

ANALYSIS OF DRUG TRAFFICKING PROJECTIONS IN LATIN AMERICA

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Executive Summary

Drug trafficking in Latin America represents one of the most complex and persistent challenges for regional and international security. This document analyzes the evolution of the drug trafficking phenomenon in the region, from cocaine production processes to global distribution dynamics, including specific issues in each producing country and emerging opportunities in security and defense for 2026. Cocaine production reached historic levels of 3,708 tons in 2023, representing a 34% increase over the previous year.

Trafficking routes have diversified toward Africa and Asia, while drug-related violence is expanding from Latin America toward Western Europe. The document examines how factors such as deforestation, illegal mining, border conflicts, and the use of emerging technologies by illegal armed groups configure a scenario of hybrid threats that require comprehensive and coordinated responses. Strategic recommendations are presented to strengthen defense and security capabilities in the region, with an emphasis on advanced technological solutions and international cooperation.

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Introduction

Drug trafficking constitutes one of the most significant threats to the political, economic, and social stability of Latin America. During recent decades, the region has been the epicenter of global cocaine production, accounting for more than 95% of coca crops worldwide. This criminal phenomenon not only generates violence and corruption but is also intrinsically linked to other illicit activities, such as deforestation, illegal mining, arms trafficking, and irregular migration.

The year 2026 marks a turning point in the evolution of Latin American drug trafficking. According to the World Drug Report 2025 by the United Nations Office on Drugs and Crime (UNODC), cocaine production reached record figures of 3,708 tons in 2023, evidencing a sustained growth of 34% compared to the previous year (UNODC, 2025). This increase occurs within a context of global instability that empowers organized crime groups and facilitates the expansion of their operations into new markets in Africa, Asia, and Europe.

The region faces multidimensional challenges that go beyond the simple combat against drug trafficking. Colombia, Peru, and Bolivia, the three main producing countries, experience growing pressures on their Amazonian ecosystems, where the expansion of illicit crops is intertwined with massive deforestation and illegal mining exploitation. Between 1985 and 2023, the Amazon lost more than 88 million hectares of forests—approximately the size of Colombia—representing nearly 12.5% of the biome's original coverage (UNODC, 2025).

Additionally, the security landscape has become more complex with the incorporation of emerging technologies by illegal armed groups. In Colombia, between 2024 and 2025, 264 attacks were recorded involving drones loaded with explosives, resulting in 15 soldiers killed and 153 wounded (Reuters, 2026). This hybrid threat has led regional governments to rethink their defense and security strategies in search of advanced technological solutions to counteract these new attack modalities.

This document provides a comprehensive analysis of drug trafficking projections in Latin America, examining everything from the technical aspects of cocaine production to the geopolitical dynamics shaping global distribution routes. It delves into the specific issues of Colombia, Ecuador, Peru, Bolivia, Argentina, and Guyana, identifying common patterns and national particularities. Furthermore, it explores emerging opportunities in the security and defense sector for 2026, with special emphasis on surveillance technologies, anti-drone systems, and advanced intelligence collection platforms.

This analysis is based on official sources from international organizations, intelligence reports, academic studies, and specialized media analysis. The goal is to provide a holistic vision that enables decision-makers, security analysts, and academics to understand the complexity of the phenomenon and the possible courses of action to mitigate its devastating effects on Latin American societies.

1 How Cocaine is Produced

1.1 Production Process

Cocaine is an alkaloid extracted from the leaves of the coca plant (*Erythroxylum coca*), primarily grown in the Andean regions of South America. The process of transforming coca leaves into cocaine hydrochloride, the most common form of the drug in the illicit market, involves multiple chemical stages that require specific precursors and specialized technical knowledge.

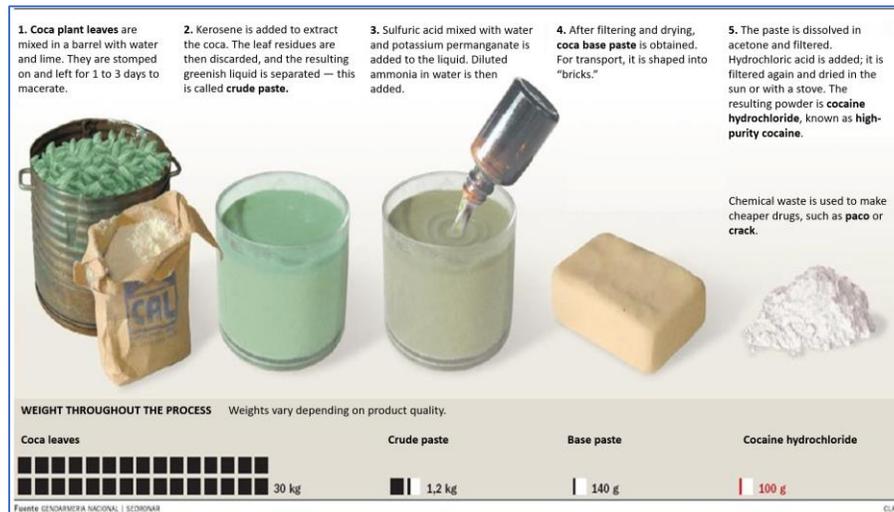


Figure 1.1. Diagram of the cocaine production process.

Source: [https://www.issup.net/files/2024-](https://www.issup.net/files/2024-12/Aspectos%20Toxicolo%CC%81gicos%20de%20la%20coca%CC%81na%20%281%29.pdf)

[12/Aspectos%20Toxicolo%CC%81gicos%20de%20la%20coca%CC%81na%20%281%29.pdf](https://www.issup.net/files/2024-12/Aspectos%20Toxicolo%CC%81gicos%20de%20la%20coca%CC%81na%20%281%29.pdf)

The production process is divided into three main phases:

Phase 1: Extraction of Cocaine Base Paste (Steps 1 - 3)

The first stage consists of the maceration of fresh or dried coca leaves with alkaline substances (usually sodium carbonate or lime) and organic solvents such as gasoline, kerosene, or diesel. This process allows the extraction of alkaloids from the leaves. The mixture is stirred repeatedly for several hours, allowing the alkaloids to dissolve in the solvent. Subsequently, sulfuric acid is added to precipitate the alkaloids, forming a semi-solid paste known as "base paste" or "bazuco," which contains between 40% and 85% sulfate cocaine.

Phase 2: Cocaine Base Refinement (Step 4)

The base paste undergoes a purification process through the addition of potassium permanganate and ammonia, which oxidize impurities and convert the cocaine sulfate into cocaine freebase. This intermediate product has higher purity (70-90%) and is chemically more stable. During this phase, additional solvents, such as acetone or ethyl ether, are used to repeatedly dissolve and crystallize the product, removing contaminants.

Phase 3: Conversion to Cocaine Hydrochloride (Step 5)

The final stage consists of converting the cocaine base into cocaine hydrochloride through the addition of hydrochloric acid. This chemical reaction produces white crystals of cocaine hydrochloride with a purity exceeding 90%, which is the marketable form of the drug. The final product is dried, pulverized, and packaged for distribution.

1.2 Chemical Inputs and Precursors

The production of cocaine requires significant quantities of chemical precursors, many of which have legitimate industrial uses. The primary inputs include:

- Organic Solvents: gasoline, kerosene, diesel, acetone, and ethyl ether.
- Acids: sulfuric acid and hydrochloric acid.
- Bases: sodium carbonate, sodium hydroxide, ammonia, and lime.
- Oxidants: potassium permanganate.

The control of these chemical precursors represents one of the main challenges for authorities, as their legal trade complicates the identification of diversions toward illicit production. Drug trafficking groups have developed sophisticated procurement networks that include front companies, cross-border smuggling, and the clandestine production of certain precursors.

1.3 Environmental Impact of the Process

The cocaine production process generates severe environmental impacts. For every kilogram of cocaine produced, approximately 200 liters of toxic chemical precursors are dumped directly into the soil and water sources, contaminating fragile ecosystems.

Deforestation associated with the establishment of coca crops and clandestine laboratories in jungle areas contributes significantly to the loss of biodiversity and climate change. Furthermore, clandestine laboratories generate highly polluting chemical residues that are rarely treated properly. These wastes include mixtures of solvents, acids, and bases that are discharged into rivers and streams, affecting water quality and the health of local communities. The cumulative impact of thousands of laboratories operating simultaneously in the Amazon region represents an environmental crisis of alarming proportions.

2 Production Figures

2.1 Evolution of Regional Production

Cocaine production in South America has experienced exponential growth over the last two decades (UNODC, 2025). According to UNODC data, total production in the region rose from 935 tons in the baseline year to 2,620 tons, representing a 180% increase. This growth has accelerated dramatically in recent years.

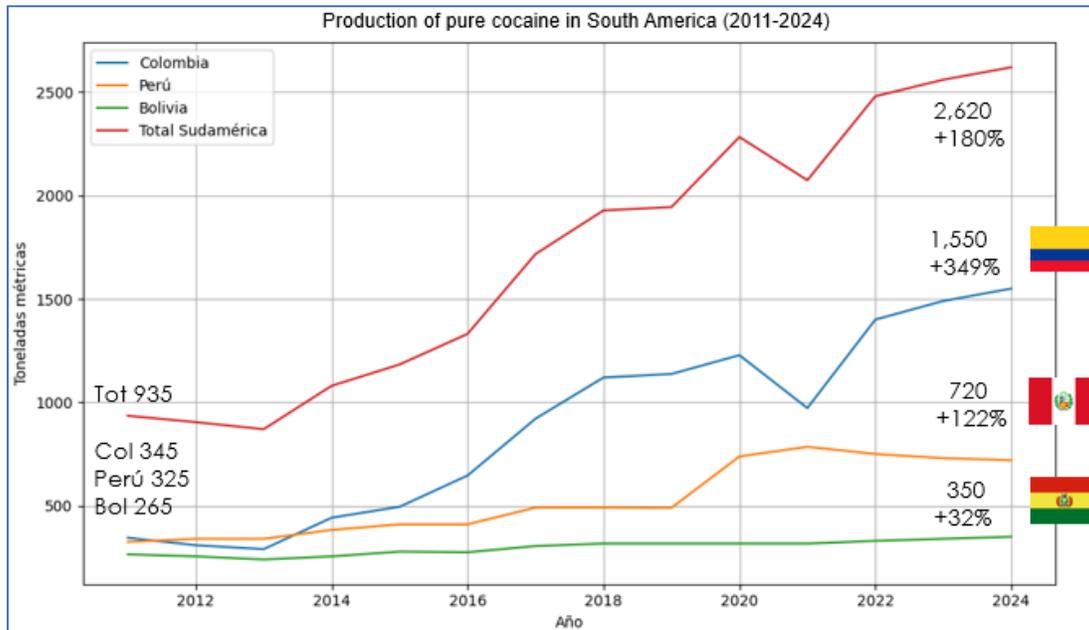


Figure 2.1. Evolution of Cocaine Production in South America (in tons).

