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DRUGS AND ANTI-DRUG POLICIES IN LATIN AMERICA: SUCCESSES, FAILURES, AND WRONG TURNS

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ABSTRACT

This paper analyzes the evolution of drug trafficking, its links to organized crime, and anti-drug policies in Latin America in recent decades. The analysis shows a historic increase in cocaine production over the past 10 years, the rise of synthetic opioids such as fentanyl, and the expansion of methamphetamine production. Despite decades of strategies aimed at reducing the supply of drugs—including crop eradication, interdiction, militarization, and the frontal war against drug trafficking and criminal organizations linked to this illegal activity—drug production and trafficking in the region have reached historic highs, shifting geographically and adapting technologically to the supply-reduction policies implemented in the different countries.

Empirical evidence shows that prohibitionist policies have had limited effects on drug availability and instead have generated high side effects, including high levels of violence, corruption, and institutional weakening. This paper also examines how criminal organizations linked to drug trafficking have evolved, diversifying into new illicit activities. It also analyzes consumption patterns in Latin America, which show a worrying increase in the prevalence of the use of substances such as marijuana, cocaine, and synthetic drugs, particularly among young people.

Finally, a reflection is presented on the need for a paradigm shift in anti-drug policies, which implies abandoning strictly repressive approaches in favor of evidence-based strategies. These should combine smart security policies and targeted deterrence, harm reduction, institutional strengthening, market regulation, and public health approaches to more effectively address the complex dynamics of drug trafficking and organized crime in the region.

Drugs and Anti-Drug Policies in Latin America: Successes, Failures, and Wrong Turns[1]

Daniel Mejía[2]

I. INTRODUCTION

The production and trafficking of illegal drugs is one of the most complex challenges that Latin America has faced in recent decades, with profound effects on security, public health, and economic development. The region is the world's leading source of cocaine production, with concentrated crops in Colombia, Peru, and Bolivia. In addition, some countries in the region are suppliers of a significant portion of the heroin consumed in North America and synthetic drugs such as fentanyl and methamphetamines consumed globally.

In 2023, Colombia reached a record 253,000 ha of coca crops, with a potential production of 2,664 metric tons of cocaine,[3] 53 percent higher than the level observed the previous year. Peru, for its part, registered 95,008 ha in 2022, the highest figure in two decades (UNODC 2024). Although heroin production is lower, Mexico was for years the main supplier of this illegal drug in North America. However, fentanyl—a synthetic opioid up to 50 times more potent—has displaced heroin in illicit opioid markets, owing to its low production costs and high profitability for cartels (Botts et al. 2023). This transition from heroin to synthetic opioids such as fentanyl drastically reduced poppy cultivation and favored the emergence of urban laboratories in Mexico. In addition, methamphetamine production has grown, an activity controlled by regional criminal organizations that supply both domestic and international markets (DEA 2024).

Illegal drug production and trafficking economies generate multimillion-dollar revenues that strengthen transnational criminal networks. In some countries, drug trafficking represents a parallel economy of great magnitude. Its expansion has been favored by geographical and social factors, including favorable conditions for cultivation, strategic transit routes, and institutional weakness. According to the International Crisis Group (2025), half a century after the start of the so-called 'war on drugs', drug trafficking has expanded territorially, diversified into substances and related crimes, and penetrated more deeply into state and community structures. This proliferation intensifies violent competition, the

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[3] The potential production of cocaine is estimated by the United Nations Office on Drugs and Crime (UNODC) using margins for transforming coca leaf into coca paste, cocaine base and cocaine hydrochloride. These margins are constantly estimated by UNODC to capture possible changes in productivity and technological improvements that can increase efficiency in the transformation of coca leaf into cocaine paste, base and hydrochloride.

main driver of organized crime in many of the countries of the region (International Crisis Group 2025). The consequences are alarming: homicidal violence, systemic corruption, and deterioration of the rule of law. Latin America, with just 8 percent of the world's population, accounts for about a third of global homicides annually, many of them linked to drug trafficking and its associated conflicts.

Faced with this scenario, governments have for decades promoted policies of supply reduction and repression, often with the support of the United States government. However, these strategies—focused on crop eradication, interdiction of trafficking, criminal prosecution of cartel leaders, and the fight against money laundering— have failed to sustainably reduce the availability of drugs. On the contrary, the collateral effects have been very high. For example, during Plan Colombia (2000–26), coca cultivation was reduced from 163,000 to 80,000 ha, but potential cocaine production only fell by 12 percent (Mejía and Restrepo 2016).

Productivity per hectare increased, and drug prices in consumer markets remained stable. In addition, the balloon effect moved coca crops to neighboring countries such as Peru and Bolivia. In Mexico, the militarization of the fight against drug cartels starting in 2006 triggered a crisis of violence that increased the homicide rate from 8 per 100,000 inhabitants in 2007 to more than 27 in 2011 (Guerrero 2011). In Brazil, air interdiction policies in the Amazon area led to a shift in traffic to river routes, increasing homicides in riverside municipalities by almost 40 percent (Pereira et al. 2024).

These results call into question the effectiveness of the repressive approach. Like any other public policy, anti-drug policies should be evaluated by their actual results, not by their intentions. Globally, there is growing recognition of the failure of the prohibitionist paradigm and the need for approaches focused on public health, harm reduction, and regulation. However, there is still pressure to intensify punitive strategies. The International Crisis Group (2025) warns that the United States has proposed renewing military offensives against the cartels, despite the collateral effects already observed, including the reconfiguration of routes, the expansion of organized crime, corruption, and generalized violence.

The consumption of psychoactive substances has also increased in the region. The most recent surveys show an increase in prevalence rates of the use of the main psychoactive substances, especially among minors and young people. This phenomenon reflects the persistent availability of drugs despite decades of prohibition and repression. In Latin America, this increase in consumption poses two distinct but interrelated challenges: on the one hand, it constitutes a growing public health problem, particularly due to the increase in early drug use, problematic use, and the poor coverage of prevention and treatment services; on the other, it has generated a new source of violent competition between criminal groups for control of local drug markets, especially in urban contexts.

Latin America, therefore, faces the crossroads of continuing with traditional strategies or exploring approaches that could potentially be more effective and comprehensive. The following sections examine (a) recent developments in the drug market in the region; (b) the effectiveness and costs of the anti-drug policies implemented in recent decades in the countries of the region; (c) the link between drug trafficking, crime, and violence; (d) the distribution and local consumption of drugs; and (e) the public policy implications derived from the most relevant findings.

II. RECENT DEVELOPMENTS IN THE PRODUCTION AND TRAFFICKING OF ILLEGAL DRUGS IN THE REGION

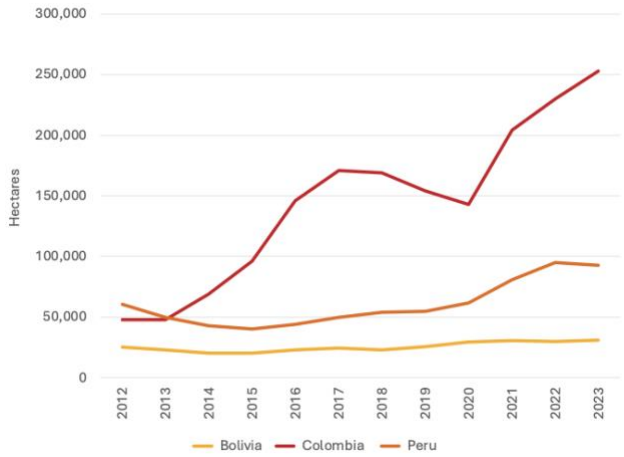
II.I Cocaine

The Andean region (Colombia, Peru, and Bolivia) maintains a virtual monopoly over global cocaine production, having reached historic highs in recent years in terms of crops and potential production. Colombia continues to lead global production. According to the latest World Drug Report of the United Nations Office on Drugs and Crime (UNODC), in 2023, the country recorded a record 253,000 ha planted with coca (an increase of 10 percent compared to 2022) and an estimated potential production in 2023 of 2,644 tons of cocaine, 52 percent more than the previous year (UNODC 2024). Peru also reports significant increases. In 2022, coca cultivation expanded by 18 percent, reaching 95,000 ha; this includes protected areas of the Amazon and indigenous territories. This expansion implied a potential production of close to 870 tons of cocaine per year (UNODC 2024). Bolivia, for its part, has maintained a stable area of around 30,000 to 35,000 ha cultivated with coca leaf, with a slight increase of 4 percent compared to 2022.

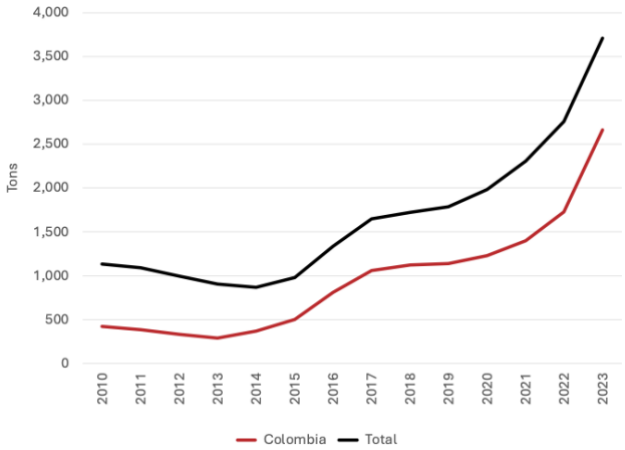
Figure 1a shows the evolution of coca cultivation in these three Andean countries between 2013 and 2023, while Figure 1b presents UNODC estimates of potential cocaine production in Colombia and in the Andean region as a whole. As these data illustrate, the supply of cocaine in the region has reached historic levels (3,708 tons in 2023), supplying not only the consolidated markets of North America and Europe, but also new emerging markets in East Asia and the Pacific, the Middle East, Oceania, and Latin America (InSight Crime 2022).

Figure 1. Hectares cultivated with coca (a) and potential production of cocaine (b)

a.



b.

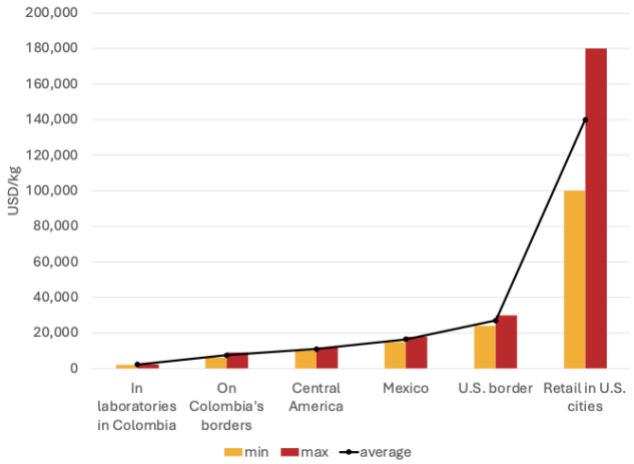


Source: Elaboration with information from UNODC (2024).

This expansion occurs despite decades of eradication and interdiction efforts, which shows a great capacity for adaptation of drug trafficking networks and persistent perverse economic incentives for peasants in contexts of rural poverty. In addition, UNODC highlights technical innovations, such as denser plantations and more efficient processing processes, which make it possible to produce more cocaine per hectare grown with coca than in the past.

Once cocaine leaves Colombia, its trafficking to the main consumer markets is in the hands of transnational criminal groups. The most used routes are to North America, via Ecuador, Central America, Mexico, and the Caribbean; to Europe, via Venezuela, the Caribbean, or the Brazilian Amazon; and to Oceania and Southeast Asia, via Ecuador or Central America through the Pacific Ocean. Various UNODC reports and investigative journalism work allow the approximation of prices of cocaine at different stages of production and trafficking, although there is no single source or exact figures. Figure 2 presents an estimate of prices along the traffic chain to North America. At the 'lab gate' in rural areas of Colombia, a kilogram of cocaine can cost around USD 2,000. At the Colombian borders (Caribbean, Pacific Coast, or Ecuador), the price rises to between USD 6,000 and USD 9,000. In Costa Rica, according to UNODC, it is between USD 10,000 and USD 12,000; in Mexico, between USD 15,000 and USD 18,000; and when crossing into the United States, between USD 24,000 and USD 30,000. Finally, in the consumer retail market, the price per kilogram can vary between USD 100,000 and USD 180,000, depending on factors such as purity, volume, and the relationship of distributors with end consumers.

Figure 2. Approximate price of cocaine from its place of origin to its final destination in North America



Source: Calculations and approximations based on information from the Integrated Monitoring System for Illicit Crops (SIMCI)-UNODC and investigative journalism works.

While the largest jump in the price of cocaine (and other drugs, as will be seen below) occurs between the last stage of large-scale trafficking (the US-Mexico border) and the retail price faced by the final consumer, so that the largest aggregate revenues associated with trafficking are concentrated in that last link of distribution within the United States, these rents are diluted there among a large number of

distribution groups. For example, transporting a shipment of one or two tons of cocaine from a laboratory in Colombia to the US-Mexico border involves one or at most two criminal groups in the region, which receive the proceeds from transporting that shipment across the border. However, once the shipment enters the United States, it is distributed to multiple cities, where networks of smaller-scale traffickers and distributors participate.

