United Nations
Office on Drugs and Crime

Gobierno de Colombia

# Colombia

## Monitoring of territories with presence of coca crops 2023

February 2025

UNODC Research

# Monitoring
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# Clarifying Notes

The Monitoring Territories with presence of Coca Cultivation 2023 report is developed within the framework of the SIMCI project, with the close collaboration of the Government of Colombia, particularly the Ministry of Justice and Law. This collaboration is not limited to the financial and logistical aspects. It also includes technical and strategic elements resulting from the joint development of a monitoring model focused on technical and objective evidence.

The maps and territorial analyses were built from the official maps provided by the Government of Colombia within the framework of the inter-institutional technical committee. Data on actions by the Government of Colombia to address the drug problem are provided by the Colombian Drug Observatory (ODC).

# Contents

# List of maps

## Summary fact sheet–Colombia coca cultivation survey, 2023

| | 2022 | Change (%) | 2023 |
|---|---|---|---|
| Net coca cultivation area calculated on 31st December (rounded to the nearest thousand)[1] | 230,000 hectares | 10 | 253,000 hectares |
| Pacific region | 94,163 hectares | 14 | 107,078 hectares |
| Putumayo – Caquetá region | 53,648 hectares | 6 | 56,933 hectares |
| Catatumbo region[2] | 42,043 hectares | 4 | 43,867 hectares |
| Central region | 32,962 hectares | 12 | 37,063 hectares |
| Meta – Guaviare region | 6,769 hectares | 6 | 7,164 hectares |
| Orinoco region | 283 hectares | 21 | 343 hectares |
| Amazon region | 157 hectares | -22 | 122 hectares |
| Sierra Nevada region | 3 hectares | -33 | 2 hectares |
| Average fresh coca leaf yield[3] | 6.4 tm/ha/año | 33 | 8.5 tm/ha/año |
| Potential fresh coca leaf production[3] | 1,410,600 tm (1,267,800 tm – 1,683,000 tm) | 50 | 2,108,600 tm (1,872,400 tm – 2,548,100 tm) |
| Potential cocaine hydrochloride production (100% purity)* | 1,738 tm (1,563 tm – 2,t074 tm) | 53 | 2,664 tm (2,367 tm – 3,219 tm) |
| Average potential cocaine hydrochloride/hectare harvested[3] | 7.8 kg/hectare harvested | 37 | 10.7 kg/hectare harvested |
| Cocaine seizures[4] | 659,134 kg | 13 | 746,285 kg |
| Illegal laboratories destroyed[5] | 4,707 | 11 | 5,218 |
| Reported manual eradication of illicit crops[6] | 68,974 hectares | -70,5 | 20,325 hectares |

*The term "potential cocaine production" refers to the amount of cocaine at 100% purity that could theoretically be produced from the detected coca hectares, depending on the stability of the cultivation, the amount of leaves that can be obtained from the cultivation, the amount of alkaloid that is present in the leaves and the capacity of the processors to extract the alkaloid and transform it into cocaine.

**1-**This corresponds to the area with coca found on December the 31st, 2022, vis-à-vis December the 31st, 2023.

**2-**Prior to 2018, Catatumbo region (Norte de Santander and Cesar) was considered as part of the Central region (Antioquia, Córdoba, Bolívar, Santander, and Boyacá). Since 2018, the results of the Catatumbo region are presented separately.

**3-**The national average yield per hectare per year and the potential cocaine production per hectare harvested are calculated from the productive area during the year (AP).

**4-**Cocaine seizures include those cocaine hydrochloride seizures that were the results of actions by the control authorities in the national territory, as well as the results of international operations or current Maritime Agreements. Colombian Drug Observatory.

**5-**This only includes cocaine laboratories and other structures set up to produce basic cocaine paste and cocaine base. Colombian Drug Observatory.

**6-**Values are verified and updated on a continuous basis, which may have an impact on data and trends previously reported.

# Presentation

The integrated coca cultivation monitoring system completes a 22-year historical series with fully comparable data by including the report corresponding to December 31, 2023, enabling Colombia to improve its understanding of the links between coca, conflict and development. This series is based on the detection of coca cultivation in medium resolution satellite images, complemented with direct field visits and verification overflights, which has allowed the geography of coca from a better understanding of its connection with the territories where it is cultivated.

In addition to cultivation detection, monitoring includes estimates of potential cocaine production, which is based on a study that includes surveys and harvest tests on a statistically representative selection of coca fields; this indicator refers to the amount of cocaine that could be obtained if all detected fields were destined for cocaine production; the indicator does not refer to the cocaine that actually reaches the markets because it does not deduct the seizures and losses that occur in the process, as explained in chapter 2. To date, approximately 3,400 harvest tests have been conducted to complete five cycles of research on the number of leaves that can be obtained from one hectare of coca.

The series of harvest tests includes more than 7,000 surveys that characterize the agricultural conditions of cultivation and provide data on the demographics and economics of coca production units. This database is a fundamental input for different in-depth studies carried out by UNODC that improve the understanding of the economic and social dynamics in the territories where coca cultivation takes place in Colombia.

Once the potential coca leaf production is estimated, qualitative information is used to determine the conversion factors from leaf to paste or base and from these to cocaine hydrochloride. These factors are validated through controlled exercises supported by the Colombian government.

In addition to the more than 20 annual monitoring reports on coca cultivation territories, SIMCI has published another 30 titles and submitted to the Colombian government another 70 titles for internal use. This information pool is the input for the report that UNODC and the Government of Colombia present in this document.

The report is divided into four chapters. The first chapter presents a global overview of cocaine trafficking and use trends that explains the increase in potential cocaine production in Colombia and the tendencies to expand this phenomenon beyond the Andean region.

The second chapter presents the main findings and emphasizes on the consolidation of the new coca geography, where concentration and persistence foster improvements in leaf productivity and in the efficiency of alkaloid extraction, but at the same time facilitate the emergence of deconcentration zones in which scenarios of depressed markets for coca leaf and its

derivatives are observed and conditions are favorable to overcome the problems associated with drug production once and for all.

The third chapter tries to explain how these clearly differentiated scenarios are conditioned by the markets and the actions of the illegal armed groups and offers elements to understand how the increase in potential cocaine production is plausible despite the restrictions on the commercialization of coca leaf and its derivatives in several regions of the country.

To conclude, the Colombian government offers a chapter summarizing the progress made in the drug policy implementation with emphasis on the efforts carried out to prevent the potential production of cocaine from becoming actually available cocaine. Efforts to seize and interrupt the cocaine production cycle, as well as the search for licit alternatives for the use of coca leaf, are at the forefront of the strategy.

Interested readers can find complementary information on the web page of the Colombian Drug Observatory (www.odc.gov.co) or the web page of the SIMCI project (www.biesimci.org).

# Executive summary

# 1.

# COCAINE MARKETS KEEP GROWING, BOTH ON THE SUPPLY AND THE DEMAND SIDE

**World Drug Report shows more drug users, more problematic use and less access to treatment.**

**20%**
Drug use in the last decade

**3%**
Drug use related problems 2018-2022

**1 of each 11 people**
has problematic use and lacks treatment

*Source: WDR, 2024*

**Estimated number of persons who used cocaine in the last year, by subregion, 2022**

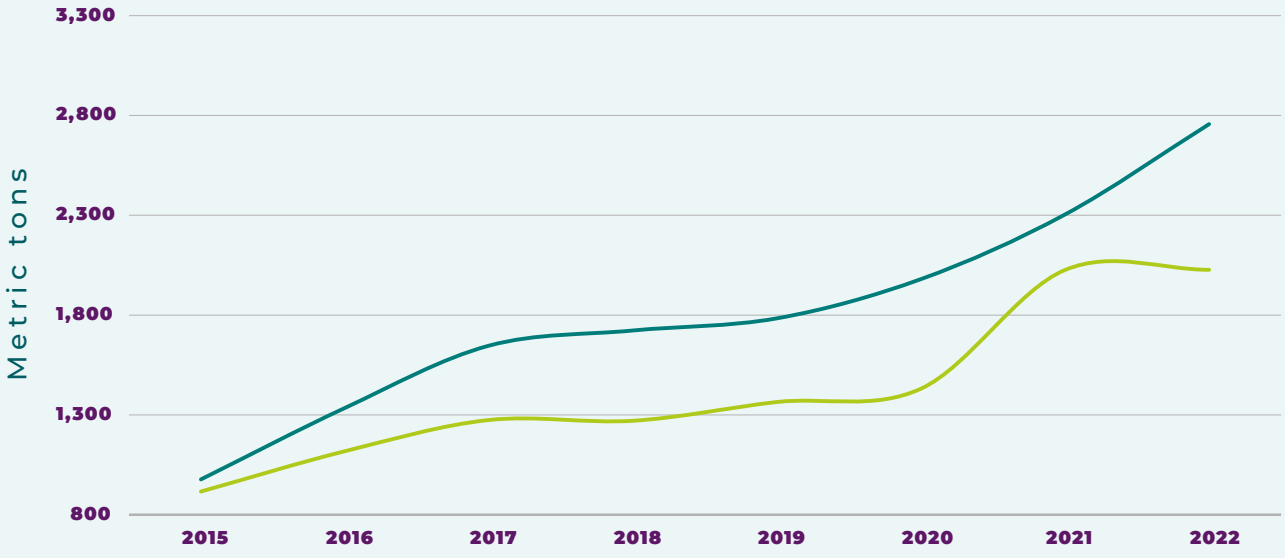

| America | Africa | Europe | Asia | Oceania |
|---|---|---|---|---|
| 11,680,000 | 2,300,000 | 5,710,000 | 2,930,000 | 840,000 |

*Source: UNODC, responses to the annual report questionnaire.*

**Although the trend in global demand for cocaine is increasing, consumption patterns vary between regions, possibly related to the following factors:**

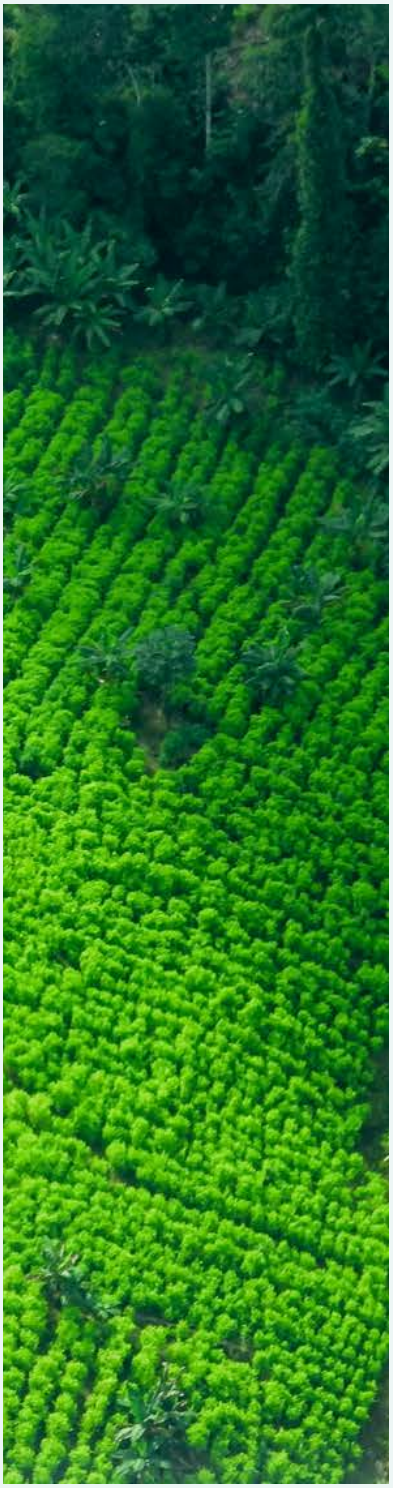
- There are more cocaine users in the Americas than in any other region, but the percentage of people reporting past-year cocaine use is highest in Oceania, followed by the Americas and Western and Central Europe.
- North America, Western and Central Europe and South America are the largest cocaine markets in terms of the number of users in the past year.

According to the World Drug Report (WDR) 2024 there are other smaller cocaine markets in Africa, Asia, Eastern and South-Eastern Europe. In these so-called emerging markets, there is evidence pointing to their expansion, such as growth in seizures and demand indicators, where data are available. Three elements stand out in this regard: (1) if compared to data available over the last ten years, an increase in cocaine users in Asia is evident in China (according to police records), and in Japan (according to reports of lifetime and past-year prevalence of cocaine use); (2) in Africa there is evidence of an increase in the number of cocaine users seeking treatment, which suggests the presence of an intensive use of the substance in the continent, especially among women; (3) in Turkey, there has been a record increase in treatment demand for cocaine-related drug use in the last ten years.




Potential production of 100% cocaine pure, 2015-2022, mt

Global amount of seized cocaine (unknown purity) 2015-2022, mt



**The current dynamics show a relationship between the expansion of supply, resulting from the trend towards diversification in drug trafficking networks, and increases in the demand for cocaine in its different presentations, generating an increasingly fragmented and complex criminal scenario[7].**

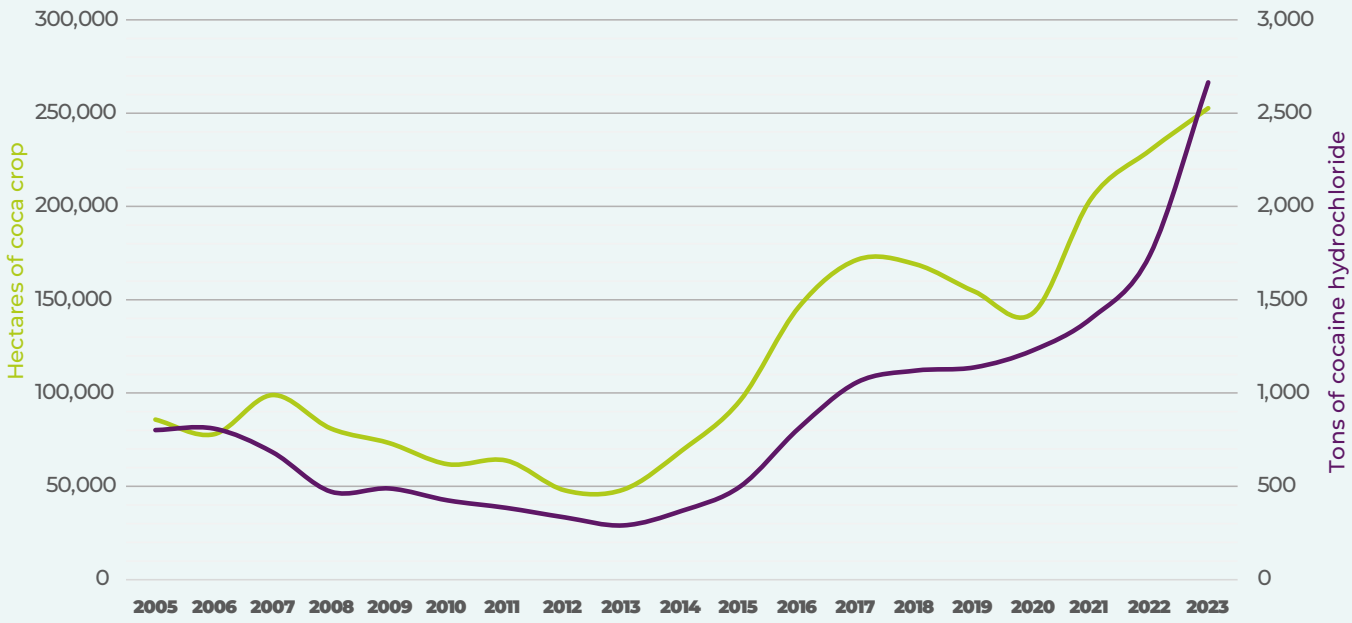
Potential cocaine production continues at historic peaks. In terms of supply, Peru reported a slight reduction in the area with coca crops in 2023, and Bolivia completed three years with a stable trend (between 2020 and 2022); however, data on coca leaf yield and efficiency of extraction and transformation to cocaine have not been updated since 2003-2004 and 2005[8] respectively. Challenging the ability to estimate potential cocaine production.

As of 2022, potential global pure cocaine production is estimated to have reached 2,757 mt, an increase of 20% over the previous year, while global cocaine seizures remained at 2,026 mt, (data not adjusted for purity) according to the World Drug Report 2024[9].

**By integrating the aforementioned elements, UNODC warns about the growing complexity of the dynamics of the illicit drug supply, given: (i) the agility of traffickers to change drugs, routes and methods; (ii) the interconnection of illicit drug production and trafficking with other crimes; (iii) the opportunities/incentives provided by the drug trade to non-state armed groups/local organized crime to integrate them into the production, trafficking and distribution of illicit drugs[10].**

7-UNODC and EUROPOL, The illicit trade of cocaine from Latin America to Europe – from oligopolies to free-for-all? Cocaine Insights 1, UNODC, Vienna, September 2021 and Global Initiative Against Transnational Organized Crime. The Global Organized Crime Index 2023.
8-For the estimates of potential cocaine production, the yields obtained by UNODC during 2003 - 2004 were used, which are being updated by the Peruvian State in the framework of the new cocaine monitoring model. The annual yield estimates for each area were made based on the results of the area and estimated annual coca leaf production provided in the coca crops monitoring report 2017 (UNODC, 2018). According to the Peruvian Drug Observatory, although DEVIDA has conducted coca leaf yield studies in 2012 and 2013, these have not been considered for this report. For more information, please consult: https://sistemas.devida.gob.pe/siscod/descargarDocu?idArchivo=44
9-UNODC (2024). Reporte Mundial de Drogas 2024 – Anexo Estadístico: Incautaciones de Drogas (2018 – 2022). Disponible en: https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.unodc.org%2Fdocuments%2Fdata-and-analysis%2FWDR_2024%2FAnnex%2F7.1._Drug_seizures_2018-2022.xlsx&wdOrigin=BROWSELINK. Consulta: julio de 2024.
10-UNODC (2024). World Drug Report 2023. Special highlights of the world drug report as of 2024. Available at: https://www.unodc.org/documents/data-and-analysis/WDR_2024/2411140S.pdf

# 2. THE AREA SOWN WITH COCA CROPS IN COLOMBIA INCREASED **10%** AND THE POTENTIAL COCAINE PRODUCTION INCREASED **53%**

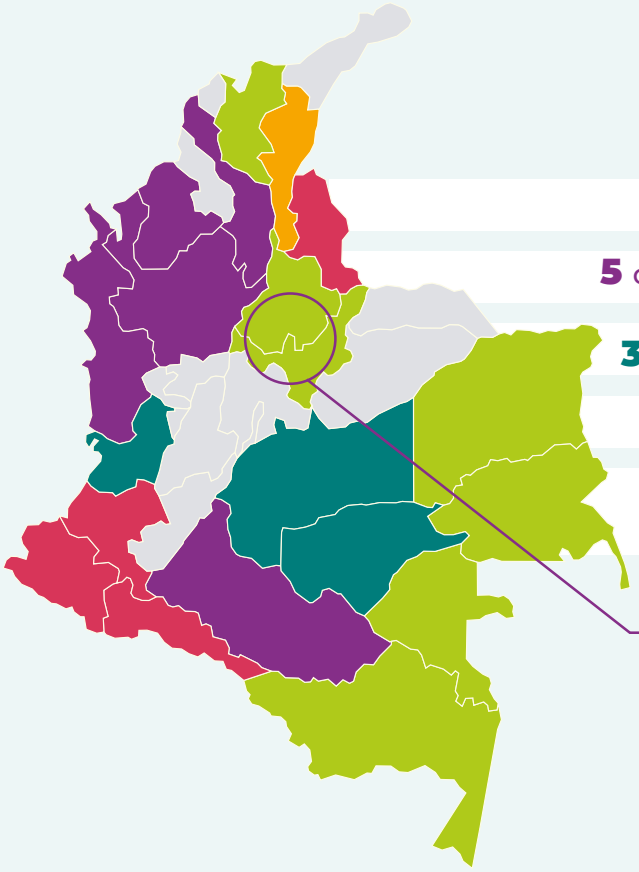



**253,000 ha**

**2,664 tm**

In contrast to the increase between 2021 and 2022, which was heavily clustered in the department of Putumayo, in this period the increase was more generalized. Of the 19 departments with coca, 16 showed an increasing trend; Cauca and Nariño were the most affected. The 15 productive hotspots remain, accounting for 39% of the coca crops in only 14% of the territory with coca crops in 2023. Only San Pablo-Taracué reduced its coca crops by 3% compared to 2022.

The report warns about expanding zones (territories wherein the presence of coca crops has only been registered in the last 3 years). 40% of the territories in this category are located in the Pacific region, with Cauca and Chocó the departments reporting the most new fields. Coca plots are not spread out, but rather form cores with densities higher than 12 ha/km². These conditions are comparable to those reported in the productive hotspots, which are highly complex scenarios for intervention.



**4** departments with more than 30,000 ha

**5** departments between 20,000 and 5,000 ha

**3** departments between 5,000 and 2,000 ha

**7** departments with less than 500 ha

**1** department (Cesar) ceasing coca cultivation in 2023

**Magdalena medio and West of Boyacá**

Possibility of advancing in a process of declaring territories as coca-free

Potential cocaine production reached 2,664 mt. This measurement refers to pure cocaine and is based on the premise that all hectares planted are harvested to produce cocaine; the figure does not discount the 746 mt of cocaine (purity unknown) that were seized by Colombian authorities in 2023[11].

It is noteworthy that in some regions (mainly outside of hotspots) the sale prices of coca leaf by-products (coca paste and cocaine base) are reaching historically low levels and in others there is even no market due to the absence of buyers, despite this, there is evidence that the vast majority of crops continue to be harvested.

Market restrictions have generated storage of cocaine paste and base, as well as its use as an element of commercial exchange in some regions.