Source: Prepared by the author, based on UNODC data

*The 2022–2024 periods have been calculated based on preliminary trends and reports

The distribution of production among the three main producing countries shows distinct dynamics:

- Colombia: Starting from a baseline of 315 tons, it has reached 1,550 tons (a 349% increase) during the reference period, consolidating its position as the world's largest producer.
- Peru: From 325 tons, it has increased its production to 720 tons (a 122% increase), with a growing trend in new regions.
- Bolivia: Although not as notable as in Colombia and Peru, a less accelerated increase is observed, from 265 to 350 tons (a 32% increase), with expansion into national parks.

These figures represent only estimated production and do not include cocaine that does not reach the markets due to seizures, losses during transport, or destruction by the authorities.

2.2 Production Costs

The economic analysis of cocaine production reveals extraordinary profit margins, which explain the persistence of the phenomenon despite interdiction efforts. Production costs vary

significantly depending on the region, the availability of precursor chemicals, and the level of state control.

2.3 Input Quantities to Produce One Kilogram of Cocaine

The production of one kilogram of cocaine hydrochloride requires specific quantities of inputs that have been documented by regulatory and enforcement agencies:

SUBSTANCE	Quantity
Gasoline* (liters)	382,00
Ammonia (liters)	0,85
Sulfuric acid (liters)	0,10
Caustic soda (liters)	0,35
Cement** (kilograms)	360,00
Potassium permanganate (kilograms)	1,01

Figure 2.2. Chemical precursors used in cocaine production.

Source: SIMCI, Anti-Narcotics Police, and own calculations.

*Gasoline has petroleum and diesel (ACPM) as substitutes. The figure is estimated assuming only gasoline is used in the process, with a recycling rate of 67%.

**Cement has several substitutes, such as lime or livestock salt. The figure is estimated assuming only cement is used in the process.

2.4 Precursor Costs

The cost of chemical precursors represents a relatively small fraction of cocaine's final market value, yet it constitutes a critical factor in the economics of illicit production. Estimated precursor costs to produce one kilogram of cocaine range between 200 and 500 USD, depending on the region and availability.

However, the wholesale price for one kilogram of cocaine in the production region oscillates between 2,500 and 5,000 USD, whereas in destination markets such as the United States or Europe, it can reach between 30,000 and 80,000 USD per kilogram. This price differential explains the massive economic incentives that perpetuate drug trafficking.



Figure 2.3. Cocaine prices per kilogram.

Source: <https://www.agronegocios.co/agricultura/el-kilo-de-cocaina-para-exportar-vale-us-5-000-3706185>

2.5 Recent Trends

The UNODC 2025 World Drug Report highlights several concerning trends in cocaine production:

1. **Increased Production Efficiency:** Clandestine laboratories have streamlined their processes, resulting in a higher cocaine yield per kilogram of coca leaf.
2. **Geographic Diversification:** Production is expanding into new regions, including protected areas and national parks, which complicates eradication efforts.
3. **Vertical Integration:** Drug trafficking organizations are increasingly controlling the entire production chain—from cultivation to refining—thereby reducing costs and maximizing profits.
4. **Innovation in Precursors:** In response to the tightening of controls over traditional precursors, producers are experimenting with alternative substances and non-conventional synthesis methods (UNODC, 2025).

3 Global Drug Trafficking

3.1 Global Distribution of Coca Crops

Historically, coca cultivation has been concentrated in the Andean region of South America, specifically in Colombia, Peru, and Bolivia. However, historical analysis reveals that, in the past, crops existed in other regions of the world, including Java (Indonesia), Ceylon (Sri Lanka), and certain areas of Africa, although these were either eradicated or abandoned during the 20th century.

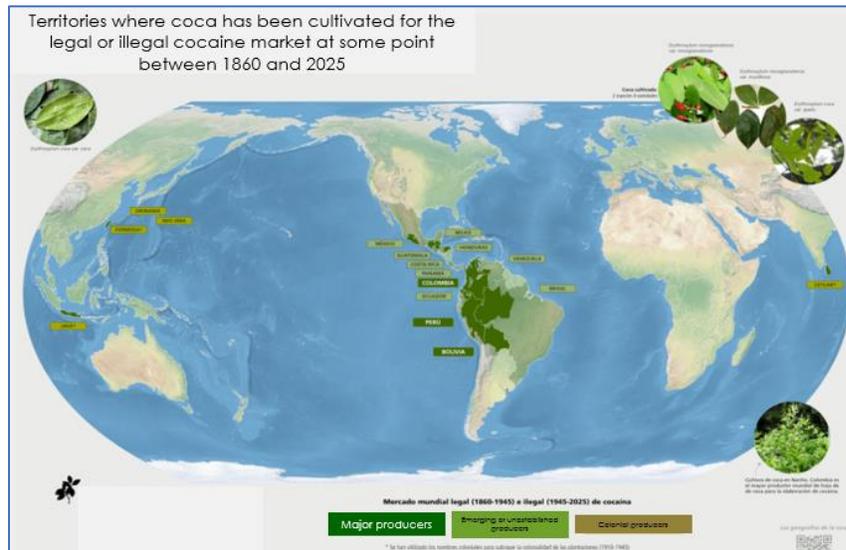


Figure 3.1. Worldwide Coca Cultivation Territories (1884–2024).

Source: <https://geoactivismo.org/mapa-mundial-de-cultivos-de-coca-para-cocaina-1884-2024/>

Currently, more than 99% of coca crops are concentrated in three countries:

- Colombia: Approximately 230,000 hectares.
- Peru: Approximately 95,000 hectares.
- Bolivia: Approximately 30,000 hectares.

This geographic concentration contrasts with the global distribution of consumption, creating complex international trafficking networks that span multiple continents. It is worth noting the emergence of incipient countries in coca cultivation and cocaine production, which will gain significant relevance in the global production and commercialization context in the coming years. Countries such as the Cooperative Republic of Guyana, Suriname, Ecuador, Uruguay, Paraguay, and Argentina share a common characteristic: they lack sufficient means to control their aerial, maritime, and fluvial domains, and even fewer resources to curb deforestation—much of which is subsequently used for coca leaf cultivation.

Despite the concerning cultivation figures in 2023, the fight against drug trafficking in Colombia also reflects a degree of "internal success." The implementation of strict control measures across Colombian air, sea, and land spaces has forced major cocaine cartels to shift their production operations to countries with fewer controls. Consequently, the business

has expanded across South America and towards Central America because, as previously noted, many of these countries lack the capabilities to counteract and control their own territories.

For instance, weaknesses in the monitoring of aircraft overflying countries like Guyana or Suriname make them prime candidates for technical stopovers in the cocaine distribution process. In the future, these regions are highly likely to become profitable hubs for cocaine cultivation, given the lack of specific oversight in areas highly favorable for crops and along potential distribution routes.

3.2 Global Consumption Patterns

The consumption of illicit drugs shows significant variations across geographic regions, reflecting the influence of cultural, economic, and availability factors, as evidenced by the percentages of the population (aged 15–64) who consumed drugs in 2015.

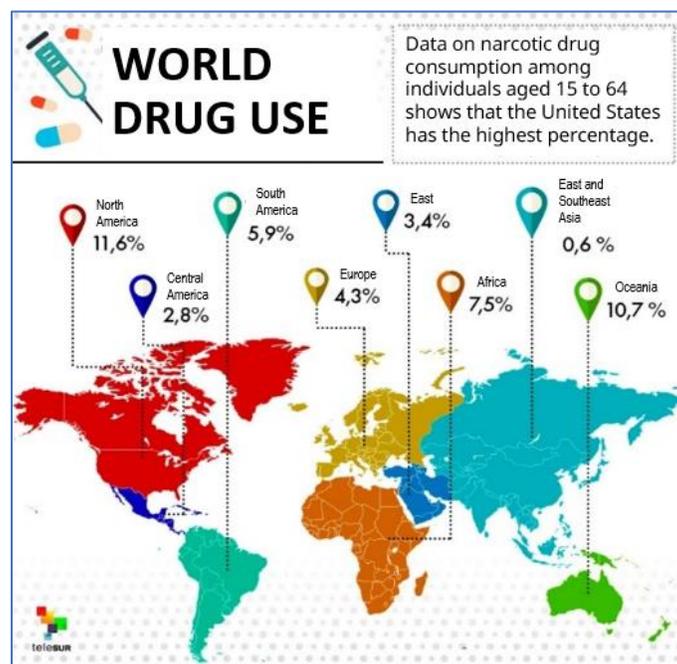


Figure 3.2. Percentage of the population that consumed drugs in 2015 (ages 15–64).

Source: <https://clinicascita.com/el-consumo-mundial-de-drogas/>

The UNODC 2025 World Drug Report updates these figures, indicating that in 2023, approximately 316 million people consumed at least one illicit drug (excluding alcohol and tobacco). This represents 6% of the population aged 15–65, compared to the 5.2% recorded in 2013. Cannabis remains the most widely used drug (244 million users), followed by opioids (61 million), amphetamines (30.7 million), cocaine (25 million), and ecstasy (21 million), according to the UNODC (2025).

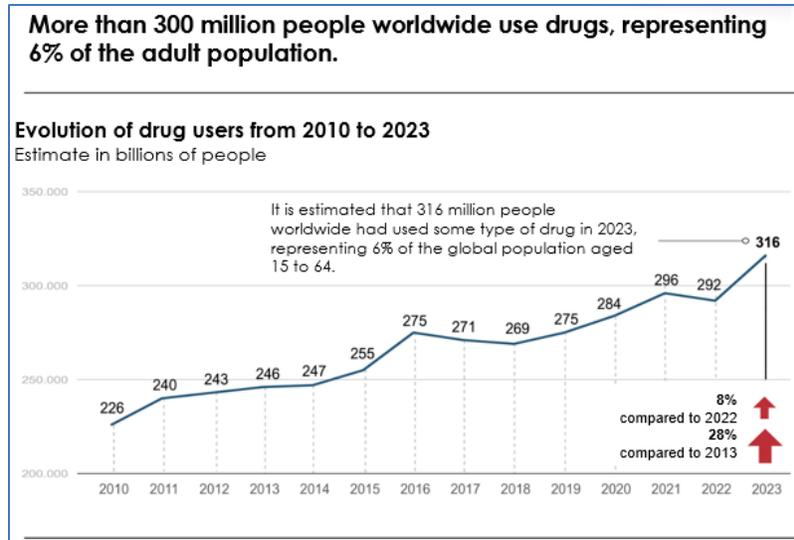


Figure 3.3. Evolution of Drug Users from 2010 to 2023.

Source: United Nations Office on Drugs and Crime (UNODC)

Cocaine consumption grew from 17 million users in 2013 to 25 million in 2023, demonstrating a sustained market expansion. The primary consumer markets are concentrated on:

- North America: The United States and Canada.
- Western Europe: Spain, the United Kingdom, Italy, France, and the Netherlands.
- South America: Brazil, Argentina, and Chile.
- Emerging Markets: Australia, New Zealand, and the Persian Gulf countries.