Local distribution networks are often loosely connected to each other, but they have central figures (such as importers and wholesale distributors) and, at the same time, are spread across multiple local retail distribution nodes that operate in a decentralized manner in the main cities of consumer countries. This means that the revenues associated with drug trafficking within consumer countries are distributed among a few key actors who are in charge of large-scale importation (from Colombia and Mexico) and many smaller-scale distributors who distribute the drugs in different cities (Bichler et al. 2017). In other words, while aggregate incomes may be higher at the last link of distribution within the United States, per capita incomes (or by criminal distribution group) are not necessarily so.

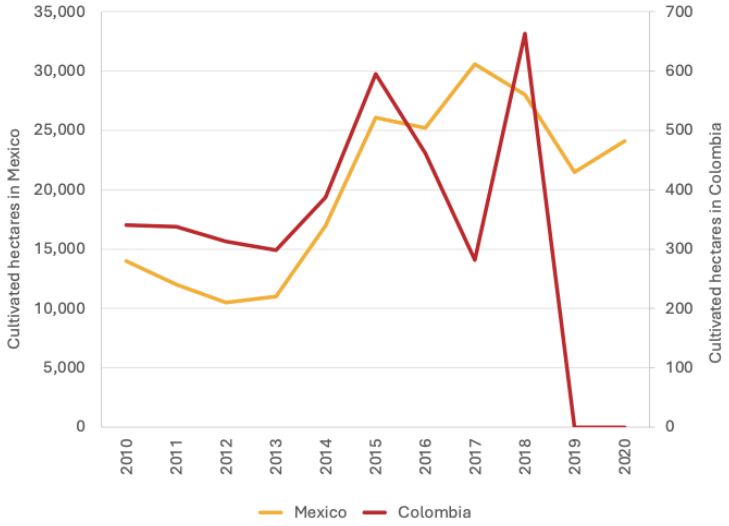
The data presented in Figure 2 illustrate the huge profit margin that criminal organizations make: from its origin to its final destination, the value of cocaine can increase more than 60 times. Although the figures should be read as informed approximations, they clearly show the very high profitability of the illegal drug trafficking business.

II.II Opioids: Heroin and fentanyl

In the case of opioids, the dynamics have changed substantially over the past decade. Until the mid-2010s, Mexico was one of the main suppliers of heroin to the North American market, with extensive poppy crops concentrated in the Sierra Madre, in the states of Guerrero, Sinaloa, and Chihuahua. Estimates indicate that Mexico reached a peak of 30,600 ha of poppy in 2017, producing hundreds of tons of opium gum, an essential substance for heroin production (Felbab-Brown 2020). Figure 3 presents UNODC measurements of opium cultivation in Mexico (the main producer) and Colombia, where a much lower level of poppy cultivation (measured on the secondary Y-axis) is observed.

However, the emergence a decade ago of synthetic opioids, such as fentanyl, and the growing demand for these substances in North America radically transformed the opioid market in Mexico. This synthetic, high-potency opioid was initially produced in China, but between 2015 and 2016, it began to be manufactured locally by Mexican cartels through the use of imported precursor chemicals (such as phenylacetone and ephedrine), especially from China and India (Dudley et al. 2023). The growth of fentanyl production in Mexico quickly displaced heroin. The proximity to the main consumer market in North America, together with lax controls and little regulation in the import of the chemical precursors necessary for the production of fentanyl, gave Mexico a comparative and competitive advantage in this market. In addition, some Mexican cartels (in particular, Sinaloa and the Jalisco New Generation Cartel [CJNG]) already had logistical networks, contacts, and distribution channels to the United States and managed to adapt their structures to the production of synthetic drugs such as fentanyl and methamphetamines.

Figure 3. Hectares cultivated with poppy in Mexico and Colombia

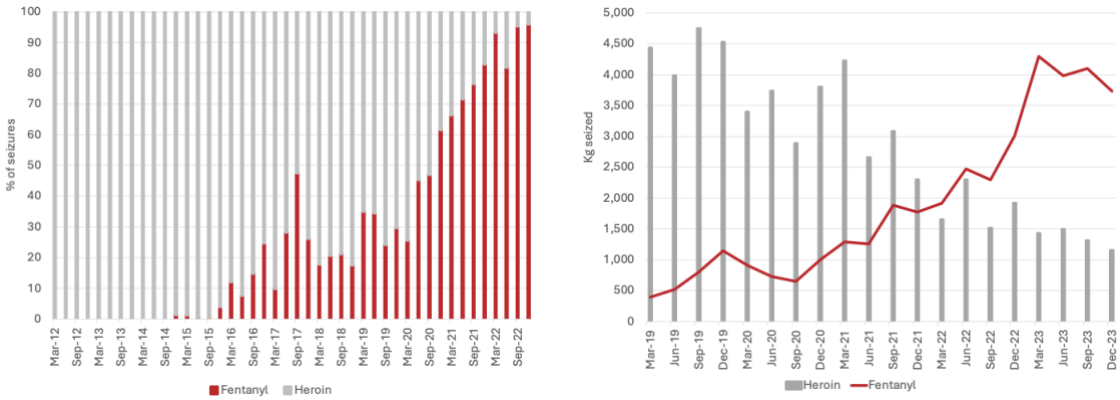


Source: Elaboration with information from UNODC (2024).

Although there are no direct figures on the illegal production of fentanyl in Mexico, seizures on the border with the United States reflect its rapid expansion: from 600 kg in 2018 to 7,200 kg in 2022, an increase of 1,100 percent in just four years. While heroin accounted for 80 percent of doses seized at the US border in 2018, in 2023 it accounted for less than 7 percent, with fentanyl being the dominant drug (Figure 4a; Botts et al. 2023). In terms of volume, while in 2019 between 4000 and 5000 kg of heroin were seized per quarter compared to only 500 to 1,000 kg of fentanyl, in 2023 these figures were reversed: in that year, between 3,500 and 4,500 kg of fentanyl were seized quarterly, compared to 1000 to 1,500 kg of heroin (Figure 4b). According to US Customs and Border Protection (CBP), more than 95 percent of fentanyl seizures are concentrated in ports on the southwest border with Mexico.

Figure 4. Heroin and fentanyl seizures at the US-Mexico border

a. As a fraction of the total **b. By volume**

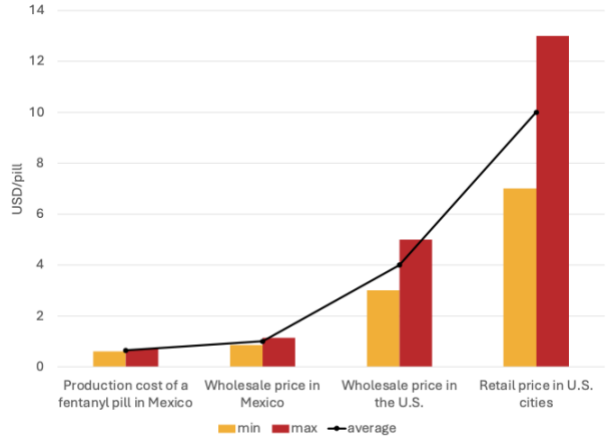


Source: Elaboration with information from Botts et al. (2023); DEA (2024).

Since January 2025, the US government's hardening stance on drug trafficking and criminal organizations linked to this illegal activity (which has been reflected in the designation of some drug cartels as 'foreign terrorist organizations' [FTOs], new financial sanctions, and increased border operations to control drug trafficking) has led to the adaptation of cartels. For example, producers in Mexico have adjusted the use of inputs toward less regulated precursors, decentralized laboratories, and reduced purity levels, even resorting to mixtures with additives to sustain supply (Dittmar and Ríos 2025).

According to different investigative journalism works, it is possible to estimate the price of an illegal fentanyl pill from its production in clandestine laboratories in Mexico to its arrival on the final market in North America. As in the case of Figure 2 on cocaine prices, these data should be understood as informed approximations. The cost of producing a pill in Mexico is between USD 0.60 and USD 0.70. In the Mexican wholesale market, its price is around USD 1 per unit. In the United States, a pill sells wholesale between USD 3 and USD 5, while the price for the final consumer varies between USD 7 and USD 13 (Figure 5).

Figure 5. Approximate price of an illegal fentanyl pill from its place of origin to its final destination in North America



Source: Calculations and approximations based on information from Cano (2023), Botts (2023), and Dudley (2024).

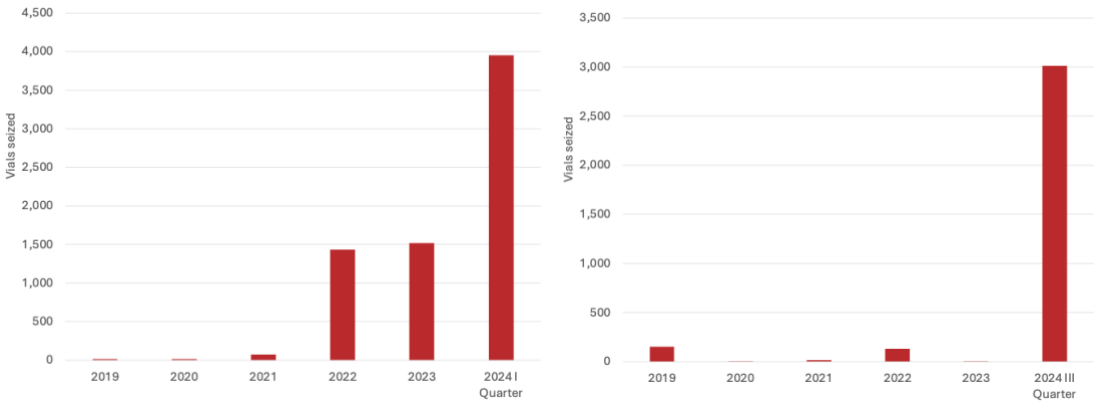
Fentanyl in other countries in the region

As of mid-2024, there is no evidence of illegal fentanyl production in South America. Most of the seizures in countries such as Colombia, Brazil, Chile, and Argentina correspond to fentanyl for medical use diverted from clinics and hospitals, usually in the form of ampoules. Although limited in volume, these seizures have increased significantly in some countries. In Colombia, they went from 75 ampoules in 2021 to 3,950 in the first quarter of 2024 alone; in Chile, from 300 ampoules between 2019 and 2023 to more than 2,000 by the third quarter of 2024 (Figure 6). For its part, in Brazil, more than 1,200 vials have been seized since 2009, and in Argentina, up to 500 vials were seized in 2023, although without a

clear upward pattern. This growth highlights a growing pressure on health systems and health control mechanisms (García and Mejía 2024).

Figure 6. Seizures of fentanyl vials for medical use

a. Colombia **b. Chile**



Source: García and Mejía (2024).

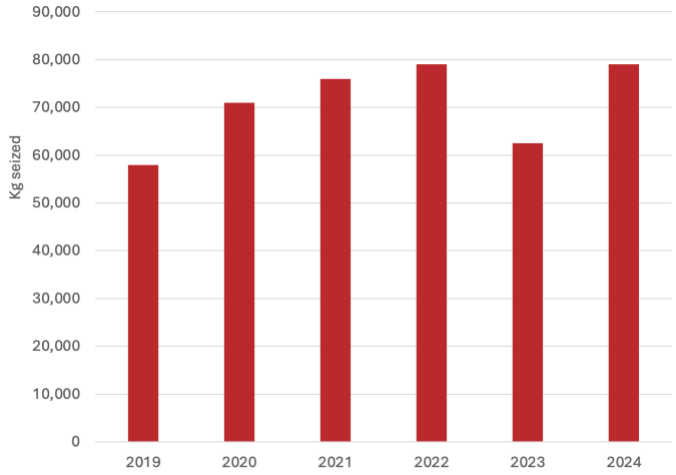
Although the region is not yet facing an opioid crisis like the one seen in North America in the last decade, these data suggest an incipient threat. The diversion of legal opioids from health systems could facilitate the emergence of illegal markets. However, while large criminal groups in South America are not yet actively involved in fentanyl trafficking, the United States experience indicates that local networks could begin to adulterate other drugs with this substance to generate a demand for this highly addictive substance. This scenario requires urgent preventive responses from health, regulatory, and safety authorities (García and Mejía 2024).

II.III. Methamphetamine

Methamphetamines, synthetic stimulant drugs consumed globally, surpass cocaine in total consumption volumes in the United States (López-Aranda 2023). Since the 2010s, Mexico has established itself as the main producer and exporter to the United States, almost completely displacing the old domestic laboratories. The Drug Enforcement Administration (DEA) reports that almost all methamphetamines consumed in the United States come from Mexico, which also supplies markets in Asia and Oceania.

The estimated annual methamphetamine consumption in the United States went from 171 tons in 2016 to 351 tons in 2022. During this period, the wholesale price fell from USD 17,000 to USD 3,500 per kilogram, reflecting an expansion in production driven by Mexican cartel-controlled 'superlabs'. US methamphetamine seizures increased from 57 tons in 2019 to 80 tons in 2022; they then decreased to 63.5 tons in 2023 and increased again to 79 tons in 2024 (Figure 7). According to CBP, between 90 percent and 95 percent of seizures of this substance occur on the border with Mexico.