**48%** of the area with coca is in special management areas

**4%** in National Natural Parks ↑ **2%**

**10%** in indigenous reservations ↑ **10%**

**14%** in forest reserves second law ↑ **5%**

**20%** in the Lands of Black Communities ↑ **13%**

**Coca cultivation and cocaine production continue to be a threat to the conservation of biological and cultural diversity**

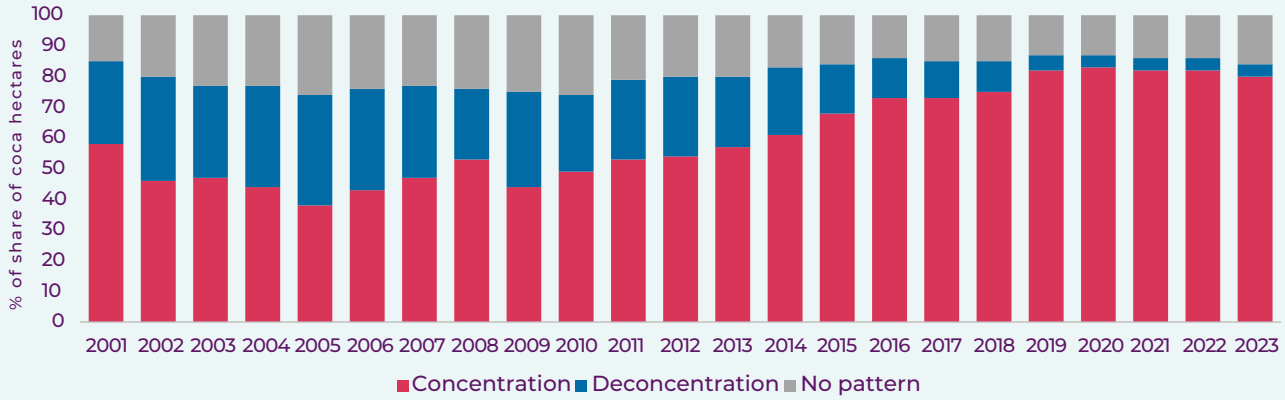
**11-**Information published by the Colombian Drug Information System (SIDCO) of the Colombian Drug Observatory, administered by the Ministry of Justice and Law. It is noted that the figure was consulted on February 26, 2025. For more information, please visit: https://www.-minjusticia.gov.co/programas-co/ODC/Paginas/SIDCO.aspx

# 3.

# **89.5%** OF COCA IS LOCATED IN THE SAME TERRITORIES WHERE IT HAS BEEN IN THE LAST 10 YEARS; HOWEVER, THE DISTINCTION BETWEEN AREAS OF CONCENTRATION AND DECONCENTRATION[12] KEEPS EXPANDING

The geography of coca allows us to locate concentration areas where coca crops reach high planting densities, close to drug trafficking routes and in territories that incentivize the efficiency and prevalence of crops, as opposed to territories where commercialization and markets seem to be dwindling.

**Distribution of area with coca crops according to concentration trend behavior, 2001-2023**



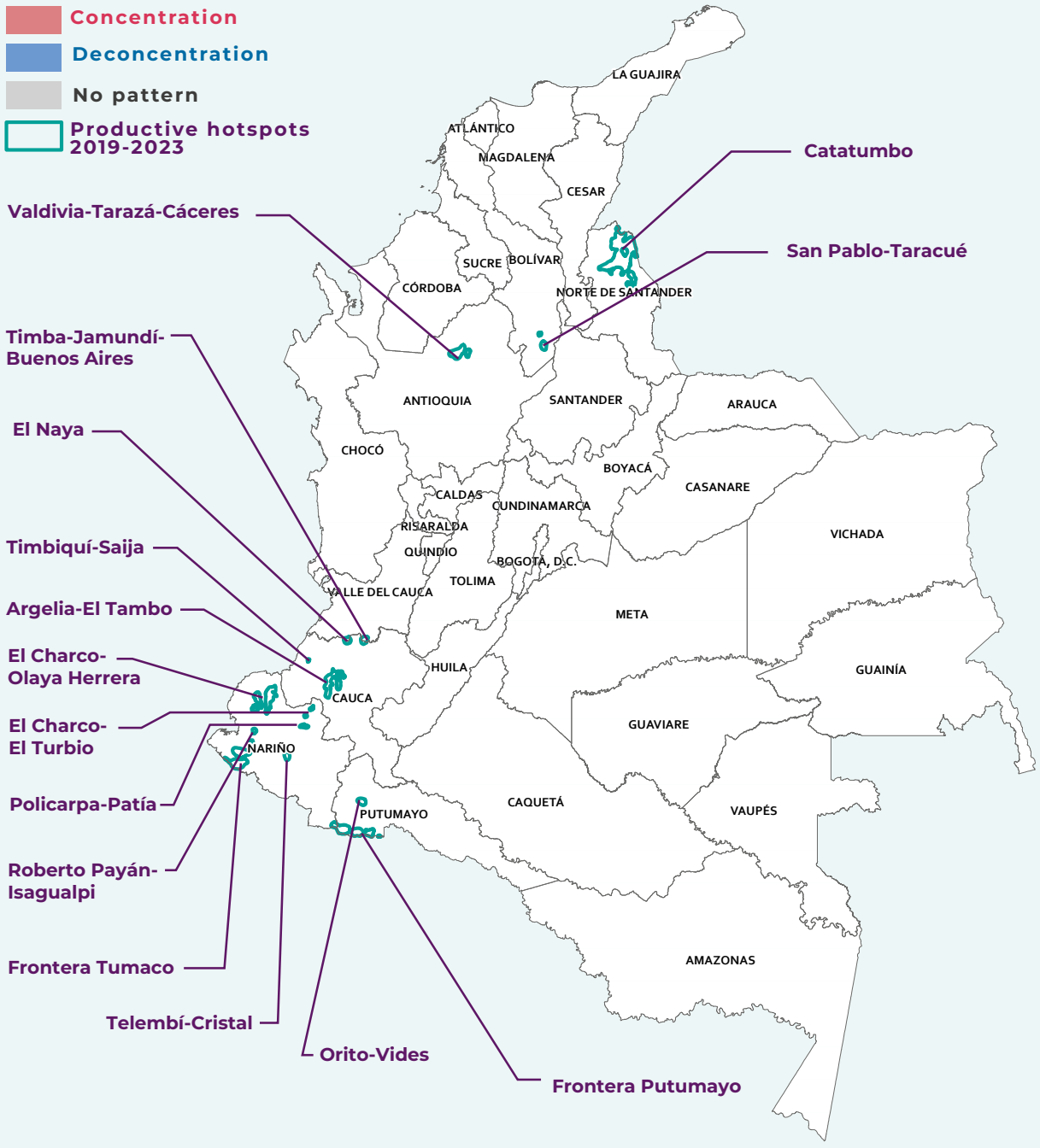

Presently, areas of coca cultivation favor industrial scale where 80% of the coca is found despite the fact that they cover only 50% of the land under coca crops. Half of the coca is found in specialized production enclaves where there has been an ongoing improvement in the leaf yield per hectare and agro-industrialization of both the growing phase and the extraction phase.

The areas with more coca crops represent a challenge for intervention and strengthening of institutional order. It is estimated that the demand for chemicals in the concentration areas is 997,560 cubic meters of liquid inputs and 192,980 tons of solid inputs. On average, these zones are estimated to use 82% of the total chemicals in the whole market.

**12-**The concentration and deconcentration areas represent a territorial approach to understand, based on a geostatistical analysis of the historical series (2013-2022), the composition of territories with a trend to reduce or increase the area grown, as well as those territories wherein it is not possible to define a predominant behavior (no pattern).

Although some growers reported difficulties in marketing their products, these situations have not been constant.

In the deconcentration areas there is still coca, but with more scattered, less productive fields and with problems for commercialization at large. The deconcentration areas are also located in territories far from borders and exit routes.




| TERRITORY | CONCENTRATION | DECONCENTRATION |
|---|---|---|
| Hectares with coca crops in 2023 | 202,200 ha | 10,700 ha |

| TERRITORY | CONCENTRATION | DECONCENTRATION |
|---|---|---|
| Percentage of the territory with coca **2023** they occupy* | **52%** | **14%** |
| Share of the territory occupied by coca in **2023** | **80%** | **4%** |
| Average interpreted per plot | **1.44 ha** | **0.97 ha** |

**No pattern: Territories where there is no consolidated trend in the area with coca crops in 2013-2022. (Concetration+desconcentration+no pattern=total area with coca crops)*

| | | |
|---|---|---|
| Prevailing seeding density | **4-8 ha/km²** in **35%** of the territory | **0.1-1 ha/km²** in **55%** of the territory |
| Greater range of seeding density | **12 ha/km²** in **25%** of the territory | **12 ha/km²** in less than **1%** of the territory |
| Presence in border areas (**0-40 km**) | **36%** of coca as 2023 | **3%** of coca as 2023 |
| Location in productive hotspots | **15** | **0** |
| Validaded forced manual eradication 2023 | **78%** of the total | **4%** of the total |
| 9,320 ha with EVOA (Evidence of Alluvial Gold Exploitation) 2022 in territories with coca crops 2023 | **34%** | **18%** |
| 11,829 ha deforested 2022-2023 in territories with coca crops 2023 | **47%** | **18%** |

*Source: Deforestación (IDEAM), 2023*

| TERRITORY | CONCENTRATION | DECONCENTRATION |
|---|---|---|
| Municipal presence of at least one illegal armed group in 2023 | **98%** of the municipalities | **84%** of the municipalities |

*Source: JEP, 2024*

| | | |
|---|---|---|
| Percentage of the municipalities that recorded at least one combat between Public Forces and an illegal armed group in 2023 | **42%** of the municipalities | **24%** of the municipalities |

*Source: JEP, 2024*

| | | |
|---|---|---|
| Percentage of municipalities that registered cases of homicides against people who exercise a social leadership role in 2023 | **42%** of the municipalities | **21%** of the municipalities |

*Source: JEP, 2024*

| | | |
|---|---|---|
| Reduction of forced displacements in the context of the armed conflict between 2022 and 2023 | **34%** | **44%** |

*Source: UARIV, 2024*

| | | |
|---|---|---|
| Number of extortions per 100 thousand inhabitants on average in 2023 | **18** | **20** |

*Source: PONAL, 2024*

| CROP | CONCENTRATION | DECONCENTRATION |
|---|---|---|
| Production model | More agroindustrial profile, where higher productivity and more efficient production chains are obtained | Traditional productive model of coca-growing peasant economy where large-scale productive models have not been consolidated or where there are restrictions on the exit of drugs |
| Productivity of coca lots | **8.7 mt/ha/year** | **7.6 mt/ha/year** |

| REFINING AND EXTRACTION | CONCENTRATION | DECONCENTRATION |
|---|---|---|
| Production process | The growers have specialized in the processing PBC (cocaine-paste-base) and BC (base of cocaine) | In Meta-Guaviare detected a trend to carry out the process of on-farm refining to get PBC and BC |
| Use of potassium permanganate** | Extended use | Sporadic use |
| Cultivation-marketing articulation | Strategic nodes for supply of inputs, as well as for the output of PBC, BC and HCL (hydrochloride of cocaine) destined for international markets | Absence of nodes strategic making it difficult to market to international markets |

***Potassium permanganate in the production process is used to oxidize non-cocaine alkaloids, namely, to remove impurities.*

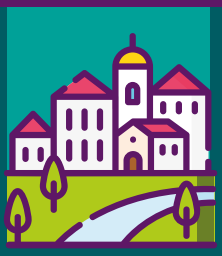
| PROCESSING AND MARKETING | CONCENTRATION | DECONCENTRATION |
|---|---|---|
| Dynamics of actors in the market | Criminal organizations at the high level act as financiers, buyers and drivers of improvements in production/transformation | The lack of buyers hinders the dynamization of local markets, affecting especially new and small producers |
| Social leadership | Possible limitation for social, environmental and organizational exercise | Increased possibility of participation in processes replacement and economies alternatives |
| Economic dependence | Associated with purchase at better prices, availability of financial resources and productive specialization | Reduction with probability of new illegal activities |

# 4. THE INTERACTION OF ILLEGAL ECONOMIES WITH LEGAL ECONOMIES IS INCREASING

The population centers closest to the coca fields[13] are the primary convergence points between the economy associated with the cocaine production phase and the goods and services associated with the legal economies. Although other illegal economies exist in coca crop areas, cocaine production is one of the main activities.

**13-**The population centers closest to coca crops are identified by calculating the Euclidean distance from each population center to the 1 square kilometer grids with coca crops in 2023.

The population centers closest to the coca crops have different categories.

| Population center | Municipal seat | Metropolitan center |
|---|---|---|
|  |  |  |
| **86%** of the population centers closest to coca crops are at the sub-municipal level | a 15 km from a municipal seat **93,000 ha of coca** | Popayán (Cauca) is the metropolitan center closest to the **59% of coca 2023** |

In 2023, there are 43 population centers located within productive enclaves, of which 1 has the category of municipal capital, El Tarra (North of Santander).

The amount of hectares with coca crops within 12 km of a population center increased from about 189,000 ha in 2022 to about 209,000 ha in 2023. In 2013 it was about 37,000 ha.

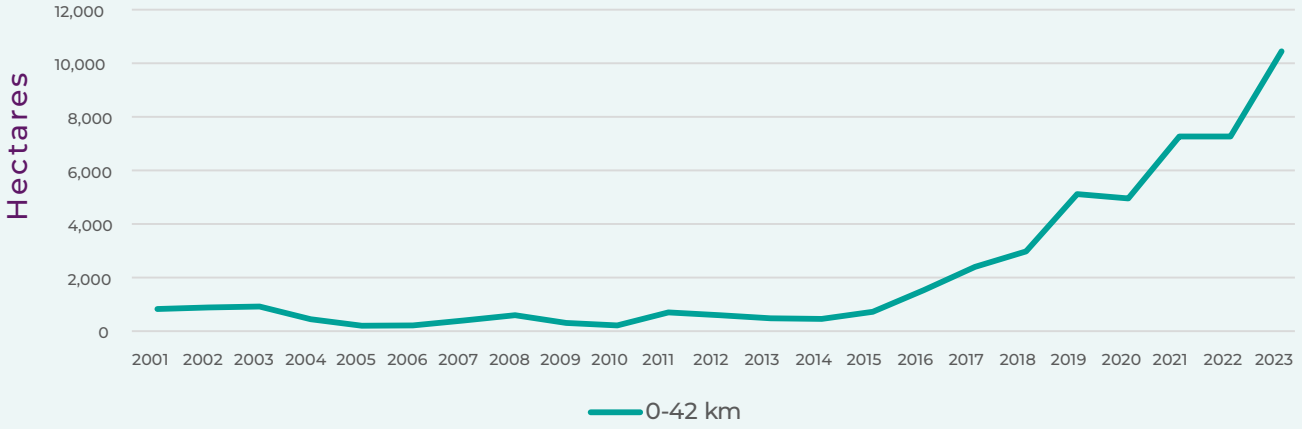
**Amount of coca crops in the range of 0-12 km from a populated center**


Although most of the coca crops are still far from market centers in territories with high vulnerabilities and limited access, about 10,500 ha of coca crops are less than 42 km from a metropolitan market center[14].

If a 42 km strip around the market centers is considered, coca crops have increased 22 times in the last decade.

**14-**The metropolitan centers were defined as the 12 main cities in Colombia: Medellín, Barranquilla, Cartagena, Manizales, Popayán, Santa Marta, Ibagué, Santiago de Cali, Pereira, Bucaramanga, Cúcuta, Bogotá.

## Quantity of coca crops in the range 0-42 km from a metropolitan market center




The relationship between coca and population centers is important not only because of the dependence of legal economies on the resources generated by illegal activities, but also because of the diversification of goods and services that become available; this may be generating powerful incentives to maintain illegal activities in the territory. It is also an opportunity to implement sustainable alternative development projects.

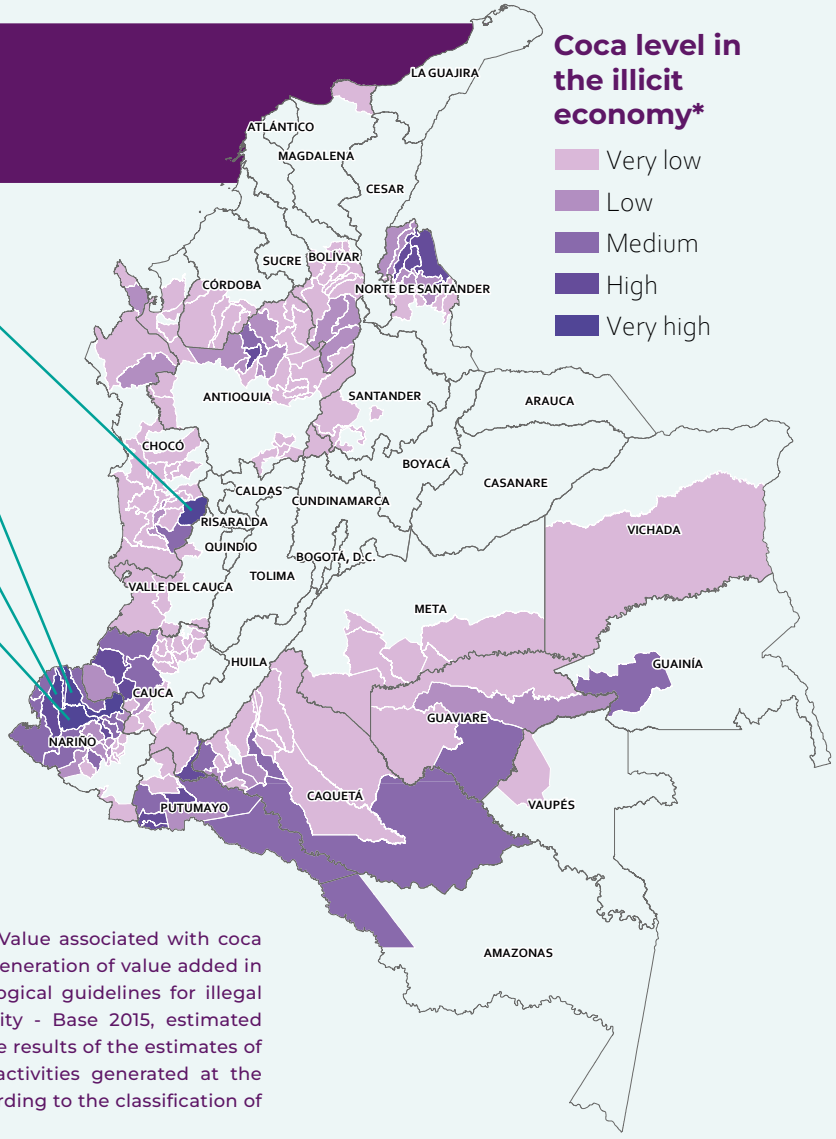
There are municipalities wherein the illegal market economy represents more than **42%** compared to the legal economy

**San José del Palmar**

**El Charco**

**Olaya Herrera**

**Magüí**




*- The scope of the indicator is defined as the ratio of the value added generated at the municipal level by (the sale of coca leaf, cocaine base paste and cocaine base within the UPAC) and the value added by legal economic activities for each municipality. 2: Value added: Defined as the value of production minus the value of intermediate consumption and is a measure of the contribution to GDP made by a unit of production, industry or sector. 3. Value associated with coca crops, as a proxy variable for estimates of the generation of value added in Colombian pesos, according to the methodological guidelines for illegal financial flows. 4: Value Added by municipality - Base 2015, estimated variable published by DANE, which provides the results of the estimates of the value added of the different economic activities generated at the municipal level at current prices of 2022p, according to the classification of national accounts.

# 5. THE IMPACT OF TRANSNATIONAL CRIME ON THE COCAINE MARKET REMAINS PREVALENT IN THE REGION

In Colombia, violence persists in the post-Peace Agreement period, as groups such as the ELN, EPL, AGC and FARC-EP dissidents continue to be active and involved in transnational organized crime[15], focusing on cocaine production and trafficking. This situation has turned some regions with concentration zones into strategic points for illegal activities, intensifying conflicts in areas affected by drug trafficking, illegal mining and human trafficking, displacing small coca growers, which damages the local economy and hampers efforts to control drug trafficking.

Interactions between illegal armed groups and transnational organized crime[16] are generating structural changes in power relations, leading to a high availability of financing and productive specialization in strategic areas. This phenomenon reinforces cocaine production and trafficking networks and could contribute to armed disputes in certain regions.


**15-**Global Organized Crime Index. Colombia Report. 2023. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://o-cindex.net/assets/downloads/2023/spanish/ocindex_profile_colombia_2023.pdf

**16-**Infobae. April 30, 2023. Coca crisis in Colombia: an opportunity in the midst of a reorganization of drug trafficking. https://www.infobae.com/colombia/2023/04/30/crisis-de-la-coca-en-colombia-an-opportunity-in-the-middle-of-a-reorganization-of-drug-trafficking/

***-** Secondary information collected by SIMCI from open sources: Ombudsman's Office, Insightcrime, Europol, Financial Action Task Force (FATF). Force (FATF); among which are: Mexican Cartels, Brazilian Groups, European Criminal Organizations (Ndrangheta, Italian), Balkan Organized Crime Groups, the Dutch-Moroccan Mafias, West African Criminal Organizations, Asian Criminal Groups, Venezuelan Cartels and Israeli Criminal Gangs; see document chapter 3 for further explanation.

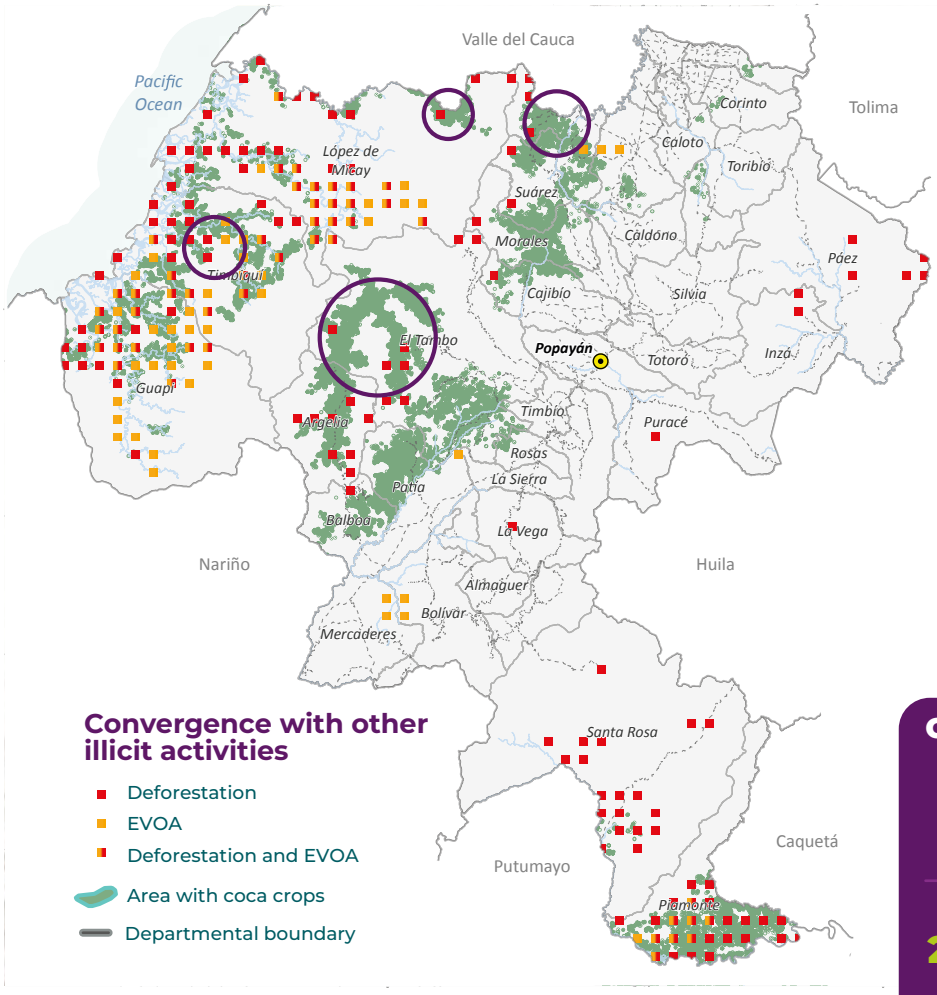
****-**About 14 organized armed groups - GAO, residual organized armed groups - GAO-r, and organized criminal groups - GDO, according to the JEP, organized criminal groups - OAGs, according to the JEP.