3.3 Geographic Dimension of Trafficking

Understanding drug trafficking routes requires considering the geographic scale of the regions involved. A comparison between South America and Europe illustrates the logistical challenges of intercontinental trafficking.



Figure 3.4. Size comparison between South America (17,840,000 km²) and Europe (10,180,000 km²)

South America, with a surface area of 17,840,000 square km² is significantly more extensive than Europe (10,180,000 km²). This vast geography, combined with extensive porous borders, dense jungles, complex river systems, and lengthy coastlines, creates ideal conditions for illicit trafficking. Criminal organizations exploit these geographical features to establish trafficking routes that evade state control.

3.4 Main Drug Trafficking Routes

Drug trafficking routes have constantly evolved in response to interdiction pressures and market opportunities. The primary global routes include:

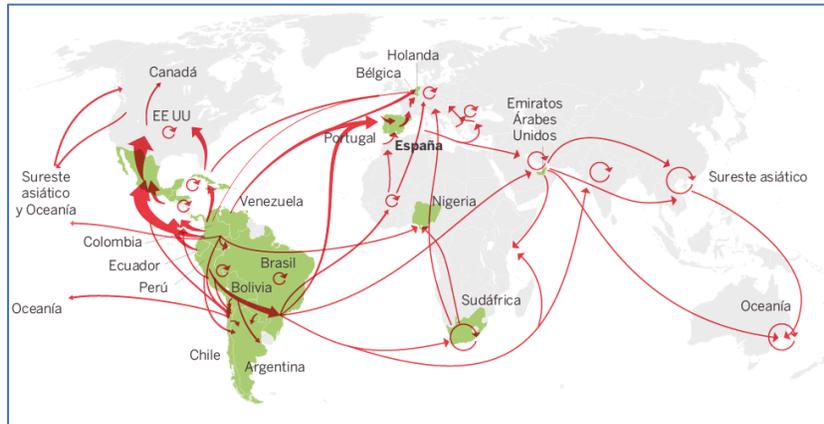


Figure 3.5. Principal Global Drug Trafficking Routes.

Source: https://elpais.com/elpais/2018/06/29/media/1530279984_222697.html

3.4.1 Routes toward North America:

The most traditional and voluminous route connects the Andean producing countries with the United States, the world's largest consumer market. Cocaine transits through Central America and Mexico, where powerful cartels control the passage toward the U.S. border.

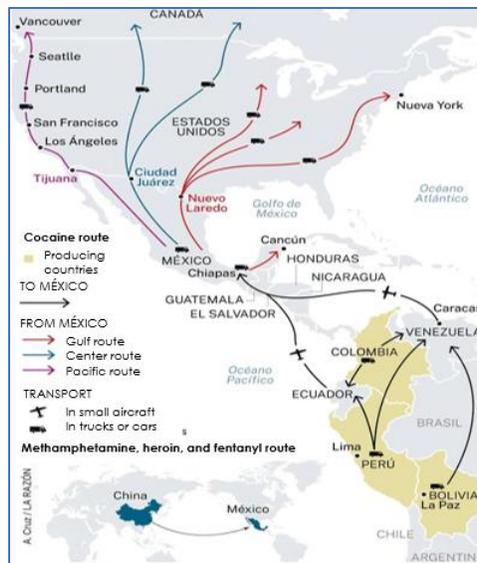


Figure 3.6. Principal Drug Trafficking Routes in the Americas.

Source: <https://www.larazon.es/internacional/20211205/7i5r2roxjd2lp3nj2wcmghxku.html>

3.4.2 Caribbean Routes:

The Caribbean constitutes a strategic corridor for trafficking toward both the United States and Europe. The numerous islands, intense commercial maritime activity, and the limited control capabilities of many island states facilitate the transit of drugs.



Figure 3.7. Principal Drug Trafficking Routes in the Caribbean.
Source: Insight Crime

3.4.3 Routes Toward Africa and Europe:

One of the most significant trends of the last decade is the expansion of routes toward West Africa, which serves as a transshipment platform toward Europe. Countries such as Guinea-Bissau, Guinea, Ghana, and Nigeria have become critical transit hubs.

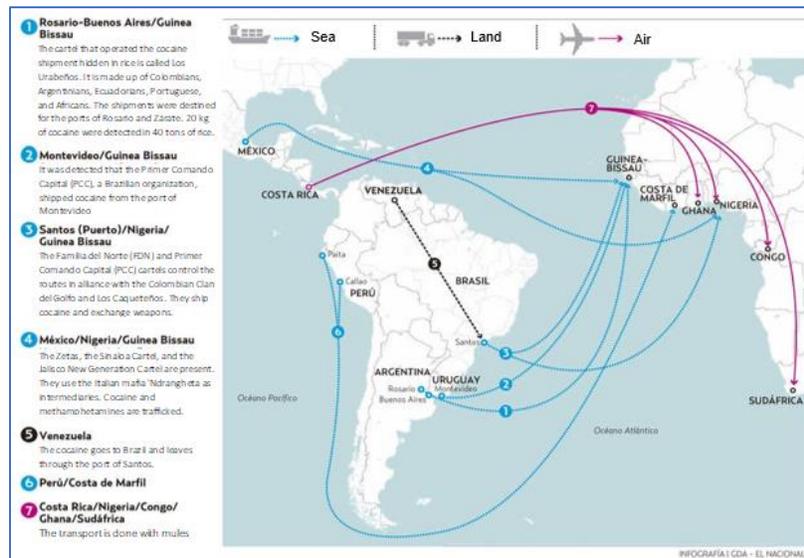


Figure 3.8. Principal Drug Trafficking Routes in the Southern Region (2023).
Source: <https://elcomercio.pe/mundo/afrika/afrika-nueva-ruta-droga-carteles-trafficar-europa-interactivo-439052-noticia/>

In Nigeria, specifically, it has been found to be one of the primary arrival points for cocaine from South America. From there, distribution is concentrated for transport to North Africa, subsequently moving to Portugal and Spain, where a new distribution hub for Europe is established.

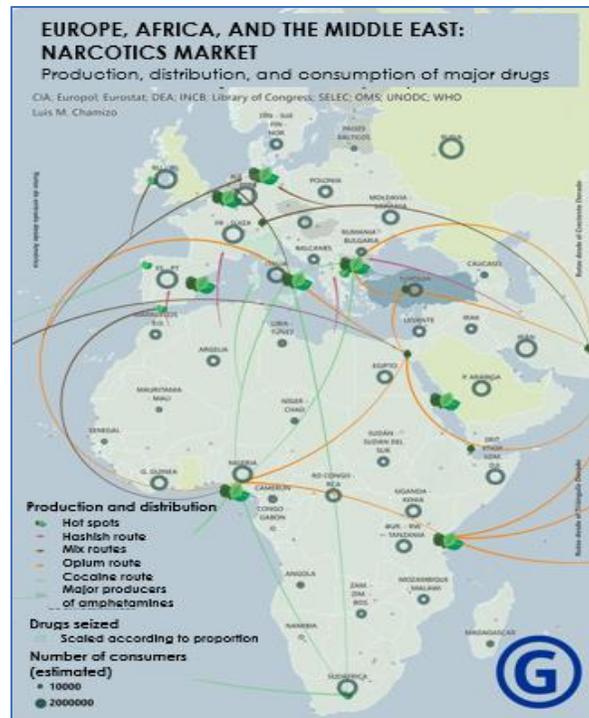


Figure 3.9. Principal Drug Trafficking Routes in Africa and Europe.

Source: <https://geopol21.com/mapa-de-los-narcoticos-en-europa-afrika-y-oriente-proximo/>

3.5 Expansion Toward New Markets

The UNODC 2025 World Drug Report highlights that cocaine traffickers are finding new markets in Asia and Africa. The violence and competition characterizing the illicit cocaine trade, once confined to Latin America, are now spreading to Western Europe as Western Balkan organized crime groups increase their market influence (UNODC, 2025).

This geographic expansion is driven by several factors:

1. Saturation of Traditional Markets: North American and Western European markets are showing signs of saturation, incentivizing the search for new consumers.
2. Economic Growth in Asia: Increasing purchasing power in Asian countries creates new potential markets.
3. Institutional Weakness in Africa: State fragility in several African countries facilitates the establishment of transit routes and distribution hubs.
4. Risk Diversification: Criminal organizations seek to diversify their routes to reduce dependence on specific corridors and mitigate the impact of interdiction operations.

4 Regional Issues

4.1 General Overview of South America

South America faces a complex web of interconnected issues that go beyond simple drug trafficking. The region is characterized by the convergence of multiple illicit activities that reinforce one another, creating vicious cycles of violence, environmental degradation, and institutional weakness.



Figure 4.1. Political Map of South America.

Source: Presentation "Analysis of the Projection of Drug Trafficking in Latin America".

A key aspect to highlight is the mountainous terrain resulting from the Andes Mountains. These formations create various altitudinal zones (thermal floors) that facilitate coca leaf production throughout the entire year.

Although coca can be cultivated between 0 and 1,700 meters above sea level, the best results are observed at altitudes exceeding 1,000 meters above sea level (msl). Therefore, the Andean region is highly favorable for cultivation, offering high yields in terms of coca leaf quantity per hectare per year.

Furthermore, as these crops are established in mountainous areas, the monitoring and eradication of the coca plant become difficult. Consequently, even when identified, its eradication is very laborious and costly, as it requires moving eradication teams by air. While eradication occurs in various zones, replanting (resowing) takes place in the short term, causing the expansion of cultivation to become more extensive.

It is worth noting that in some South American countries, due to environmental and legislative issues, the use of chemical agents for crop eradication (such as glyphosate) is prohibited. These agents could prevent short-term replanting; therefore, it is necessary to complement manual eradication with incentives so that coca cultivation is no longer as profitable.

Analyzing the problem from the grower's perspective, planting coca leaf is more favorable for the farmer because, after harvesting, they are not required to transport the leaf to a collection center or the nearest city for sale—which would represent a cost in both time and money. Instead, the cocaine processor goes directly to the farm and purchases the production on-site. This leads to an additional concept within the production chain: the logistics of moving both the coca leaf and the other inputs for its production. This creates a highly dangerous economy characterized by the control of areas by Organized Armed Groups (OAGs), leading to an additional social problem: the recruitment of individuals—in many cases, minors—to provide "security" in the areas where the inputs for cocaine hydrochloride production transit.

4.2 Convergent Illicit Activities

The issue of drug trafficking in the region cannot be understood in isolation, but rather as part of a broader criminal ecosystem that includes:



Figure 4.2. *Combination of Illicit Activities in the Region.*

Source: Presentation "Analysis of the Projection of Drug Trafficking in Latin America".