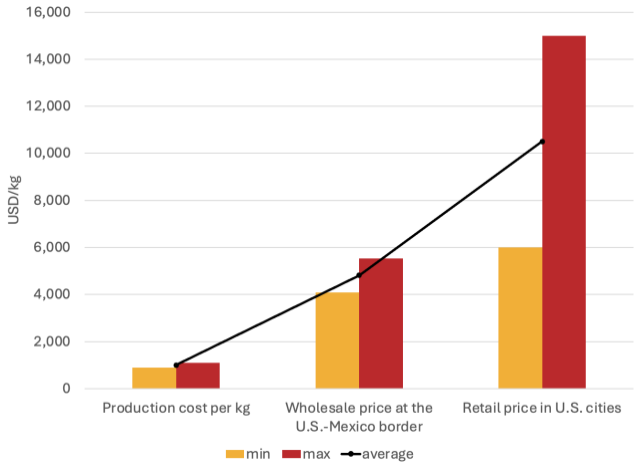
Figure 7. Methamphetamine seizures in the United States



Source: Elaboration with information from CBP (2025).

Based on investigative journalism and data from the UNODC World Drug Report, it is possible to estimate the price of a kilogram of methamphetamine from its place of production to its arrival in the final consumer market in North America. According to Dudley et al. (2023), the cost of production in Mexico is around USD 1,000 per kilogram. According to the UNODC data portal, the wholesale price in the United States is approximately USD 4,800, while the retail price in cities in that country varies between USD 6,000 and USD 15,000 (Figure 8).

Figure 8. Approximate price of methamphetamine from its place of origin to its final destination in North America



Source: Elaboration and approximations based on information from Dudley et al. (2023) and UNODC.

Economic magnitude of drug production and trafficking in the region

Drug trafficking represents an illegal economic sector of great magnitude in Latin America. At the global level, UNODC estimates for 2009 estimated that cocaine and opiate markets generated around USD 153 billion annually (UNODC 2009). By 2014, other estimates put the cocaine market at between USD 94 billion and USD 143 billion, and the opioid market at USD 75 billion to USD 132 billion (May 2017). These global figures should be understood as approximations, given the uncertainty that exists in variables such as production, seizures, prices, and purity of drugs.

Country-specific estimates provide more reliable approximations. In Colombia, revenues from cocaine production and trafficking in 2023 were approximately USD 15.3 billion, equivalent to 4.2 percent of gross domestic product (GDP). In addition, considering an average of 1.25 ha of coca per peasant family (UNODC 2023a), there would be about 200,000 families involved in this activity.

In Mexico, fentanyl trafficking is estimated to generate revenues of between USD 27 million and USD 67.5 million annually, while methamphetamine reaches about USD 330 million wholesale and up to USD 1,000 million when crossing into the United States. (Dudley et al. 2023). Regarding cocaine, a conservative estimate based on purchase prices in South America, seizures in transit, and wholesale prices at the northern border suggests that Mexican cartels would have earned around USD 5.4 billion in net revenue in 2022.

In terms of job creation, Prieto-Curiel et al. (2023) estimate that between 160,000 and 185,000 people work for the cartels in Mexico, placing them as the fifth largest employer in the country, above large companies such as Walmart or *América Móvil*.

Taken together, these data illustrate how drug trafficking functions as a major illegal economy in some countries in the region, generating significant income and job opportunities in contexts of poverty and social exclusion.

Main organized criminal groups linked to drug trafficking, their organization, and evolution

The structure of organized criminal groups dedicated to drug trafficking in Latin America has evolved in response to anti-drug policies (Bagley 2013; Lessing 2017). In Mexico, the fragmentation of the large historical cartels (Guadalajara, Juárez, and Golfo) gave way to two dominant axes: the Sinaloa Cartel—a federation with a long history—and the CJNG, more vertical and violent. Both organizations operate as transnational networks with a presence in multiple countries, alliances with Colombian and Ecuadorian criminal groups, and links to European mafias (DEA 2024; Felbab-Brown 2022). Alongside them, smaller regional groups persist, allied with or opposed to the main cartels. Farfán-Méndez (2019a) states that the organizational structure of cartels influences their money laundering strategies: hierarchical groups adopt conservative schemes, while flexible networks assume greater financial risks.

A common feature is the outsourcing of functions. In this sense, local gangs handle retail distribution in the region's main cities, while large cartels control production and international routes used for trafficking (UNODC 2023a).

In Colombia, after the fall of the Medellín and Cali cartels in the 1990s, drug trafficking was left in the hands of fragmented structures. Initially, guerrillas such as the Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army (ELN) and paramilitary groups financed their activity through the production and trafficking of drugs, mainly cocaine. After the paramilitary demobilization between 2003 and 2006, Colombia's emerging criminal gangs (BACRIM) emerged. Currently, the criminal groups linked to large-scale drug trafficking that stand out the most in Colombia are the Clan del Golfo (Gaitanista Self-Defense Forces of Colombia), with national reach and control of Caribbean routes; the FARC dissidents, divided between the Central General Staff and the Second Marquetalia, which dominate coca-growing areas in the southeast of the country; and the ELN, active especially in the border areas between Colombia and Venezuela. These organizations maintain alliances with Mexican cartels, exchanging cocaine for weapons or money, and operate with local intermediaries such as money laundering networks or urban traffickers (Felbab-Brown 2022).

In the Southern Cone, the Brazilian First Capital Command (PCC) went from being a prison gang to a transnational drug trafficking network, controlling routes from Bolivia and Paraguay to Brazilian ports bound for Europe via Africa (UNODC 2023a). In addition, this group maintains control over domestic traffic, together with the Red Command. In Central America, local clans (such as the Cachiros and Lorenzana) act as logistics contractors for Mexican cartels. Before the heavy-handed policies implemented by the government of Nayib Bukele in El Salvador, the MS-13 and Barrio 18 gangs, known for extortion, also engaged in micro-trafficking and offered armed labor to major drug cartels. In the Caribbean, meanwhile, the use of routes through Puerto Rico, the Dominican Republic, and Haiti as transshipment points for cocaine from South America and on its way to North America and Europe has resurfaced, often in coordination with Colombian and Venezuelan networks (UNODC 2023a).

Despite their differences, these organizations share the systematic use of violence and corruption as a mechanism to resolve disputes, avoid criminal prosecution by security forces and justice, and ensure the territorial control necessary for drug production and trafficking (Lessing 2017). Violence arises in territorial disputes, attacks on state forces, and violent social control in communities. Corruption allows for impunity: networks of high-ranking state officials involved with criminal drug trafficking groups (such as the ‘Cartel of the Suns’ in Venezuela) have been documented in Honduras and Venezuela (InSight Crime 2022), and Mexico has had emblematic cases, such as the conviction of Genaro García Luna for links to the Sinaloa Cartel. These criminal alliances weaken institutions and threaten the democratic stability of the countries of the region.

In summary, the last decade has been marked by the boom in cocaine production, the expansion of fentanyl and methamphetamine markets, and the consolidation of flexible, violent, and transnational criminal structures (DEA 2024; UNODC 2023c). These challenges, which exceed the capacities of traditional policies, have contributed to persistent violence, which will be discussed in the next section.

III. ANTI-DRUG POLICIES: COSTS, EFFECTIVENESS, AND SIDE EFFECTS

Supply-reduction policies have been a pillar of the 'war on drugs' in Latin America since the late 20th century. These strategies seek to reduce drug production and trafficking through the eradication of illicit crops (coca, poppy, or marijuana), the institution of alternative development programs, the destruction of laboratories and production infrastructure, the control of chemical precursors, the interdiction of drug shipments, and the militarization of production and transit areas.

Crop eradication has involved aerial spraying (glyphosate) and manual eradication, with the aim of removing the raw material for natural drugs such as cocaine and heroin. Alternative development has sought to provide licit crops and improve local economic conditions to reduce farmers' dependence on illicit crops. For their part, the destruction of laboratories and interdiction aim to weaken intermediate links of trafficking, while the control of chemical precursors seeks to restrict key inputs for production. In turn, the militarization of strategic areas for drug production and trafficking, provided for in Plan Colombia or the Merida Initiative, aims to limit the operations of criminal groups through military and police presence. The economic logic behind these strategies is simple: by reducing supply, prices would rise and consumption would decrease.

However, the available empirical evidence shows mixed results and is often contrary to the theoretical expectations of the implementation of these strategies. This section summarizes the main evaluations of the effectiveness of supply-reduction strategies implemented in Colombia, Mexico, Peru, Bolivia, and Brazil, as well as their collateral effects on violence, health, and the economy. Finally, institutional factors that help to understand the performance of these policies are analyzed.

Next, the analysis for Colombia, a country that has served as a laboratory for many of these strategies, is presented, and then the evidence available for Mexico and other countries in the region is presented. Different policies have been implemented in these countries to reduce the production and trafficking of illegal drugs.

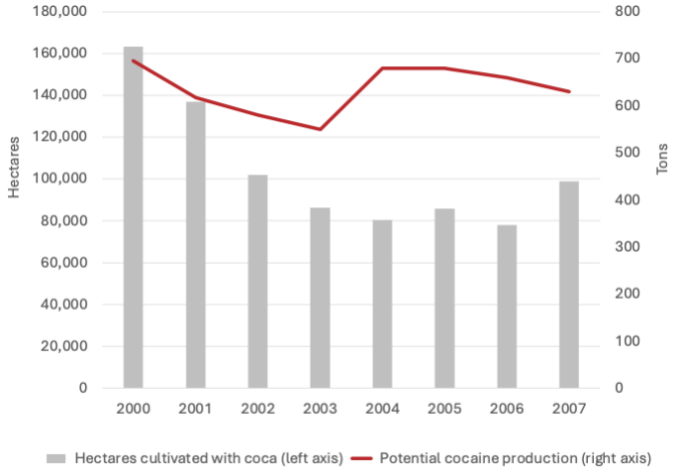
Supply-reduction policies under Plan Colombia: Eradication, interdiction, and recovery of security

In response to the increase in coca cultivation and the deterioration of security observed in Colombia during the second half of the 1990s, in September 1999, the governments of Colombia and the United States launched Plan Colombia, with two main objectives: to reduce drug production by 50 percent in six years and to recover territories that were under the control of illegal armed groups. According to Colombia's National Planning Department (DNP), between 2000 and 2008, the United States disbursed an average of USD 472 million annually in subsidies for the military component of Plan Colombia, while Colombia invested approximately USD 712 million per year in the same component, totaling a joint expenditure equivalent to 1.2 percent of the country's annual GDP (Mejía and Restrepo 2016).

Plan Colombia combined aerial spraying campaigns with glyphosate, manual eradication, destruction of laboratories, policies to interdict shipments of cocaine and precursor chemicals, and the

strengthening of military and police capacities. It also strengthened cooperation between the US and Colombian intelligence agencies, allowing operations to capture or neutralize leaders of criminal organizations linked to drug trafficking. In terms of supply-reduction results, coca cultivation fell from 163,000 ha in 2000 to about 80,000 to 100,000 ha between 2006 and 2007, a reduction of close to 50 percent. However, potential cocaine production decreased by only 13.6 percent (from 695 to 600 tons), due to an increase in the productivity of cocaine production, which went from 4.7 to 7.3 kg of cocaine per hectare cultivated between 2000 and 2008 (Figure 9) (Mejía and Restrepo 2016).

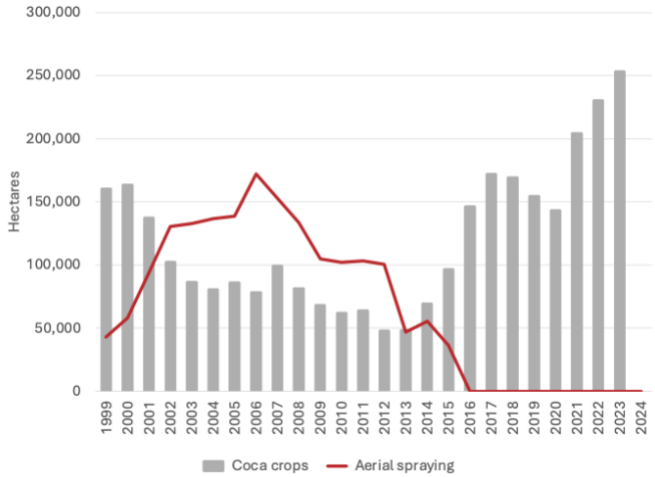
Figure 9. Coca leaf cultivation and potential cocaine production during the Implementation of Plan Colombia, 2000–07



Source: Elaboration with information from SIMCI-UNODC.

Aerial spraying with herbicides to eliminate coca crops was one of the flagship strategies used under Plan Colombia since 1999. Figure 10 shows the evolution of coca cultivation in Colombia and the number of hectares sprayed with glyphosate between 1999 and 2023.

Figure 10. Coca leaf crops in Colombia and aerial spraying with glyphosate, 1999–2023



Source: Elaboration with information from SIMCI-UNODC and the Ministry of Defense of Colombia.

Most evaluations that have analyzed the effectiveness of aerial spraying campaigns of illicit crops have found that this strategy produces no or very limited effects. The main reasons are the displacement of crops to areas not intervened by spraying (such as natural parks and indigenous reserves), reseeding, and the strategies used by growers to reduce the effectiveness of these campaigns, such as spraying molasses on coca bushes to prevent the herbicide from penetrating the leaf cuticle and destroying the plant or cutting ('soquear') the stem of the coca bush between 30 and 40 cm from the ground, with which the plant is reborn and returns to harvest after a few months. Box 1, in Annex 4 of this document, describes in more detail the main assessments that have estimated the impact of spraying on coca leaf crops, the empirical strategies that have been used, and the main results.