# 6. COCA CROPS FACILITATE THE DIVERSIFICATION OF CRIMINAL SUPPLY

The new geography of coca seems to be encouraging the consolidation of territories where the intensification of the phenomenon matches an increase in violence against social leaders, an increase in activities related to coca growing, a general deterioration of security conditions and an increase in pressure against the most vulnerable communities such as indigenous and Afro-Colombian peoples, and in some territories other illegal activities emerge and consolidate.

In the department of Cauca, for example, different crimes converge. Evidence of alluvial gold mining (EVOA) and coca cultivation continues to increase, while poppy and marijuana cultivation continues in the territory.

## Diversification of the criminal supply:
## THE CASE OF CAUCA




**4 PRODUCTIVE HOTSPOTS**

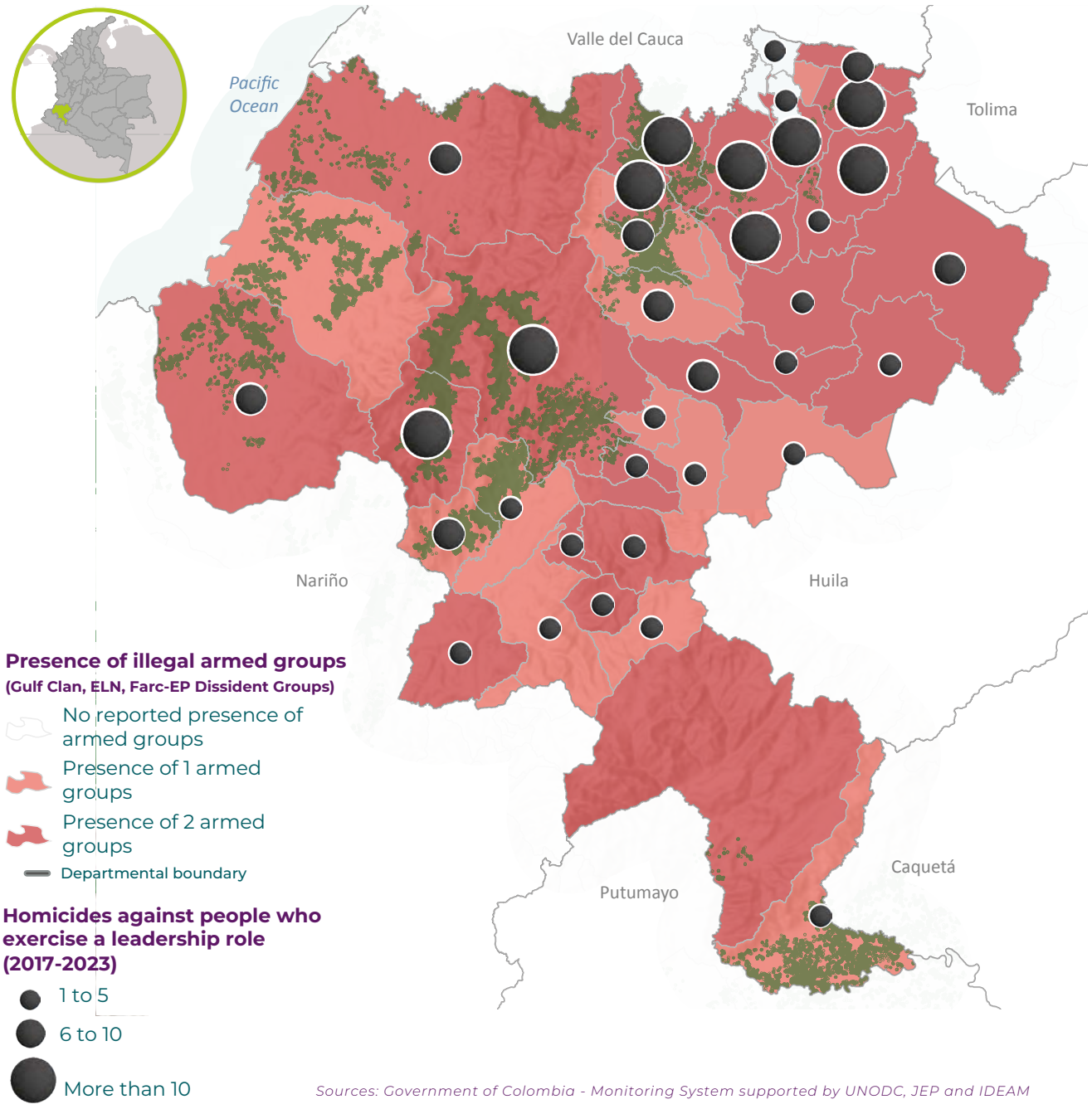
that represent **44%** of the area with departmental coca in **864 km²** Coca crops in Cauca

**Coca crops in Cauca**

**↑ 21%**

| 2022 | 2023 |
|---|---|
| 26,223 ha | 31,844 ha |

**The area grown with coca in the department has increased fivefold in the last ten years, this increase is centered in the mountains rather than in the coastal areas and originates in the sowing of new coca clusters that meet the conditions of density and productivity, but do not yet complete the condition of permanence to be considered hotspots**




*Sources: Government of Colombia - Monitoring System supported by UNODC, JEP and IDEAM*

**252 cases** social leaders kiled in Cauca between **2017-2023**

| | Municipalities with coca in Cauca | Municipalities without coca in Cauca |
|---|---|---|
| Reported clashes between illegal armed groups and security forces | **50%** of municipalities | **20%** of municipalities |
| Fighting between armed groups between illegal armed groups | **32%** of municipalities | **10%** of municipalities |
| Homicides of social leaders | **55%** of municipalities | **35%** of municipalities |

The high interest in the profits from criminal activities has become one of the main incentives to concentrate the presence of illegal armed groups in Cauca. According to data from the JEP[17], in 2023, a scenario of violence was created by the action of the Farc-EP dissidents present in the territory with the structures coordinated by Iván Mordisco and the Segunda Marquetalia block, in addition to the interference of the ELN guerrilla with the Southwestern Front and the Western Front.

The influence of illegal armed groups in Cauca has been intensifying violence in the department, especially affecting municipalities with coca crops. In the post-agreement scenario, fighting between illegal armed groups and the security forces, confrontations between illegal armed groups, and homicides of social leaders have increased substantially between 2017 and 2023.

## In 2023 and in the framework of the implementation of the National Drug Policy in Colombia

The **Territorial Missions Strategy** is highlighted as a mechanism for inter-institutional coordination and articulation for the comprehensive and focused implementation of the strategic lines of the National Drug Policy. Based on interagency action, the aim is for rural communities that depend on illicit economies linked to drugs to progressively and sustainably transition to licit economies, through a process of productive reconversion.

- The Ministry of Justice and Law implements the **Project Bank strategy** through which in 2023 it technically and financially supported 12 productive initiatives of peasant communities and organizations, including indigenous reservations and community councils, located in the region of Catatumbo, Nariño, Guaviare, Caquetá and Sur de Bolívar. These projects focused on products such as cocoa, coffee, fruit, sustainable livestock, guinea pig production systems and forest conservation, reaching a total of 20,000 beneficiaries.

- The Government has reaffirmed its commitment to meeting the objectives set out in the **National Program for the Integral Substitution of Illicitly Used Crops (PNIS)**. Therefore, until August 2024, resources have been committed for the execution of the Program amounting to $2.3 billion for more than 80,000 families linked to the program.

**17-** Based on the information provided by the JEP for the year 2023, the diversity of armed groups in the country was categorized into four major structures. The classification was guided by those groups that have internal structures and substructures, such as the 1) Dissidents of the FARC-EP, the 2) Gulf Clan, 3) and the ELN guerrillas; and those that do not have this division within them: 4) Other groups (La Constru, La Cordillera, La Inmaculada, Las Palmas, Los Botalones, Los Caparros, Los Chiquillos, Los Espartanos, Los Mexicanos, Los Pachenca, Los Pelusos, Los Puntilleros, Los Rastrojos, Los Rastrojos Costeños, Los Shotas).

# Chapter 1.

## Global dynamics of cocaine hydrochloride markets

The World Drug Report 2024 (WDR-2024), published by the United Nations Office on Drugs and Crime (UNODC), **reports a 12% increase in detected hectares of coca cultivation worldwide by 2022** from 315,181 ha in 2021 to 354,900 ha in 2022[18]. Global potential cocaine production is estimated to have increased from 2,304 mt in 2021 to 2,757 mt; that is, a 19.6% increase in the number of tons of cocaine that could potentially be produced from the detected hectares.

The term "potential cocaine production" refers to the amount of cocaine at 100% purity that could theoretically be produced from the detected coca hectares, depending on the stability of the cultivation, the amount of leaves that can be obtained from the cultivation, the amount of alkaloid that is present in the leaves and the capacity of the processors to extract the alkaloidal transform it into cocaine.

On the other hand, the results of operational and interdiction controls in the different continents[19] indicate that 11.3% of the cases of seizures of illicit drugs worldwide in 2022 correspond to coca leaf and its derivatives; this figure is represented by 2,026.6 mt of cocaine (cocaine hydrochloride, cocaine paste/base and other presentations) and 974.4 mt of coca leaf[20].

The generalized increase in cocaine seizures is applicable to different territories, as indicators report that, in Europe, for the sixth consecutive year a record has been set in cocaine seizures: in 2022 this figure reached 346 mt, representing an increase of 7.2% over 2021 (323 mt). It is important to consider that 68% of the tons seized are concentrated in three countries: Belgium (111 mt), Spain (58.3 mt) and the Netherlands (51.5 mt)[21]. One of the possible explanations for this reality is the trend towards a change in the cocaine arrival ports, with Antwerp (Belgium), Rotterdam (Netherlands) and Hamburg (Germany) taking the place of those located on the Iberian Peninsula (such as Cadiz in Spain). This situation is consistent with the increase in North Sea operations associated with interdiction of cocaine trafficking, particularly in ports in Sweden and Norway[22]. In Africa, cocaine seizures also increased, from 3.3 mt in 2018 to 17.2 mt in 2022 (an increase of more than 420%)[23].

**18-**United Nations Office on Drugs and Crime, "Analysis by Market: Cocaine," Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market-trends.html.

**19-**According to the UNODC, World Drug Report 2024 [World Drug Report, 2024] (Vienna: UNODC, 2024).

**20-** Data taken from the World Drug Report 2024, published by UNODC; the figures correspond to the responses to the annual report questionnaire.

**21-**UNODC, "Drug Seizures 2018-2022," World Drug Report 2024 (Statistical Annex), March 12, 2024, https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.unodc.org%2Fdocuments%2Fdata-and-analysis%2FWDR_2024%2FAnnex%2F7.1._Drug_seizures_2018-2022.xlsx&wdOrigin=BROWSELINK

**22-** United Nations Office on Drugs and Crime, Global Report on Cocaine 2023: Local Dynamics, Global Challenges (Vienna: United Nations; CRIMJUST, 2023), 20-1, https://www.unodc.org/documents/data-and-analysis/cocaine/Global_cocaine_report_2023.pdf.

**23-**UNODC, "Drug Seizures 2018-2022," World Drug Report 2024 (Statistical Annex), March 12, 2024, https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.unodc.org%2Fdocuments %2Fdata-and-analysis%2FWDR_2024%2FAnnex%2F7.1._Drug_seizures_2018-2022.xlsx&wdOrigin=BROWSELINK.

Although the contrast between cocaine supply and demand has not always been harmonious, the current **evidence** on dynamics shows a link between the expansion of supply, resulting from the trend towards diversification in trafficking networks, and increases in the demand for cocaine in its different forms, which generates an increasingly fragmented and complex criminal landscape.

In integrating the above elements, UNODC (WDR-2024) warns about the increasing complexity of the dynamics of illicit drug supply in view of (1) the agility of traffickers to change drugs, routes and methods; (2) the interconnection of illicit drug production and trafficking with other crimes; and (3) the opportunities/incentives provided by drug trafficking to non-state armed groups/local organized crime to integrate them into the production, trafficking and distribution of illicit drugs[24], among other aspects. As drug traffickers change trafficking routes and modalities, new or strengthened alliances between transnational criminal organizations and local criminals are also generated, resulting in the opening of new cocaine markets in other parts of the world.

It is important to mention that there are reports of coca cultivation in Guatemala, Honduras[25,26], Mexico[27] and Ecuador[28]; however, only three out of the nine countries that have reported the presence of coca cultivation for illicit cocaine production are supported by UNODC monitoring systems: Bolivia, Peru and Colombia.

The presence of coca cultivation beyond the Andean countries could be attributed to different causes, among which the following can be established: (1) as a measure by criminal agents to reduce the logistic chain and approach more lucrative markets, Central America being geographically strategic as it is closer to nodes of use such as the United States and Canada; (2) the existence of greater ease for the establishment of coca cultivation, due to the fact that local authorities face difficulties in detection and intervention; and (3) easier access to the chemical substances needed to obtain the alkaloid. The foregoing has a significant impact on the economic profits of drug trafficking groups.

Not only is there an expansion of coca cultivation beyond the Andean region; infrastructures for cocaine production have also expanded beyond the countries with coca cultivation and their dismantling could be an indicator that allows for a better understanding of this dynamic. In South America, apart from Colombia, Peru and Bolivia, 285 infrastructures for cocaine processing have been intervened[29,30] between 2018 and 2022 mainly in Venezuela (271 infrastructures equivalent to 95%), with reports also in Brazil, Ecuador and Chile. In Central America[31,32], there have been 30 intervention operations involving this type of infrastructure, with Honduras reporting

**24-**United Nations Office on Drugs and Crime, Special points of interest from the World Drug Report 2024 [World Drug Report, 2023] (United Nations, 2024), https://www.unodc.org/documents/data-and-analysis/WDR_2024/2411140S.pdf.

**25-** United States Department of State Bureau of International Narcotics and Law Enforcement Affairs, International Narcotics Control Strategy Report, vol. 1, Drug and Chemical Control [Strategic Report on International Narcotics Control] (INL, 2022), 139, https://www.state.gov/wp-content/uploads/2022/03/22-00767-INCSR-2022-Vol-1.pdf.

**26-**Ibid. In the 2022 International Narcotics Control Strategy Report published by the US Government's Bureau of International Narcotics and Law Enforcement Affairs (INL), which refers to countries such as Guatemala and Honduras as having reports of coca cultivation

**27-**European Union Drug Agency and Europol, "Coca and cocaine production", European Union Drug Agency, May 6, 2022, https://www.euda.europa.eu/publications/eu-drug-markets/cocaine/production_en#chart-id-A1MDkxODYz-html-source-table.

**28-**United States Department of State Bureau of International Narcotics and Law Enforcement Affairs [INL]. (2024) Geospatial report on illicit crops on the Ecuadorian border 2024. Document for internal use.

**29-**UNODC, "Clandestine laboratories detected and dismantled" (2018- 2022), World Drug Report 2024 (Statistical Annex), 2024, https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.unodc.org%2F documents%2Fdata-and-analysis%2FWDR_2024%2FAnnex%2F9.1._Clandestine_laboratories_detected_and_dismantled.xlsx&wdOrigin=BROWSELINK

**30-**Infrastructure for dosing or laboratories in kitchens are not taken into consideration. Those registered for small, medium and industrial scale production are taken into account.

**31-**UNODC, "Clandestine laboratories detected".

**32-**Infrastructure for dosing or laboratories in kitchens are not taken into consideration. Those registered for small, medium and industrial scale production are taken into account.

the highest number of cases (23 operations), followed by Guatemala (6).

New trends related to the decentralization of production are not only evident in South America; dismantled infrastructures have also been reported in Europe[33]. In 2022 there were 39 interdiction operations, an increase of 14.7% over the previous year, where 34 laboratories producing cocaine hydrochloride from paste/base were seized; note that between 2021 and 2022 more than 1.2 mt of potassium permanganate, a key chemical for the purification of cocaine, were seized. In the rest of the world[34, 35] between 2018 and 2022, cocaine hydrochloride production infrastructures were also reported in countries such as Australia (4 infrastructures), China (1) and Ivory Coast (1).

The presence of infrastructures for cocaine hydrochloride processing in non-traditional areas could be due to three possible causes, among others: (1) greater ease of establishment, given the possible lack of knowledge of local authorities, a situation that could pose challenges for control institutions in terms of detection and seizure; (2) greater facility for obtaining the chemical substances necessary for cocaine processing, where control processes are less rigorous or non-existent, as this is a sui generis issue; (3) greater facility for establishment and lower risk of seizure due to a possible lack of knowledge by local authorities of routes, expansion zones in non-traditional areas and new trafficking modalities; and, most importantly, (4) the economic benefits will be much greater compared to exporting the finished product.

In addition to reports of coca cultivation in other countries and the implementation of cocaine paste/base to cocaine hydrochloride conversion laboratories, there is a risk that the use of cocaine alkaloidal by-products via smoking will emerge; global seizures of cocaine paste/base increased from 71.2 mt in 2018 to 160.1 mt in 2022, an increase of over 124%, while cocaine hydrochloride seizures increased 68% over the same period from 989.4 mt in 2018 to 1,663.8 mt in 2022[36]; however, further characterization of the use of these types of substances is required.

Even though the trend in global cocaine demand is increasing, use patterns vary between regions, possibly in relation to the current dynamics of cocaine production and trafficking. Despite the cocaine market remaining concentrated in the Americas and parts of Europe, the WDR-2024 reports an increasing demand in Africa and Asia, evidenced by rising seizures and growth in use, according to the data available[37].

The areas referred to as emerging cocaine markets are smaller but expanding markets for cocaine distribution in Africa, Asia and Eastern and Southeastern Europe, reflected in the increase in seizures and (where data are available) demand indicators[38]; countries such as China, Turkey and some African nations have an increasing number and tendency to be significant users, both over a lifetime and in the past year. Regarding Western and Central Europe, the World Drug Report 2023 warns about an increase in the intensity of use with an increase in hospitalizations and deaths associated with cocaine use, including

**33-**European Union Drug Agency, "Cocaine: The Current Situation".

**34-**UNODC, "Clandestine laboratories detected".

**35-**Infrastructure for dosing or laboratories in kitchens are not taken into consideration. Those registered for small, medium and industrial scale production are taken into account.

**36-**UNODC, "Drug Seizures 2018-2022."

**37-**UNODC, "Regional distribution of cocaine use", Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market-trends .html.

**38-**UNODC, "Key Findings in Emerging Markets", Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market-tr ends.html.

crack (cocaine base). Africa and Asia show signs of increasing use and its consequences, although at earlier stages of increased use[39].

In 2022, North America had the largest proportion of users with 6.5 million people, representing 28% of the global total. The Americas as a whole accounted for approximately half of global users, while Europe had 5.8 million and Asia had 2.9 million users[40]. Cocaine use and associated harms also increased in countries such as Australia between 2010 and 2021; nevertheless, harms due to use in this country remain lower than those caused by other stimulants, and while survey data from the 2022-2023 period indicate a stabilization of cocaine use among males aged 14 years and older, use among females in this age group continued to increase[41].

Cocaine trafficking routes and modalities have also changed, involving new ports of origin and destination, transit points and concealment methods. The point of origin of cocaine trafficking is no longer only from ports in Colombia, as it was a few years ago[42], since ports located in Guayaquil (Ecuador) and Santos (Brazil) have become more relevant in this context. Thus, Ecuador and the Southern Cone have become the major points of cocaine departure for Europe and, to a lesser extent, for Africa, Asia and Oceania[43].

Since 2019, Africa has positioned itself as a transit point for cocaine coming from Brazil and destined for markets in Europe or Oceania[44]. This is due to the fact that Brazilian criminal groups prefer routes that pass-through Portuguese-speaking countries such as Mozambique, Angola and Cape Verde, where trafficking using fishing boats or ships with contaminated cargo predominates. Airports in Kenya and Ethiopia are also being used as transit points for trafficking cocaine from Brazil to other continents[45].

Therefore, table 1 presents the magnitude of global cocaine use in the last year in contrast with cocaine seizure data and the three main departure countries and regions where seizures were made.

**39-**UNODC, "Key findings on cocaine use and related harm in Europe", Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024- drug-market-trends.html.

**40-**UNODC, "Regional distribution of cocaine use", Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market-trends.html.

**41-**UNODC, "Key Findings on Cocaine Use and Related Harms in Australia", Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024 -drug-market-trends.html.

**42-**UNODC, Global Report on Cocaine, 20.

**43**-UNODC, "Main cocaine trafficking flows", Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market- trends.html.

**44-**UNODC, Global Report on Cocaine, 20, 22.

**45**-Ibid.

**Table 1.**
Key statistics World Drug Report 2023

| | Extent of global cocaine use in the past year[1] (2022) | | Cocaine seizure reports as of 2022[2] | | Top three departure countries with reported shipments of seized cocaine [3] | |
|---|---|---|---|---|---|---|
| Region and subregion | In millions of people | Total people (%) | Seized quantities reported (mt) | Percentage | Outside the regions in which seizures were made | Within the regions in which seizures were made, |
| North America | 6,5 | 28 | 267,8 | 13,2 | Colombia, Peru and Ecuador | Mexico and the United States |
| Europe | 5,8 | 25 | 346,7 | 17,1 | Colombia, Brazil and Peru | The Netherlands, Spain and Germany |
| Latin America and the Caribbean | 5,2 | 22 | 1.381,5 | 68,2 | Not applicable[4] | Colombia, Peru and Bolivia |
| Asia | 2,9 | 12 | 3,5 | 0,2 | Brazil, Peru and Colombia | Hong Kong, China, United Arab Emirates, Qatar |
| Africa | 2,3 | 10 % | 17,8 | 0,9 | Brazil, Colombia and Ecuador | Nigeria, Benin, South Africa |
| Oceania | 0,8 | 3% | 9,3 | 0,5 | United States, Peru, China, Hong Kong | New Zealand, French Polynesia |
| Overall total | 23,5 million (people) | 8 million (people) | 2.026,6 | 100 | Colombia, Peru and Brazil | Not applicable |

**Source:**

**1.** UNODC, "Regional Distribution of Cocaine Use," World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market-trends.html;

**2.** UNODC, "Long-term Comparison of Cocaine Production and Seizures," Online World Drug Report 2024: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market-trends.html;

**3.** UNODC, "Major Cocaine Trafficking Flows," World Drug Report 2024 online: Drug Market Patterns and Trends [World Drug Report, 2023], 2024, https://www.unodc.org/unodc/en/data-and-analysis/wdr2024-drug-market-trends.html.

