably require similar information on a national scale.

To date, current track-and-trace systems monitor products through metrics that are uniquely tailored to each state system. For example, some states may have a limited list of authorized cannabis products while others have a nearly limitless range. Some states may track products in units, while others may track products by weight. The variation of the data captured in these systems are a result of the heterogenous regulations that exist today. For interstate commerce to be feasible, and for the illicit market to not prevail through legal loopholes, the interoperable traceability of products must be evident through a centralized track-and-trace system, or other unified inventory control mechanisms. Moreover, this central inventory must have insights made accessible to law enforcement to monitor a national supply chain, especially to ensure that states that have decided to not legalize within their borders can prevent pockets of illicit or gray markets.

In order to create an interoperable traceability system, metrics and data collected in track-and-trace systems must become standardized such that all states capture the same data for use. In turn, states will have to update regulations to reflect the standardization. A resolution is needed between legal

states with existing tracking systems to identify and solidify these metrics. Groups like Cannabis Regulators Association<sup>40</sup> may be ideal in providing such guidance in partnership with the federal government; however, law enforcement should be considered a vital stakeholder in these decisions. Having expertise in the tracking of other substances or illicit products that can cause harm and what data is required for appropriate enforcement, law enforcement can ensure that such a system is designed with best practices in mind.

Importantly, data submitted in track-and-trace systems, though vital for the future of interstate commerce, is self-reported by licensees and is often unanalyzed for data entry errors or validity of responses. For example, these systems track the original wet weight of a harvest as well as the dry weight but do not seek to determine whether the difference of these two metrics is anomalous to what is statistically expected. On the aggregate, this type of analysis could discover potential indicators of diverted product. Upon the authorization of interstate commerce for cannabis, law enforcement should be provided with real-time analysis within these databases to ensure the oversight of licensed systems is efficient.

In the discussion of establishing a centralized traceability system, states without any legal form of cannabis, such as Idaho, which lacks even the type of low-THC program employed by most states with conservative drug laws, must be considered. Should Idaho continue to prohibit the production, distribution, and sale of cannabis within its state boundaries, law enforcement in the state is tasked with ensuring no regulated state markets deliberately attempt to supply their population. This task is made more challenging by the fact that interstate commerce does not prohibit the transporting of prohibited products through a state as a means to enter a different state. In other words, states would not be able to ban the transportation of cannabis through their state. For example, despite Idaho's lack of a regulated cannabis program, and therefore no localized track-and-trace system, Idaho state officers must be provided insights into traceability and transportation of products that may be moving to or from Washington, Oregon, and Montana—three states that border Idaho and have active adult-use markets. A source of these insights could be the transportation manifests for the products being transported across the state. By accessing the centralized traceability system, Idaho law enforcement officers will be able to verify authorized transportation readily and efficiently. Subsequently, should illicit markets emerge to fulfill the demand of Idaho's population, law enforcement using the centralized tracking system may be able to quickly identify confiscated products that originated in a legal system and were deliberately diverted.

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40 Cannabis Regulators Association. (n.d.) [Homepage]. Retrieved August 29, 2023, from <https://www.cann-ra.org/>

## Recommendation #2: Other Data Sources to Rapidly Identify Priority Areas

Track-and-trace systems seek to monitor the supply chain *within* regulated markets; as discussed through this paper, illicit supply chains also originate and operate *outside of* regulated markets. Other data points, when paired together and analyzed, could help inform where illicit supply chains may exist, even without the discovery of diverted products. For example, ecological changes, human trafficking, and cannabis consumer demand-side factors are all variables associated with the illicit cannabis supply chain. In addition to centralized interoperable traceability of products, law enforcement needs insights from other data sets that can help point to the most egregious of actors of the illicit market; those posing an immediate risk to public health and safety.

In the cases of illicit cultivation or production facilities, metrics for identifying possible illicit activity within specific regions include water usage, electricity usage, aerial images, and soil composition. In addition to electricity meter monitoring, there have been federal efforts to capture metrics as indicators of illicit market activity by the U.S. Forest Service.<sup>41</sup> The first is a database called the Detection and Interdiction of Marijuana to Aid Enforcement and Conservation (DIMEC). The DIMEC is a computer algorithm capable of learning to detect patterns in aerial and satellite imagery consistent with illicit cannabis grows. The second, a system currently being tested, is environmental DNA (eDNA), a highly sensitive method of detecting low concentrations of substances from a sample of local water sources. The method has successfully detected the presence of cannabis in water sources. Results from routine samples and studies can be captured in a database.