In addition to their very low effectiveness in reducing coca crops, the spraying campaigns generated negative impacts on health and well-being. Rozo (2014) found that exposure to glyphosate used in aerial spraying campaigns reduced school attendance and deteriorated public health in the fumigated municipalities. Camacho and Mejía (2017) documented an increase in dermatological and respiratory diseases and spontaneous abortions, as a result of exposure to this herbicide in the areas covered by aerial spraying programs, affecting low-income communities more. These findings led the Constitutional Court to suspend the aerial spraying program in 2015, citing the precautionary principle and the lack of prior consultation with vulnerable ethnic communities that were affected by this counternarcotics strategy.

Regarding interdiction, although there are no direct empirical evaluations using micro-level data, the structural model of Mejía and Restrepo (2016) suggests that interdiction is more cost-effective than eradication: the marginal cost of reducing 1 kg of cocaine in the United States would be USD 175,000 via interdiction versus USD 940,000 via eradication.

Another important lesson is the need to develop comprehensive strategies. The Comprehensive Consolidation Plan of La Macarena (PCIM), initiated in 2007, combined eradication with alternative development and investment in infrastructure. Although the results were modest, significant improvements were observed in local conditions, a crucial aspect when it comes to consolidating sustainable reductions in the incidence of drug production and trafficking activities in producer countries (Mejía, Uribe, and Ibáñez 2011).

As for the National Comprehensive Program for the Substitution of Illicit Crops (PNIS), its evaluation between 2017 and 2022 shows that, although crops were reduced in some areas and a 6 percent drop in multidimensional poverty was observed among the program's beneficiaries, it had serious implementation flaws: the decrease in coca cultivation in the treated areas was offset by an increase in crops in neighboring areas that were not intervened; only 2.75 percent of the registered families received all the promised benefits; and there was an increase in deforestation levels in surrounding areas (Londoño, Marín, and Vélez 2024). Since 2014, coca cultivation in Colombia has expanded again (see Figure 10). Prem, Vargas, and Mejía (2023) identified that a naïve and ill-timed announcement of an illicit crop substitution program during peace negotiations with the FARC in 2014 incentivized crop expansion pending pre-announced substitution incentives, exacerbating future production.

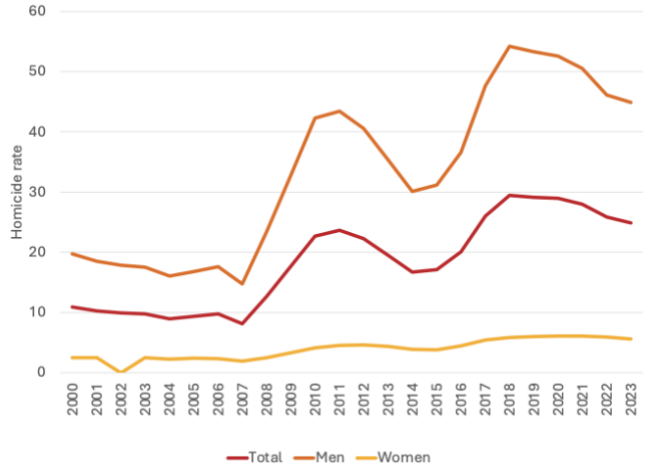
In summary, in Colombia, the supply-reduction policies implemented during Plan Colombia achieved temporary reductions in coca leaf cultivation and cocaine production, but at a high economic cost and with questionable long-term effectiveness. Even in the best years, the global supply of cocaine did not contract steadily. In fact, international cocaine prices have not shown lasting increases indicative of shortages in the markets for this substance. Various attempts to make drugs more expensive, as a result of the strengthening of different supply-reduction policies, have been short-lived, as production shifts geographically or traffickers find new routes. Taken together, these studies highlight the complexity of designing effective anti-drug policies, in which understanding local incentives and behaviors is crucial to avoid counterproductive outcomes.

Mexico's frontal war on drugs: Merida Initiative, militarization, and drug-related violence

In Mexico, supply-reduction policies resulted in a frontal offensive against drug cartels beginning in 2007 under the Merida Initiative, a joint strategy with the United States that provided financial, technological, and training assistance to Mexico and Central American countries. This strategy was structured around four pillars, namely (a) interrupting the flow of drugs and weapons, (b) strengthening security and justice institutions, (c) developing a secure and modern border, and (d) supporting communities affected by violence.

The federal government deployed military forces to combat drug trafficking organizations, prioritizing interdiction and the capture of leaders, under the assumption that decapitating the cartels would reduce drug trafficking to the United States (Robles et al. 2013). More than half of the known kingpins were captured or eliminated in the early years. However, violence intensified: the homicide rate almost tripled between 2007 and 2011, from 8.2 to 23.6 homicides per 100,000 population (Figure 11), with a greater increase among men than women.

Figure 11. Homicide rate in Mexico, total and by gender, 2000–23



Source: Elaboration with data from the National Institute of Statistics and Geography (INEGI) of Mexico and data from the World Bank.

The academic literature has consistently shown that Mexico's strategy of militarization against drug trafficking did not reduce violence but rather intensified it. The fragmentation of the cartels, the territorial struggles after the capture and extradition of their leaders, and the lack of institutional strengthening resulted in more confrontations, homicides, and the emergence of new groups such as the CJNG (Dell 2015; Lindo and Padilla-Romo 2018; Phillips 2015; Robles et al. 2013). Beyond military operations, the literature underscores the importance of addressing structural causes, such as corruption and lack of opportunities, by proposing approaches to human security (Farfán-Méndez 2019b).

The economic costs were also significant. The municipalities most affected by the violence suffered contractions in economic activity—reflected in falls in energy consumption and GDP per capita—and higher levels of corruption, in some cases involving local police in extortion crimes (Balmori 2016; Robles et al. 2013). Likewise, the transnational nature of drug markets showed how policies in one country have an impact on others. In this sense, the increase in cocaine seizures in Colombia between 2006 and 2009 exacerbated violence in Mexico, especially in border municipalities disputed by criminal organizations due to their strategic location for illegal drug trafficking to North America (Castillo, Mejía, and Restrepo 2020).

In addition, the expansion of the synthetic drug market introduced new dynamics. Following China's ban on fentanyl exports in 2019, Mexican municipalities linked to fentanyl saw an increase in deaths from overdoses, drug dealing, and socioeconomic decline, while heroin-producing regions saw declines in homicides (Atuesta 2024).

Policies against illicit crops in Peru and Bolivia

Other coca-producing countries—in particular, Peru and Bolivia—offer additional lessons on supply-reduction policies. Peru, which was the world's leading producer of coca leaf in the 1980s, experienced a sharp drop in illicit crops in the following decade owing to aggressive interdiction and eradication efforts. During the government of Alberto Fujimori, measures such as the closure of the 'Air Bridge', which connected the cultivation areas in Peru with the laboratories for the processing of coca paste into cocaine hydrochloride in southern Colombia, drastically interrupted the business. As a result, the price of coca leaf in Peru plummeted, and many farmers abandoned the crop. The area under cultivation fell from more than 115,000 ha in 1995 to less than 50,000 ha at the beginning of 2000.

However, this achievement was not definitive. Production shifted to Colombia, which in 2000 already accounted for 70 percent of the world's production of coca leaf and cocaine hydrochloride (Mejía 2016b). This 'balloon effect' was repeated a decade later: when cultivation declined in Colombia in the 2000s, Peru was once again the leading producer of coca leaf in 2012. UNODC stressed that the anti-drug persecution in Colombia had shifted the crop to neighboring countries. Although Peru achieved a slight reduction between 2012 and 2013 with manual eradication and alternative development, crops persist in the area of the Valley of the Apurimac, Ene and Mantaro Rivers (VRAEM), where remnants of insurgent groups such as the Shining Path operate (UNODC 2014).

Bolivia, for its part, implemented a model of 'social control' since 2006 under the government of Evo Morales. Instead of forced eradication, a legal quota of crops (20,000 ha for traditional uses) was allowed, and producers themselves were encouraged to monitor excesses and coca cultivation for illicit uses (that is, cocaine production). This strategy, combined with alternative development supported by the European Union, yielded results. Between 2010 and 2014, Bolivia reduced the cultivated area by 34 percent, without high levels of violence. Ledebur and Youngers (2016) highlight that this policy avoided confrontations with coca growers owing to the agreement and improvements in the living conditions of rural populations that were economically dependent on coca leaf crops. By guaranteeing basic income and offering legal alternatives, dependence on the illegal market was reduced. Although deviations toward drug trafficking persist, this model highlights the value of aligning local incentives with national objectives, strengthening community institutions to achieve self-regulation of supply.

Effects of anti-drug policies on countries with new international drug trafficking challenges: Brazil and Ecuador

Most studies on anti-drug policies have focused on producer and transit countries such as Colombia, Mexico, Peru, and Bolivia. However, new routes, such as traffic through the Brazilian Amazon to Europe or through Ecuador to North America and Asia, have gained relevance. Pereira et al. (2024) analyzed the effects of an air interdiction policy implemented in Brazil in 2004, which forced the diversion of air traffic to river routes. The authors find that homicidal violence increased 27 percent in municipalities along these routes, and overdose deaths increased, which reveals a greater local availability of cocaine. They conclude that, although the air interdiction was effective, it generated a displacement of crime and more violence in areas that were previously less affected.

Ecuador, which maintained low levels of violence until 2020, experienced a drastic increase in homicides from 2021 onward, reaching a rate of over 47 per 100,000 inhabitants in 2023 (OEC0 2024). According to the International Crisis Group (2025), the country became the most violent in South America due to its growing role in cocaine trafficking, facilitated by its proximity to Colombia and the existence of key seaports on the Pacific Ocean. Several Mexican groups expanded their operations in Ecuador, using local gangs as intermediaries (Dalby 2021). Institutional corruption has facilitated criminal infiltration, consolidating the power of these networks, especially in areas such as Durán. The lack of economic opportunities and post-pandemic social weakening facilitated the recruitment of young people, thus reinforcing the cycle of criminality.

In summary, the empirical evidence reviewed in this section shows that reducing supply in producing and transit countries has been very difficult in contexts of high profitability and weak institutionality. Forced eradication and militarization have temporary gains, but they carry very high costs in terms of violence, the environment, and democratic institutions. In Colombia, decades of fumigation did not raise street prices for cocaine in major consuming countries, nor did they steadily reduce production. In Mexico, the offensive against drug cartels managed to temporarily dismantle some criminal structures, but at the cost of a very sharp increase in levels of violence. On the contrary, experiences

such as those of Peru in the 1990s and Bolivia more recently, combining selective interdiction, economic incentives, and local participation, have achieved better results with lower levels of violence.

Evidence suggests that no single strategy is enough: the most effective policies combine strategies of targeted deterrence, alternative development, institutional strengthening, and community agreements. In addition, they should be complemented by demand-reduction policies in consumer countries. Mejía and Restrepo (2012) show that the latter are much more cost-effective: for every dollar invested, prevention and treatment in consumer countries reduce consumption more than eradication or interdiction in producer and transit countries. This evidence coincides with a shift in global discourse toward public health and development approaches, evaluating policies beyond seizures and eradication and including indicators of governance and well-being of populations affected by drug trafficking in producer and transit countries (Youngers and Rosin 2005). In short, a comprehensive approach is required that not only reduces supply but also strengthens institutions, reduces violence, and generates sustainable conditions for the populations involved.

IV. DRUG TRAFFICKING, ANTI-DRUG POLICIES, AND VIOLENCE

The relationship between drug trafficking and violence in Latin America has been the subject of extensive empirical research, which together confirm a significant causal connection: drug production and trafficking tend to exacerbate levels of lethal violence and criminality. This link is explained by several mechanisms.

First, since these are illegal activities, the actors involved cannot resort to the justice system to resolve disputes associated with transactions (payments, deliveries of goods, compliance with deadlines, quality commitments, and so on) and often end up resorting to violence as a mechanism to resolve these disputes (Magaloni et al. 2020). Second, the high profits from drug trafficking act as a 'booty' that criminal groups dispute, provoking violent actions that seek control of strategic areas for drug production and trafficking. Likewise, drug production and trafficking activities require territorial control: to grow coca or poppy or to transport drugs to the main markets for final consumption. However, it is worth clarifying that the violence associated with disputes over territorial control of areas suitable for drug production and trafficking does not only occur in the countries of production and transit. In some cities in consumer countries, such as Chicago or Los Angeles, for example, a significant part of interpersonal violence (homicides and shootings) is associated with disputes between local gangs for territorial control of urban spaces (street corners, parks, parking lots, and so on) that have traditionally been used for the sale of psychoactive substances to end consumers. Third, some anti-drug policies focused on the repression of supply can aggravate violence by fragmenting criminal organizations and creating incentives to eliminate competitors (an effect known as *the kingpin strategy*).

In producer and transit countries, violence associated with drug production and trafficking activities tends to be more intense than that associated with drug distribution in consumer countries. The literature has explained these differences in the levels of violence observed in producer and transit countries and consumer countries by the greater criminalization and persecution faced by production

and trafficking activities in the former, in contrast to those of final distribution and consumption in the latter. In addition, the literature has pointed out that greater institutional weakness in producer and transit countries plays an important role. This is partly due to the fact that, in consumer countries, the state, regulatory, and judicial presence is stronger, which contributes to preventing and even deterring the use of violence around the distribution markets of psychoactive substances (Farfán-Méndez et al. 2022; UNODC 2010).