**4.** Not applicable since producing countries cannot export cocaine to themselves.

## **More and purer cocaine in wholesale markets:** how does this indicator help explain changes in the global cocaine market?

Purity, along with other indicators and data, are parameters that contribute to understanding the dynamics of cocaine supply and demand. In turn, the purity of a substance such as cocaine refers to the percentage of its active component compared to the total weight of the sample, excluding contaminants, adulterants, additives or impurities; that is, the percentage of alkaloid contained in an analyzed sample[46].

The analysis of cocaine purity plays a critical role that goes beyond simple quality assessment and is fundamental to understanding the complex problem of trafficking and use of this illicit substance. Information on these

**46**-Term adapted from "Percentage Yield & Percentage Purity", Minichemistry, 2024, https://www.minichemistry.com/percentage-yield-percentage-purity.html.

indicators, combined with other available statistics and information, contributes to (1) epidemiological studies that contribute to the analysis of drug use patterns; (2) the tracing of trafficking networks and the identification of production methods and distribution routes, as one of the elements for linking cases; (3) the identification of the efficiency and level of sophistication of clandestine laboratories; (4) the determination of the geographic origin, through the analysis of chemical profiles; and (5) the creation of public health alerts through the identification of cutting substances, among others. This is possible through the generation of data such as drug type, purity and adulterants used, among other aspects, with a variety of advanced instrumental analysis techniques in specialized laboratories, with chromatography being the main technique used[47].

In line with the above, one of the critical aspects to be addressed is the identification and quantification of impurities. These analyses not only determine the amount of pure cocaine but also reveal the presence of adulterants that can range from inactive compounds to toxic substances. In the illicit cocaine market, cocaine is not marketed 100% pure; cocaine is mixed with other substances to increase its volume, affecting purity levels and modifying its properties, generally with the purpose of reducing distribution and commercialization costs and increasing profits, or to change its characteristics inadvertently for the user.

Cocaine can be adulterated in two ways: (1) with inactive substances, which have no psychoactive effects, such as lactose, mannitol or starch and whose purpose is to increase the final volume, or (2) with active substances, which when combined with cocaine present effects greater than the sum of the effects that each one would have separately, producing more intense sensations, often with more dangerous effects for the organism, this being known as synergic activity[48, 49]. Among the most commonly used substances that present this effect with cocaine are levamisole, caffeine and hydroxyzine, mainly.

In terms of purity, the cocaine received by the user is different from that produced in clandestine laboratories. For example, as reported by the European Union Drugs Agency (EUDA), the purity of cocaine in a production laboratory could range from 75% to 90%, decrease between 70% and 85% at ports or borders, and then reach levels below 50% for the final user in the country of destination[50].

Based on this reference, and considering the data generated by the EUDA and the Drug Enforcement Administration (DEA), it is possible to obtain signs of an increase in cocaine purity in recent years[51] (a situation that shows a similar behavior to that of potential cocaine production and seizures), as shown by the laboratory analysis of cocaine seizures trafficked in the European Union and the United States (Table 2).

**47**-Among the quantitative techniques most used by forensic laboratories are gas chromatography (GC) and high-performance liquid chromatography (HPLC), which offer a separation of the components and a precise measurement of the concentration of cocaine. There is also mass spectrometry, frequently used together with chromatography, which allows for the exact identification and detailed quantification of the components of the sample, while infrared (IR) spectroscopy facilitates the identification of the chemical structures present and the detection of adulterants. The qualitative techniques used are colorimetric tests, thin layer chromatography (TLC) and microcrystalline assays.

**48**-Michael J. Cascio and Kuang-Yu Jen, "Cocaine/Levamisole-Associated Autoimmune Syndrome: A Disease of Neutrophil-Mediated Autoimmunity", Current Opinion In Hematology 25, no. 1 (en. 2018): 29-36, https://doi.org/10.1097/MOH.0000000000000393.

**49**-Christopher Tallarida, Erin Egan, Gissel D. Alejo, Robert Raffa, Ronald J. Tallarida and Scott M. Rawls, "Levamisole and Cocaine Synergism: A Prevalent Adulterant Enhances Cocaine's Action in Vivo", Neuropharmacology 79, (Apr. 2014): 590, https://doi.org/10.1016/J.NEUROPHARM.2014.01.002.

**50**-Information estimated based on the DEA's Export Quality Cocaine Purity Report (2005–2023) and the European Drug Report 2024 published by the European Union Drug Agency (EUDA).

**51-**Drug Enforcement Administration (DEA). Export Quality Cocaine Purity: 2005 – 2023, 2024 Report. Reserved document.

## Table 2.

Evolution of purity in a kilogram of wholesale cocaine trafficked to the European Union and the United States.

| Zone/analysis generated | Range | Substance | 2010 (%) | 2013 (%) | 2022 (%) | 2023* (%) |
|---|---|---|---|---|---|---|
| United States/-DEA [1] | Minimum | Cocaine | 73,50 | 76,30 | 84,30 | 87,00 |
| | | Adulterants and impurities | 26,50 | 23,70 | 15,70 | 13,00 |
| | Maximum | Cocaine | 90,40 | 82,90 | 94,40 | 92,90 |
| | | Adulterants and impurities | 9,60 | 17,10 | 5,60 | 7,10 |
| European Union/EUDA [2] | Minimum | Cocaine | 27 | 33 | 64,38 | n. a. |
| | | Adulterants and impurities | 73 | 67 | 35,62 | |
| | Maximum | Cocaine | 46 | 50 | 75,8 | n. d. |
| | | Adulterants and impurities | 54 | 50 | 24,2 | |

**Note: n. a.: not available.**

*Data corresponding to the first half of 2023.

**Source:**

**(1)** Drug Enforcement Administration (DEA), generated under the framework of Cocaine Signature Program Forensic Analysis and Operation Breakthrough Statistical Analysis, published in the Export Quality Cocaine Purity: 2005 - 2023 Report; the results generated correspond to the purity of cocaine processed in Colombia. Purity is defined as the average percentage of pure cocaine present in a one-kilogram block. UNODC, SIMCI estimated the lower and upper limits of the reported purity of seizures from Colombia, Peru and Bolivia, only as an indication of the trend.

**(2)** Data taken from the historical compendium of the European Drug Report (2012 - 2024), published by the European Union Drugs Agency (formerly known as the European Monitoring Centre for Drugs and Drug Addiction, European Union Drugs Agency, "Publications database", 2024, https://www.euda.europa.eu/publications-database_en?f%5B0%5D=publication_type%3A404. Con la información Using

the available information generated by the EUDA and DEA, comparing the wholesale market purity of cocaine seized between the United States and Europe over the last 13 years (Figure 1) shows that (1) the average purities are higher, with a stable upward trend in the United States, while, although purities in Europe are significantly lower, there is a considerable increase from 2018 onwards, with a high variability among the detected figures. This trend could be due to the fact that cocaine trafficking channels to Europe are more diversified in view of the growing market, allowing more direct access to the drug before it is adulterated[52], and (2) the variability of purity figures in Europe, with a wide gap between minimum and maximum ranges, could indicate the existence of gaps in the wholesale supply chain and distribution logistics in local user markets.

**52**-United Nations Office on Drugs and Crime and European Union Agency for Law Enforcement Cooperation, Cocaine Insights 1: The Illicit Trade of Cocaine from Latin America to Europe: From Oligopolies to Free-For-All? (Vienna: UNODC; EUROPOL, 2021).

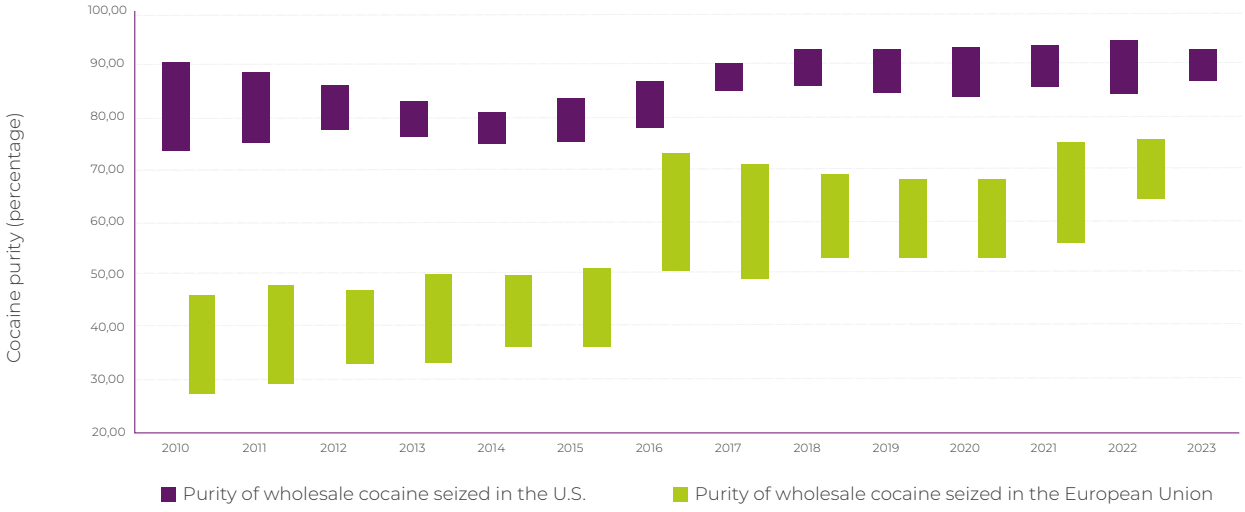



**Figure 1.**
Comparison of the average purity of cocaine seized at the wholesale level in the United States and the European Union [(1) (2)]

**Source:**

**(1)** Drug Enforcement Administration (DEA), generated under the Cocaine Signature Program Forensic Analysis and Operation Breakthrough Statistical Analysis, published in the Export Quality Cocaine Purity: 2005 - 2023 Report; the results generated correspond to the purity of cocaine processed in Colombia. Purity is defined as the average percentage of pure cocaine present in a one-kilogram block. UNODC, SIMCI estimated the lower and upper limits of the reported purity of seizures from Colombia, Peru and Bolivia, only as an indication of the trend.

**(2)** Data taken from the historical compendium of the European Drug Report (2012 - 2024), published by the European Union Drugs Agency (formerly known as the European Monitoring Centre for Drugs and Drug Addiction. European Union Drugs Agency, "Publications database", 2024, https://www.euda.europa.eu/publications-database_en?f%5B0%5D=publication_type%3A404.

The results of the analyses generated by the DEA allow to determine the traceability of cocaine seizures arriving in the United States; that is, the country of origin of the seizures. Based on the data generated from 2010 to 2023, identifying the lowest and highest annual purity reported from Colombia, Peru and Bolivia, it is possible to recognize signs of a trend of increasing purity from the producing countries, i.e., in recent years cocaine tends to leave the production areas in a purer condition. Between 2010 and 2023, the range of concentrations of cocaine seized in Colombia, Peru and Bolivia fluctuates between 73.5% and 94.4%, indicating a generally high level of purity, yet with variations depending on the sample. In addition, the data would also indicate that the minimum purity tends to increase progressively, from 73.5% in 2010 to 87% in 2023, while the maximum purity, although remaining above 80% (lowest point in 2014), has reached its maximum level in 2022 (94.4%)[53].

Upon analyzing the purity of seizures in the United States, according to country of origin, in the period 2010-2023 (Figure 2), there are aspects that show that (1) the purity of cocaine from Colombia could present an increase since 2015, with an upward trend (between 2017 and 2023 the levels remain above 84%, with a maximum in 2023); (2) for the same period, the purity of cocaine of Peruvian origin would tend to be relatively higher compared to Bolivia and Colombia, averaging above 90% in the last five years. Even though it dropped to 78% in 2012[54], as of 2017 purity could have stabilized above 90% reaching its highest level of 93% in 2021, and (3) while the purity of cocaine coming from Bolivia could have

**53-**Drug Enforcement Administration (DEA). Export Quality Cocaine Purity: 2005 – 2023, 2024 Report. Reserved document.

**54**Among the quantitative techniques most used by forensic laboratories are gas chromatography (GC) and high-performance liquid chromatography (HPLC), which offer a separation of the components and a precise measurement of the concentration of cocaine. There is also mass spectrometry, frequently used together with chromatography, which allows for the exact identification and detailed quantification of the components of the sample, while infrared (IR) spectroscopy facilitates the identification of the chemical structures present and the detection of adulterants. The qualitative techniques used are colorimetric tests, thin layer chromatography (TLC) and microcrystalline assays.

presented a downward trend, going from 90% in 2010 to 75% in 2014, as of 2015 purity shows signs of growth, reaching 94% in 2022, which represents the peak of the three countries during the analyzed period.

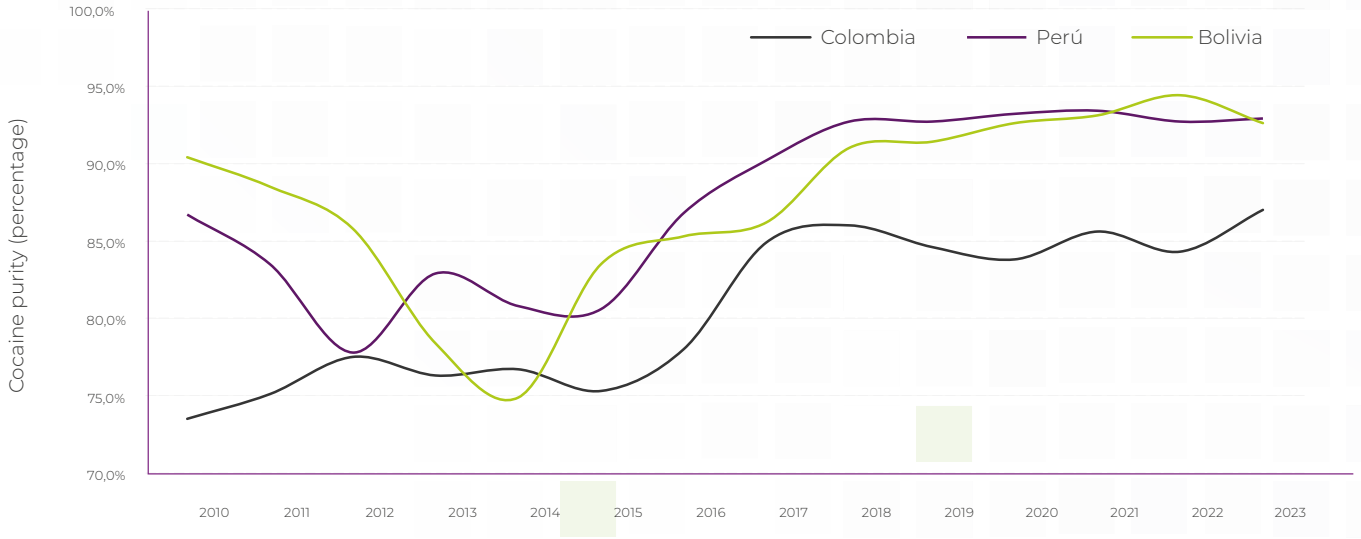



**Figure 2.**
Cocaine purity from Colombia, Peru and Bolivia [1]

**Fuente**

**(1)** Drug Enforcement Administration (DEA), generated under the Cocaine Signature Program Forensic Analysis and Operation Breakthrough Statistical Analysis, published in the Export Quality Cocaine Purity Report: 2005 - 2023; the results generated correspond to the purity of cocaine processed in Colombia. Purity is defined as the average percentage of pure cocaine present in a 1 kg block.

Another source confirms the trend in Colombia. The results obtained by the Chemical Laboratory for Anti-Drug Research, attached to the International Center for Anti-Drug Trafficking Studies (CIENA, acronym in Spanish) of the Anti-Narcotics Directorate of the Colombian National Police (PONAL, acronym in Spanish) indicate that the average purity reported for 2024 was 85%, according to the samples selected (18 samples seized in clandestine infrastructures).[55].

Apart from the challenges in the generation of statistics on cocaine purity, its importance and contribution to the construction of a comprehensive view of the characteristics of both the market and the drug is highlighted. On the supply side, data on cocaine purity is an important indicator for tracing the supply chain[56] and dismantling trafficking networks; in the same sense, systematized information on purity could generate information that allows authorities to identify trends in distribution routes, as well as to design and develop more effective policies and strategies in the fight against drug trafficking. Moreover, on the demand side, accurate detection of these impurities is essential to assess the risks associated with their use and develop appropriate intervention strategies. From a public health perspective, the variability in purity could influence the dose taken and the risk of overdose; knowing the purity of cocaine has a direct impact on the design of more effective prevention programs and alerts about the dangers associated with adulterated drugs.

**55**-Anti-Narcotics Directorate, Executive report: preliminary purity study on seized cocaine samples (Bogotá: Colombian National Police, 2024).

**56-**Reuter, P., and Caulkins, J.P. "Illegal 'Lemons': Price Dispersion in Cocaine and Heroin Markets." The Bulletin on Narcotics, 56(1-2 in 2004), pp. 141-165.

## What are the main characteristics of the current dynamics of cocaine supply and demand in Colombia?

The increase in global cocaine supply and demand has put pressure on coca/cocaine production areas in the Andean countries. According to the WDR-2024, of the 354,900 ha detected in 2022 in the Andean countries through the Integrated Illicit Crop Monitoring System (SIMCI), 65% of the area is concentrated in Colombia, 27% in Peru and 8% in Bolivia; The increase in coca hectares worldwide seems to be influenced by expanding user markets, with more users reported to have used cocaine at some time in their lives and in the last year in the different continents; this increase translates into a greater capacity to produce cocaine.

Colombia is no stranger to this situation since, over the last ten years, the geography of coca/cocaine, the methods of production and the stakeholders involved in the cultivation, manufacture, trafficking and distribution of this substance to local user markets have undergone changes that have challenged the methods, methodologies and actions to monitor and take action.

These transformations were further intensified after the demobilization of the Revolutionary Armed Forces of Colombia-People's Army (FARC-EP), as a result of the 2016 Peace Accord signing. The power voids[57] in the coca-growing areas generated by the absence of this guerrilla group in the territory reconfigured the balance of power of the criminal organizations involved in the drug-trafficking chain. Today, the criminal landscape is not only increasingly fragmented with the emergence of new groups, such as the FARC-EP dissident groups, but the other major armed groups, such as the National Liberation Army (ELN) and the Clan del Golfo, have also benefited from greater territorial and criminal strength.

In order to exemplify the transcendence of this evolution, the potential production of cocaine hydrochloride has been increasing in the last decade; going from 290 mt in 2013 to 2,664 mt in 2023; in other words, an increase of 820%; it is worth mentioning that historical records have been previously reached, such as the one registered in 2016 when 810 mt were reached, which represented an increase of 62% compared to 2015. This trend in the potential production of cocaine of Colombian origin would be due to a combination of several factors, which will be analyzed in the following sections[58]

Table 3 compares global cocaine supply and demand statistics with the data available in Colombia, in order to facilitate the construction of a comprehensive vision of the order of magnitude regarding the coca cultivation problem and potential cocaine production.

**57** Sweeney, T. (2022). A Power Void? Competition and violence after the demobilization of the FARC-EP. Universidad de los Andes. Available at: http://hdl.handle.net/1992/63954

**58-**See chapter 2. The Geography of Coca Cultivation in Colombia.

**Table 3.**
Summary of available statistics on cocaine supply and demand worldwide and in Colombia.

| Item | World | | | Colombia[1] | | |
|---|---|---|---|---|---|---|
| | 2021[2] | 2022[3] | vs. | 2021 | 2022 | 2023 |
| Coca cultivation | 315,181 ha | 354,900 ha | | 204,000 ha | 230,000 ha | 253,000 ha |
| Eradication | 118,490 ha | 100,779 ha | | 103,257 ha | 68,893 ha | 20,325 ha |
| Potential cocaine production[4] | 2,304 mt | 2,757 mt | | 1,400 mt | 1,738 mt | 2,664 mt |
| Coca leaf seizures | 855 mt | 974.4 mt | | 721 mt | 676 mt | 984 mt |
| Seizures of cocaine paste/base | 146 mt | 163 mt | | 89 mt | 107 mt | 99 mt |
| Cocaine hydrochloride seizures | 1,387 mt | 1,663.8 mt | | 669 mt | 659 mt | 746 mt |
| Seizures of crack and other forms | 493 mt | 199.8 mt | | 1.33 mt[5] | 1.46 mt[5] | 1.09 mt[5] |
| Number of cocaine users | 22 million people | 23,5 million people | | 140,000 people[6] | 142,000 people[6] | 144,000 people[6] |

Source:

**(1)** Colombian Drug Observatory, "Colombian Drug Information System (SIDCO)," Ministry of Justice and Law, February 26, 2025.

**(2)** World Drug Report 2022, UNODC, World Drug Report 2023 (Vienna: UNODC, 2023).

**(3)** World Drug Report 2023, UNODC, World Drug Report 2024.

**(4)** The potential production of pure cocaine hydrochloride was estimated under the assumption that all production obtained from cultivation is processed in the territory and there is no resource mobility. These estimates constitute a reference point for comparison, since, in practice, no pure cocaine hydrochloride markets are set up. See chapter 2.

**(5)** Information taken from SIDCO - ODC, including data on basuco seizures. This substance is produced from cocaine adulteration residues. It is alkaline in nature, so its method of use is by pulmonary inhalation (smoking). Considering the context of this report, it can be seen as a counterpart of crack (cocaine base).

**(6)** UNODC, SIMCI (2024). Estimates obtained by applying the methodology of Illicit Financial Flows of the Cocaine Market to 2023. The user population estimate, according to type (occasional or abuse/dependence) corresponds to an indicator that includes data from the 2019 National Survey on drug use conducted by the Ministry of Justice and Law and DANE; in this research, the population that used substances such as basuco (cocaine base to be smoked) and cocaine (hydrochloride) in the last year is reported; in addition, from this group of people, it differentiates which of them report abuse or dependence. Given that this data only corresponds to 2019, the user population for the years 2021-2023 is estimated based on the population growth at the departmental level, as recorded by DANE, according to the population estimates for each of the country's departments.

Changes in the dynamics of cocaine production and trafficking could be analyzed indirectly (as a proxy variable) through the behavior of seizures. As a result of interdiction operations, the largest amount of cocaine hydrochloride seized in history was achieved in 2023. According to figures provided by the Colombian Drug Observatory, seizures increased from 659 mt in 2022 to 746 mt in 2023, representing a 13% increase over this period (representing 28% of potential production). Seizures of cocaine paste/base decreased by 6.9%, from 106.7 mt in 2022 to 99.3 mt in 2023. Looking back, the increasing trend in cocaine hydrochloride seizures persists. This same situation is also reflected in cocaine paste/base seizures, a variable that increased by 131% between 2016 (43 mt) and 2023 (99 mt).

In terms of regional behavior, there was an increase in cocaine seizures in international operations and in border areas, both cocaine paste/base and cocaine hydrochloride.