While enforcement should never prioritize population-level illicit cannabis consumption, illicit cannabis demand and the demand-side drivers that reinforce this demand, such as price of illicit cannabis and willingness to pay for cannabis, are trackable through national consumer surveys.<sup>42</sup> These trackable metrics, among many others, could be collected and analyzed through advanced statistical models that seek to quantify the magnitude of the relationships between each variable and isolate events with true correlative potential to the illicit market. In other words, when using this big data, indicators of illicit cannabis markets may be revealed. While this product does not yet exist, the concept is comparable to other surveillance-style dashboards designed and employed by the Office of National Drug Control Policy, such as the new Opioid Overdose Tracker.

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41 Banegas, D. E. (2018, July 20). *Pot farms pose serious risks to forests, wildlife and human health*. Forest Service, USDA. <https://www.fs.usda.gov/features/forest-service-scientists-do-some-serious-sleuthing-detect-illegal-marijuana-grow-sites>

42 Cannabis Public Policy Consulting. (n.d.). *Regulatory determinants of cannabis outcomes survey*. Retrieved August 29, 2023, from <https://www.cannabispolicyconsulting.com/regulatory-determinants-of-cannabis-outcomes-survey/>

The Opioid Overdose Tracker uses a number of relevant data sources to model, identify, and analyze nonfatal opioid overdoses as a way to predict and mitigate future fatal opioid overdoses.<sup>43</sup> The tracker is described as a “treasure trove of data”<sup>44</sup> and is used by a variety of service providers to connect people to treatment for substance use disorder and improve healthcare system response times. Similarly, a data source to identify illegal activity could be used by law enforcement to target and enforce the egregious actors of the illicit market.

Data that have not been aggregated and analyzed can be challenging to apply in real-world settings. A large data set with automated statistical functions could rapidly identify pockets of illicit market activity prior to the supply chain spreading. Law enforcement must be provided with these functions by an entity like the Office of National Drug Control Policy to fulfill their goals of eradicating the illicit market while also preventing the associated public health and public safety harms that coincide. Upon the federal authorization of interstate commerce, these insights will only serve to strengthen enforcement efforts across the country.

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43 National EMS Information System. (n.d.). *Opioid overdose tracker*. Retrieved August 29, 2023, from <https://nemsis.org/opioid-overdose-tracker/>

44 The White House. (2022, December 8). *Biden-Harris administration launches first-of-its-kind national data dashboard for non-fatal overdoses* [Press release]. <https://www.whitehouse.gov/ondcp/briefing-room/2022/12/08/biden-harris-administration-launches-first-of-its-kind-national-data-dashboard-for-non-fatal-overdoses/>



## Recommendation #3: Tax Stamps for Product Legitimacy and Identification

To clearly distinguish legally grown and sold cannabis from illicit market products, both states and the federal government should consider implementing a regulated cannabis tax stamp system. Under this system, states would issue a stamp as proof of payment for a cannabis-specific tax, and that stamp would be required for the legal sale of cannabis, both within a state and across state borders. A clear demarcation for legally produced cannabis products would help law enforcement agencies better identify illicit cannabis products and ensure consumers purchase lab-tested, regulated cannabis.

Tax stamps are commonly used for certain licenses and consumer products, particularly those with an associated excise tax, such as hunting, firearms, tobacco, and alcohol. For example, 48 states require a tax stamp for all tobacco products, and tobacco sales without a tax stamp are strictly prohibited.<sup>45</sup> A handful of these states go one step further by requiring “high-tech stamps,” which use advanced technology such as encryption protection, color-shifting dyes, and unique serial numbers to prevent counterfeits. When California adopted high-tech tax stamps, the state brought in an additional \$110 million in revenue without raising the tobacco excise tax. In addition to helping law enforcement identify illegal products, high-tech stamps used in conjunction with uniform track-and-trace requirements will help prevent tax evasion and reduce supply chain diversion and inversion.