The following summarizes the main findings of the literature that studies the relationship between drug trafficking, violence, and anti-drug policies in some countries of the region, such as Mexico, Colombia, Brazil, and Ecuador.

As noted above, in the case of Mexico, the academic literature has been consistent in showing that the military offensive initiated in 2007 against drug cartels produced a significant increase in levels of violence. The strategy of 'decapitation' of criminal organizations weakened local organizations and opened up power vacuums that led to violent disputes between factions and successors, which in turn increased homicide rates. The evidence also indicates that violence tended to be concentrated in strategic territories and in key drug trafficking corridors, where practices such as extortion of civilians also grew. In contrast, areas dominated by a single cartel showed relatively lower levels of direct violence, suggesting that criminal fragmentation exacerbated insecurity rather than contained it.

An additional dimension of the relationship between drug trafficking and violence is the flow of weapons from North America to Mexico as part of the payment for drug shipments coordinated by Mexican drug cartels. Some studies have documented this phenomenon, where Mexican cartels take advantage of the lax regulation of certain North American states in the sale of rifles and ammunition that are then smuggled to areas controlled by organized criminal groups in Mexico (Izquierdo 2021; UNODC and Flemish Peace Institute 2024). This reverse flow of weapons as payment for drug shipments not only strengthens these criminal groups militarily but also increases structural violence within their territories of control, creating a double illicit circuit: drugs that go up to the north and weapons that go down to the south. Various studies highlight that this exchange fuels a cycle of violence and weakens the state, since the resources used to combat drug trafficking are displaced by the weapons that criminal groups use to maintain and expand their territorial dominance and control (UNODC and Flemish Peace Institute 2024).

In Colombia, Angrist and Kugler (2008) and Mejía and Restrepo (2013) documented that the boom in cocaine production and trafficking activities has a significant effect on levels of violence, in particular, on homicides, kidnappings, and forced displacements.

In Brazil, Soares and Carvalho (2010) studied the crack boom in the nineties and its relationship with the increase in homicide rates, while studies on Central America show how drug dealing amplified the lethality of gangs, increasing the violence associated with disputes for territorial control (Wolf 2017).

In this context, corruption acts as a critical facilitator of this dynamic. Trejo and Ley (2018) found that Mexican municipalities with the highest drug trafficking flows register a higher number of murders of local authorities, evidencing the capture of the state by criminal networks. Hedges (2025) analyzes how

drug trafficking infiltrates state institutions, increases criminal access to weapons, and resorts to political assassinations to consolidate its power.

In conclusion, drug trafficking is perhaps one of the main triggers of violence and criminality in Latin America, but the intensity of this violence depends on the institutional context. In general, other illegal markets, such as illegal mining or illegal timber exploitation, also tend to generate higher levels of violence through the same mechanisms as drug trafficking. A fundamental determinant through which illegal markets generate violence is the size of the illegal rents in dispute, and, as discussed in the previous sections, in the case of drug trafficking, these rents are very significant in different countries in the region. When the state is weak or corrupt, violence is more intense; where there is greater control, it can be attenuated.

However, the combination of illicit markets with very high profitability, multiple armed actors, and institutional weakness has generated scenarios of extreme violence in several countries in the region. Evidence suggests that purely coercive strategies have failed and that reducing both violence and drug trafficking requires more comprehensive approaches. The following section examines how local drug distribution and consumption also shape the dynamics of violence at the urban scale.

V. LOCAL DRUG DISTRIBUTION, MICRO-TRAFFICKING, AND CONSUMPTION IN LATIN AMERICAN COUNTRIES

In recent decades, drug dealing and the expansion of local drug markets have gone hand in hand in Latin America's main cities. While much of the public policy has focused on combating large cartels and transnational drug trafficking, the region now faces challenges stemming from its growing role as a consumer market. This phenomenon has led to a sustained increase in drug trafficking and distribution at the local level and the strengthening of local criminal networks. Although the volume of micro-trafficking is considerably smaller than that of the international drug trade, its impact in terms of citizen security and local criminal governance is significant.

Drug dealing in cities such as Bogotá, Lima, or Mexico City operates through fixed distribution points known locally as ‘ollas’ or ‘tienditas’, managed by criminal networks of relatively small scale of operation. In other cities, such as Medellín, São Paulo, or Rio de Janeiro, these structures have acquired greater sophistication and coercive capacity. In Medellín, the so-called ‘combos’ control specific territories and monopolize the local distribution of drugs, often under the coordination of higher hierarchical structures (Blattman et al. 2024). In Rio de Janeiro and São Paulo, criminal factions such as the Red Command and the PCC not only operate as actors in drug trafficking and local drug distribution but also exert control over entire communities, imposing rules and monopolizing other legal and illegal markets. In Central America, gangs such as the Mara Salvatrucha (MS-13) and Barrio 18 have integrated drug retail into their criminal activities, intensifying levels of urban violence in cities such as San Salvador and Tegucigalpa.

The territorial control exercised by these organizations is not limited to the distribution of drugs but often includes criminal governance functions over local populations. In peripheral areas with a weak

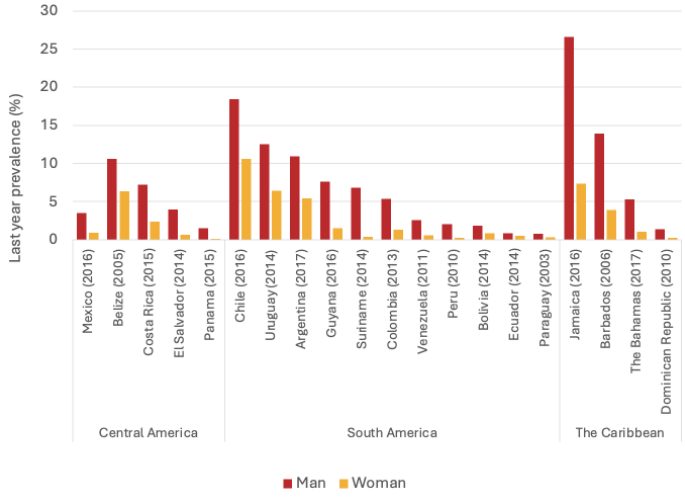
institutional presence, these groups regulate community coexistence, impose coercive rules, punish common crimes, and resolve neighborhood disputes, assuming functions that correspond to the state and local governments (Arias 2006; Blattman et al. 2022). This form of criminal governance also involves the provision of basic goods or services and, in some cases, the exercise of parallel justice, thus consolidating an alternative order that, while reducing certain types of violence, reinforces the subordination of communities to non-state armed actors.

Recent patterns of drug use in Latin America

Historically, prevalence rates of psychoactive substance use in Latin America have been relatively low compared to North America and Europe. However, in the last two decades, a significant increase has been observed in several countries. This trend has been documented from national consumption surveys carried out among the general population and students, with the technical support of the Inter-American Observatory on Drugs (OID) of the Inter-American Drug Abuse Control Commission, Organization of American States (CICAD-OAS), which promotes standardized protocols and comparative analyses in the region. Overall, recent data indicate a general increase in drug use in Latin America, especially among the young population, despite the fact that levels are still lower than those in developed regions.

Regional trends show that cannabis remains the most widely used psychoactive substance in the region, and its use has increased in most countries, both in the general population and among adolescents. Annual prevalence rates vary widely by country, with levels especially high in Jamaica, Chile, Uruguay, Barbados, and Argentina. These figures reflect that, in several countries in the region, the penetration of cannabis use is close to levels typically observed in developed countries (Figure 12).

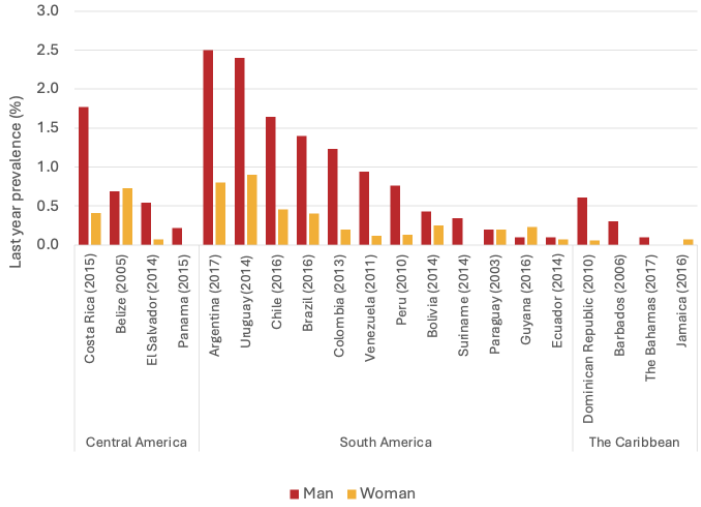
Figure 12. Prevalence of marijuana use in the last year in the general population, by gender



Source: Elaboration based on CICAD-OAS (2019).

In contrast, cocaine use has lower absolute prevalences in the countries of the region, although it has also tended to increase over the last decade. Southern Cone countries such as Argentina and Uruguay have prevalence rates of cocaine use in the last year among men very similar to those observed in the United States (2.5 percent) and higher than those in Canada (1.7 percent) (Figure 13). Brazil, for its part, has become one of the main crack markets in the world, which shows a particular problem with cocaine derivatives.

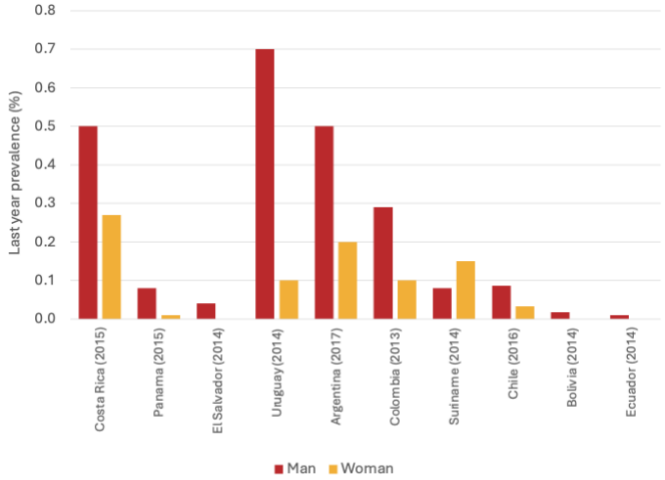
Figure 13. Prevalence of cocaine use in the last year in the general population, by gender



Source: Elaboration based on CICAD-OAS (2019).

As for synthetic drugs such as MDMA (ecstasy), although their levels of consumption are lower, they show an expansion among the young population and in recreational contexts. Uruguay, Costa Rica, and Argentina are the countries with the highest prevalence rates of the consumption of this substance.

Figure 14. Prevalence of ecstasy use in the last year in the general population, by gender



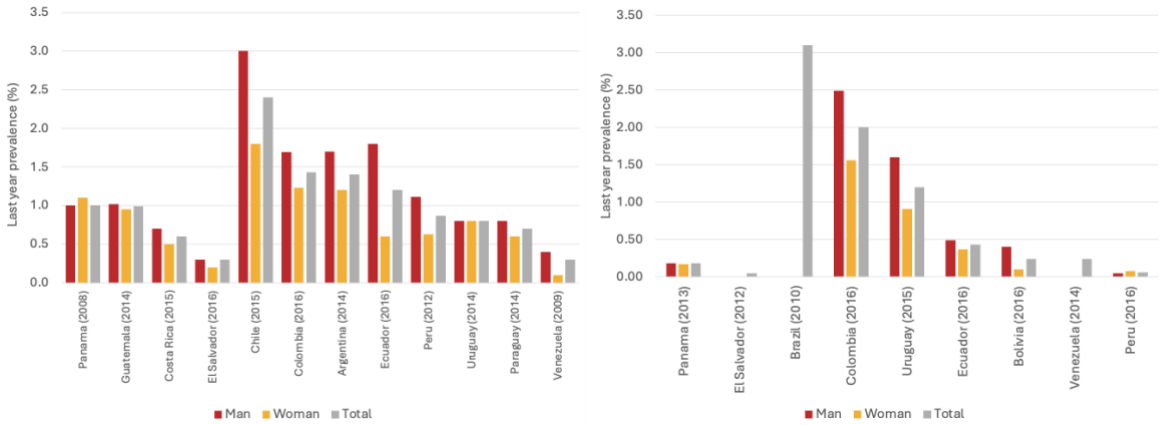
Source: Elaboration based on CICAD-OAS (2019).

Figures 12, 13, and 14 show important differences in consumption patterns by gender. On average, the annual prevalence of drug use among men can be three to five times higher than among women, depending on the substance. This gap is particularly marked in the case of cannabis and cocaine, although it narrows in the case of synthetic drugs, especially in younger populations. In some countries, similar rates of ecstasy use have even been recorded among male and female students.

Age also strongly influences consumption patterns. Young adults (ages 18–34) have the highest annual prevalence rates for both cannabis and cocaine. On the other hand, among older adults, consumption is much lower. Adolescents (ages 12–17) show intermediate, although worrying, levels, with particularly high prevalences in countries such as Uruguay and Chile, for both cannabis and cocaine. In some surveys of the school population, the proportion of students who report cocaine use in the last year even exceeds the figures reported in the United States or Canada. In the case of ecstasy, use is clearly concentrated in the young population: annual consumption rates among secondary and university students are several times higher than those of the general population (Figure 15).