Coca Crops: The foundation of the drug trafficking economy, concentrated in remote rural areas with limited state presence.

Illegal Mining: Particularly gold extraction, which generates complementary income for armed groups and causes environmental devastation. Between 2018 and 2023, the cumulative deforestation footprint from mining exceeded 1.9 million hectares across the entire Amazon (UNODC, 2025).

Deforestation: Between 1985 and 2023, the Amazon lost more than 88 million hectares of forest—approximately the size of Colombia—representing nearly 12.5% of the biome's original coverage (UNODC, 2025).

Illegal Migration: Irregular migratory flows are exploited by criminal networks for human trafficking and migrant smuggling, generating additional pressure on border zones.

4.3 Colombia: Epicenter of Regional Drug Trafficking

Colombia remains the world's largest producer of cocaine, possessing a highly sophisticated criminal infrastructure. The issue within the country is multidimensional, affecting various sectors of national security and regional stability.

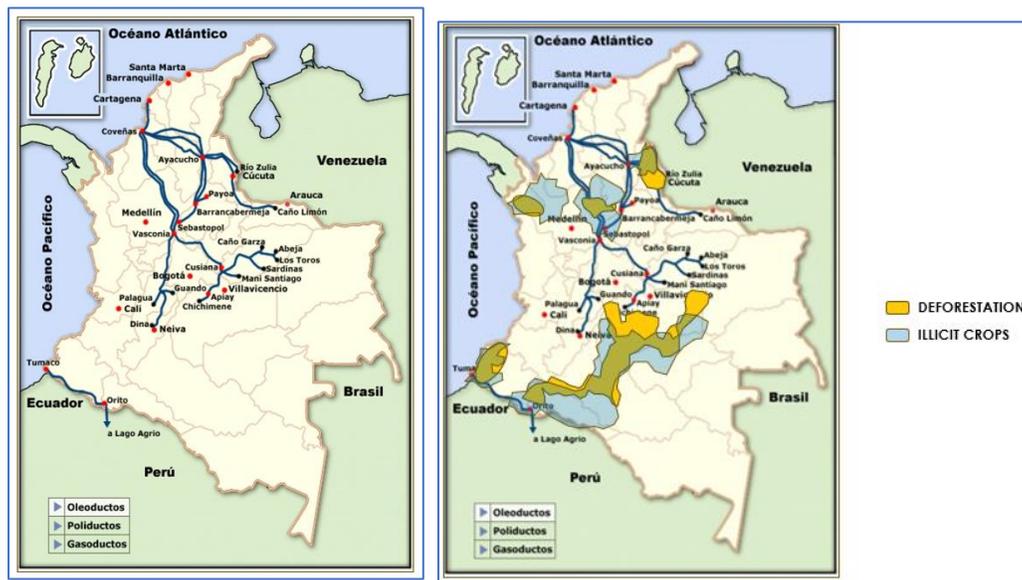


Figure 4.3. Colombia's Pipeline System and its Relationship with Deforestation and Illicit Crops.

Source: Prepared by the author.

4.3.1 Critical Oil Infrastructure Under Threat

The Colombian pipeline system, vital to the national economy, is under constant threat from illegal armed groups that finance their operations through extortion and sabotage.

The left side of Figure 4.3 shows Colombia's multi-purpose pipeline network used for transporting oil and its derivatives. As mentioned at the beginning of this document, substances such as gasoline and kerosene are essential precursors for alkaloid processing. The location of this infrastructure suggests that drug trafficking seeks to establish production centers in proximity to these supply sources. This optimizes the procurement of solvents, leaving access to coca leaves and cement as the only external requirements.

On the right side of the same graphic, a direct correlation is observed between deforestation and coca crops. This proximity allows producers to generate economies of scale by concentrating on the collection of coca leaves and kerosene at a single point, strategically located near distribution centers.

The northeastern region of Colombia, on the border with Venezuela, encompasses the Catatumbo area. Both the cultivation and transformation of coca leaf into cocaine hydrochloride are concentrated here. Up until 2025, shipments were transported through various illegal border crossings into Venezuela, from where they were dispatched to Central America for final transit to the United States and Canada.

A similar situation occurs in the south of the country, on the borders with Ecuador and Peru. In this area, coca crops are situated near the border line to exploit access to critical precursors, especially petroleum derivatives. This dynamic turns the Ecuadorian border into a strategic corridor analogous to the Venezuelan one; there, border crossings are used to transport pure cocaine into Peruvian territory, from where it is distributed toward the Pacific Ocean via maritime and air routes.

Since a considerable portion of the laboratories has been located on the borders with Venezuela, Ecuador, and Peru, these areas have been identified as the major flashpoints of regional violence. This situation stems from the territorial dispute between Organized Armed Groups (OAGs), seeking to maintain control and hegemony over these zones, and the State, which attempts to regain institutional control. This confrontation generates constant public order disturbances that directly affect the region's civilian population.

4.3.2 Deforestation and Illicit Crops

The hotspots of high deforestation in Colombia coincide geographically with the areas of highest coca crop concentration, evidencing the direct link between drug trafficking and environmental degradation. In fact, coca cultivation in the country experienced a 43% increase in 2021, reaching historic levels that reflect the phenomenon's expansion into new regions.

Figure 4.4 shows how 62% of cocaine production is concentrated in the Catatumbo zone and along the borders with Ecuador and Peru. This strategic location coincides, in turn, with the highest rates of violence recorded in these two regions.

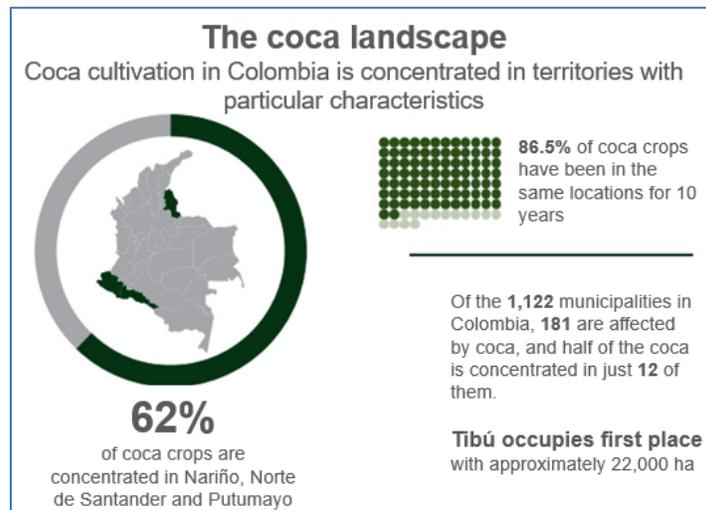


Figure 4.4. Evolution of Coca Cultivation in Colombia.

Source: <https://noticiasyrespuestas.com/2022/10/20/cultivos-de-coca-en-colombia-aumentan-43-en-2021/>

4.3.3 Terrorism Against Oil Infrastructure

Attacks on pipelines represent a systematic tactic by illegal armed groups to pressure the government and finance their operations through the extortion of oil companies.

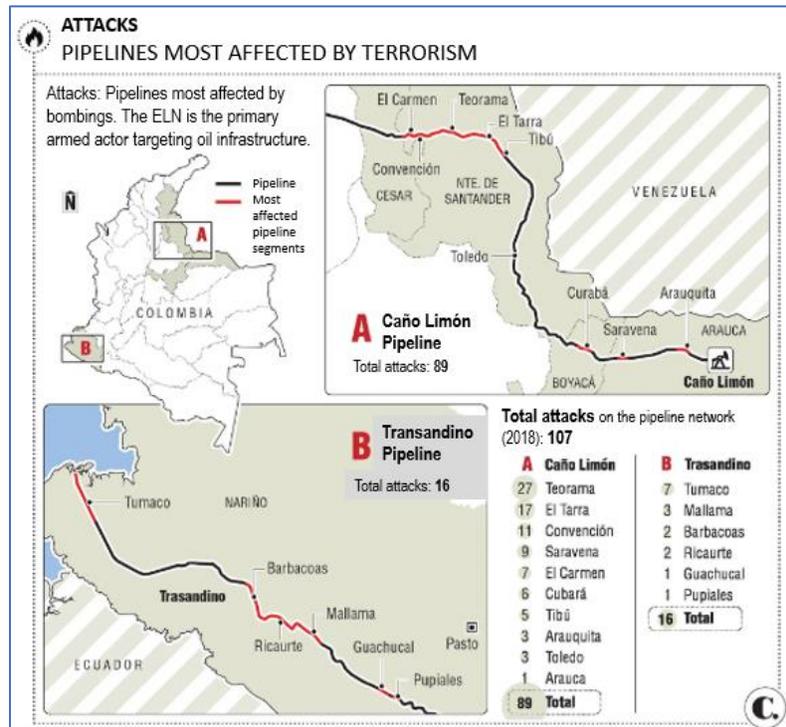


Figure 4.5. Pipelines Most Affected by Terrorist Attacks in Colombia.

Source: <https://www.elcolombiano.com/colombia/eln-dana-medioambiente-con-ataques-a-oleoductos-IA10105368>

In addition to extorting companies to finance their operations, criminal groups take advantage of pipeline bombings and pumping interruptions to install illicit valves. Through these connections, they obtain essential precursors such as gasoline or kerosene; it is noteworthy that approximately 380 liters of these solvents are required to produce one kilogram of pure cocaine.

Furthermore, the supply chain is fragmented into specialized roles operated by different structures: The first group is responsible for procuring petroleum-derived precursors. The second group handles cultivation and plantation security. The third group provides cement and other chemical inputs. The fourth group guarantees logistical security to ensure all these elements converge at the processing laboratories.

This analysis leads to the conclusion that armed organizations in Colombia have shifted away from their ideological motivations to become structures dedicated to the production and facilitation of drug trafficking inputs, thereby consolidating a highly profitable illicit economy.

4.3.4 Illicit Maritime Trafficking

Colombia faces significant pressure across its Caribbean and Pacific maritime corridors, which are used intensively for cocaine trafficking toward Central America and Mexico, as well as for direct shipments to international markets.



Figure 4.6. *Illicit Maritime Trafficking in Colombia: Drug Trafficking and Organized Crime in the Caribbean and Pacific Corridors.*

Source: CMCON

Previously, cocaine distribution to international markets was carried out indiscriminately along Colombia's Atlantic and Pacific coasts. However, due to persistent controls by the National Navy, embarkation points have recently concentrated in the Urabá region of Antioquia and the southern coastline, specifically in the vicinity of the Port of Buenaventura.

Since 2020, increased surveillance in Buenaventura forced criminal structures to shift the stockpiling of inputs and coca leaf toward neighboring Ecuador. This logistical migration has caused the Colombia-Ecuador border to face severe public order crises by 2025, with a particular emphasis on informal border crossings.