In relation to international operations[59], 468.8 mt of cocaine were seized in 2023, representing an increase of 51.7% compared to 2022 (309 mt); 464.6 mt of this corresponded to cocaine hydrochloride. Although seizures of cocaine paste/ cocaine base accounted for 0.9% of seizures in 2023, the level of seizures (4 mt) is a record figure that is consistent with the growth in international trafficking of this substance for the manufacturing of cocaine hydrochloride in other countries.

**59-**Operations carried out outside the national territory, in which the Colombian Law Enforcement participates as part of international cooperation agreements and maritime treaties in force.

# Chapter 2.

## The Geography of Coca Cultivation in Colombia

Coca cultivation reached a record high for a second consecutive year with 253,000 ha as of December 31, 2023, an increase of 10% over the figure reported in 2022. Unlike the dynamics shown in the previous monitoring activity, where nearly 80% of the absolute variation was concentrated in Putumayo, in 2023 the increase is more generalized, even though it maintains its tendency to concentrate in historical areas: 50% of the absolute change is concentrated in the departments of Cauca and Nariño (Figure 3).

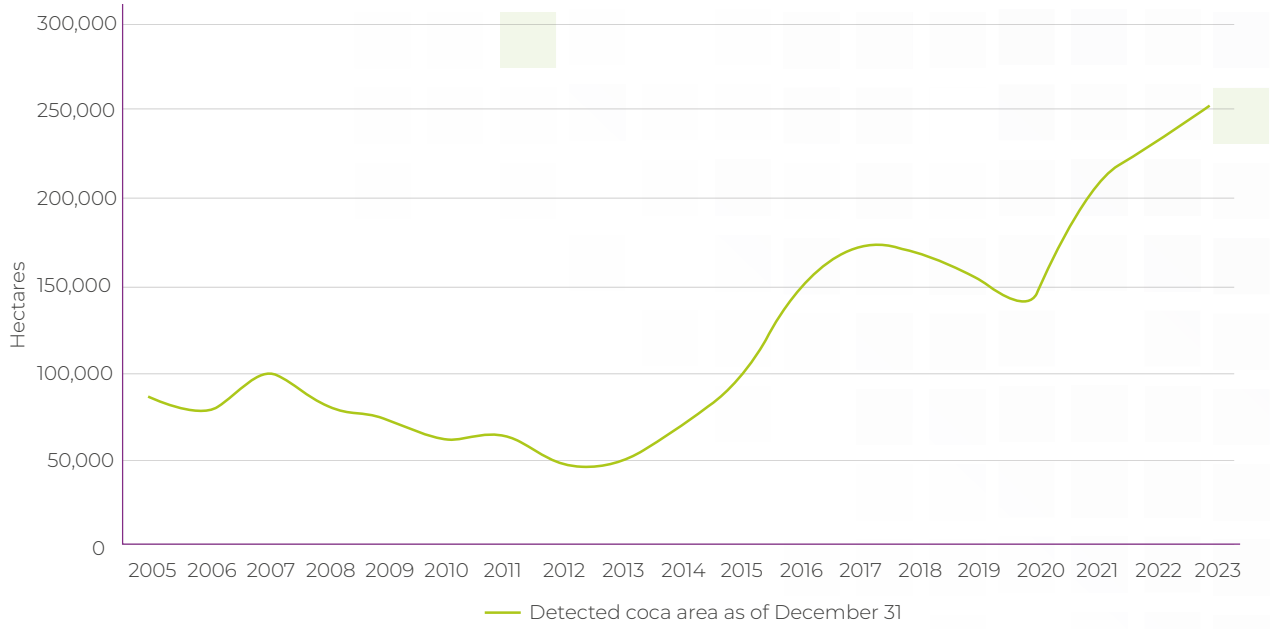
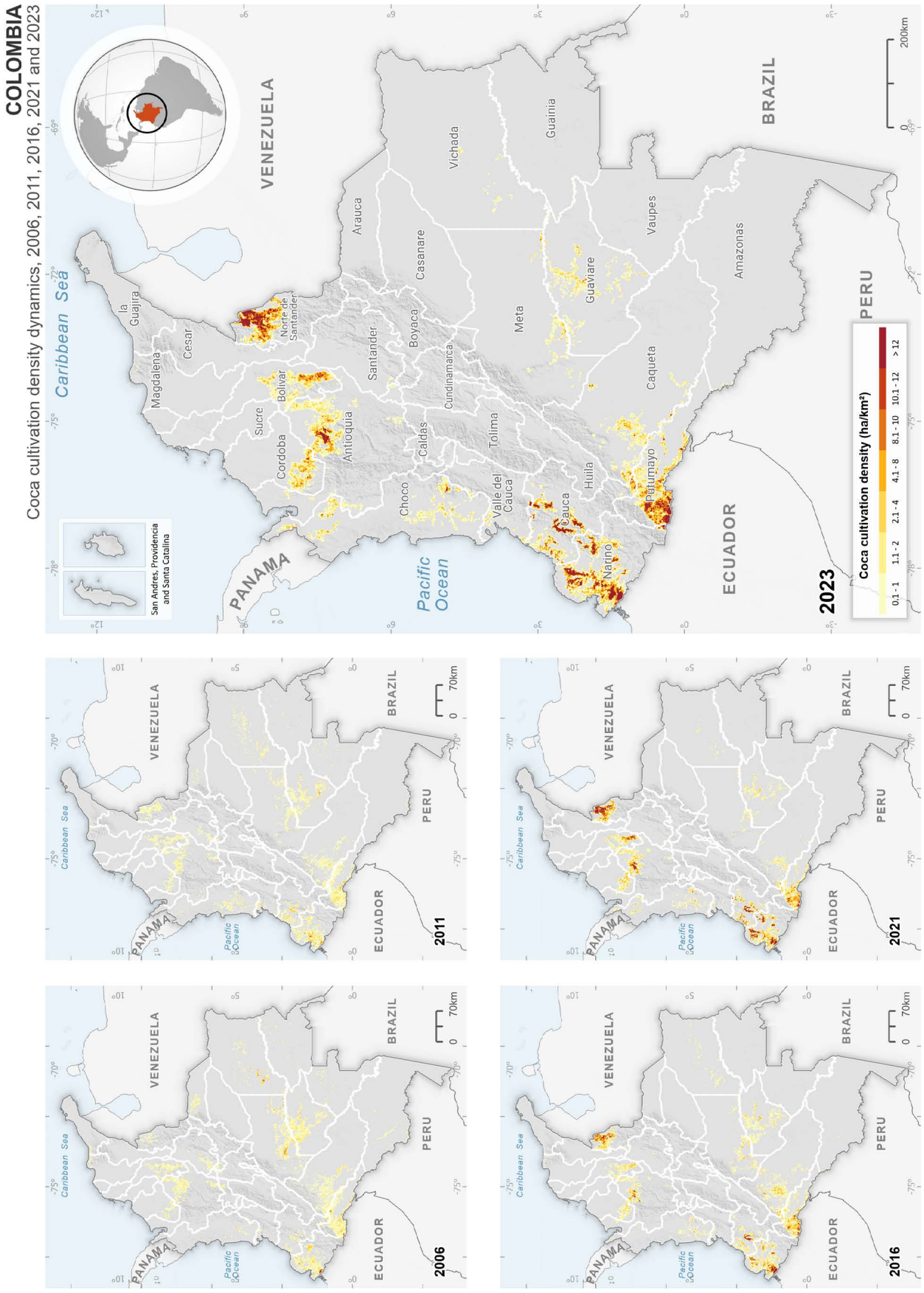



**Figure 3.**
Area under coca cultivation, 2005-2023

Since 2019[60], the area under coca cultivation shows a clear upward trend, 1.7 times more coca in 2023 than the amount reported in that year (154,000 ha); 64% of the coca has been concentrated in three departments over the last five years: Nariño, Putumayo and Norte de Santander. In 2023, Nariño is the most affected department, accounting for 26% of the national coca cultivation.

In hindsight, coca cultivation has had a rapidly changing territorial dynamic that shows how it went from a more homogeneous distribution with some concentration centers to a consolidation of hubs in geostrategic zones with greater facility and proximity to access routes both for the departure of the drug and for the entry of the chemical substances necessary for its production; For example, in 2006, 62% of coca was located in Nariño, Putumayo, Meta and Guaviare; by 2011, the east of the country began to lose ground and the expansion to areas of Cauca and Nariño was much more significant; by 2016, the year of the signing of the Peace Accord and thereafter, the illicit phenomenon is much stronger (63% of total coca) in traditional departments such as Nariño, Putumayo and Norte de Santander (map 1).

**60-**In 2019, Phase V of Production and Yields began, a point of reference for measuring changes in planting and production dynamics and productive hotspots are being determined for the first time.




*Sources: Government of Colombia - Monitoring System Supported by UNODC.*
*The Boundaries, names and titles used on this map do not constitute recognition or acceptance by the United Nations.*

**Map 1.**
Coca cultivation density dynamics, 2006, 2011, 2016, 2021 and 2023

The Pacific region continues to be the largest contributor to the national total with a share of 42%. By 2023, 19 departments show some degree of coca cultivation, one less than in 2022 (Cesar); 16 of these departments show an upward trend and 3 show a downward trend (Amazonas, Magdalena and Vaupes).

While there are departments where cultivation growth tends to be concentrated, the representation of the absolute variation in planted area (map 2) shows that both within the hotspots there is a considerable increase in area in comparison to 2022 (orange to red colors in map 2) and in some expansion zones in Cauca (mountainous zone) and northern Chocó. On the other hand, there are areas with reduction (green color) that coincide spatially in some cases with focal areas of the intervention, such as the department of Guaviare, the Tomachipán sector and the San Pablo-Taracué hotspot.

The dynamics of coca cultivation in Colombia increasingly reveal characteristics of **concentration and persistence** of the phenomenon in certain areas of the country, which, as evidenced since 2019[61], tend to favor an efficient productive chain with a clear orientation towards trafficking; an example of this phenomenon is the consolidation of productive hotspots. By 2023, the 15 hotspots identified in the previous year are maintained, containing **39% of the area with coca only 14% of the territory** under coca cultivation in 2023 (Table 4, Map 3).

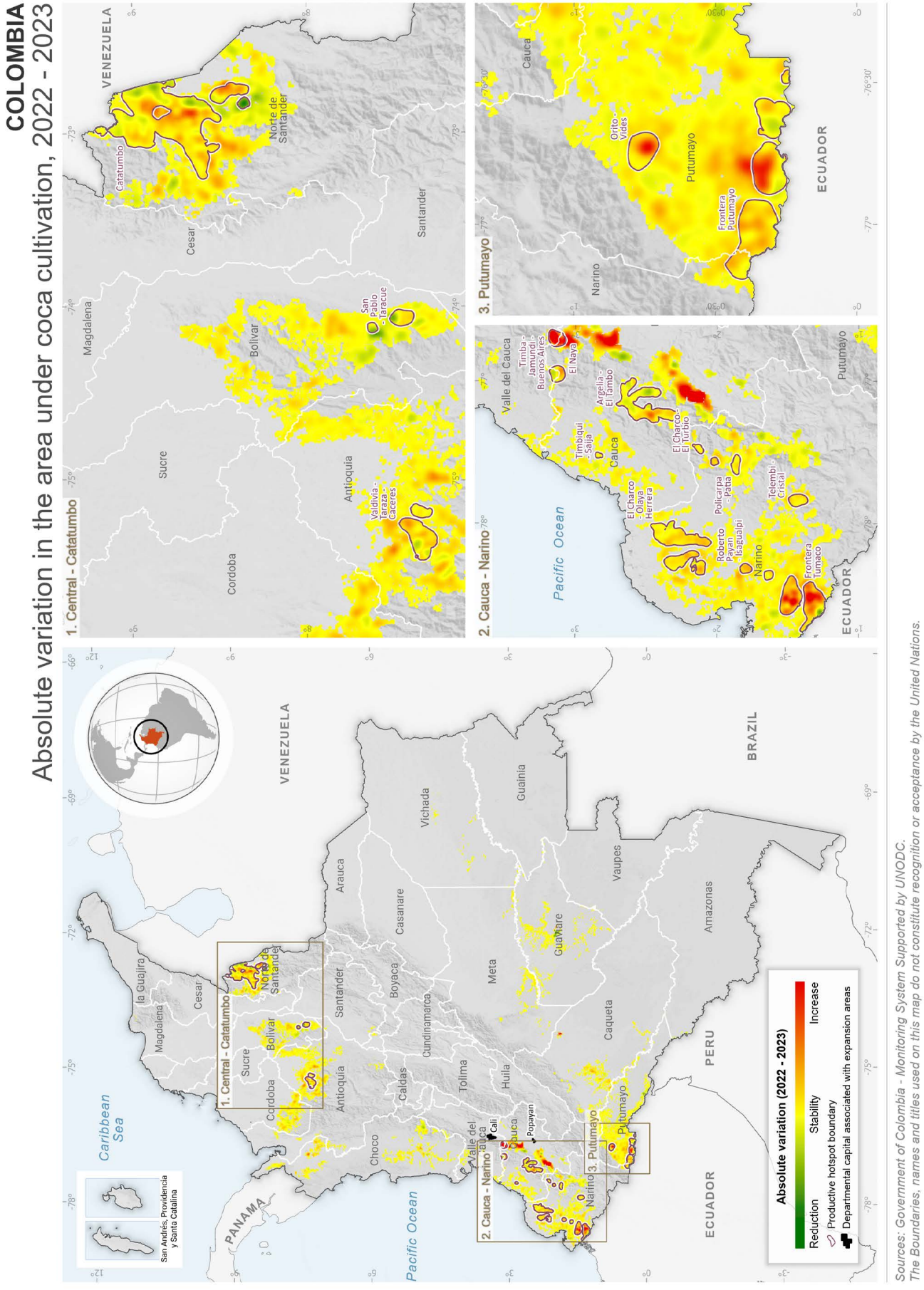
A productive hotspot is defined spatially as a territory that over the last five years has presented a highly significant concentration of coca cultivation (hectares planted per square kilometer) and in which the phenomenon has persisted more than four years. Moreover, in some of them —thanks to field studies— it has been possible to identify characteristics different from the rest of the region (cultivars, yields, cultural management, cultivation density). In this regard, there is a tendency towards productive chain integration in situ, as well as the possible specialization of the production processes (cultivation and processing).

**Table 4.**

Area with coca in productive hotspots, 2023

| Hotspot | Coca 2023 (ha) |
|---|---|
| Catatumbo | 28,953 |
| Tumaco-Border | 16,833 |
| Putumayo-Border | 13,594 |
| El Charco-Olaya Herrera | 11,950 |
| Argelia-El Tambo | 10,246 |
| Valdivia-Tarazá-Cáceres | 6,230 |
| Orito-Vides | 2,415 |
| Timba-Jamundí-Buenos Aires | 2,362 |
| El Naya | 1,434 |
| San Pablo-Taracué | 1,351 |
| Telembí-Cristal | 1,161 |
| Roberto Payán-Isagualpi | 1,127 |
| Policarpa-Patía | 1,004 |
| El Charco-El Turbio | 747 |
| Timbiquí-Saija | 177 |

**61-**In 2019, Phase V of Production and Yields began, a point of reference for measuring changes in planting and production dynamics and productive hotspots are being determined for the first time.




**Map 2.**
Absolute variation in area planted with coca, 2022-2023

The **Tumaco, Catatumbo and Timba-Jamundí-Buenos Aires Border** hotspots account for 62% of absolute hotspot growth, despite their relatively stable territorial extension (except in Timba, which increased its extension by 10%); this behavior reflects a strong tendency towards concentration in a small territory which, together with high productivity factors (see production section) and elements that indicate economic dependence on illicit activity, mean that these areas require differentiated and comprehensive intervention strategies. In Tumaco-Border alone, there has been an increase of nearly 2,000 ha, or 31% of the absolute growth in hotspots.

San Pablo-Taracué, located in the department of Bolívar, is the only hotspot that shows a reduction trend in both the area planted with coca (3%) and its territorial extension (37%).

As part of this report, a warning should be issued in Cauca, particularly concerning three zones in which a significant growth in the area planted with coca was identified, together with hotspot characteristics in terms of planting density and high productivity levels; this indicates that it is only a matter of time (due to the persistence factor for the definition of hotspots) before new hotspots are consolidated[62] (Figure 4).

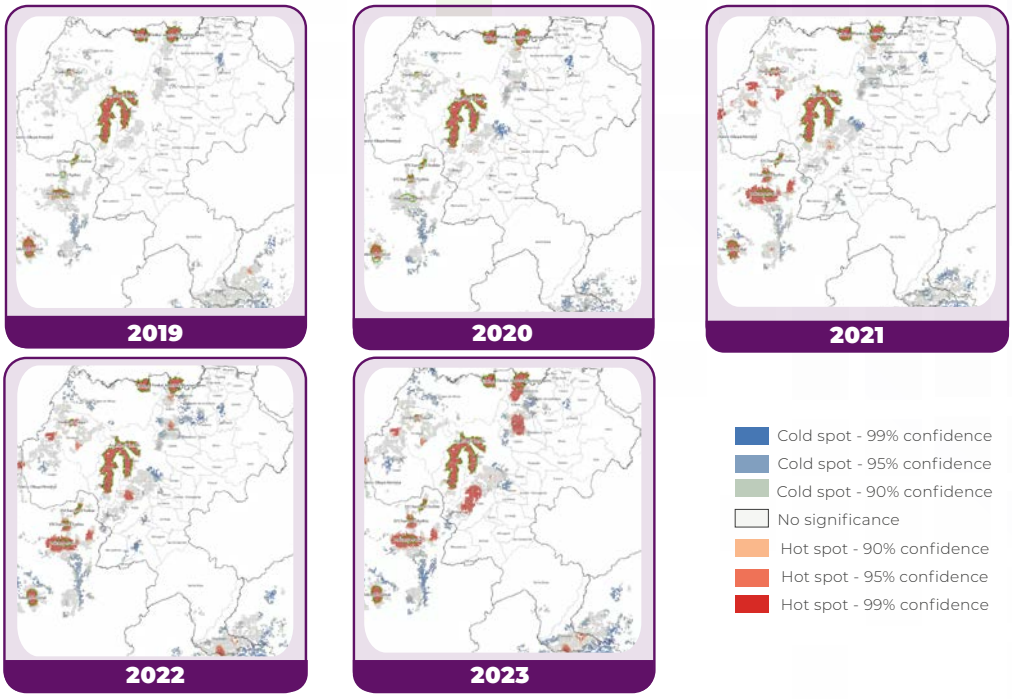



**Figure 4.**
Evolution of the hotspot zone in Cauca, 2019-2023

The first zone is an expansion of the current Timba-Jamundí-Buenos Aires hotspot, to the south in the municipality of Suárez, less than 4 km away from the municipal capital; the second is located between the municipalities of Morales, Suárez and Cajibío in the Salvajina sector, with populated centers of interest such as San Isidro and El Rosario; The third is located to the south between the municipalities of Balboa and Patía, on the western bank of the Patía River with populated centers such as Don Alonso, La Fonda, Santa Cruz and La Mesa.

Lastly, another factor that allows us to understand the current dynamics of the illicit phenomenon is the dynamics of persistence, which is explained in infographic 1.

**62-**It is important to bear in mind that, in the same territory, understood as grids of 1 km², the dynamics of coca cultivation are highly variable and are associated with social, security and economic factors, among others; therefore, it is possible to identify a greater number of coca fields planted in the same area in one year (densification/concentration); or to identify that the territory with coca is expanding because new fields arise in more distant areas.

## Persistence of coca cultivation in Colombia, 2023

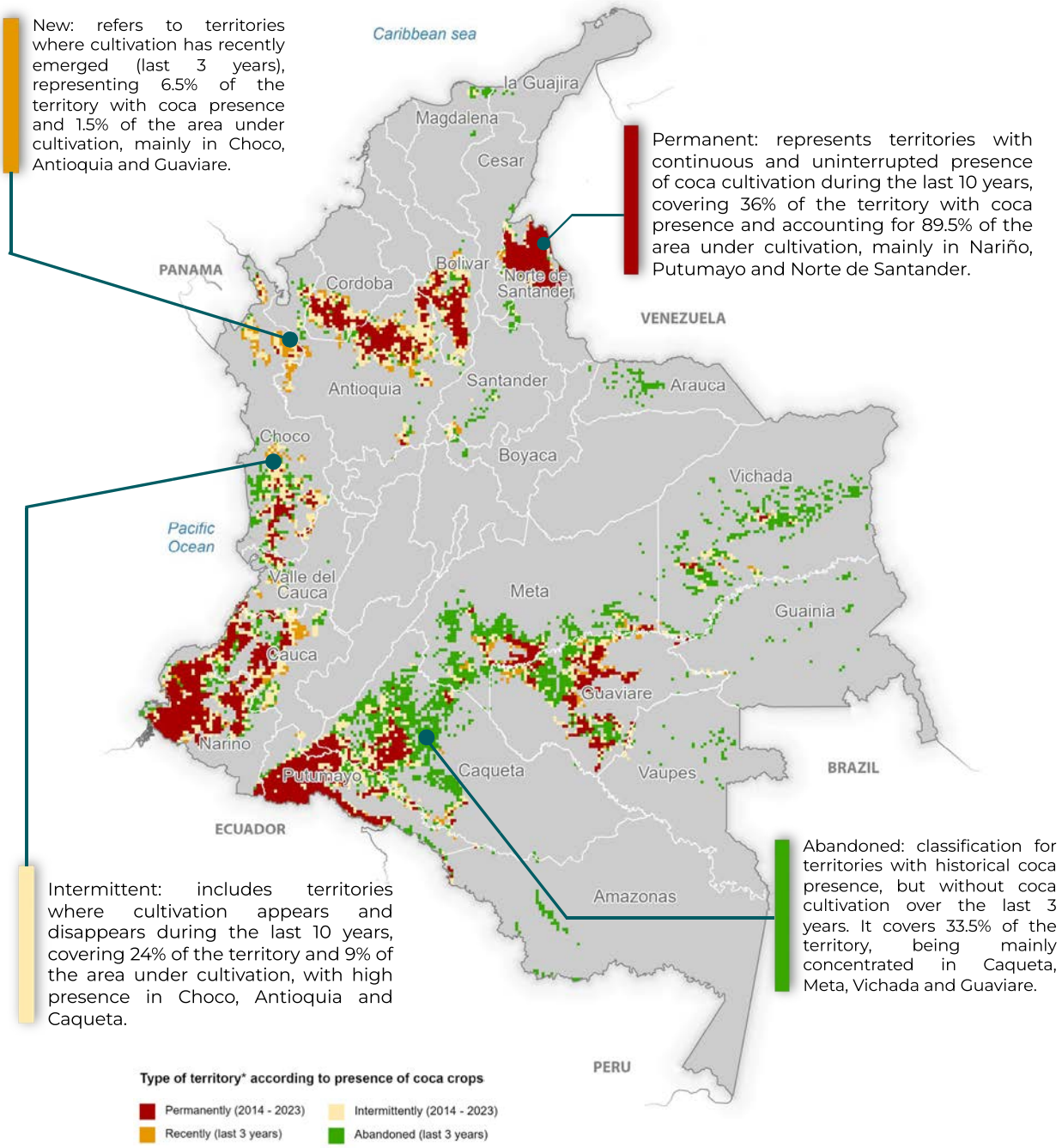
The analysis of the persistence of coca cultivation is carried out in 5 x 5 km territories over a 10-year period. This analysis classifies the areas according to the frequency of cultivation in four categories: permanent, intermittent, new and abandoned.