Figure 15. Prevalence of ecstasy use in the last year in the young population, by gender

a. High school students **b. College students**



Source: Elaboration based on CICAD-OAS (2019).

Surveys show that the perception of availability has a significant influence on consumption patterns: those who report greater ease in obtaining drugs or having received direct offers exhibit significantly higher consumption rates. There is also concern about the increasingly early onset of the use of psychoactive substances, with cases registered as early as age 13 or 14 years. The earlier consumption begins, the greater the risk of dependence and of developing physical and mental health problems associated with problematic use of psychoactive substances. Some international organizations, such as CICAD-OAS, have emphasized the need for preventive programs that delay the age of onset of drug use, especially in school and community contexts.

In summary, although Latin America had relatively low levels of consumption in the past, recent data show an upward trend with significant differences by country, age, and gender. These dynamics demand

comprehensive public health, prevention, and treatment policies, with emphasis on the most vulnerable groups of the population.

Responses to micro-trafficking and drug use in the region

Latin American governments have adopted a variety of strategies in the face of increased local drug use and distribution, ranging from repressive and public health approaches. As for 'iron fist' operations, many countries carry out frequent raids on neighborhoods, arresting local vendors. In El Salvador, during the 2000s, hundreds of young people were arrested for possession or sale of small amounts; in Argentina, specialized prosecutors' offices in drug dealing were created, and operations are carried out in marginalized areas. Although these actions show immediate results, they tend to be unsustainable, as the points of sale are relocated (balloon effect on an urban scale).

Several countries have implemented legal reforms to decriminalize personal consumption, recognizing that criminalizing the user does not reduce demand and contributes to prison overcrowding. Colombia has done so since 1994; Argentina, Mexico, and Ecuador, for their part, established possession thresholds to avoid criminal sanctions. These reforms make it possible to address consumption as a public health problem and focus resources on more effective policies, such as prevention, especially among children and young people.

Treatment and harm reduction programs have grown slowly in the region. Costa Rica, Uruguay, and Chile have invested in drug treatment centers and courts for addicts who break the criminal law. In Brazil, some cities such as São Paulo have developed community interventions in critical areas such as 'Cracolandia', combining treatment and police presence for assistance purposes.

Comprehensive interventions in neighborhoods recognize the link between micro-trafficking and social exclusion. In Rio de Janeiro, the strategy of the Pacifying Police Units (UPPs), implemented since 2008, sought to recover territories dominated by criminal groups and gangs through the presence of community police and the provision of state services. Although the UPP strategy succeeded in reducing violence in some favelas, it faced limitations due to the lack of continuity. In Medellín, initiatives such as 'Barrismo positivo' or 'Zonas de Atención Especial' offered education, sports, and employment to at-risk youth, with mixed results. In Bogotá, the comprehensive intervention in the Bronx made it possible to regain territorial control, restore the rights of exploited minors, and offer rehabilitation services to the homeless population (Mejía 2016a). However, in many of these cases, interventions focused on particular areas ended up displacing the sale of drugs to nearby places.

At the local level, some governments also attack supply by destroying synthetic drug laboratories, such as tuci or ecstasy, detected in Argentina and Chile. In addition, civil society and religious organizations have played an active role, such as in Colombian neighborhoods, where they cooperate with authorities to protect school environments, or in Central American neighborhoods, where evangelical churches lead prevention campaigns.

A prominent case is that of Uruguay, which in 2013 legalized and regulated cannabis for recreational use through a model of state control and regulation, which sought to weaken drug trafficking and address consumption from a public health perspective. Box 2 in Annex 4 describes the cannabis market regulation model implemented in Uruguay and its impacts on consumption and safety. The implementation of this model in Uruguay has inspired similar debates in Mexico and Colombia about cannabis regulation.

In short, consumption and micro-trafficking represent the 'tip of the iceberg' of the drug problem in Latin America. The trends show an increase in the consumption of cannabis, cocaine, and synthetic drugs, and the consolidation of local markets, which can generate violence. State responses are slowly moving toward more balanced approaches that combine strategies of focused deterrence, criminal prosecution of criminal groups dedicated to the trafficking and distribution of psychoactive substances, and some policies, still incipient, of prevention and treatment against consumption, although the punitive emphasis persists. CICAD's 2019 report recommends comprehensive policies: targeted preventive education, attention to problematic consumers, and dismantling micro-trafficking through intelligence, not indiscriminate raids.

This requires resources and interinstitutional coordination between the health, education, security, and justice sectors. Some successful experiences, such as drug courts in Chile, show that rehabilitation can reduce criminal recidivism (CICAD-OAS 2019). However, it is still necessary to move toward policies that prioritize public health over punishment, especially in the treatment of consumers and small sellers, who are often vulnerable links rather than major criminals.

VI. CONCLUSIONS AND POLICY RECOMMENDATIONS

Many countries in Latin America have implemented multiple strategies to combat drug trafficking and violence associated with illegal markets. Despite this, after decades of implementing policies focused on reducing supply under the 'war on drugs' approach, the results have been very limited.

The evidence analyzed in this paper leads to a clear conclusion: the dominant strategy, based on repression and prohibition, has not achieved its fundamental objectives and, on the contrary, has contributed to the expansion of illegal drug markets, the strengthening of organized crime, and a marked increase in the levels of violence in several producing and transit countries in the region. Despite massive campaigns of eradication, interdiction, and persecution by drug cartels, cocaine production is at an all-time high, the flow of other drugs such as fentanyl and methamphetamines persists, and violence has escalated to record numbers in many countries.

A key factor in the failure of policies to reduce supply and fight drug trafficking has been the ability of organized crime to adapt in the face of state pressure. The fragmentation of cartels, technological innovations in drug production and trafficking processes, the opening of new routes (such as the Brazilian Amazon or the ports of Ecuador), and diversification into other illegal economies are direct responses to the repressive policies implemented in different countries. In contexts of weak institutions,

various drug trafficking groups have assumed functions of local authority, offering security or income in exchange for loyalty, which deeply undermines the democratic order in the region.

On the other hand, domestic drug use in Latin America has grown significantly, especially among young people. In the face of this change, a punitive approach persists that penalizes users and small vendors, without offering effective treatment or prevention alternatives. This strategy has failed to prevent access to drugs, but it has contributed to stigmatization, overburdening the penal system, and weakening public health responses.

In short, Latin America is facing a turning point. The available evidence on the limited effectiveness and the very high costs, both direct and collateral, of the anti-drug policies implemented in recent decades in the region points to the need to abandon the exclusively repressive paradigm and move toward more balanced, comprehensive, and evidence-based policies. Cases such as the concerted eradication with communities in Bolivia or the regulation of cannabis in Uruguay show that alternative approaches can be more effective and sustainable. Regulating certain substances, far from implying a renunciation of control, can weaken the power of drug trafficking, reduce the illegal income associated with drug trafficking, and reduce the direct and collateral damage associated with it.

The main public policy recommendations derived from the analysis carried out are presented below:

- Supply-reduction policies implemented in the region should not only be evaluated for their direct results, such as the number of hectares of illicit crops eradicated or drugs seized, but also for their effects on two important dimensions. First, to what extent are the costs of this illegal business increasing and the profitability for organized criminal groups operating in the region decreasing? Second, what is the impact of these supply-reduction policies on the levels of violence associated with drug trafficking? As documented in this paper, many supply-reduction measures can appear to be very successful if evaluated using the wrong metrics, for example, by considering only the number of hectares of coca leaf sprayed or manually eradicated. If, as the evidence shows, eradicated or substituted illicit crops are easily replaced, evaluating the success of supply-reduction policies using metrics such as the number of hectares manually eradicated, sprayed by air, or replaced through alternative development programs is misleading and does not reflect the actual effectiveness of the strategies. In relation to the second point, some strategies implemented in the region to confront criminal groups linked to drug trafficking, such as the capture, extradition, or elimination of the leaders of these organizations, end up fragmenting the cartels and generating spirals of violence that are very costly for the region. This is compounded when captured or eliminated leaders are quickly replaced by unaffected second or third parties within criminal organizations.

- Countries should prioritize reducing levels of drug-related violence, even if this means sacrificing some supply-reduction metrics. Responsibility for a transnational phenomenon such as the production, trafficking, and consumption of psychoactive substances must be shared. If consumer countries do not achieve concrete results in reducing demand, producer and transit countries should prioritize the goal of reducing drug-related violence, even if this conflicts with the pressures they receive to reduce the supply of drugs within their territories. In

this context, a diplomatic strategy and permanent dialogue with predominantly consumer countries is needed, to show them that some of the supply-reduction policies they promote are very costly (in terms of violence, corruption, and institutional deterioration) for the region. The best contribution that consumer countries can make to reducing drug-related violence in producer and transit countries is to implement effective and evidence-based demand-reduction policies within their territories. This would reduce the revenues associated with drug trafficking and, with it, the levels of violence in the region.

- The region needs to rethink its security and justice strategies, starting with replacing indiscriminate militarized operations with targeted deterrence actions against the most important links in organized criminal networks linked to drug trafficking. To this end, it is necessary to strengthen institutional intelligence and criminal investigation capacities, by providing police forces and prosecutors' offices adequate tools and technological equipment to confront organized criminal groups that permanently innovate and seek to counteract the effects of supply-reduction policies. Likewise, the countries of the region must decisively confront corruption and the infiltration of drug trafficking in politics.

- Negotiations with organized criminal groups linked to drug trafficking must focus on weakening them, with the aim of bringing them to justice. While pacts between organized criminal groups to reduce levels of violence can be very attractive in the short term, national and local governments must carefully evaluate their costs, considering both static or short-term costs, as well as dynamic costs in the medium and long term. The criminal stability derived from the pacts between criminal groups is fragile; if the pacts are broken, the subsequent violence may be more intense than the initial one. Also, tolerating pacts between criminal groups can lead to their strengthening and the deterioration of the capacity of states to confront them in the future if criminal groups do not comply with what has been agreed. In short, the authorities face not only a static dilemma ('mafia peace' versus 'mafia violence') but a dynamic dilemma: reducing violence today could mean more violence, criminality, and institutional weakness in the future, especially if the balances or pacts initially reached are broken. In any case, the governments of the region and their military and police forces must strengthen their capacities, equipment, and technologies to confront these groups and guarantee their submission to justice.

- While the criminal prosecution of criminal groups linked to drug trafficking should focus on the most important links in the chain and not on links such as peasant coca or poppy growers, or young drug users, the countries of the region should promote economic and social development in vulnerable areas. This requires addressing the structural causes of drug trafficking through comprehensive rural development programs, as well as urban development policies that provide sustainable legal alternatives for the weak links in the chain of production and trafficking of illegal substances. This includes investment in infrastructure, education, employment, and public services in coca-growing regions and in marginal neighborhoods of the region's main cities.

- With regard to the consumption of psychoactive substances, the policies adopted must have a public health approach, where prevention campaigns focused on young people, people with problematic consumption patterns, and at-risk populations, such as street dwellers, are prioritized. Likewise, policies against consumption must focus on harm reduction, recognizing that there are people with dependency problems who must be treated with dignity to reduce the risks and damages associated with problematic consumption patterns. International evidence shows that these strategies work: after decriminalizing the use of all drugs in Portugal in 2001, overdose deaths decreased significantly, and new HIV infections among drug users plummeted, with no significant increases in the prevalence of drug use. Similarly, countries such as Switzerland and Canada have implemented innovative programs (for example, medically supervised heroin or methadone-assisted therapy programs or supervised consumption rooms) that have been successful in reducing overdose mortality and the spread of infectious diseases, while connecting people with addiction problems to health services and treatment. In addition, prevention policies should be focused, avoiding primary and generalized prevention approaches, mainly on prevention and harm reduction in vulnerable and at-risk groups, with investments in early education, school and community programs, and access to treatment for people with problematic consumption patterns. Public policy responses to drug use should be led by the public health and education sectors, rather than being addressed from the criminal sphere to consumers of psychoactive substances.

- Governments in the region should explore regulatory reforms. For this, it is necessary and urgent to open the debate on the decriminalization or regulation of certain drugs, starting with cannabis for recreational use in adults. The experience of Uruguay, many US states, and some European countries such as Portugal and Switzerland can serve as a basis for designing optimal regulatory models for each country. For example, some provinces in Canada have initiated limited decriminalization pilot programs, which do not criminalize the possession of small amounts of opioids, cocaine, and other drugs for personal use; The state response focuses on the provision of treatment and social services rather than on the criminal prosecution of consumers. The available international experience indicates that it is possible to regulate the markets of psychoactive substances such as cannabis and, with this, weaken illegal markets, reduce criminal revenues, and reduce the levels of violence associated with the illegal distribution of psychoactive substances. In addition, countries should consider the experience of some European countries with controlled consumption centers. This does not imply promoting the use of psychoactive substances but rather adopting a pragmatic approach that recognizes that there are users with problematic consumption patterns that are very difficult to abandon, but in which opportunities for harm reduction and for bringing these users closer to treatment programs that help mitigate the side effects of consumption can be taken advantage of. These calibrated and evidence-based legal reforms could be adapted to the reality of Latin America, reducing stigma and making it easier for people with addictions to seek help, without significantly contravening existing international frameworks.