This situation highlights the "balloon effect": when strict controls are implemented at identified distribution points, drug trafficking organizations shift toward areas or countries with less robust interdiction capabilities. This phenomenon is expanding the impact of drug trafficking across various regions of Latin America, where controls are not as effective as those executed in Colombia.

4.3.5 Balloon Effect

The phenomenon known as the "balloon effect" illustrates how focused military pressure does not reduce the total volume of production or trafficking but simply redistributes the routes and operational zones. The 2018 Air Bridge Denial (ABD) operation exemplifies this pattern.

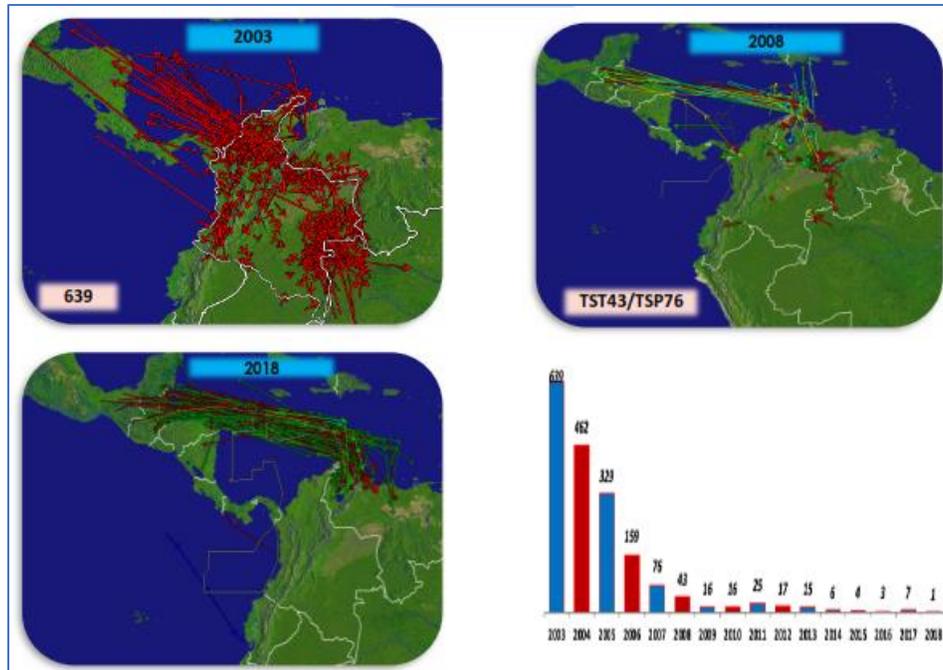


Figure 4.7. Balloon Effect: Focused Military Pressure Redistributes Routes Without Reducing Total Volume. Operation ABD 2018.

Source: Presentation "Analysis of the Projection of Drug Trafficking in Latin America".

In 2003, 639 illegal flight tracks carrying cocaine toward various points in Central America were recorded. However, due to the strengthening of surveillance and the incorporation of platforms such as light attack aircraft in 2008, this figure decreased significantly to only 46 tracks during that period. This success incentivized the development of new strategies within the Military Forces—specifically the Colombian Air Force—resulting in only one illegal track being detected in national airspace by 2018, fifteen years after the initial record.

This stance and decisive military determination, backed by appropriate technical means, has caused the displacement of distribution toward neighboring countries. This phenomenon has given rise to what the think tank defines as the "new concept of drug trafficking and global implications." This concept posits that cocaine production control can no longer focus on a single country but instead requires a coordinated strategy encompassing the majority of nations in Central and South America.

4.3.6 Hybrid Threat: Use of Drones

One of the most concerning evolutions in the Colombian conflict is the adoption of drones by illegal armed groups. Between 2024 and 2025, Colombia recorded 264 attacks involving unmanned aerial vehicles (UAVs) equipped with explosives, resulting in 15 soldiers killed and 153 wounded (Reuters, 2026). This hybrid threat prompted the national government to launch a \$480 million project in January 2026 to develop a "drone shield" (anti-drone system) aimed at protecting critical infrastructure and security forces from these attacks (Reuters, 2026).

The strategy behind the use of drones by these organizations is fundamentally to weaken Military Forces' operations and reduce their control capacity at strategic cocaine production and distribution points.

4.4 Ecuador: The New Cocaine Highway

Ecuador has undergone a dramatic transformation in its role within regional drug trafficking, shifting from being primarily a transit country to becoming a nerve center for criminal operations.

4.4.1 Pipeline System

Similarly to Colombia, Ecuador possesses critical oil infrastructure that traverse's conflict and narcotic production zones. Specifically, it has the San Miguel-Lago Agrio pipeline, which not only carries Ecuadorian crude and its derivatives but also pumps hydrocarbons from Colombia. This dynamic exists because the Trans-Andean Pipeline (OTA) in Colombian territory has become inoperable due to constant bombings affecting indigenous populations; consequently, Colombian legislation has restricted pumping through this system.

Since petroleum derivatives—essential inputs for alkaloid production—are abundantly available in northern Ecuador where this pipeline passes, the region has become strategic for drug trafficking. Through various illegal crossings, coca leaf cultivated in the departments of Cauca and Putumayo is moved from Colombia to Ecuador. There, due to the proliferation of laboratories near the border zone, cocaine is processed and subsequently distributed through the Esmeraldas maritime terminal or transported across the country to the Port of Guayaquil.

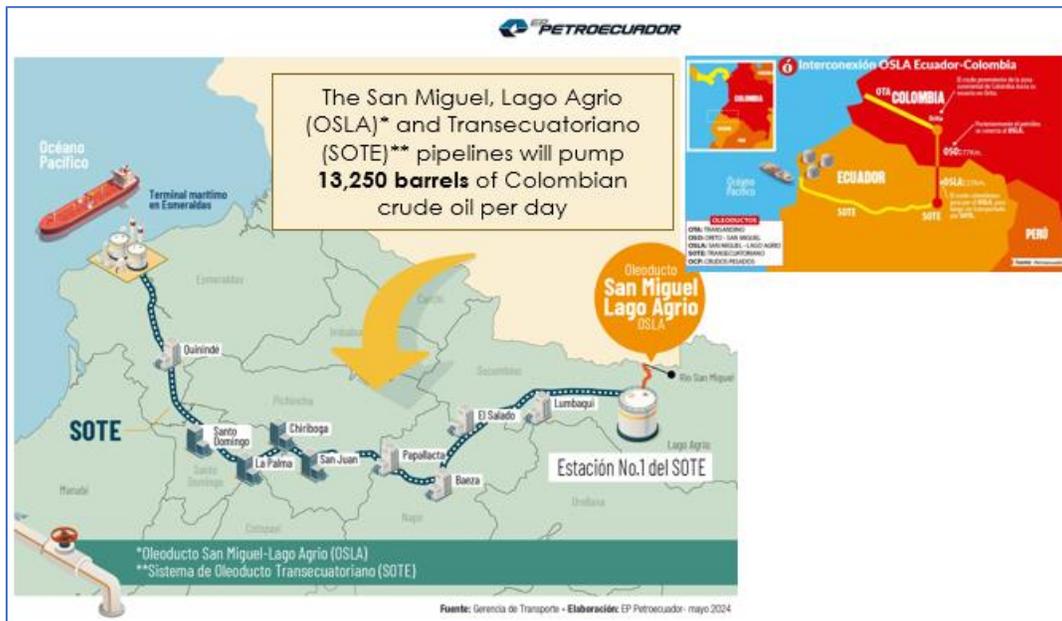


Figure 4.8. Ecuador's Pipeline System.
Source: EP Petroecuador (2024)

4.4.2 Convergence of Threats

Ecuador faces the convergence of deforestation, coca crops, and drug processing laboratories in the border zones with Colombia.

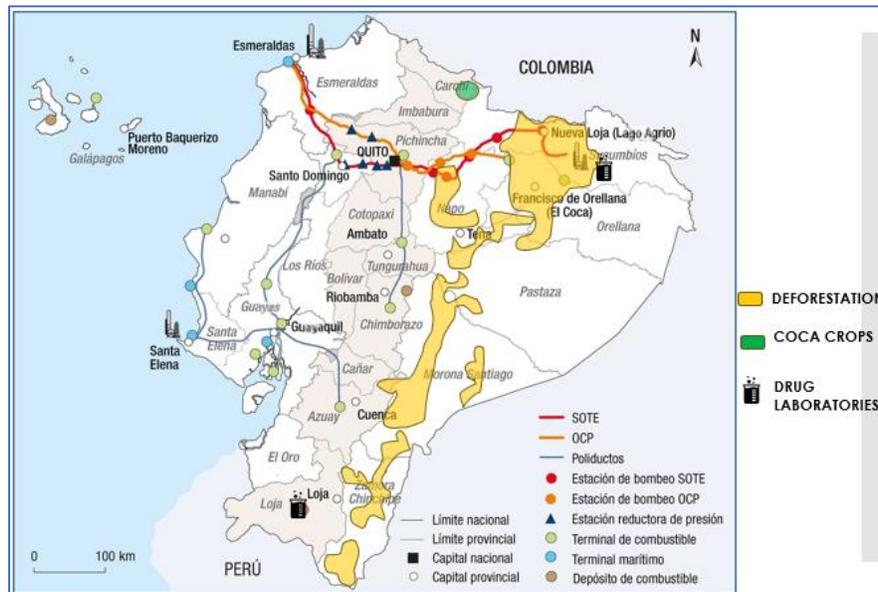


Figure 4.9. Ecuador's Pipeline System and Convergence of Deforestation, Coca Crops, and Drug Laboratories.

Source: <https://insightcrime.org/es/investigaciones/ecuador-autopista-de-la-cocaina-hacia-estados-unidos-y-europa/>

It is highly probable that if controls in Colombia increase without the implementation of measures of similar magnitude and effectiveness in neighboring countries, Ecuador will soon consolidate itself as one of the primary cocaine distribution hubs. From there, the narcotic would be transported across the Pacific Ocean toward Asia and Central America, with the ultimate goal of reaching the United States market.

4.4.3 Deforestation

The expansion of illicit activities has accelerated deforestation in Ecuador's Amazon regions—a phenomenon that, as in Colombia, geographically coincides with the location of coca leaf crops.

4.4.4 Cocaine Production and Trafficking

Ecuador has established itself as a "cocaine highway" toward the United States and Europe. Its Pacific ports, especially Guayaquil and Esmeraldas, have become critical points for large-scale shipment exports.

4.4.5 Internal Routes

Internal drug trafficking routes in Ecuador connect border production zones with exit ports, traversing the territory from east to west and north to south. Given that Ecuador is not historically a coca-producing country, the input enters from Colombia or Peru. The

movement of these shipments has caused violent acts to manifest in various areas of the country, generating a direct impact on the security of the civilian population.

One of the regions with the highest crime rates due to the control of these routes is Guayas Province. Its strategic proximity to the Port of Guayaquil makes it the primary exit corridor for cocaine originating from neighboring countries or produced in local laboratories.