It is worth noting that the use of cannabis tax stamps is not a novel idea, nor is it without its controversial past. The Marihuana Tax Act of 1937—often regarded as the precursor to federal prohibition—created a cannabis tax stamp that served as a de facto ban on cannabis due to the prohibitively high cost of the stamps and harsh penalties for noncompliance.<sup>46</sup> A modern-day cannabis tax stamp system should ensure that stamps are simple to obtain, easy to comply with, and incur no additional costs beyond already established taxes. The goal of cannabis tax stamps should not be to punish the legal industry but rather to help law enforcement agencies identify instances of noncompliance and illicit market activity.

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45 CDC. (n.d.) STATE System tax stamp fact sheet. HHS. <https://www.cdc.gov/statesystem/factsheets/taxstamp/TaxStamp.htm#:~:text=Essentially%2C%20tax%20stamps%20are%20evidence,%2C%20hunting%2C%20alcohol%20sales>).

46 U.S. Customs and Border Protection. (2019, December 20). Did you know... *marijuana was once a legal cross-border import?* U.S. Department of Homeland Security. <https://www.cbp.gov/about/history/did-you-know/marijuana#:~:text=His%20campaign%20against%20Cannabis%20led,an%20annual%20tax%20of%20%2424>.

## Recommendation #4: Federal Guidelines to Address Inconsistent State Regulations

Unenforced prohibition and federal noninterference in state-regulated cannabis programs means that states functionally operate as individual countries with respect to their cannabis laws. Absent federal oversight beyond the enforcement of certain criminal activities, states are left to design and implement their own cannabis programs. In other words, there is no regulatory uniformity among state-level cannabis programs. Where the federal government would typically provide guidelines or a regulatory “floor,” such as labeling requirements, lab testing standards, or advertising restrictions, states are left to fill in the gaps. This has led to significant variance in cannabis laws between states, including policies necessary to keep consumers safe and protect vulnerable populations. For example, while all legal states require THC potency on cannabis product labels, not all states require a universal cannabis symbol, allergen information, THC per serving recommendations, or an expiration date.<sup>47</sup> A lack of national cannabis tracking, coupled with wide inconsistencies in cannabis laws, makes it difficult for law enforcement agencies to identify regulated versus unregulated cannabis products, noncompliant advertising practices, and potential avenues of supply chain inversion and diversion.

To establish a regulatory baseline for cannabis programs that promotes consistency and protects the public, the federal government should create minimum standards for all areas of cannabis policy that concern public health and safety. These areas include, but are not limited to, laboratory testing, packaging and labeling, manufacturing practices, and advertising restrictions. While the federal government should create minimum standards, the rights of states to pass additional regulations based on the specific needs and nuances of their population must be preserved.

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47 Kruger, D. J., Korach, N. J., & Kruger, J. S. (2022). Requirements for cannabis product labeling by U.S. state. *Cannabis and Cannabinoid Research*, 7(2), 156–160. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9070747/#:~:text=This%20study%20demonstrates%20the%20lack,language%20or%20font%20size%20requirements>.

## Recommendation #5: Federal Task Force for Evolving Trends and Changing Market Dynamics

To facilitate the continuous improvement of cannabis policies and procedures across the country, a national task force of policymakers, regulators, social equity and justice experts, law enforcement agencies, public health experts, researchers, and industry representatives should be formally established and facilitated at the federal government level. A group of diverse experts representing different jurisdictions and groups impacted by changing cannabis laws will encourage collaboration and information sharing—all necessary components of informed, evidence-based, comprehensive policymaking.

A national cannabis task force should focus on two primary areas: policy recommendations and research. Public policy should evolve as new cannabis market dynamics and industry trends emerge, but policymakers and government agencies are not always able to adapt quickly. A task force focused on cannabis policy issues can step in and conduct the necessary policy research, stakeholder engagement, and knowledge sharing required for well-written policymaking. Recommendations from a national task force can directly influence and improve cannabis laws at all levels of government. Further, a task force can aid in the development of the aforementioned federal safety standards, cannabis tracking requirements, and data collecting and sharing. The task force can also allocate resources to commission studies on important issues, such as cannabis-related public health outcomes, the impact of cannabis advertising, or manufacturing testing best practices.