- It is necessary to strengthen international cooperation mechanisms to confront the transnational phenomenon of drug production, trafficking, distribution, and consumption. This is especially important in strategies aimed at combating drug trafficking and the criminal prosecution of criminal organizations linked to drug trafficking. In this sense, it is key to strengthen regional collaboration in intelligence, border control, and prevention of money laundering, as well as to promote the co-responsibility of consumer countries in reducing demand.

- Finally, related to the previous point, it is necessary to strengthen regional diplomacy to demand co-responsibility from the United States in the control of firearms. Just as Washington has demanded for decades that Latin American countries reduce the supply of illegal drugs, governments in the region must coordinate to demand greater control over the sale and trafficking of firearms in the United States, which end up in the hands of criminal organizations in Latin America. This two-way illicit flow—drugs going north and weapons going south—fuels violence and strengthens organized criminal groups linked to drug trafficking. A significant contribution the United States could make to reducing drug-related violence in the region would be to tighten domestic regulations on the sale of assault weapons and improve traceability mechanisms, recognizing that regional security depends on a shared commitment.

- Breaking with the inertia of traditional policies is urgent. Only a comprehensive approach that combines security, public health, and economic and social development will sustainably reduce the power of drug trafficking and its effects in the region. Drug policies must evolve toward more humane, effective models focused on the well-being of communities, capable of building more resilient societies in the face of organized crime. Evidence-based policies are not only often more effective but also encourage a more open debate about how best to address a complex problem that is, to some extent, impossible to eliminate entirely: the human desire to alter mental states through the use of psychoactive substances.

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ANNEXES

Annex 1. The process of cocaine production and trafficking, factors, costs, revenues, and size of drug trafficking in the Colombian economy

The cocaine production process in Colombia is structured in four sequential links: (a) the cultivation of the coca leaf; (b) the primary transformation of the leaf into coca paste or base; and (c) the transformation of coca base into cocaine hydrochloride (the final product) and (d) the initial trafficking stage, where cocaine is transported from the farmgate to the Colombian borders to be trafficked. The first two links correspond to small-scale, labor-intensive peasant economies with limited profit margins. UNODC estimates the average number of hectares of coca per family involved in this activity (1.25 ha per growing family) would imply that, by 2023, there would be close to 200,000 part-time or full-time peasant families, only in the initial phases of cocaine production: the cultivation of the coca leaf and its transformation into paste. A hectare of coca leaf can produce between 4 and 6 crops per year, generating an annual net income per hectare of approximately USD 2,000 to USD 2,500 (own calculations based on Mejía and Rico 2011). The initial transformation of the coca leaf into paste and base uses easily accessible inputs such as cement, gasoline, and potassium permanganate, as well as acids (hydrochloric and sulfuric) for the extraction of the alkaloids from the macerated coca leaf. By 2018, while the cost of precursor chemicals to produce 1 kg of cocaine base was approximately COP 880,000 (about USD 285), the market price of 1 kg of cocaine base was approximately COP 2,300,000 (USD 741). Table A1 shows the amount required and the cost (in 2018) of the precursor chemicals needed to produce 1 kg of cocaine base in Colombia.

Table A1. Main chemical precursors for cocaine production and their costs, calculations for 2018

Substance	Quantity required to produce 1 kg of cocaine base	Cost of chemical precursors per kg of cocaine base (COP)
Gasoline (gallons)	74.6*	733.542
Ammonia (liters)	2.1	4.943
Sulfuric acid	1.6	41.899
Cement (kg)	50.7	28.426
Potassium permanganate (kg)	0.3	22.028
Urea (kg)	10.7	45.849
Sodium metabisulfite (kg)	0.3	2.113
Total cost of precursors per kg of base		**878,800**

* Includes gasoline reuse factor.

Source: Calculations based on data from SIMCI-UNODC (several years).

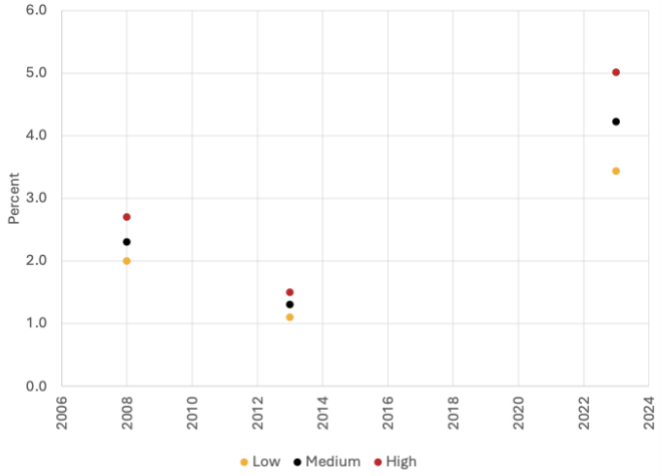
The highest value-added links, where cocaine base is processed into cocaine hydrochloride and wholesale trafficking is organized, are dominated by organized criminal groups with the capacity to make significant capital investments, including the assembly of crystallization laboratories (crystallizers), whose cost can exceed USD 1 million. In this phase, more controlled chemical

precursors are used, such as acetone, ether, hydrochloric acid, and ammonia, necessary for the purification, precipitation, and crystallization of the alkaloid, as well as electric generators and microwave ovens for final drying. The marginal cost of producing a kilogram of cocaine in a crystallizing facility in the jungles of Colombia (at 92 percent purity, the highest level reached) is approximately USD 2,500 to USD 3,000.

In the final phase of trafficking, in which cocaine is transported to Colombia's borders, there are different risk-sharing schemes between Colombian producers and drug traffickers (Colombian or foreign). In some schemes, Colombian producers deliver the cocaine to drug traffickers at Colombia's borders, and they are responsible for transporting it to consumer countries. In other schemes, Colombian producers have a participation in the trafficking phase in risk-sharing alliances with drug trafficking groups that transport the final product to the borders of the main consumer countries. The final sale price of Colombian cocaine at Colombia's borders (in ports or border areas) ranges from USD 6,000 to USD 9,000 per kg, depending on the scheme used and the participation of Colombian producers in the initial phases of trafficking.

Using these average final sale prices and potential cocaine production figures, and discounting the total cocaine seized within Colombia, we arrive at an estimate of cocaine production and trafficking revenues in Colombia, for 2023, of USD 15,300 million (in its average value), which is equivalent to 4.2 percent of Colombian GDP for that year. Figure A1 presents the evolution of drug trafficking revenues as a percentage of GDP for 2008, 2013, and 2023. While in 2008 drug trafficking revenues in the Colombian economy corresponded to about 2.3 percent of GDP and in 2013 (one of the years with the lowest cocaine production recorded in the last 25 years) to 1.3 percent of GDP, in 2023 this figure was more than 4 percent of GDP. This is only comparable to estimates from the time when Pablo Escobar and the Medellín cartel (in the 1980s and early 1990s) vertically dominated the entire cocaine production and trafficking chain until it entered consumer countries, when it was estimated that drug trafficking revenues represented between 4 percent and 5 percent of Colombian GDP (Rocha 2001; Steiner 1996).

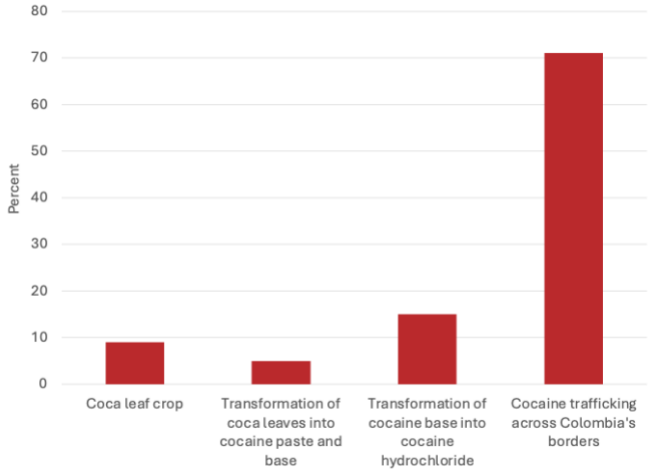
Figure A1. Drug trafficking revenues as a percentage of GDP in 2008, 2013, and 2023



Source: Calculations based on data from SIMCI-UNODC (several years) and Mejía and Rico (2011).

According to estimates by Mejía and Rico (2011), the distribution of the value added produced in each of the four main links in the cocaine production and trafficking chain is as follows: 9 percent corresponds to the first link, the cultivation of coca leaf; 5 percent to the transformation of coca leaf into cocaine paste and base; 15 percent to the transformation of base into cocaine hydrochloride (the final product); and 71 percent to the trafficking stage, where the cocaine leaves the laboratories and is transported to the borders of Colombia (Figure A2). This distribution of value added among the links reflects a markedly regressive structure in the distribution of benefits, as the greatest economic returns are concentrated at the end of the chain, while the social, environmental, and security costs fall disproportionately on farmers and rural communities.

Figure A2. Relative importance of each link in cocaine production in Colombia



Source: Calculations based on data from SIMCI-UNODC (several years) and Mejía and Rico (2011).

Annex 2. Fentanyl production and trafficking, factors, costs, revenues, and links of organized criminal groups in this illegal activity

Fentanyl is a synthetic opioid that, under medical regulations, is used as an analgesic for the treatment of severe pain. However, the illicit production and marketing of this substance has increased exponentially in recent years, due to its high potency and profitability. Fentanyl is estimated to be 100 times more potent than morphine and 50 times more potent than heroin. This means that small dosage errors when consuming it can lead to a serious risk of overdose and death. Its low production cost and ease of clandestine manufacture have made this substance a central element in organized crime operations.

The illegal production of fentanyl in Mexico has evolved significantly in recent years, consolidating the country as a key player in the supply of this synthetic opioid to the United States and Canada. The fentanyl production process requires precursors or pre-precursor chemicals imported from China or

India,[4] especially through brokers located in Sinaloa, who facilitate access to inputs that are not yet regulated. Initial production operations were relatively simple and small scale, but cartels have centralized control, scaling to larger laboratories, indicating growing economies of scale and higher barriers to entry (Dittmar and Ríos 2025). Fentanyl synthesis in Mexico is characterized by a relatively low cost structure, which makes it highly profitable for illegal producers. The cost of producing a fentanyl pill in Mexico ranges between USD 0.60 and USD 0.70 (Infobae 2023), including all operating expenses. These same pills are sold in the United States at prices ranging from USD 5 to USD 10 per unit (Monnet 2023), depending on location, representing a significant gain for producers and traffickers; they can even sometimes have a higher price, between USD 7 and USD 14 per pill (Infobae 2023).

Most illegal fentanyl producers in Mexico obtain the necessary precursor chemicals online or through the dark web. For example, a recent journalistic investigation revealed that, with an investment of only USD 3,600, it is possible to obtain enough precursors to produce close to 3 million fentanyl tablets, with a potential market value of approximately USD 3 million, "a conservative estimate based on the prices cited by US law enforcement agencies in reports published during the last six months" (La Jornada 2024).

The profitability of fentanyl production is remarkably high. According to estimates by Dudley (2024), the wholesale fentanyl market in Mexico is worth between USD 15.7 million and USD 40.5 million. Upon crossing the border, fentanyl prices increase significantly, and the total value of illegal fentanyl produced in Mexico amounts to between USD 27 million and USD 67.5 million. This high profitability is due to the combination of low production costs and high selling prices in international markets. Despite the high profitability of illegality, the estimated total size of revenue associated with the production and trafficking of illegal fentanyl is relatively small when compared to other drugs such as cocaine and methamphetamines.

The main organized criminal groups involved in the production and trafficking of fentanyl in Mexico are the Sinaloa Cartel, in particular the faction known as ‘Los Chapitos’, and the CJNG. Both groups have consolidated logistical structures to import chemical precursors—mainly from China—and process them in clandestine laboratories located in states such as Sinaloa, Sonora, Baja California, and Michoacán (DEA 2024). The Sinaloa Cartel has been identified as the most sophisticated group in the production of fentanyl, as it has complex logistics networks and cross-border operations that guarantee export to the United States. In contrast, the CJNG has been more linked to distribution and transportation, although it has also ventured into production at scale.

Operations are not only centralized in the leadership of these cartels. Various investigations suggest that both groups subcontract part of the production to ‘cooks’ or small independent producers who operate temporary laboratories in exchange for monetary payments and security and protection services. This fragmentation has allowed these cartels to decentralize risk and increase operational flexibility. However, it has also generated disputes over territorial control and a drop in wholesale prices of fentanyl. For example, in Sinaloa, the price of 1 kg decreased from USD 7,000 in 2022 to around USD

[4] A detailed description of the chemical precursors needed for fentanyl production, the countries of origin, the routes and forms of trafficking, and the actors involved can be found in García (2024).

3,000 in 2023, as a result of increased supply and the loss of control by large cartels over subcontracted small producers (Dittmar and Ríos 2025).

The regulation of precursor chemicals and pressure from the US government for countries such as China, India, and Mexico to impose greater controls on the trafficking of these precursor chemicals for the illegal production of fentanyl have affected the production of this substance. In August 2024, China imposed stricter controls on key substances used in fentanyl synthesis, forcing Mexican producers to adapt their production methods and look for alternatives to obtain the necessary inputs (Reuters 2024).