In conclusion, the model of violence and logistics that affected Colombia is being replicated in Ecuador. This suggests that cocaine production, precursor trafficking, and violence levels will increase significantly in the coming years if comprehensive strategies are not implemented to combat manufacturing and distribution processes within Ecuadorian territory.



Figure 4.10. Internal Drug Trafficking Routes in Ecuador.

Source: <https://www.phenomenalworld.org/es/analisis/traficos-fronterizos/>

4.5 Peru: Expansion into New Regions

Historically, Peru has established itself as the world's second-largest cocaine producer. Currently, it faces an expansion of cultivation into new regions, which significantly hinders institutional control efforts.

Critical inputs such as coca leaf, cement, and petroleum derivatives enter Peruvian territory from the border with Colombia; this dynamic has fostered the proliferation of final processing laboratories in the northern part of the country.

As in Ecuador, a cocaine distribution flow has been identified—originating from both Colombia and local production—destined for export across the Pacific Ocean toward the Asian market, a consumption segment that is becoming increasingly relevant globally.

In central Peru, extensive areas of coca leaf cultivation remain. A portion of this production is dispatched via the Pacific route, while another fraction is transported toward the Bolivian border, from where it is subsequently moved toward markets in Brazil and Argentina.

4.5.1 Pipeline System

Peruvian oil infrastructure also faces threats in coca-producing zones.



Figure 4.11. Peru's Pipeline System.

Source: <https://sudaca.pe/noticia/informes/el-oleoducto-abandonado-a-su-suerte-petroperu-petroleo-fuga/>

Similarly to Colombia, pipelines in Peru constitute a critical source of chemical precursors. It is observed that in the areas surrounding this infrastructure, processing laboratories and deforestation hotspots proliferate. This recurrence confirms that accessibility to petroleum derivatives, combined with environmental degradation for the establishment of illicit crops, creates critical points that result in centers of violence and both social and economic destabilization.

4.5.2 Coca Crops

Coca cultivation in Peru is expanding into new regions, including areas previously unaffected by this phenomenon. As in Colombia, these plantations are primarily located in mountainous, hard-to-access areas where state presence is limited. This lack of institutional control motivates farmers to view coca leaf cultivation as their only reliable source of income, to the detriment of legal products.

Since illicit cultivation is significantly more profitable for the farmer, eradication efforts become more complex and laborious. It is essential to highlight that Peru possesses a vast territory with notable limitations in airspace surveillance. Previously, this was compounded by a legal restriction that prevented the interception and shoot-down of aircraft; such regulations hindered effective control of illegal flights and prevented the development of a forceful strategy to reduce illicit air traffic in the country.

4.5.3 Deforestation Hotspots

Deforestation in the Peruvian Amazon is directly linked to the expansion of illicit crops and illegal mining.

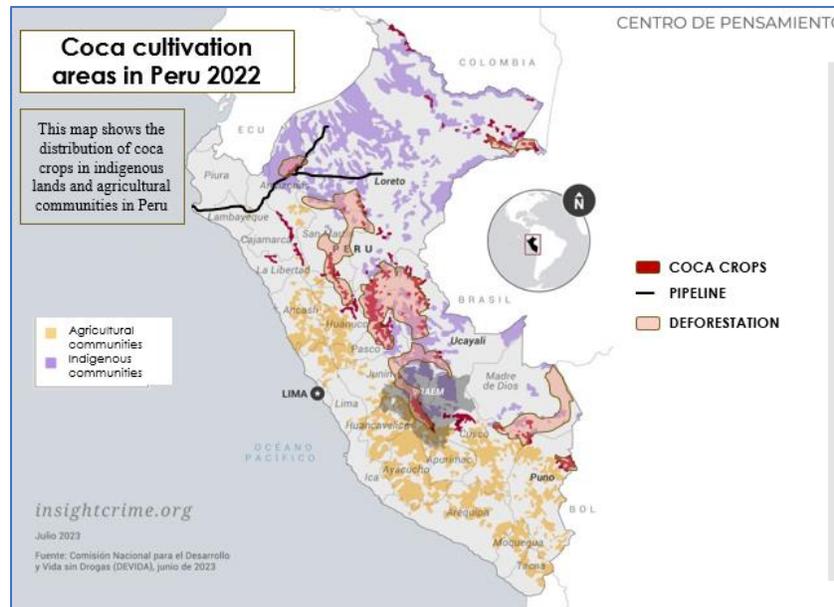


Figure 4.12. Coca Crops in Peru and their Relationship with Deforestation and Pipelines.
Source: <https://insightcrime.org/es/noticias/coca-peru-expande-nuevas-regiones/>

The causes of this deforestation follow patterns similar to those observed in Colombia and Ecuador, where the loss of forest cover is directly linked to the establishment of illicit crops in those same areas.

4.6 Bolivia: Drug Trafficking in National Parks

Bolivia faces the particular challenge of drug trafficking penetration into protected areas and national parks.

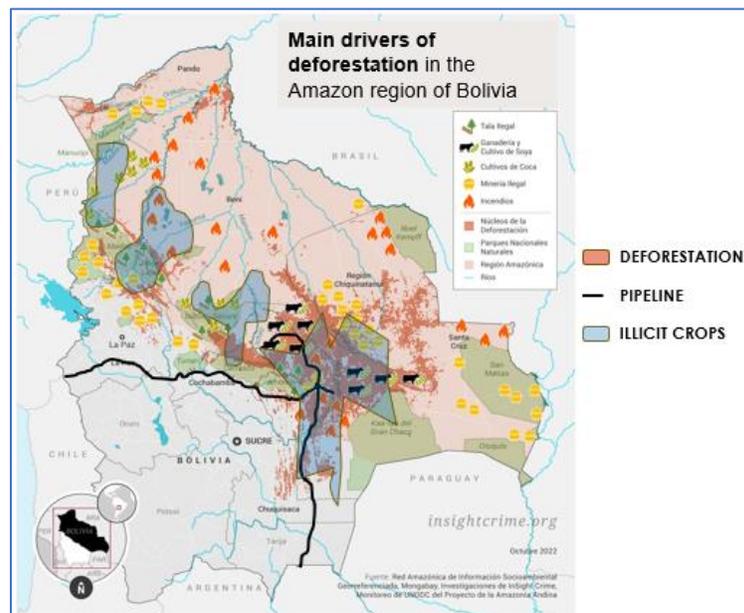


Figure 4.13. Deforestation in Bolivia and its Relationship with Illicit Crops and Pipelines.
Source: <https://insightcrime.org/es/investigaciones/motores-deforestacion-amazonas/>

Once again, the pattern linking multi-purpose pipeline infrastructure with deforestation and coca leaf crops is repeated. This situation presents an aggravating factor in Bolivia: due to ancestral traditions, coca leaf cultivation is legal in certain areas and quantities. This facilitates the diversion of a considerable portion of the production intended for traditional use into the manufacturing of cocaine hydrochloride.

Although Bolivia is not a major oil producer, it possesses a network of multi-purpose pipelines for domestic fuel supply. This infrastructure is subject to illicit tapping for the installation of valves that allow the extraction of gasoline or kerosene, essential precursors for drug processing.

In Bolivia, controls are minimal in both airspace and waterborne environments, constituting one of the country's greatest strategic vulnerabilities. Lake Titicaca, located on the border with Peru, is one of the most complex areas to monitor; a large portion of the coca leaf cultivated in both countries moves through this region. Depending on profitability and current distribution lines, the flow of goods varies bidirectionally between Bolivia and Peru.

Waterborne, aerial, and land control capabilities are insufficient. The country lacks the experience and the technical means necessary to supervise the supply of chemical inputs, as well as to intercept the distribution and shipment of cargo through the routes defined by drug trafficking.

Once the cocaine is processed in Bolivia, the finished product is transported in smaller quantities toward Peru. However, one of the most significant recent findings is the expansion of the business into Argentina, employing not only land routes but also the waterway (hidrovía), as will be analyzed later.

4.6.1 Pipeline System

The YPFB Transporte network (a subsidiary of the state oil company) constitutes a strategic infrastructure of more than 3,000 km linking production centers with refineries and foreign markets. However, this network faces critical security challenges, ranging from clandestine tapping for hydrocarbon theft—especially in multi-purpose pipelines—to environmental incidents resulting from the age of the infrastructure. Furthermore, its operability is compromised by its location in geologically unstable terrain and its vulnerability to blockades and social conflicts.

4.6.2 Deforestation

The primary drivers of deforestation in the region are the expansion of industrial agriculture, especially soybean cultivation, and extensive cattle ranching, mostly concentrated in the department of Santa Cruz. Added to these factors are small-scale agricultural settlements, recurrent forest fires (often resulting from the practice of "chaqueo" or slash-and-burn), and road infrastructure development. In recent years, the convergence of international demand for raw materials and extreme weather conditions has accelerated the loss of primary forests in critical regions such as the Chiquitania and the Amazon.

4.6.3 Cocaine Crops in Protected Areas

Although agro-industry and forest fires are the main causes of forest loss at the national level, illicit crops act as a critical driver of ecosystem fragmentation. To establish these

plantations, clandestine paths and roads are opened in virgin jungles, which subsequently facilitates the incursion of illegal logging and mining. At the beginning of 2026, monitoring reports indicate that areas such as Carrasco National Park have recorded increases of up to 38% in illegal crops; meanwhile, in parks such as Amboró and Madidi, the installation of crystallization laboratories and clandestine landing strips has accelerated the degradation of previously inaccessible primary forests.

4.6.4 The Impact of the Lithium Triangle

The Lithium Triangle is a geographic region located in the Andes Mountains, specifically at the border intersection of Bolivia, Argentina, and Chile, which concentrates more than 60% of the world's reserves of this mineral. This area is strategic for the global energy transition, given that lithium is an essential component in the manufacturing of batteries for electric vehicles and electronic devices.



Figure 4.14. The Lithium Triangle in South America.

Source: <https://visiondesarrollista.org/el-triangulo-del-litio/>

In the specific case of Bolivia, this phenomenon has a profound impact at three levels:

1. The Global Leader in Resources

Bolivia possesses the world's largest lithium resources, certified in early 2026 at 23 million tons, primarily located in the Salar de Uyuni (Potosí), followed by the Coipasa (Oruro) and Pastos Grandes salt flats. This places the country in an enviable strategic position, yet also under immense international pressure to grant access to these resources.

2. Geopolitics and Industrialization (2026 Context)

Unlike its neighbors, Bolivia has opted for a model where the State, through Yacimientos de Litio Bolivianos (YLB), maintains control over the production chain.

- **Strategic Alliances:** To accelerate production, the government has signed agreements to implement Direct Lithium Extraction (DLE) with companies from Russia (Uranium One Group) and China (the CBC consortium).
- **European Union Interest:** Recently, in February 2026, EU delegations visited the country to explore partnerships under the Global Gateway strategy, seeking to diversify commercial partners beyond Eurasian powers.