An example of an existing task force is the Organized Crime Drug Enforcement Task Force (OCDETF), an independent task force within the Department of Justice.<sup>48</sup> As the largest anticrime task force in the United States, the OCDETF comprises federal prosecutors and representatives from federal, state, and local law enforcement groups. Leveraging the knowledge and diverse experiences of its members, the task force develops a coordinated, cross-agency strategy for targeting and enforcing organized crime, including drug trafficking. A cannabis-focused national task force could employ a similar approach for enforcing the illicit cannabis market at the local, state, and federal levels.

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48 Organized Crime Drug Enforcement Task Forces (n.d.). *About OCDETF*. DOJ. Retrieved August 29, 2023, from <https://www.justice.gov/ocdetf>

## **Recommendation #6: Ongoing Federal Guidance on Enforcement Priorities**

Any changes in federal cannabis laws that permit interstate commerce must come with clear guidance for law enforcement agencies regarding the enforcement priorities of the illicit cannabis market and other related illegal activities. As discussed in an earlier section, the issuance and subsequent revocation of the Cole Memo has clouded the role of local and state law enforcement agencies in enforcing cannabis laws in their jurisdiction. Enforcement is especially difficult for those law enforcement groups in states with both a legal industry and a pervasive illicit market, such as California or Oklahoma. Guidance from the aforementioned federal task force, the Department of Justice, the National Office of Drug Control Policy, and other relevant federal agencies should clarify the relationship between local, state, and federal law enforcement agencies in enforcing federal cannabis policies and outline all investigative and prosecutorial priorities. This guidance should be routinely updated as drug trade is influenced by changing social and policy dynamics.

## **Recommendation #7: Federal Funding for a Comprehensive Approach**

Given the lack of a legal, interstate cannabis market and the unknown nature of its harm potential, there is no current monitoring mechanism or established infrastructure that cannabis can be retroactively fit into for purposes of enforcement. Because of this, this paper envisions a successful foundation for law enforcement that requires the updating of existing technology, the initiation of modern data tools, and above all, dedicated human resources and expertise. To accomplish any of the recommendations provided, federal funding is imperative. Though not yet declared, a future of interstate commerce suggests a new tax stream for cannabis, such as a potential cannabis tax stamp or federal excise tax similar to the one that exists for alcohol.<sup>49</sup> It is vital that the federal government allocate these potential revenues to enforcement efforts described in this paper. By doing so, the illicit market can be diminished, and the U.S. government can see a return on the investment.

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<sup>49</sup> Alcohol and Tobacco Tax and Trade Bureau. (2022, May 9). *Tax rates*. U.S. Department of the Treasury. <https://www.ttb.gov/tax-audit/tax-and-fee-rates>

While research has not asserted a clear return on investment ratio, it stands to reason that funding assigned to law enforcement efforts that reduce the illicit market advances the position and revenues of taxable, safer cannabis as the substitute market dwindles. Additionally, as the illicit market is associated with poor health outcomes of consumers, funding assigned to law enforcement efforts that reduce the illicit market may reduce healthcare spending for cannabis-related harms. This same return on investment sentiment extends to costs associated with addressing the deplorable acts of human trafficking, as well as ecological restoration. As this paper has distinguished, the growth of an illicit cannabis market is not victimless. The illicit market carries associated outcomes, with current monitoring and interventions that can currently be described as underfunded.<sup>50,51,52</sup>

Though enforcement is not the panacea for eliminating the illicit market, the comprehensive recommendations provided by this paper present a way for enforcement to contribute significantly to reduction, simply by creating a system of efficiency. To create this multifaceted, collaborative, and informed system, federal funding is not just essential, it is mandatory.

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50 Loyola University's Center for the Human Rights of Children. (2015, April 16). *U.S. funding: Anti-trafficking efforts severely underfunded*. Human Trafficking Search. <https://humantraffickingsearch.org/resource/u-s-funding-anti-trafficking-efforts-severely-underfunded/>

51 United Nations Environment Programme. (2021, March 10). *Five things the world is saying about ecosystem restoration*. <https://www.unep.org/news-and-stories/story/five-things-world-saying-about-ecosystem-restoration>

52 American Addiction Centers. (2023, March 27). *Barriers to addiction treatment: Why addicts don't seek help*. <https://americanaddictioncenters.org/rehab-guide/treatment-barriers>