Annex 3. Production and trafficking of synthetic stimulant drugs, factors, costs, income, and links of organized criminal groups in this illegal activity

The production of methamphetamines requires essential chemical precursors, such as ephedrine and phenylacetone (P2P). These compounds are mainly imported from China and India, through ports such as Manzanillo, in the state of Colima, taking advantage of legal loopholes and lax regulations in those countries. Mexican producers have developed sophisticated networks of intermediaries to acquire these precursors, allowing them to maintain large-scale production at relatively low costs. In recent years, production has shifted from artisanal laboratories to industrial plants, evidencing significant economies of scale (López-Aranda 2023). Although transportation is inexpensive, the cartels concentrate production in Mexico and distribute from there to multiple destinations (the United States, Europe, Asia, and Oceania), instead of producing directly in each market. While exact figures vary, the cost of producing 1 kg of methamphetamine in Mexico is estimated to be significantly lower than its US sale price, leading to substantial profit margins for producers and traffickers.

The states of Sinaloa, Michoacán, and Jalisco are home to 'superlabs' capable of producing large quantities of high-purity methamphetamines. These facilities operate with industrial efficiency, favored by the availability of precursors and the technical expertise developed locally. The strategic location of these states, with access to seaports and land routes to the northern border, facilitates drug trafficking to the United States.

As with fentanyl, the Sinaloa Cartel and CJNG are the main organizations involved in the production and trafficking of methamphetamines in Mexico, likely reflecting economies of scope in the two synthetic drug markets (fentanyl and methamphetamines). The Sinaloa Cartel has established a logistics network that controls the supply of precursor chemicals and production in clandestine laboratories. For its part, the CJNG has aggressively expanded its presence in key areas of production and has developed similar capabilities for methamphetamine manufacturing and distribution.

The production and trafficking of methamphetamines in Mexico and their export to international markets have a markedly variable cost and price structure, reflecting the market dynamics and strategies of the criminal groups involved. According to a journalistic investigation by Dudley et al. (2023), producing 1 kg of methamphetamines in Mexico requires an investment of approximately USD

1,000, considering expenses in chemical precursors, labor, and operation of clandestine laboratories. The wholesale price of 1 kg of methamphetamine in the wholesale market in the United States is around USD 5,000, indicating a significant profit margin for traffickers who manage to smuggle the drug into this country. The value of the wholesale methamphetamine market in Mexico is approximately USD 330 million, and when it crosses the border into the United States, the value can rise to USD 1,000 million (Dudley et al. 2023).

Despite the fact that the vast majority of methamphetamines produced in Mexico are destined for the North American market, Mexican cartels have sought to expand their businesses to other parts of the world, such as Europe and Oceania. The average price of 1 kg of methamphetamine in Europe is approximately USD 20,000. This reflects a growing demand and increased risks associated with traffic to this continent. Meanwhile, in Oceania (Australia and New Zealand), the price of 1 kg of methamphetamine can reach up to USD 190,000, which has encouraged Mexican cartels to expand their operations to this region, attracted by the potential profits (Infobae 2024).

The cost and price structure of methamphetamine reflects the strategies of Mexican cartels to maximize their profits in international markets. The relatively low investment in production, combined with significantly higher prices in markets such as the United States, Europe, and Oceania, evidences the high profitability of this illicit activity and explains the motivation to expand its global reach.

Annex 4. Approximate estimates of revenues from drug production and trafficking in other countries in the region: Mexico and Ecuador

In Mexico, the production and retail sale of methamphetamines and fentanyl is estimated to generate revenues in excess of USD 1,000 million for drug cartels (mainly the Sinaloa Cartel and the CJNG), with a wholesale market valued at several hundred million dollars (Dudley et al. 2023). Specifically, the wholesale market for methamphetamines is estimated at USD 330 million, a figure that rises to USD 1,000 million once the drug is introduced into the United States. In addition, Mexican cartels have expanded their activity into high-priced markets, reaching values of approximately USD 20,000 per kilogram in Europe and up to USD 190,000 per kilogram in Oceania (Infobae 2024), which can substantially increase the estimated revenues of Mexican cartels from methamphetamine trafficking to these continents.

Box 1. Impact evaluations of the effectiveness of glyphosate aerial spraying campaigns as a strategy to reduce coca cultivation in Colombia between 1999 and 2015

Several academic studies have evaluated the effectiveness of glyphosate spraying as a strategy to reduce coca cultivation and reduce cocaine production. One of these first works was that of Dion and Russler (2008), who modeled the subnational dynamics of coca crops during Plan Colombia and concluded that aerial fumigation has a minimal impact, since the benefits achieved in terms of reducing coca crops in areas affected by spraying end up being offset by increases in crops in nearby areas through the well-known 'balloon effect'.

In a related work, Reyes (2014) used a difference-in-differences strategy to estimate the causal effect of aerial spraying with glyphosate on the cultivated area in Colombian municipalities. The analysis is based on a panel of municipal-level data for the 1994–2004 period, combining information from the Global Illicit Crop Monitoring Programme (SIMCI), data from the aerial eradication program (measured by the number of hectares sprayed by air with glyphosate), and socioeconomic variables.

The estimate of the effect is based on the comparison between municipalities with different levels of intervention (fumigation) over time, controlling for both common trends and fixed effects. Reyes (2014) estimates that a 1 percent increase in the area sprayed with glyphosate is associated with a 0.7 percent to 1 percent increase in the area under cultivation the following year, indicating significant displacement effects.

Finally, Mejía, Restrepo, and Rozo (2015) take advantage of a natural experiment caused by a diplomatic crisis between the governments of Colombia and Ecuador, which resulted in Colombia definitively suspending, as of 2008, the aerial spraying of illicit crops in a 10 km strip within its border territory with Ecuador. This decision made it possible to compare areas that continued to be treated with spraying with those that ceased to be treated under similar conditions as a result of the diplomatic conflict. Using a discontinuous regression (DR) design combined with differences in differences, the authors found that, for each additional hectare sprayed with glyphosate, the reduction in coca cultivation was only 0.022 to 0.03 ha.

These results suggest that aerial spraying has a limited impact and is not a cost-effective strategy to reduce coca production in Colombia. According to Mejía, Restrepo, and Rozo (2015), the average cost to the United States of fumigating 1 ha of coca is approximately USD 800. For every dollar the United States spent on the spraying program, Colombia spent approximately USD 2. With this, the average cost of fumigating 1 ha is USD 2,400. If spraying is between 3 percent and 4 percent effective in reducing coca cultivation, the average total cost of (temporarily) removing a hectare of coca is between USD 80,000 and USD 108,000. To measure this imbalance, it is enough to compare these costs with the market value of the coca leaf produced in a hectare, close to USD 500: eradicating it by aerial spraying can cost between 160 and 216 times more than its commercial value.

In the case of cocaine, it is possible to make an approximate and conservative calculation based on three assumptions: (a) that 35 percent of the potential production of cocaine in the Andean region is destined for North American markets and transits through Mexico, (b) that Mexican cartels acquire it at a price of USD 12,000 per kilogram and sell it at the US border at USD 24,000 per kilogram, and (c) that all cocaine seizures made in countries between the Andean region and Mexico are deducted from the

volumes transacted. Under these assumptions, the cocaine trafficking revenues received by Mexican cartels could have reached close to USD 5,400 million in 2022. This should be understood as a conservative calculation and, therefore, a minimum level of what these organizations could be receiving annually as a result of cocaine trafficking to North America.

A similar estimate for Ecuador in 2021 estimates cocaine trafficking revenues of approximately USD 953 million (Dudley and Acosta 2023). It should be emphasized that these figures should be understood as ballpark estimates and not as exact measurements. The inherent opacity of the illegal market, the variability of prices and volumes, as well as the differences in the methods and periods analyzed, make it necessary to use these numbers with caution in academic or public policy analyses.

Box 2. Cannabis market regulation in Uruguay: impacts on consumption and safety

In 2013, Uruguay became the first country in the world to fully legalize and regulate the adult-use recreational cannabis market. This South American country established a state and non-commercial model of production and supply, with access restricted to adult residents through personal self-cultivation (of up to six plants), membership in regulated cannabis clubs, or purchases in registered pharmacies (of up to 40 grams per month). This model sought to weaken the illicit market without triggering consumption, implementing a mandatory registration of users and a price set by the state that sought to put an end to the illegal cannabis market. The implementation phase was gradual: in 2014, the registration of self-growers and clubs began, and in 2017, sales began in regulated pharmacies.

Some academic studies that have evaluated the policy approach implemented in Uruguay toward cannabis show that the regulatory model has not led to significant increases in the rate of cannabis use among young people. For example, Laqueur et al. (2020) applied a synthetic control method comparing Uruguay with Chile and found no evidence of increases in cannabis use among the Uruguayan adolescents after regulated legalization. No significant changes were observed in the perception of risk associated with cannabis in this age group, although there was an increase in the perception of availability.

Similarly, Rivera-Aguirre et al. (2022) employed a difference-in-differences approach with surveys of secondary students and found that regulated cannabis legalization in Uruguay was not associated with increases in the prevalence of annual or monthly use, or in problematic or frequent use among young people. In fact, the authors of this study report a decline in student drinking rates after 2014 and no sustained change in risky or frequent drinking compared to previous trends that were observed before the implementation of the regulated legalization model.

In the adult population, the availability of legal and regulated cannabis coincided with an initial increase in prevalence rates of use, followed by a stabilization. Data from Uruguay's National Drug Board shows that the percentage of adult Uruguayans who used cannabis in the past year increased from 9.3 percent in 2016 to 15.4 percent in 2018. This initial increase probably reflects both a greater willingness to report consumption and the incorporation of new users in an environment of less stigma toward this psychoactive substance. However, the most recent surveys suggest that consumption has moderated: by 2023–24, annual prevalence rates declined to about 12.3 percent, marking the first reduction since the implementation of the policy change.

One of the central objectives of the law was to substantially reduce the illegal marijuana market. Ten years later, Uruguay has managed to drastically reduce the weight of the black market in the supply of this psychoactive substance. Before the change, virtually all consumption came from illicit sources (mostly pressed marijuana imported from Paraguay). By 2018, the share of users obtaining cannabis via illegal markets fell to 24.4 percent (from 58 percent in 2014). This trend continued in 2024, when only 6 percent of the market was imported illegal marijuana, having been almost entirely displaced by locally sourced, legal and regulated cannabis. This is a remarkable result in terms of controlling organized crime, as it indicates that regulated selling captured a substantial portion of the demand that previously financed criminal economies.

However, the Uruguayan experience shows that illegality does not disappear completely: 'grey' markets have emerged, where legally produced cannabis (by home growers or clubs) is sold through unauthorized channels. Factors such as access restrictions (few authorized points of sale and registration requirements) and the exclusion of non-residents have led many users—especially those with lower resources or from the interior of the country—to continue to acquire it outside the formal, legal and regulated channel. In fact, it is estimated that around 65 percent of cannabis users in Uruguay are not registered in the legal system: some are supplied on the grey market and others on traditional illicit markets (IRCCA 2023).

Assessments for Uruguay have also examined the effects on perceptions and public health. A striking finding is that the perception of cannabis risk reported by young Uruguayans remained stable after the law (Laqueur et al. 2020), unlike the drop in risk perception observed in some countries that have implemented commercial regulation models.

Likewise, no significant increases in the consumption of other substances attributable to legalization have been detected; by contrast, Uruguay has seen a steady decline in tobacco use in recent years and no unusual rise in drug prevalence rates. In terms of public health, so far, there are no signs of an increase in negative indicators, such as admissions to treatment for problematic cannabis use. Authorities maintain close monitoring of possible effects on traffic accidents or other damages, although the available data do not show alarming changes associated with the regulation.

When compared to other regulatory experiences, such as those of Washington and Colorado states in the United States, some common results are found. As in Uruguay, these states have not seen any increase in adolescent consumption after legalization; in fact, in Colorado, the proportion of high school students who use marijuana has decreased to historic lows (Colorado Department of Public Health and Environment 2023). On the other hand, adult consumption has increased in states with a legal market. A study conducted in Colorado estimated that living in a state with legal cannabis increases the frequency of marijuana use among adults by approximately 24 percent (Dahl et al. 2022). However, this greater adult consumption has not been accompanied by equivalent increases in social or health problems. Many of the predicted negative effects did not materialize: for example, there has not been an explosion in crime or road accidents attributable to the problematic use of marijuana. Some studies even show reductions in opioid overdose deaths in states with legal cannabis (Smart and Pacula 2019).

In short, the regulation of the marijuana market in Uruguay—a pioneer worldwide—has partially fulfilled its objectives: it managed to incorporate tens of thousands of users into a legal and state-regulated market, reducing the flow of money to drug trafficking, without triggering a generalized increase in problematic consumption. The available assessments show that the prevalence of use did not increase among young people, although it did increase among adults at baseline, and then stabilized within manageable ranges. In terms of security, the illegal market has been considerably weakened—in particular, by eliminating marijuana imported by transnational criminal networks—although challenges such as the grey market

and the incorporation of sectors that are currently excluded from legal access remain. The Colorado and Washington cases reinforce these conclusions. Cannabis regulation can be achieved without increasing delinquency or consumption among adolescents, while obtaining multiple benefits, such as increased quality control, consumer information, and potential improvements in public health.