New: refers to territories where cultivation has recently emerged (last 3 years), representing 6.5% of the territory with coca presence and 1.5% of the area under cultivation, mainly in Choco, Antioquia and Guaviare.

Permanent: represents territories with continuous and uninterrupted presence of coca cultivation during the last 10 years, covering 36% of the territory with coca presence and accounting for 89.5% of the area under cultivation, mainly in Nariño, Putumayo and Norte de Santander.

Intermittent: includes territories where cultivation appears and disappears during the last 10 years, covering 24% of the territory and 9% of the area under cultivation, with high presence in Choco, Antioquia and Caqueta.

Abandoned: classification for territories with historical coca presence, but without coca cultivation over the last 3 years. It covers 33.5% of the territory, being mainly concentrated in Caqueta, Meta, Vichada and Guaviare.




**Infographic 1.**
Persistence of coca cultivation in Colombia, 2023

## Opportunities to make progress in the consolidation of coca free territories

Despite the national trend, seven departments do not show an upward trend; this may be an indication that the illicit phenomenon is moving into a secondary position and that agricultural producers with coca have found other activities, legal or illegal, to develop in their territory and obtain income. These types of territories can be considered scenarios for focusing comprehensive intervention actions that favor a sustained reduction of cultivation and its effects, thus advancing in the consolidation of coca-free territories (Figure 5).

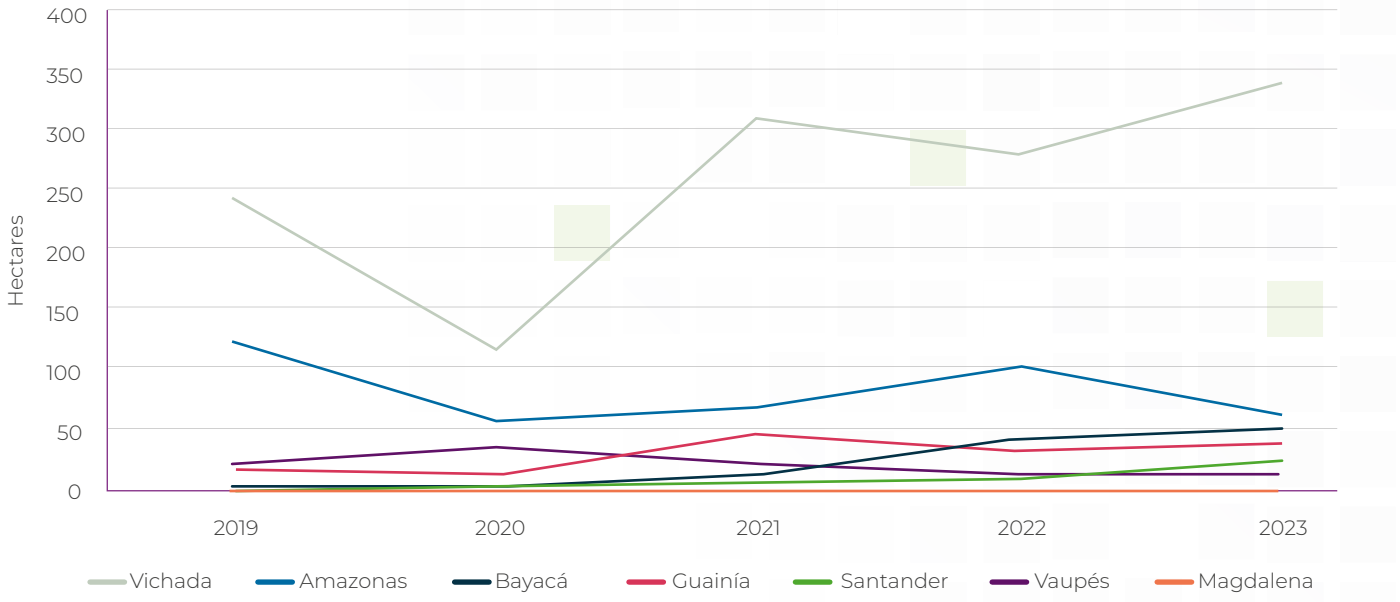



**Figure 5.**
Area under coca cultivation in departments with less than 500 ha, 2019-2023

The seven departments with less than 500 ha are Vichada, Amazonas, Boyacá, Guainía, Santander, Vaupés and Magdalena; they account for only 0.2% of the national total and together increased by less than 90 ha compared to what they had reported in 2022 (Figure 4).

A more local perspective shows that 181 municipalities out of 1,122 have coca cultivation in 2023, down 4 from 2022, and only 10 of these municipalities account for 45% of coca cultivation. In the top 10 municipalities, coca increased 7% compared to 2022; all of them show an upward trend, but Tumaco and Valle del Guamuez account for nearly 50% of the absolute variation (3,500 ha) shown in the top 10 (Infographic 2, Table 5).

## Municipalities that could reach abandonment more quickly

- **65 municipalities** have **less than 100 ha under coca cultivation.** Altogether nearly 2,000 ha

- **12 municipalities** have **less than 10 ha with coca.** Altogether nearly 50 ha

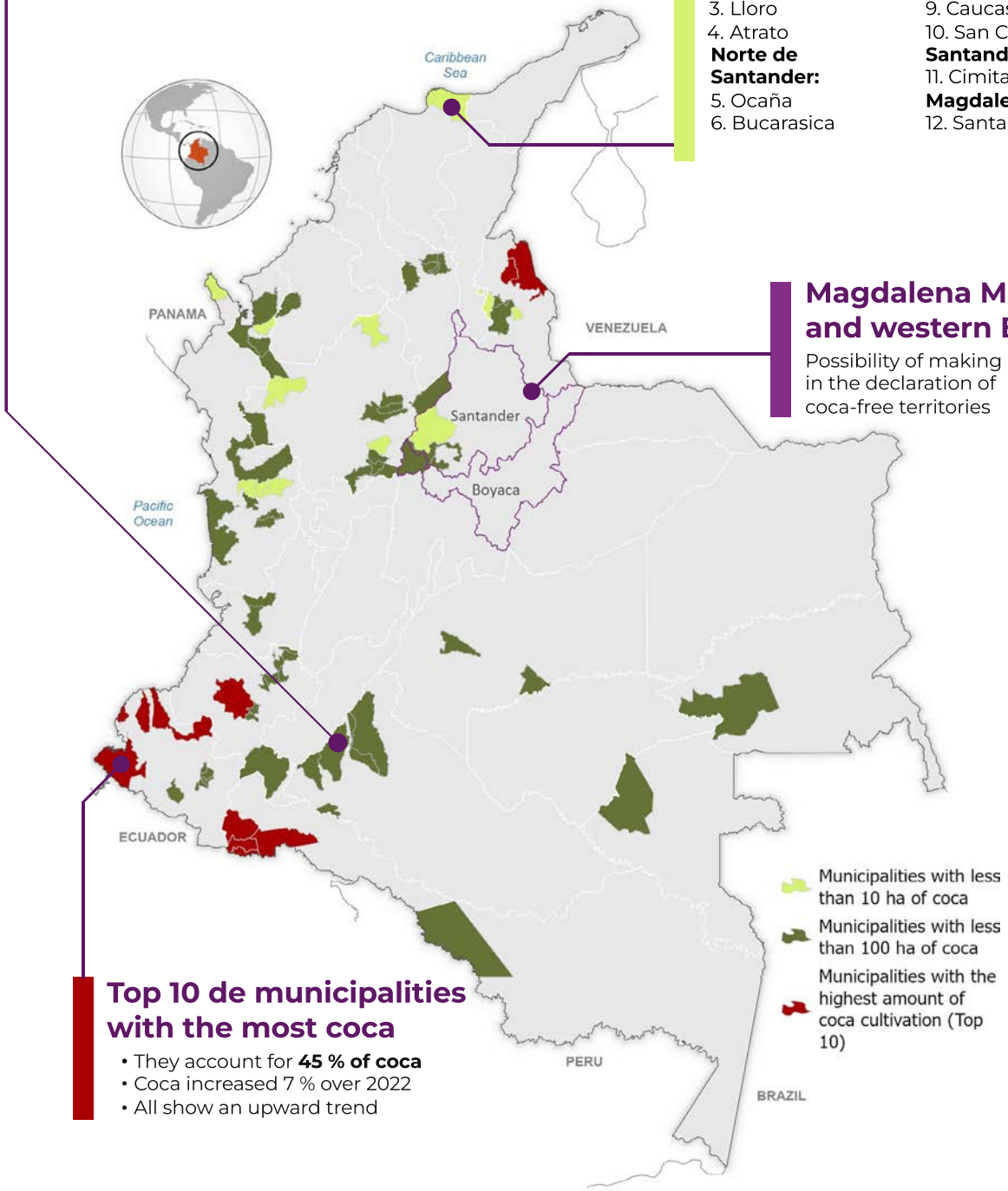
**Choco:**
1. Rio Quito
2. Acandi
3. Lloro
4. Atrato

**Norte de Santander:**
5. Ocaña
6. Bucarasica

**Antioquia:**
7. Dabeiba
8. Apartado
9. Caucasia
10. San Carlos

**Santander:**
11. Cimitarra

**Magdalena:**
12. Santa Marta




### Magdalena Medio and western Boyaca

Possibility of making progress in the declaration of coca-free territories

### Top 10 de municipalities with the most coca

- They account for **45 % of coca**
- Coca increased 7 % over 2022
- All show an upward trend

**Infographic 2.**
Municipalities that can approach abandonment more quickly.

**Table 5.**
Municipalities with the highest presence of coca cultivation, 2022-2023

| Department | Municipality | Area with coca 2022 (ha) | Area with coca 2023 (ha | Change (%) 2022-2023 |
|---|---|---|---|---|
| Norte de santander | Tibú | 22,081 | 23,030 | 4 |
| Nariño | San andrés de tumaco | 20,720 | 23,000 | 11 |
| Putumayo | Puerto asís | 11,504 | 11,726 | 2 |
| Cauca | El tambo | 9,224 | 9,392 | 2 |
| Nariño | El charco | 8,695 | 9,258 | 6.5 |
| Putumayo | Valle del guamuez | 7,959 | 9,193 | 15.5 |
| Putumayo | Orito | 8,086 | 8,732 | 8 |
| Norte de santander | El tarra | 6,390 | 6,864 | 7 |
| Putumayo | San miguel | 6,440 | 6,723 | 4 |
| Nariño | Olaya herrera | 4,994 | 5,531 | 11 |

Just as in the departmental view, there are municipalities that, according to the trend and the recent coca affectation, seem to be territories that may approach abandonment more quickly and where it would be recommended to focus institutional and international cooperation efforts to facilitate the transition from illicit to licit economies; 65 of the 181 municipalities have less than 100 ha planted with coca, totaling approximately 2,000 ha, and 12 of the 181 municipalities have less than 10 ha with coca, totaling approximately 50 ha.

### *Differentiated intervention strategie*

The new coca geography makes it possible to define specific intervention scenarios that, if integrated into the planning of strategies in the territories, can favor the design of differentiated actions according to the characteristics of the territory from a social, cultural, economic and coca cultivation production perspective. Two scenarios are presented below:

1. *Areas of Special Environmental Importance (National Natural Parks [PNN] and Forest Reserve Zones) and in Collective Territories (Indigenous Reserves and Afro-descendant Community Lands)*. Coca continues to be a threat to the preservation of biological and cultural diversity; 48% of coca is located in these four large areas; all show an increase in area compared to 2022, but it was more significant (13%) in the lands of the Afro-descendant Communities, which in turn continue to have the largest share (20% of the total). In Indigenous Reserves, 10% is concentrated and increased by 10%; in Natural National Parks (PNN), 4% of the coca is concentrated and increased by 2%. Similar to the national coca landscape, the phenomenon of concentration is observed in special management areas, and although many entities have been affected, it is in few of them where coca cultivation has a greater share (Infographic 3).

## Lands of Afro-descendant communities

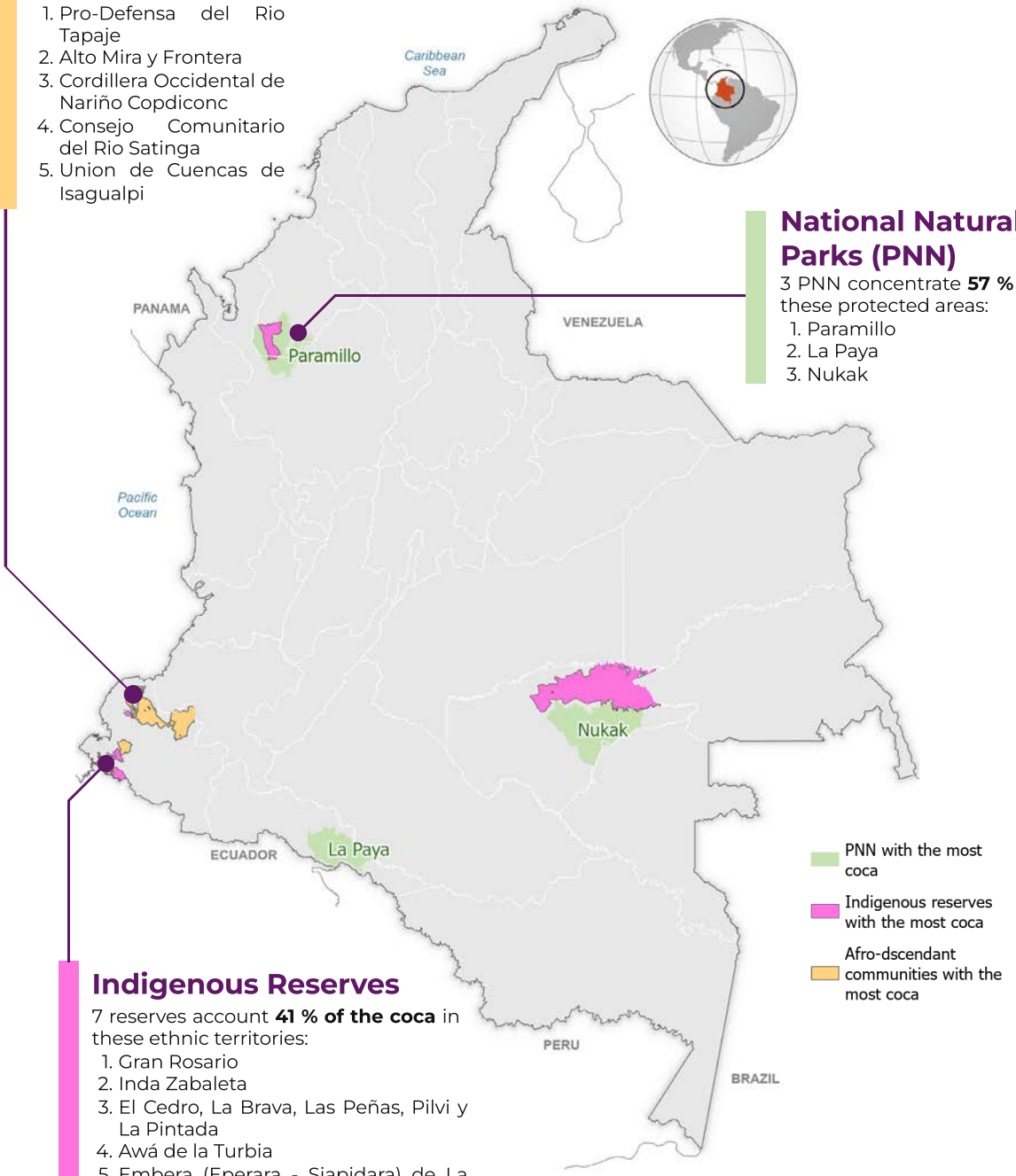
5 afro-descendant communities concentrate **41 % of coca** in these ethnic territories:

1. Pro-Defensa del Rio Tapaje
2. Alto Mira y Frontera
3. Cordillera Occidental de Nariño Copdiconc
4. Consejo Comunitario del Rio Satinga
5. Union de Cuencas de Isagualpi

## National Natural Parks (PNN)

3 PNN concentrate **57 % of coca** in these protected areas:

1. Paramillo
2. La Paya
3. Nukak




## Indigenous Reserves

7 reserves account **41 % of the coca** in these ethnic territories:

1. Gran Rosario
2. Inda Zabaleta
3. El Cedro, La Brava, Las Peñas, Pilvi y La Pintada
4. Awá de la Turbia
5. Embera (Eperara - Siapidara) de La Floresta, Santa Rosa y San Francisco
6. Nukak Maku
7. Alto Sinu, Esmeralda Cruz Grande e Iwagado

**Infographic 3.**
Special management areas and the impact of coca cultivation

**2.** The trend towards the concentration of coca near borders and trafficking routes continues to solidify. The coca geography[63] indicates that coca cultivation tends to concentrate more significantly, reaching more efficient production chains, in areas close to borders and trafficking routes as opposed to areas where coca cultivation tends to decrease and market conditions limit the commercialization of the leaf and its by-products (Figure 6). This phenomenon has become stronger in recent years and allows us to identify particular territorial features that can guide territorial intervention policies.

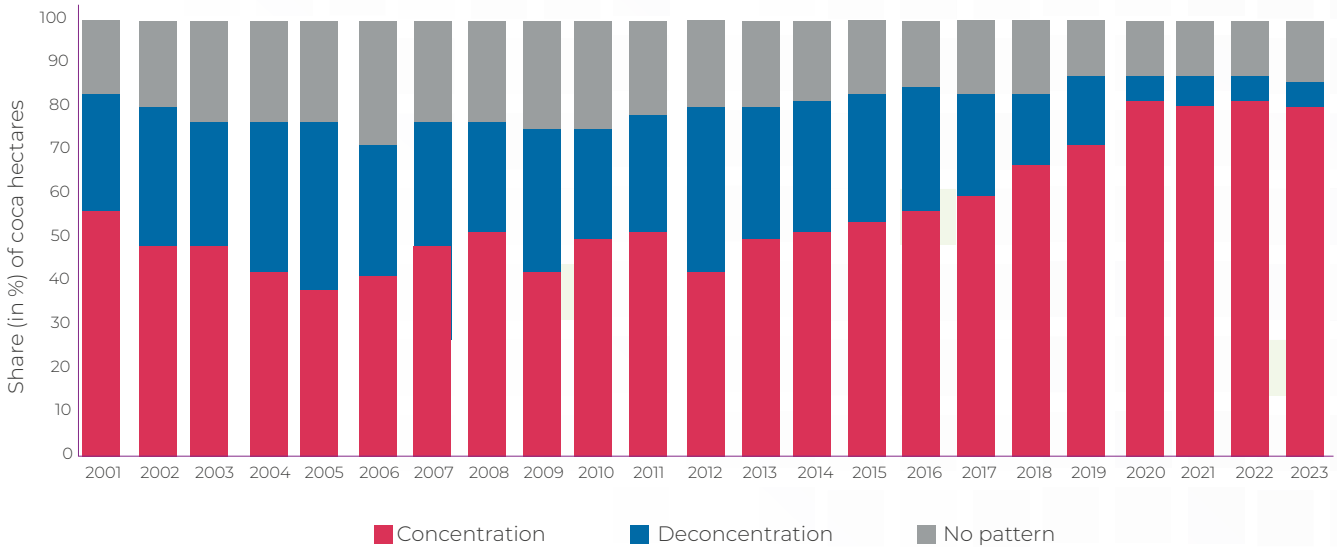



**Figure 6.**
Distribution of area planted with coca according to concentration trend behavior, 2001-2023

As of 2023, it was recorded that 202,000 ha of coca (80% of the national total) are located in territories catalogued as concentration zones, which occupy 52% of the territory planted with coca in 2023[64]; in contrast, 14% are located in deconcentration zones and contain only 10,700 ha (4%) of the national coca. As part of this same analysis, there is a percentage of the territory that, due to its variability in the trend of coca cultivation, it is still not possible to determine any characteristics of the dynamics and these are called areas without patterns.

In the deconcentration zones, a scenario of opportunity to make progress in the consolidation of coca-free territories is emerging; a territory where, from the very dynamics of establishment and persistence of cultivation, signs of dispersion and reduction of the phenomenon can be observed, and when going deeper into social, economic and cultural aspects, the signs of a greater possibility of making the transition to a licit economy become stronger. For instance, coca fields have an average size of 0.97 ha, which is lower than the national average of 1.06 ha, and their predominant density is low, barely 0.1-1 ha/km$^2$, i.e. dispersed cultivation sites where the consolidation of productive hotspots is unlikely. On the other hand, in deconcentration zones such as Meta-Guaviare, there has been a tendency to carry out the coca/cocaine transformation process (extraction and refining processes) in the Agricultural Production Units with

**63-**The area with coca (a space-time cube) was analyzed and aggregated into 1 km$^2$ grids applying statistical techniques for the analysis of emerging hot spots (Mann-Kendall trend test), which allow the identification of hot spots (zones of concentration) and cold spots (zones of deconcentration) with subdivisions into the categories of new, increasing, decreasing and sporadic. This exercise includes a ten-year time series analysis. This differs from the productive hotspots that have analyzed, over the last five years, the persistent concentration of the illicit phenomenon. For more information, see Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC). Monitoring Report of Territories with coca cultivation presence 2022 (2023).

**64-**Territory defined as 1 km$^2$ grids where coca cultivation is present.

Coca (UPAC)[65], however, the use of potassium permanganate is sporadic. This reflects that both CBP and CB production (to a greater extent) is occurring in the area. Furthermore, the lack of strategic nodes for international trade hinders the export of coca-derived products, limiting the potential for commercialization.

Conversely, in the concentration zones, the interpreted polygons cover an average of 1.44 ha, significantly exceeding the national average size. Coca is distributed in areas with high cultivation densities (4-8 ha/km$^2$) reaching densities higher than 12 ha/km$^2$ in 25% of the territory; from an intervention standpoint, this poses challenges in terms of operability (greater probability of replanting), security and the consolidation of coca-free territories. In addition to the aforementioned, the 15 productive hotspots are located in the concentration zones, areas with production chains and a strong agro-industrial profile that seems to be oriented to international traffic.