3. Critical Challenges and Impacts

Despite the potential, "lithium fever" generates significant internal tensions:

- **Economic and Legal Uncertainty:** There is an intense legislative debate regarding a new Evaporative Resources Law. Regions such as Potosí demand higher royalties, arguing that current contracts do not guarantee a fair return for local development.
- **Environmental Impact:** The primary concern is the intensive use of freshwater in areas already suffering from water stress. Environmentalists and indigenous communities fear that large-scale extraction will affect quinoa agriculture, camelid ranching, and the fragile ecosystem of the salt flats.
- **Economic Transition:** With the decline of natural gas reserves, President Rodrigo Paz's government seeks to make lithium the new engine of the Bolivian economy, although experts warn that its impact on the GDP will still take years to match the hydrocarbons era.

4.7 Argentina: Transit Country

Argentina, although not a significant producer, plays a crucial role as a transit country and an expanding consumer market. Cocaine from Bolivia enters Argentina through three primary routes:

1. **Land Route:** Through the northwest, specifically via Salta (points such as Orán and Jujuy).
2. **Air Route:** Via small aircraft that are difficult to detect.
3. **Waterborne Route:** Through channels and rivers connecting with the Paraguay River toward the Atlantic.

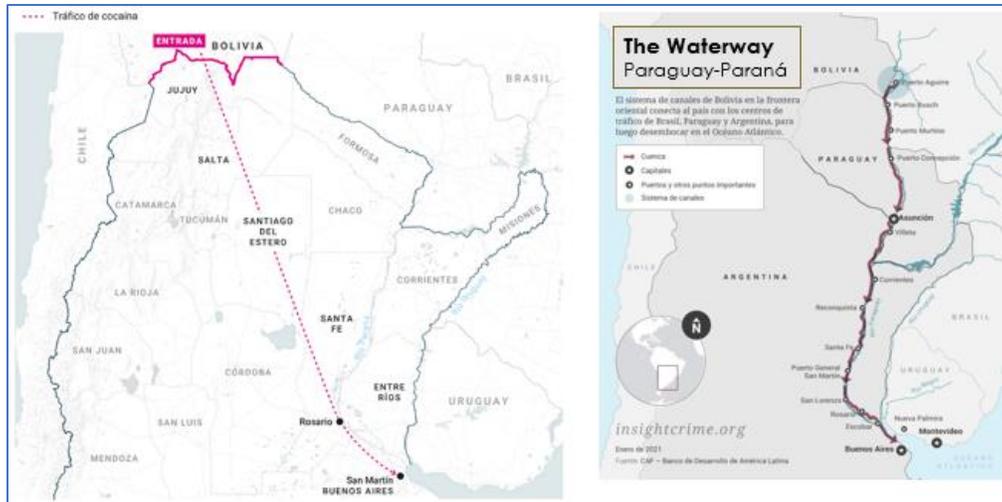


Figure 4.15. Cocaine Trafficking in Argentina: Principal Land, Air, and Waterborne Routes. Sources: <https://www.notiar.com.ar/index.php/actualidad/1/134934-viaje-a-la-frontera-norte-las-seis-rutas-principales-de-la-argentina-para-el-contrabando-y-el-narcotrafico-por-camila-dolabjian-y-diego-cabo> <https://insightcrime.org/es/noticias/nuevas-rutas-narcotrafico-rios-bolivianos/>

5 How production and distribution are being relocated

5.1 Reconfiguration of Global Routes

Drug trafficking is a dynamic phenomenon that constantly adapts to interdiction pressures and market opportunities. In recent years, a significant reconfiguration of production and distribution routes has been observed.

5.2 Geographical Expansion of Crops

Illicit substance crops are expanding into new regions, particularly in border zones and remote areas with limited state presence.

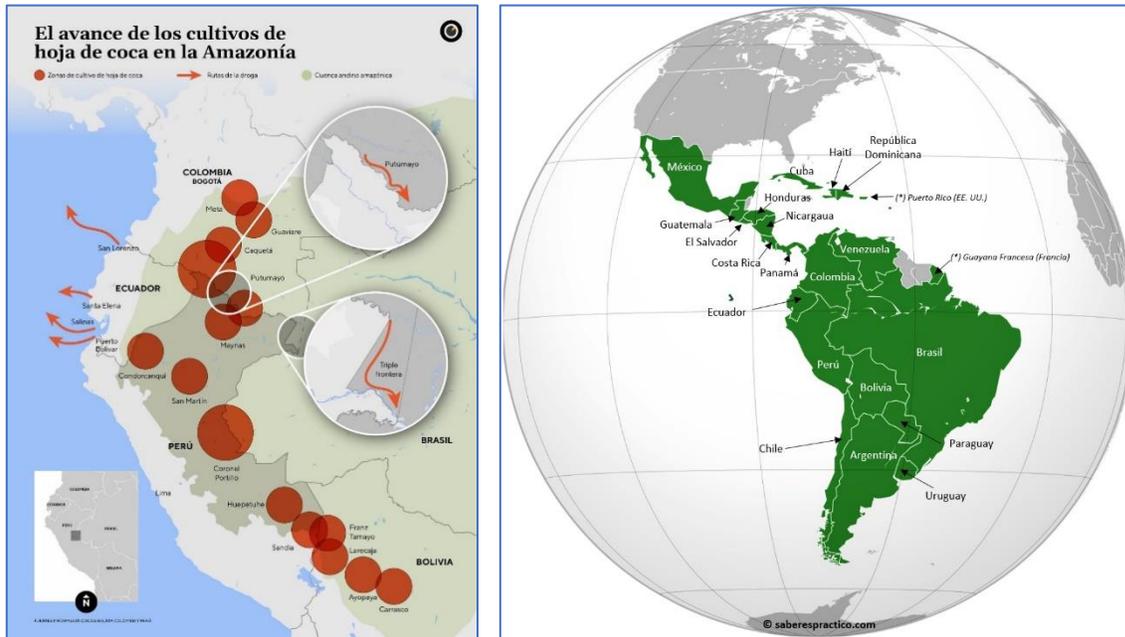


Figure 5.1. Illicit substance crops and transport projection.

Source: <https://ojo-publico.com/5152/narcodeforestacion-el-nuevo-mapa-la-coca-destruye-la-amazonia>

Transport corridors continuously evolve in response to new state pressures, shifting toward countries and regions with lower interdiction capacity. This relocation also responds to new regional geopolitical and economic dynamics.

5.3 Evolution of Routes in the Caribbean

Caribbean routes have undergone significant transformations, with a return to historical patterns but incorporating new operational modalities.



Figure 5.2. Main drug trafficking routes in the Caribbean (2024).

Source: <https://www.economist.com/the-americas/2014/05/24/full-circle>

The primary factor in the modification of Caribbean routes is based on the new conditions in Venezuela, specifically following the events of January 3, 2026, which involved the capture of Nicolás Maduro and his subsequent transfer to the United States.

Currently, the control of Venezuelan airspace and maritime territory is coordinated with the new government, under strict surveillance supported by United States technology. Previously, a large portion of the cocaine produced in Colombia entered Venezuela to be distributed through the Caribbean Community (CARICOM). From Venezuelan territory, shipments moved toward islands such as Antigua and Barbuda, Saint Lucia, and Barbados, using the Dominican Republic as a transit point toward Florida or transatlantic routes destined for Africa and, subsequently, Europe.

Due to increased U.S. air-sea control in the area, the flow of Colombian cocaine has shifted toward Guyana and Suriname. These countries, which previously functioned as technical stopovers for aircraft, have gained new prominence in the maritime and aerial dispatch of narcotics to the African market.

Both nations share critical vulnerability: they lack robust surveillance and control infrastructure. This deficiency is due to a historical shortage of resources to acquire security and defense technologies, coupled with a low population density that prevents having sufficient personnel in their defense forces. Likewise, there is a significant gap in training and tactical equipment to guarantee national security.

The case of Guyana is the most alarming. Its offshore oil production exports crude directly to refineries in the United States but imports gasoline in return—an essential derivative to produce alkaloids. Fuel consumption has increased due to industrial expansion and the growth of the vehicle fleet driven by foreign investment. This allows drug trafficking to obtain one of the primary chemical precursors in a camouflaged manner, under the guise of industrial consumption or urban mobility.

Furthermore, the expansion of physical infrastructure in Guyana has triggered the import of cement (especially from Turkey) and the installation of local plants. In this way, the second necessary bulk input for cocaine processing is fully available and easily hidden within the legality of new civil and road works.

Regarding the third essential component—cultivation—Guyana possesses vast stretches of fertile land where coca leaves can be grown without being easily detected, due to the lack of means for crop monitoring and control. In fact, incipient plantations and processing laboratories have already been located. If urgent actions are not taken to modernize national security through air, sea, river, and land controls, Guyana could become a nerve center for production and distribution in the medium term, with illicit economies that are difficult to eradicate.

A similar situation is observed in Suriname. Although its current oil discoveries do not reach the proportions of Guyana's, the projection of new deposits poses identical risks. Currently, Suriname functions as a strategic transit point for cocaine arriving from Colombia through northern Brazil, as well as for production originating within Brazilian territory.

In conclusion, Guyana and Suriname represent the greatest strategic risks in the medium term. They not only have facilitated access to chemical precursors, but their geographical location positions them as ideal channels for the distribution of cocaine toward Africa, Asia, and Europe.

5.4 Factors Driving Relocation

Several factors are driving the relocation of production and distribution:

1. **Interdiction Pressure:** Eradication and control operations in traditional zones push production toward new areas.
2. **Balloon Effect:** Focused pressure in one region generates displacement toward adjacent zones or new regions.
3. **Market Opportunities:** The identification of new consumer markets in Asia and Africa encourages the establishment of new routes.
4. **Logistical Innovation:** The use of new technologies (drones, submersibles, modified containers) allows for the exploration of previously unfeasible routes.
5. **Political Instability:** State fragility in certain regions creates opportunities for the establishment of criminal operations.
6. **Changes in Criminal Alliances:** Reconfigurations in alliances between criminal organizations generate new trafficking corridors.

5.5 Implications for Regional Security

The relocation of production and distribution has profound implications for regional security:

- **Expansion of Violence:** New operational zones experience increases in violence and criminality.
 - **Institutional Weakening:** Criminal organizations corrupt local institutions in new regions of operation.
 - **Population Displacement:** Local communities are displaced or co-opted by criminal structures.
 - **Environmental Degradation:** Expansion into new areas causes deforestation and pollution in previously preserved ecosystems.
-

6 Opportunities in Security and Defense 2026

6.1 Regional Strategic Context

The year 2026 presents a complex strategic context for Latin America, characterized by multiple converging threats that require comprehensive and technologically advanced responses.

- Drug Trafficking and Organized Crime: Border porosity in jungle zones, rivers, and maritime areas—where control is difficult to maintain—favors the mobility of narco-terrorist organizations.