**Cultivation characteristics** Crop characteristics analysis in the concentration and deconcentration zones reveals a sharp difference in production patterns. In the concentration zones, there is evidence of a shift towards an agro-industrial approach[66], which integrates processes to transform coca leaves into products with higher value added such as cocaine paste/base. This approach goes beyond the usual agricultural production and seeks to take advantage of the full potential of the production chain from planting to processing. This has led to higher yields thanks to differentiated cultural practices that maximize productivity, reaching 8.7 tons per hectare per year[67]. In productive hotspots such as Argelia-El Tambo and Tumaco-Border, productivity levels of between 10.0 and 11.8 tons per hectare per year have been achieved. This efficient model not only optimizes yields but also promotes more robust production chains at the national level, standing out as a consolidated system oriented towards profit maximization.

The deconcentration zones are characterized by the persistence of a traditional coca-growing peasant economy model[68]. These areas have not developed scale production models, which is reflected in a lower productivity of 7.6 tons per hectare per year. Additionally, the restrictions on the outflow of drugs accentuate the trend towards a reduced level of technification, which limits efficiency and the development of sustainable production chains.

**Extraction and refining characteristics.** In the concentration zones, growers have adapted their activities towards the processing and commercialization of coca-derived products such as cocaine base and cocaine paste to maximize their profitability. One of the key inputs in this process is potassium permanganate to process coca leaves into a cocaine base. Also, these zones have strategic nodes that facilitate both the supply of inputs and the exit of processed products to international markets, thus strengthening the value chain in the commercialization of the drug.

**Characteristics of processing and commercialization.** The organizations present in the concentration zones play a

**65-** An economic unit dedicated totally or partially to the cultivation of coca or other agricultural activities, under a single management, regardless of its title or ownership, legal status or size. The UPAC can be made up of one or more farms as long as they use the same means of production, such as labor and machinery.

**66-**Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC). Characterization studies of the productive hotspots: El Charco-Olaya Herrera and Argelia-El Tambo (2023); Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC).

**67-**The national weighted average yield was calculated, bearing in mind regional differences in the productive area and yields by type of zone. This enabled the calculation of potential production by region, with yields being implicit and weighted according to the composition of the area and the total potential leaf production by region and type of zone.

**68-**Workshops carried out in the framework of the research on the behavior of illicit drug prices in Colombia 2022 and first semester 2023.

crucial role as financiers, buyers and drivers of improvements in the production and processing of illicit products. This environment generates significant economic dependence, as producers are incentivized by the sale of their products at better prices, the availability of cash and productive specialization. This model presents limitations for implementing social, environmental and organizational policies, which reinforce outsourcing networks at regional and municipal levels where small criminal organizations also operate. Even though there may be an array of services provided by the government in these territories, these can be co-opted by criminal organizations based on territorial control, this scenario limits the implementation of social, environmental and organizational policies to be provided to the most vulnerable population.

On the other hand, in deconcentration zones, the lack of buyers limits the dynamization of local markets, mainly affecting to new growers who have less hectares planted. These areas are more likely to be involved in crop substitution processes, which could reduce economic dependence on coca cultivation. Despite this reduction, the possibility that new illegal activities may emerge as an alternative source of income persists; this keeps the risk of continued involvement in illicit economies latent.

**Security landscape.** The security conditions in the concentration and deconcentration zones have responded, among other reasons, to the continued presence of organized armed groups (OAGs), residual organized armed groups (r-OAGs) and organized criminal groups (OCGs)[69]. Data reported by the Special Jurisdiction for Peace (JEP, acronym in Spanish) show that in 2023 the percentage of municipalities in concentration zones that reported the presence of at least one armed group was 98%, while in deconcentration zones it was 84%[70].

The use of violence by the OAGs, r-OAGs and OCGs in these areas continues to be an ongoing and concerning mechanism of territorial control. As shown in Table 6, despite the fact that in the deconcentration zones there are more municipalities with more homicides of leaders and forced displacements, it is in the concentration zones where a greater number of these victimizing events are reported. This finding could be related to the intensity of criminal activities in the concentration zones, where competition between armed groups is more acute due to the geostrategic importance of these areas for drug trafficking.

**69-**Pursuant to the provisions of Act 1908/2018, Organized Armed Groups (OAGs) are understood to be: "Those who, under the direction of a responsible commander, exercise such control over a part of the territory as to enable them to carry out sustained and concerted military operations". On the other hand, the residual Organized Armed Groups (r-OAG) are armed groups that emerged from the FARC-EP, a guerrilla group that demobilized in 2016, whose members did not accept the peace accords and returned to arms. Whereas Organized Criminal Groups (OCGs) are defined as "a structured group of three or more persons that exists for a period of time and cooperates in order to commit one or more crimes."

**70-**Based on the information provided by the Special Jurisdiction for Peace (JEP) for 2023, the diversity of armed groups reported in the country was divided into four main structures. The division was based on those groups that have internal structures and substructures, as in the case of (1) FARC-EP dissidents, (2) Clan del Golfo and (3) ELN guerrilla; and those that do not have this division internally: (4) other groups (La Constru, La Cordillera, La Inmaculada, Las Palmas, Los Botalones, Los Caparros, Los Chiquillos, Los Espartanos, Los Mexicanos, Los Pachenca, Los Pelusos, Los Puntilleros, Los Rastrojos, Los Rastrojos Costeños, Los Shotas).

**Table 6.**
Victimizing events per zone, 2023

| Category | Forced displacements | | Homicides in the context of the conflict | | Homicides of leaders | |
|---|---|---|---|---|---|---|
| | Municipalities | Quantity | Municipalities | Quantity | Municipalities | Quantity |
| Concentration | 50 | 65,131 | 37 | 561 | 21 | 38 |
| Deconcentration | 103 | 30,366 | 57 | 589 | 22 | 29 |
| Total | 153 | 95,497 | 94 | 1,150 | 43 | 77 |

**Source:**

own elaboration based on data provided by UARIV, JEP and SIMCI's own data.

On the other hand, it is important to note that in deconcentration zones, 16% of the municipalities did not report the presence of illegal armed groups (IAGs), which suggests a greater dispersion in the activity of these groups compared to concentration zones, where only 2% of the municipalities were free of their influence. This notable difference not only reflects the greater capacity for territorial control in strategic areas, but also demonstrates the difficulties in reducing their presence in regions historically affected by violence and illegal armed activity.

In this regard, it is worth noting that, in the municipalities of the deconcentration zones, clashes between illegal armed groups and Law Enforcement agencies decreased by 18% between 2022 and 2023. In addition, homicides of social leaders also experienced a 24% reduction in this area during the same period, demonstrating progress in the reduction of violence and the positive impact of security strategies in these areas.

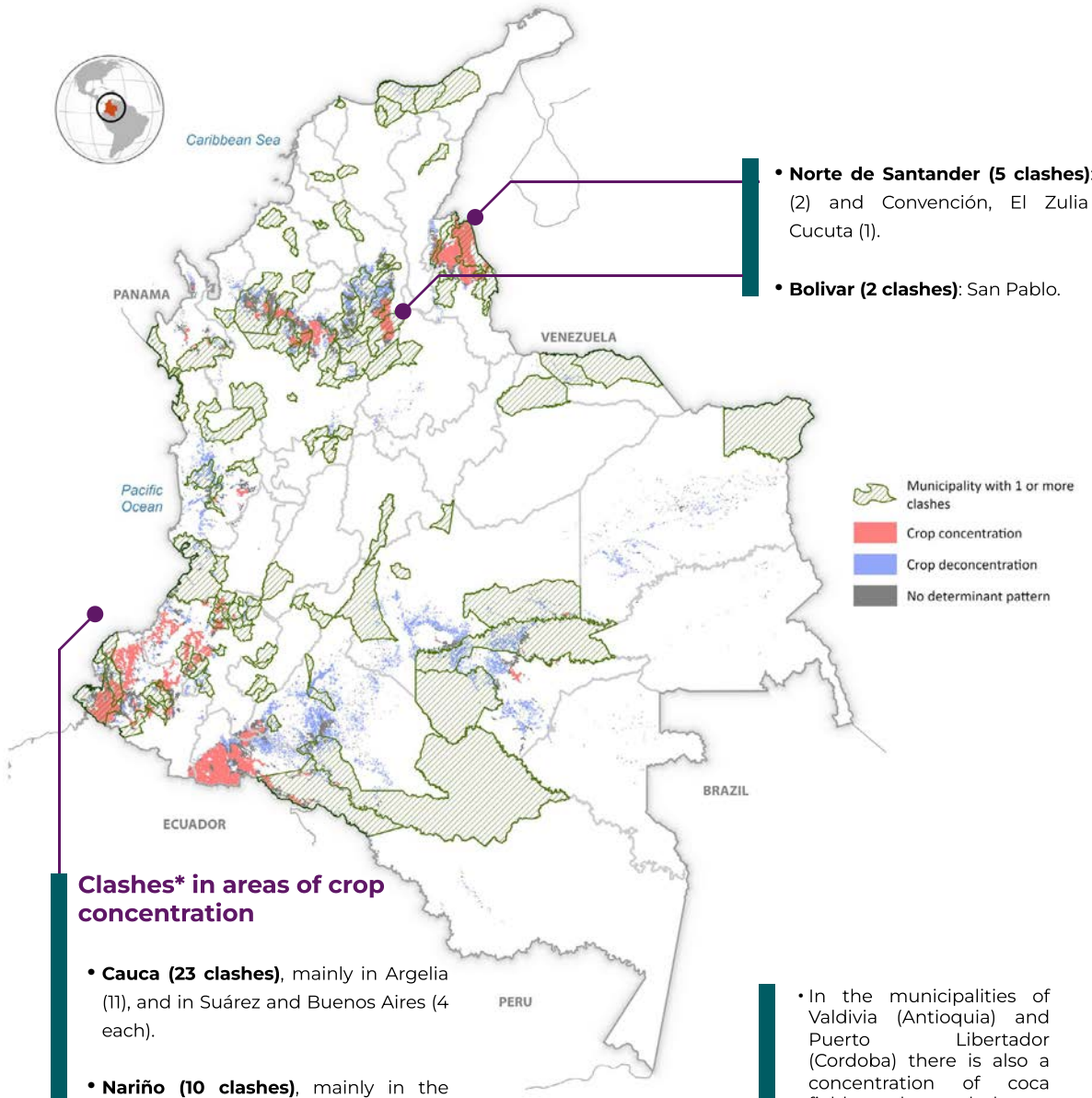
When analyzing forced displacements related to the armed conflict in the municipalities located in the deconcentration zones between 2022 and 2023, a 44% reduction is observed in the occurrence of this victimizing event, which reveals a significant improvement in the security conditions of these territories.

In 2023, combats between law enforcement and IAGs reflect a large difference between concentration and deconcentration zones. Based on data provided by the JEP, 42% of municipalities in concentration zones reported at least one combat, while this percentage drops to 24% in deconcentration zones. This data shows how the dynamics of the armed conflict continue to be significantly more intense in territories where the consolidated presence of illicit crops persists (Infographic 4).

Lastly, in terms of extortion, the rate per 100,000 inhabitants shows slight variations between the concentration and deconcentration zones. In 2023, based on National Police figures, concentration zones reported an average of 18 extortions per 100,000 inhabitants compared to 20 in deconcentration zones.

## Violence and presence of illegal armed groups in coca cultivation concentration zones

- The fragile security conditions in the concentration and deconcentration zones of coca cultivation are due, among other reasons, to the continuous presence of organized armed groups - **OAGs**, residual organized armed groups – **r-OAG** and organized criminal groups – **OCGs**.
- In **42%** of the municipalities where the **concentration** of coca cultivation is predominant, there was at least one clash betweeen armed groups. In the case of those with **deconcentration**, clashes ocurred in **24%** of the municipalities.
- 16% of the municipalities in the deconcentration zones did not report the presence of illegal armed groups, whereas in the concentration zones this percentage drops to 2%.




- **Norte de Santander (5 clashes)**: Tibu (2) and Convención, El Zulia and Cucuta (1).
- **Bolivar (2 clashes)**: San Pablo.

## Clashes* in areas of crop concentration

- **Cauca (23 clashes)**, mainly in Argelia (11), and in Suárez and Buenos Aires (4 each).
- **Nariño (10 clashes)**, mainly in the municipality of Samaniego (4).
- **Valle del Cauca (2 clashes)**: Jamundí.

- In the municipalities of Valdivia (Antioquia) and Puerto Libertador (Cordoba) there is also a concentration of coca fields, and one clash was recorded in each of them.

* Clashes happen between illegal armed groups, while term confrontation is used to describe the fight between these groups and law enforcement bodies.

**Infographic 4.**
IAGs in coca cultivation concentration zones

# Convergence

The conditions of vulnerability of areas with coca cultivation have turned some areas of Colombian territory into favorable places for drug trafficking to permeate different sectors of society, facilitating the emergence of different crimes such as money laundering, corruption and other illegal activities. A high percentage of the areas that have historically been planted with coca have had a forestry orientation, which has led to activities such as forest degradation and deforestation. Similarly, the mining potential for gold extraction in some Colombian territories adds to this problem, encouraging the illicit extraction of minerals and other activities that allow IAGs to generate income to maintain their operations.

There are initial activities that pave the way for the development of illicit economies, such as deforestation and forest clearing. These activities transform the environment, weakening ecosystems and facilitating the arrival of resource exploitation activities, such as the illicit extraction of minerals or the production of cocaine hydrochloride. Once these resources have been obtained, this generates dynamics that, although they generally take place outside the affected rural areas, sometimes take place in the municipalities near these activities, where various mechanisms are used to launder the money derived from said illicit economies. The populated centers become strategic points for the transformation of capital generated by deforestation, illegal mining and coca cultivation into goods and services, which suggests a possible link between these activities in rural areas and money laundering mechanisms in nearby urban areas.

This hypothesis raises the need to develop a monitoring system to articulate the dynamics between rural and urban areas, since there is currently no tool that captures the interaction between both territories in a comprehensive manner. However, the phenomenon of criminal convergence is presumably not limited to rural areas and that illicit economies find in nearby cities a space to legitimize capital from activities such as deforestation, illegal mining and coca cultivation. The creation of such a monitoring system could contribute to a better understanding of the links between rural and urban areas and facilitate more effective interventions in the fight against illicit economies and organized crime.

This has contributed to certain areas being considered zones of criminal convergence, where drug trafficking, armed conflict and other illicit activities mutually reinforce each other, worsening the security situation and hindering the social and economic development of these regions. The map shows, on the one hand, the presence of coca cultivated areas in dark green and the points where there are concentrations of illicit gold extraction (orange) or deforestation (red), as well as those areas where one or both activities converge with illicit crops; on the other hand, data on the presence of armed groups (in red colors) together with data on homicides of social leaders in the last seven years are superimposed.

These conditions put at risk the population that develops social control actions against activities that affect the environment. For example, in 2023, 51% of the assassinations of social leaders were registered in municipalities with coca cultivation. Excluding Bogotá and Cali, the municipalities where the presence of three and four armed groups was reported account for at least one of the activities (coca cultivation, illicit mineral extraction or deforestation) and accounted for 14% of the

murders. In terms of criminal convergence, 80% of the total number of armed groups identified in 2023 are located in municipalities where at least one of these activities exists. Moreover, 21% of the total number of armed groups are found in the municipalities where the three activities were detected.

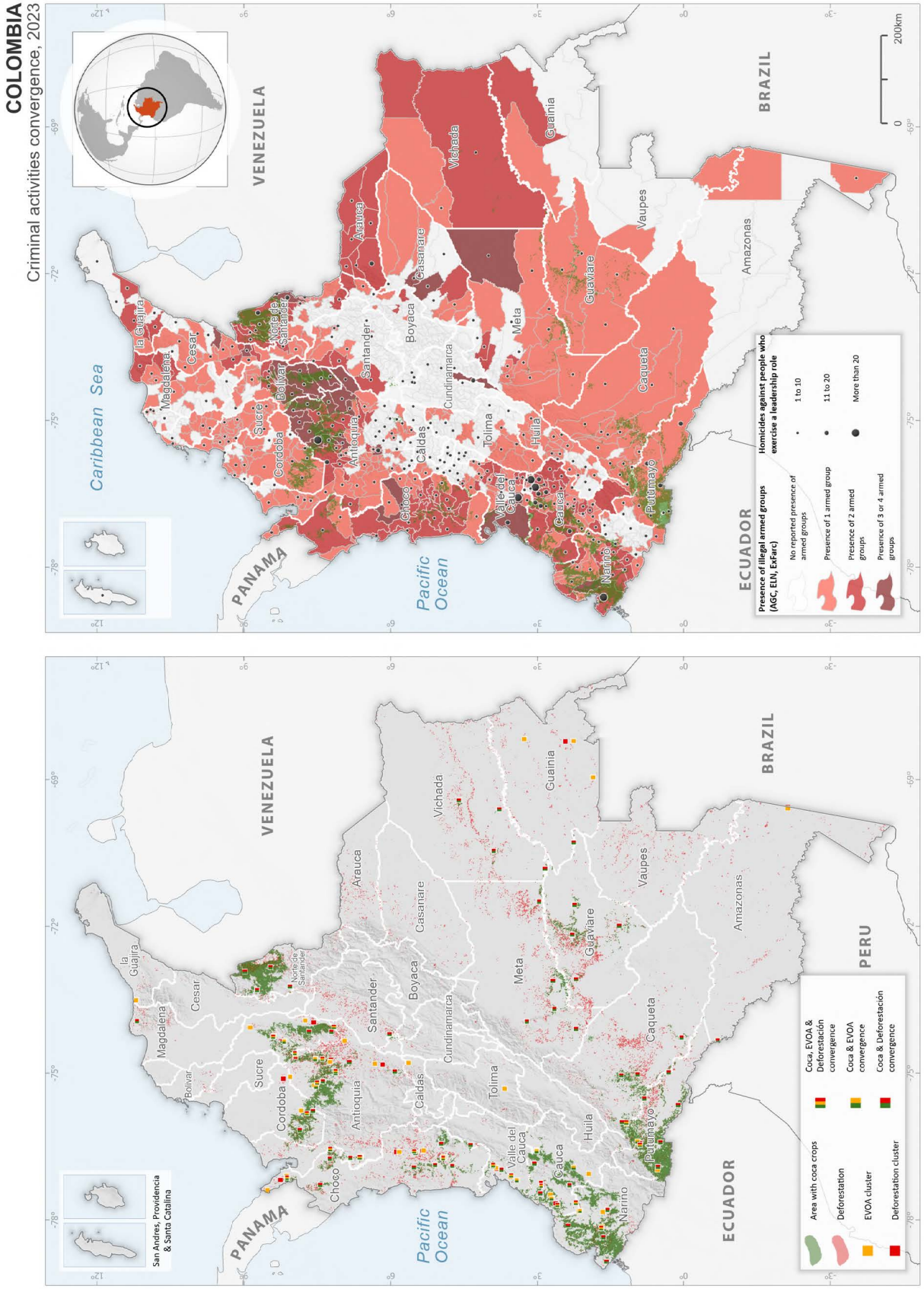
This exercise is a first approximation to map actions that can be an indirect indicator of criminal convergence (for those that can be monitored from remote sensing); nevertheless, extended monitoring systems must be developed to analyze not only the illicit activities mentioned, but also to identify other associated crimes (that are not perceptible in the territory through satellite information) in areas where this condition could lead to a greater presence of actions carried out by IAGs. Furthermore, and as previously mentioned, the urban context must also be analyzed, since criminal convergence is not limited to rural areas and can have significant implications in urban environments. This would allow effective intervention in these areas and improve the understanding of the criminal phenomenon as a whole.

**Note:**

** The identification of the areas of convergence of criminal activities was based on the delimitation by 1 km² grids of the areas affected by the three phenomena (coca cultivation, evidence of alluvial gold mining [EVOA, acronym in Spanish] and deforestation) separately, the result of which was spatially superimposed. Therefore, areas with only one activity, as well as those with two or three superimposed activities, could be delimited.

The presence of armed groups per municipality was obtained with information from the JEP, which has identified the presence of 0 to 4 types of groups, including: ELN, post-FARC-EP groups (Estado Mayor Central and Second Marquetalia, mainly), Clan del Golfo (AGC) and other armed groups. As of 2023, only four municipalities have identified the four types of groups: Cali and Buenaventura in Valle del Cauca, and Valdivia in Antioquia.

The number of social leaders killed was obtained from data from the Institute for Development and Peace Studies (Indepaz, acronym in Spanish) and includes the total number of leaders killed between January 1, 2017 and December 31, 2023 across the country.




*Sources: For coca crops and gold minning, Government of Colombia - Monitoring System supported by UNODC. For homicides against people who exercise leadership roles and illegal armed groups, Special Jurisdiction for Peace (JEP). For deforestation Hidrology, Meteorology and Environmental Studies Institute (IDEAM).*
*Limits, names and titles used in this map don't constitute a recognition or acceptance by the United Nations*

**Map 3.**
Convergence of criminal activities, 2023

## For the eighth consecutive year, the estimate of potential cocaine production in Colombia increases, reaching 2,664 mt in 2023

The pressure of increased global demand for cocaine, as well as the convergence between transnational organized crime (TOC), organized crime and IAGs, continue to exert pressure on local and regional dynamics in the territories where coca cultivation is present in Colombia, particularly in the areas where coca cultivation is concentrated.

This pressure manifests itself beyond the area planted with coca and is aligned with the logistics of national and international trafficking and the establishment of infrastructures for the production of cocaine and the chemicals needed for its transformation.

The following are some concepts that shall facilitate the understanding of this section.

Potential cocaine production refers to the amount of cocaine at 100% purity that could theoretically be produced from the detected hectares of coca; it depends on the stability of the cultivation, the amount of leaves that can be obtained from it, the amount of alkaloid that is present in the leaves and the capacity of the processors to extract that alkaloid and transform it into cocaine.

The estimate of potential cocaine production is calculated by integrating the factors presented in table 7 for each region.

**Table 7.**
Factors in the determination of potential cocaine production

| Factor | Scope | Results[1] |
|---|---|---|
| **01** Productive area: area detected by persistence factor | Source: Persistence factor (PF). UNODC-SIMCI | 2023: 248,414 ha |
| **02** Annual fresh coca leaf yield (mt/ha/year) | Yield 2023: 8.5 (mt/ha/year)<br>Source: Productivity studies. UNODC-SIMCI and Government of Colombia[1]. | Potential production of fresh coca leaf 2023: 2,108,635 mt (1,872,379 mt-2,548,086 mt) |
| **03** Primary transformation factors | | |
| **3.1.** Average cocaine paste/base obtained per metric ton of fresh coca leaf (kg of paste/base/mt of leaf) | Conversion factors:<br>In-farm cocaine base paste (CBP): 2.19 (kg/mt of coca leaf) In-farm cocaine base (CB) and Off-farm cocaine base (CB): 1.45 (kg/mt of coca leaf)[1]<br>Source: UNODC-SIMCI and Government of Colombia (1. productivity studies, 2. extraction efficiency exercise 2010 and 2015). | Potential cocaine base production 2023: 3,330 mt (2,958 mt-4,023 mt) |
| **3.2.** Division of labor in the coca leaf sale and processing activities | · 5.5% growers processing CB<br>· 67.8% growers processing CBP<br>· 26.7% growers selling fresh leaves<br>Source: Government of Colombia and UNODC (2023). Production and yield studies, Phase V closure. Internal document. | |
| **04** Secondary transformation factors | | |
| **4.1.** Purity of cocaine base | Pure cocaine base: 80%.<br>Source: Government of Colombia and UNODC (2012). Efficiency Studies of the Transformation to Cocaine Hydrochloride. Page 20. Internal document. | Potential cocaine hydrochloride production 2023: 2,664 mt (2,367 mt-3,219) mt |
| **4.2.** Conversion factor base kg/ hydrochloride kg | Conversion factor base kg/ hydrochloride kg: 1:1<br>Source: UNODC-PRELAC (2016). Characterization of the Coca Leaf Transformation Process into Cocaine Hydrochloride. into Cocaine Hydrochloride. Page 51. Internal document. | |

Note:
**1.** Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC). Monitoring Report of territories with the presence of coca cultivation (2023).