Figure 6.1. Drug trafficking and organized crime: border porosity in jungles, rivers, and maritime zones.

Sources: UNODC (2025), Insight Crime (2025)

- Illegal Mining and Protection of the Amazon: Between 1985 and 2023, the Amazon lost more than 88 million hectares of forest—approximately the size of Colombia—representing nearly 12.5% of the biome's original coverage. Deforestation caused by mining (especially gold) between 2018 and 2023 exceeded 1.9 million hectares across the entire Amazon (UNODC, 2025).
- Lithium Triangle: The "Lithium Triangle" region (Argentina, Bolivia, and Chile) concentrates the world's largest reserves of this critical mineral for the global energy transition, generating new geopolitical interests and potential conflicts.

- **Persistent Border Conflicts:** The region faces historical border tensions that reactivate periodically, such as the controversy between Venezuela and Guyana over the Esequibo territory.
- **Terrorist Groups and Hybrid Technological Threats:** Illegal armed groups have experienced significant growth, reaching a force of 21,000 to 22,000 members—a nearly 45% increase since 2022. This hybrid threat includes the use of drones in regions like Cauca and Guaviare; in fact, 119 attacks with these devices were recorded in 2024, while in the first eight months of 2025, the figure rose to 180 incidents. Meanwhile, the International Committee of the Red Cross (ICRC) reported an 89% increase in victims of mines and explosive devices during 2024, totaling 719 people killed or injured—the highest level recorded in the last eight years.

6.2 Opportunities in Colombia

Colombia faces critical operational needs that generate strategic opportunities for implementing advanced security and defense solutions:

- **Intensification of Operations Against Illegal Groups and Drug Trafficking:** Strengthening operational capabilities is required in key areas such as Catatumbo, the borders with Ecuador and Peru, and the department of Cauca.
- **Modernization of Obsolete Systems:** The ScanEagle unmanned aircraft system faces serious challenges regarding obsolescence and logistical support, making its replacement with next-generation platforms imperative.
- **DAD Calima Project:** A strategic Drone-Counter-Drone (DAD) capability initiative designed to effectively counteract unmanned aerial threats within the national territory.
- **Anti-Drone Shield:** In January 2026, the Colombian government launched a project valued at \$1.68 billion for the development of an integrated air defense system. The first phase of this project has an approved budget of \$271.1 million (Reuters, 2026).

6.3 Opportunities in Perú

Peru presents a favorable context for security and defense investments:

- **Position as a Producing Country:** Venezuela, Colombia, and Peru constitute the main cocaine-producing countries worldwide. Ecuador and Peru are critical transit countries.
- **Increased Defense Investment:** A new alignment with the United States is driving budget increases.
- **Operational Need:** Surveillance of borders, drug trafficking corridors, and the Amazon.

6.4 Opportunities in Bolivia

The creation of multi-domain security architecture:

- **Aerial Interception and Airspace Control (Textron T-6/AT-6):** Bolivia needs to renew its capacity to intercept irregular flights linked to drug trafficking.
- **Persistent Surveillance in the Amazon:** Protecting the Amazon and detecting illegal mining requires "eyes in the sky" that do not rely on costly infrastructure.

- Response to Hybrid Threats and Denied Environments: Modern threats include the use of drones by organized crime and signal interference (jamming).
- Logistics and Tactical Mobility: Strengthening the humanitarian response and logistical capacity of the Armed Forces.

6.5 Opportunities in Guyana

Guyana presents a unique strategic context that generates significant opportunities.



Figure 6.2. Security and defense opportunities in Guyana.

Sources: <https://www.bbc.com/mundo/articles/cpwp4lyp902o>; <https://petroleum.gov.gy/wp-content/uploads/2024/10/1-2018-Brugman-Update-Expansion-Study-Final-Revised-Report.pdf>

Strategic Factors:

- Territorial Controversy with Venezuela: The dispute over the Esequibo region generates defense requirements.
- Offshore Energy Sector Growth: Massive oil discoveries require infrastructure protection.
- Pressure on Drug Trafficking Routes: The displacement of traditional routes in the Caribbean and Pacific.
- Degradation of State Control in Venezuela: Tends to shift illicit economies toward Guyana.

6.6 Integrated Technological Solutions

Security and defense opportunities for 2026 require integrated technological solutions that address multiple operational dimensions:

Key Components:

1. Intelligence: Implementation of advanced Surveillance and Reconnaissance (ISR) systems with persistence capability and multispectral sensors for monitoring borders and critical areas.
 2. Protection: Deployment of next-generation anti-drone systems for the detection, identification, and neutralization of unmanned aerial threats in urban and rural environments.
 3. Command and Control: Strengthening of integrated C3I2 Centers (Command, Control, Communications, Intelligence, and Informatics) that allow for interoperability and real-time decision-making based on fused data.
 4. Movement and Maneuver: Modernization of aerial platforms (fixed and rotary wing) to ensure tactical mobility, troop transport, and superiority in complex theaters of operation.
 5. Fires: Optimization of rapid response capabilities and precision fire support to neutralize strategic targets with the least possible collateral damage.
 6. Support: Integration of air defense radar systems and secure, resilient communication networks for command sustainment in hard-to-access areas.
 7. These integrated solutions allow for addressing the hybrid threats that characterize the regional security context, combining capabilities for surveillance, detection, identification, and neutralization of both conventional and asymmetric threats.
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7 Recommendations

Based on the comprehensive analysis of drug trafficking projections in Latin America and the identified opportunities in security and defense, the following strategic recommendations are presented:

7.1 Regional Strategic Recommendations

- Strengthening international and regional cooperation: It is imperative to establish robust cooperation mechanisms for intelligence sharing, operational coordination, and the harmonization of legal frameworks. The transnational nature of organized crime requires joint responses that overcome the limitations of unilateral actions.
- Adopt comprehensive approaches linking security and development: Purely repressive strategies have shown significant limitations. It is necessary to complement interdiction actions with alternative development programs, institutional strengthening, and comprehensive state presence in areas affected by drug trafficking.
- Prioritize environmental protection as a security component: Deforestation and environmental degradation associated with drug trafficking represent long-term threats to regional security. Security strategies must explicitly incorporate environmental protection and ecosystem restoration objectives.
- Invest in advanced surveillance and control technologies: Faced with the adoption of emerging technologies by criminal groups, States must invest in superior capabilities: persistent surveillance, unmanned platforms, anti-drone systems, and integrated Command and Control centers (C4I).

7.2 Country-Specific Recommendations

7.2.1 Colombia

- Accelerate the implementation of the anti-drone shield to neutralize the threat of UAV attacks against Public Forces.
- Reinforce the protection of critical infrastructure, with an emphasis on the oil and multipurpose pipeline network.
- Expand surveillance capabilities in remote areas of Catatumbo, Cauca, and the borders with Ecuador and Peru.
- Replace obsolete systems (such as the ScanEagle) with next-generation platforms featuring greater autonomy and advanced sensors.

7.2.2 Peru

- Capitalize on the strategic alignment with the United States to increase defense investment and technology transfer.
- Implement advanced surveillance systems in the drug trafficking corridors of the Amazon basin.
- Strengthen the Peruvian Air Force (FAP) with vertical takeoff and landing (VTOL) and persistent monitoring UAS technologies.

- Develop alternative development programs in coca cultivation expansion zones.

7.2.3 Ecuador

- Strengthening control of Pacific ports (Guayaquil, Esmeraldas) to reduce the export of illicit shipments.
- Increase state and military presence on the northern border to contain the flow of precursors from Colombia.
- Strengthen maritime interdiction capabilities and surveillance of the Exclusive Economic Zone (EEZ).
- Implement intelligence programs to dismantle internal trafficking networks.

7.2.4 Bolivia

- Secure national parks and protected areas against incursions by groups dedicated to alkaloid processing.
- Tighten control over the commercialization and diversion of chemical precursors.
- Develop economic alternatives for coca-growing communities and improve surveillance in remote areas

7.2.5 Argentina

- Bolster border controls in the northwest (Salta and Jujuy) to detect the entry of narcotics.
- Develop early detection capabilities for illicit flights and surveillance of river routes toward the Atlantic
- Increase surveillance of river routes toward the Atlantic.
- Improve coordination with Bolivia for the control of transborder flows.

7.2.6 Guyana

- Leverage the economic surplus from the oil sector to invest in defense.
- Strengthen the Guyana Defense Force (GDF) capabilities with advanced technologies.
- Develop maritime surveillance systems to protect offshore infrastructure and detect illicit trafficking vessels.
- Increase cooperation with Colombia and other countries in the region.

7.3 Technological Recommendations

- **Implement Integrated Surveillance Systems:** Develop architectures that integrate multiple sensors (radar, electro-optical, infrared) across land, air, and space platforms, connected to command centers for real-time coordinated responses.
- **Adopt Long-Range Unmanned Platforms:** Unmanned expeditionary VTOL systems that offer persistent surveillance in remote areas without exposing personnel to risk. Their adoption should be prioritized for border and crop monitoring.
- **Develop Anti-Drone Capabilities:** The threat of armed drones requires specialized detection and neutralization systems. Technologies capable of implementing Wide Area Visual Detection and Ranging, and Autonomous VTOL (not runway dependent) systems should be deployed to protect critical installations.

- Strengthen Signals Intelligence: The use of encrypted communications by criminal organizations requires investment in SIGINT and cyber-intelligence capabilities.

7.4 Public Policy Recommendations

- Reform legal frameworks to facilitate international cooperation: Harmonize national legislations to streamline extraditions, evidence sharing, and the coordination of transborder operations.
- Strengthening controls on chemical precursors: Implement stricter traceability and control systems for the production, importation, and distribution of chemical precursors used in cocaine processing.
- Develop sustainable alternative development programs: Invest in programs that offer viable economic alternatives for communities dependent on illicit crops, including technical assistance, market access, and infrastructure.
- Fortify justice institutions: Combat corruption and strengthen the capacity of judicial systems to prosecute complex cases of drug trafficking and organized crime.

7.5 Recommendations for the Private Sector

- Develop technological solutions adapted to the regional context: Defense and security companies must develop solutions specifically designed for the operational challenges of Latin America, considering factors such as geography, climate, and institutional capabilities.
- Establish public-private partnerships (PPP): Foster collaboration between governments and the private sector to develop, implement, and maintain advanced security systems.
- Invest in training and technology transfer: Ensure that technological solutions include robust components for training and knowledge transfer to guarantee operational sustainability.

7.6 Research Recommendations

- Develop monitoring and evaluation systems: Implement rigorous systems to assess the effectiveness of interventions and adjust strategies based on evidence.
- Investigate the dynamics of illicit markets: Deepen the understanding of the economic, social, and political dynamics that sustain illicit markets to design more effective interventions.
- Study long-term environmental impacts: Investigate the cumulative impacts of drug trafficking on ecosystems and develop environmental restoration strategies.

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