## Key concepts

1. **Productive area (area detected by persistence factor):** the productive area during the year corresponds to the implementation of a spatial analysis methodology that allows the estimation of the persistence of coca cultivation through the construction of a factor that allows modeling, field by field, the dynamics of the cultivated area during the year, based on the incorporation and systematization of the available information of the variables that directly affect stability, such as the supply control actions registered in the platform and vegetation cover, among others.

2. **Annual fresh coca leaf yield:** amount of material harvested per area unit (e.g., kg/ha) per year.

3. **Conversion factor:** this is a numerical ratio that transforms a unit of measurement into an equivalent unit of measurement. It works as a constant that multiplies or divides the initial value to change it from one unit to another without altering its real magnitude. In this context, the conversion factor refers to the amount of coca leaves required to produce one kilogram of cocaine. (Figure 7).

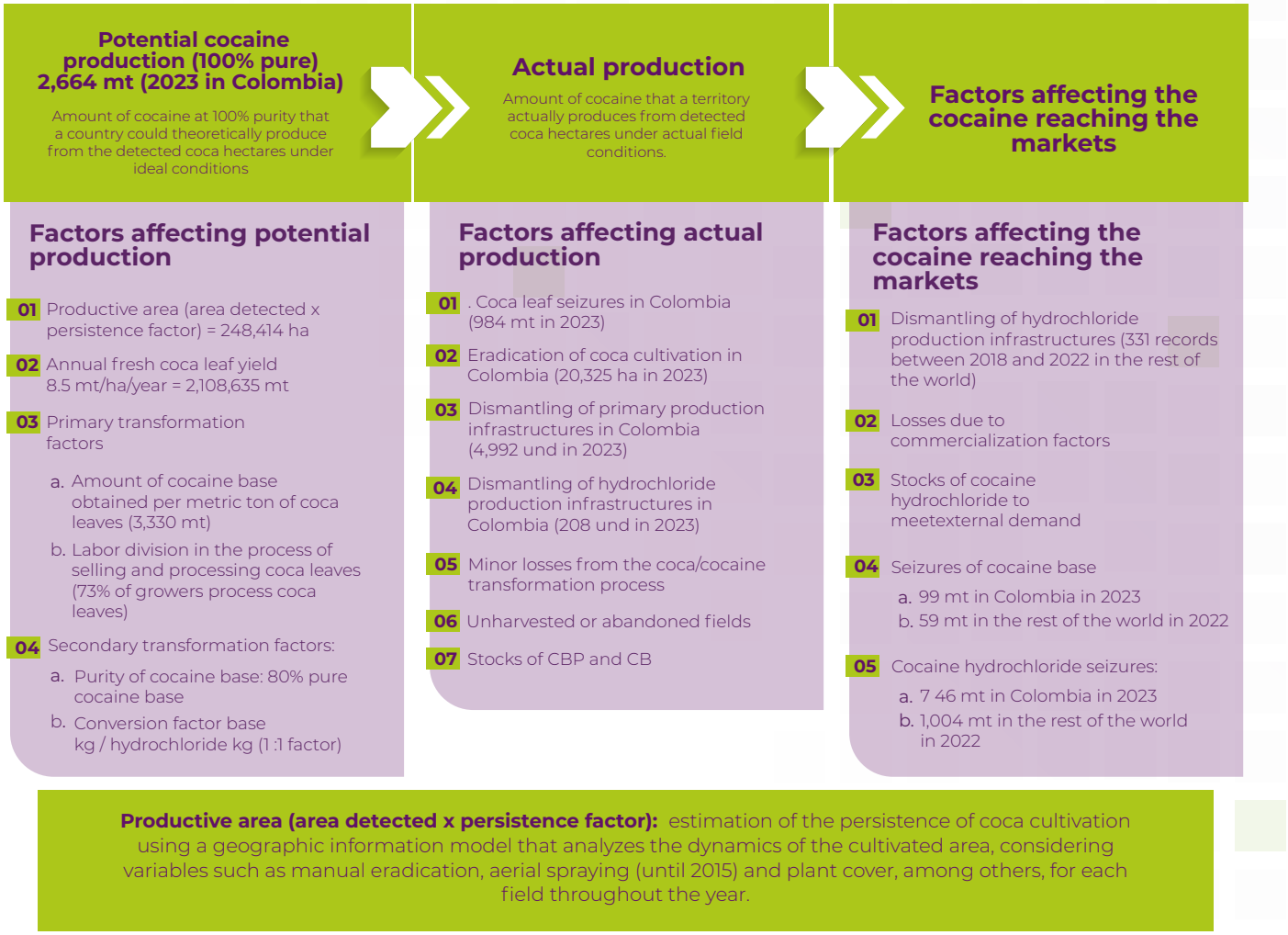



**Figure 7.**
Factors affecting potential, actual and market production

In 2023, potential cocaine production in Colombia was estimated at 2,664 mt, continuing an upward trend that has been consolidating since 2013, as a result not only of the sustained increase in the area planted, but also of factors such as the efficiency of cocaine extraction and conversion and local incentives to improve the productivity levels of coca fields (Figure 8).

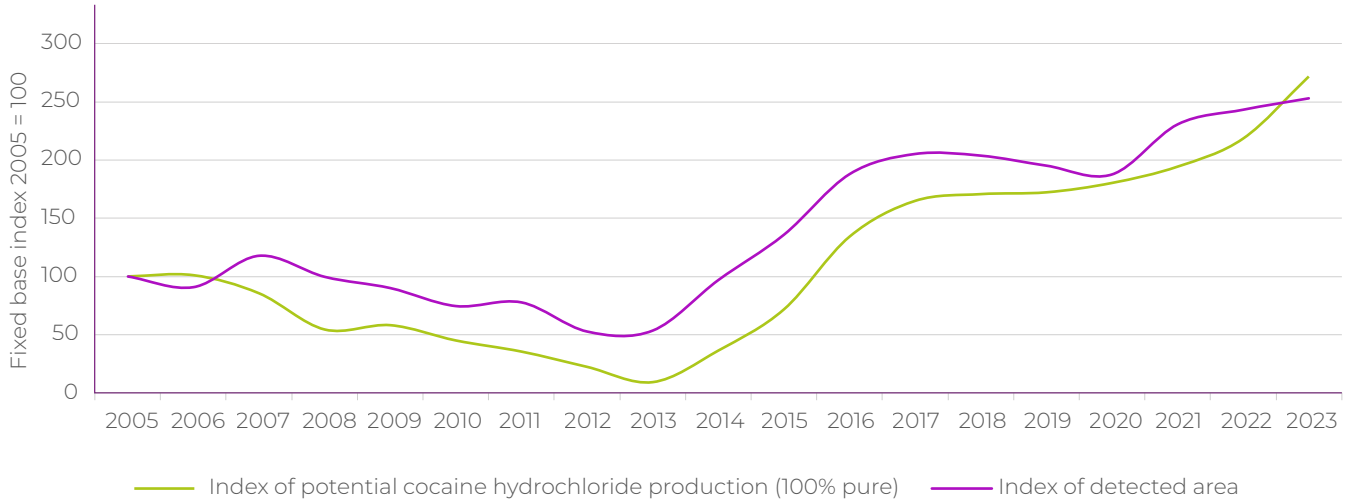



**Figure 8.**
Fixed base index of potential cocaine hydrochloride production, 2005 vs. area detected under coca cultivation[(1), (2), (3)]

**Source:** UNODC-SIMCI.

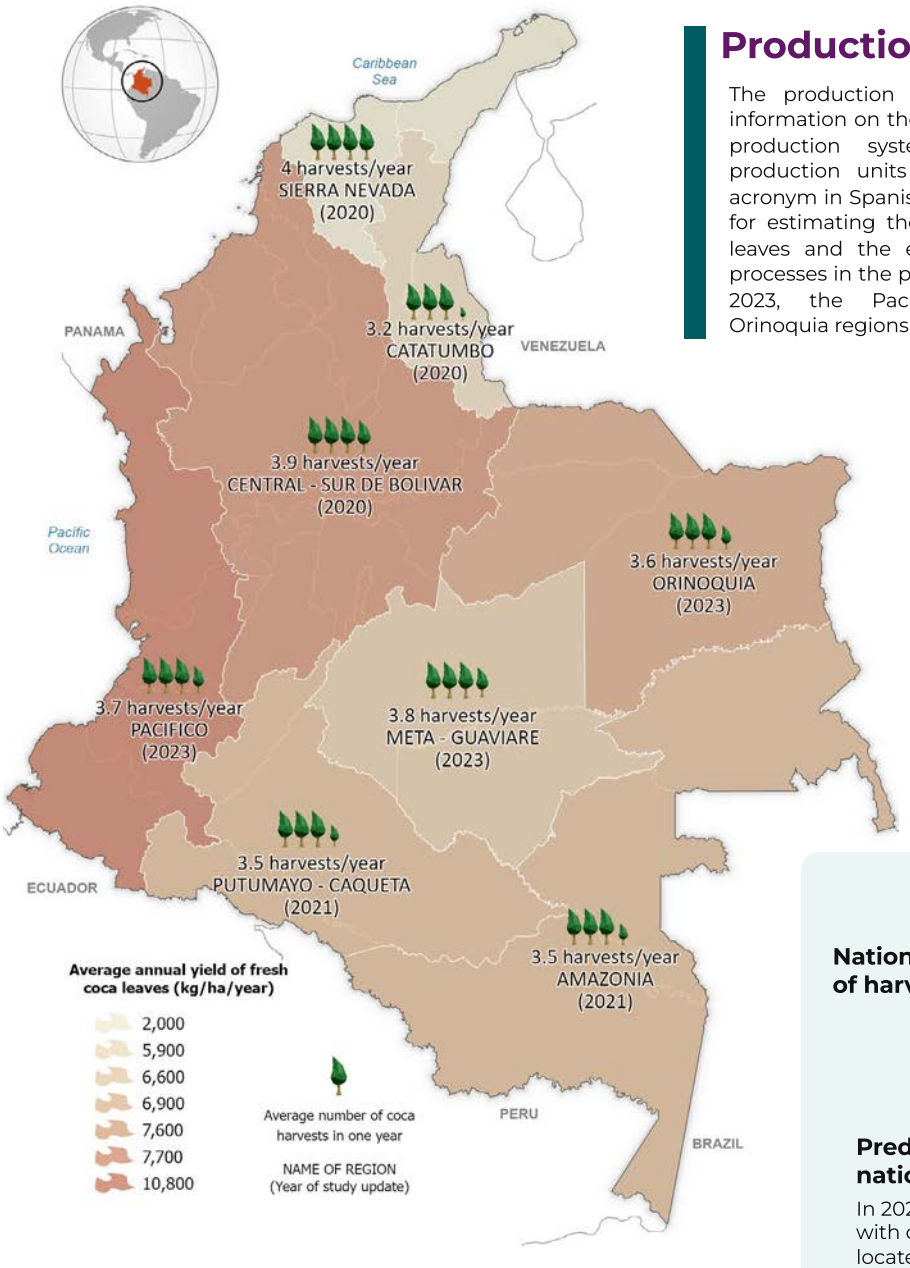
**Note:**

**(1)** To facilitate the comparative analysis of the growth of the aforementioned variables, fixed base indexes were estimated as of 2005. A fixed base index goes beyond the comparison of two points in time and seeks to analyze variations in relation to a fixed reference period.

**(2)** The estimate of the area detected index was based on national data on the area detected as of December 31 of each year in Colombia, published by UNODC-SIMCI.

**(3)** The potential production rate of pure cocaine hydrochloride was estimated under the assumption that all production obtained from the cultivation is processed in the territory and there is no resource mobility. These estimates constitute a reference point for comparison, since, in practice, no pure cocaine hydrochloride markets are set up.

Potential production is estimated at the regional level as shown in Infographic 5.




## Production and yield

The production and yield studies provide information on the main characteristics of the production systems in the agricultural production units with coca (UPAC, for its acronym in Spanish), as well as the key factors for estimating the capacity to produce coca leaves and the efficiency of the extraction processes in the primary production phase. By 2023, the Pacifico, Meta-Guaviare and Orinoquia regions were updated.

**National average number of harvests per year: 4**

**Predominant cultivar nationwide**

In 2023, 94 % of the crops with only one cultivar were located between **Chipara, Injerta and Bonita**

## Points of interest

**Annual yield** is defined as the amount of fresh coca leaves that a hectare can produce in 1 year. The national average for 2023 is **8.5 mt/ha/year** and the highest value is located in the **Pacifico region with 10.8 mt/ha/year**.

**Potential fresh coca leaf prroduction** is the **maximum** amount of fresh coca leaves that could be obtained from the total coca production area. The national total for 2023 is **2,108,600 mt** and the highest value is found in the **Pacifico region with 1,138,154 mt.**

**Infographic 5.**
Production and yield

In order to understand the scope of the "potential production", it must be taken into account that the estimation of magnitudes referring to illegal activities is highly complex, which is why international standards are used to allow comparability between countries, the construction of historical series and a description of the phenomenon.

The estimate of 2,664 mt refers to potential production, not to the cocaine that was actually produced or that actually reached the markets. For instance, a research conducted by UNODC and the Government of Colombia, under the framework of the 2023 report, found that, while most of the coca fields in Colombia were harvested in 2023, approximately 10% of them did not show any sign of having been scraped, i.e. that 10% of the coca fields could potentially produce cocaine and yet, because they were not harvested, they did not produce a single gram of cocaine.

Calculating the amount of cocaine that actually reaches the markets has complexities beyond the scope of the research conducted by UNODC and the Government of Colombia. The following is a non-exhaustive list of the elements that are not contemplated in the potential cocaine production and that should be considered to estimate the cocaine production reaching the markets:

1. Manual eradication is not the only factor whereby coca fields are eliminated/abandoned; however, there are no recording systems in place to incorporate other variables into the monitoring system. This means that the fields that are abandoned or eradicated in the framework of other programs or due to external situations
2. in the territory, may not be producing cocaine and yet be considered in the estimation of potential cocaine production.
3. Growers may not harvest the leaf or extract the alkaloid, or they may fail to sell the leaf or its by-products and this production may not reach the markets.
4. Seizures of cocaine leaves, paste, base or hydrochloride do not reach the markets.
5. It is possible that part of the production is used locally and does not reach international markets.
6. Although research indicates that losses (from accidental spills, process damage or accidents in transit) are not significant, they represent cocaine that does not reach markets.
7. As a result of market conditions, it is possible that some of the cocaine produced is kept in stocks or stored and does not reach the market.

UNODC, based on data obtained from production and yield studies developed with the Government of Colombia, estimates the potential cocaine production since 2005. The productive area factor is updated every year using the coca cultivation census, and based on production and yield studies, two factors are updated: potential leaf production and alkaloid extraction by the grower. The production and yield studies are renewed per region with one or two regions each year, which means that a phase to cover the entire country is completed every three to four years. Five phases[71] have been completed by 2023, as shown in Table 8.

**71-** In 2005, information gathering began on the productivity of coca cultivation in the eight regions where coca cultivation has an impact at a national level. From then on, one or two regions are updated each year; each national round is completed in approximately four years. To date, five national phases have been consolidated, according to the agreements between UNODC and the Colombian government: Phase I, the baseline study, while the regional update carried out between 2007-2010 refers to Phase II; Phase III was carried out in the period 2011-2014, and Phase IV was carried out between 2015 -2019. Phase V began in 2020 with the collection of information in the Sierra Nevada, Central and Catatumbo regions; then in 2021 with Putumayo-Caquetá and finally in 2023 with Meta-Guaviare, Orinoquía and the Pacific region. Phase VI began in 2024 with the collection of information from the Central, Catatumbo and Putumayo-Caquetá regions.

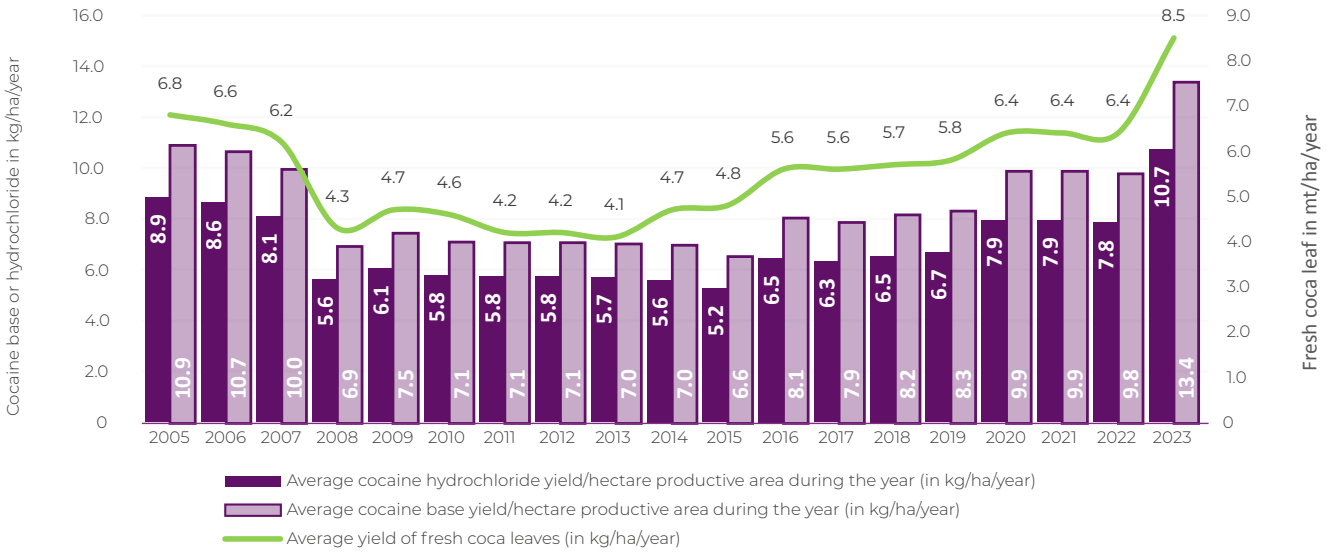
**Table 8.**

Production and yield surveys per phase, 2005-2023

| Region | Phase I | Phase II | | | | Phase III | | | | Phase IV | | | | Phase V | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2005 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2017 | 2018 | 2019 | 2020 | 2021 | 2023 |
| Catatumbo | 135 | 135 | | | | 120 | | | | 135 | | | | 180 | | |
| Central | 165 | 165 | | | | 180 | | | | 165 | | | | 150 | | |
| Meta-Guaviare | 309 | | 300 | | | | | 300 | | | | 300 | | | | 300 |
| Orinoquía | 150 | | | | 135 | | | 150 | | | | 150 | | | | 150 |
| Pacific | 255 | | | 276 | | | | | 270 | | | | 300 | | | 450 |
| Putumayo-Caquetá | 240 | | 210 | | | | 240 | | | | 300 | | | | 375 | |
| Sierra Nevada | 135 | 135 | | | | 45(c) | | | | 30 | | | | 36 | | |
| **Total** | 1,389 | 435 | 510 | 276 | 135 | 345 | 240 | 450 | 270 | 330 | 300 | 450 | 300 | 366 | 375 | 900 |

This report indicates that in 10 years the potential coca leaf production in Colombia doubled from 4.1 mt/ha/year in 2013 to 8.5 mt/ha/year in 2023; the potential production of cocaine base, with a purity level of 80%[72], increased from 7 kg/ha/year in 2013 to 13.4 kg/ha/year in 2023 (Figure 9). It should be noted that in Colombia there is no record of massive use of the licit coca leaf industry or of any by-product derived from coca cultivation; therefore, all the coca cultivated tends to be processed as an input for processing and obtaining cocaine base. Furthermore, there may be traditional use related to some indigenous communities; however, this detection model does not include this type of cultivation.

**72-**This production volume was estimated considering a purity level of 80%, which means that, from an estimated kilogram of cocaine base, 800 grams of free cocaine base and 200 grams of impurities are obtained.




## Figure 9.

Estimated capacity to obtain fresh coca leaves (mt/ha/year), cocaine base and cocaine hydrochloride per hectare per year (kg/ha/year)[(1), (2), (3)]

**Source:** Government of Colombia and UNODC-SIMCI.

**Note:**

**(1)** The annual national average yield of coca leaf per hectare was estimated through the implicit yield obtained as a result of the ratio between the total tons of fresh coca leaves obtained in the different regions affected by coca cultivation and the productive area during the year at the national level. The annual productivity of coca cultivation in each of the regions was obtained from the results of the regional updates of the coca cultivation productivity studies, by means of harvest testing.

**(2)** The annual national average yield of potential cocaine base production per hectare harvested is estimated from the ratio between annual national cocaine base production, as the sum of regional estimates, and productive hectares during the year. The cocaine base production obtained is presumed to be 80% pure; similarly, the estimates are based on the established methodology of cocaine production potential.

**(3)** The average annual cocaine hydrochloride yield per productive hectare is the result of the ratio between the potential production of pure cocaine hydrochloride at the national level, estimated according to its methodology, and the productive hectares during the year. The potential production of pure cocaine hydrochloride was calculated under the assumption that all production obtained from cultivation is processed in the territory and that there is no resource mobility. These estimates constitute a reference point for comparison, since, in practice, no pure cocaine hydrochloride markets are set up.

It is possible to point out that, given the expansion of cocaine supply, demand is also responding to this behavior, opening new trafficking routes and diversifying the means of concealment to reach new users in Europe, Asia and Africa. Among other reasons, this behavior is the result of the convergence of several factors, both economic and conjunctural, that influence the expansion of coca cultivation in Colombia, as well as the increase in yields per hectare and greater efficiency in its transformation into cocaine and in national and international trafficking.

The following is an explanation of the main characteristics and dynamics found, based on the results of the research conducted by the Government of Colombia and UNODC-SIMCI[73], as well as available information.

**73-**By means of lines of research under the framework of integrated monitoring, such as updating the productivity studies of coca cultivation in Colombia Phase V (2020-2023); characterization of the cocaine hydrochloride production infrastructures in 2017 and 2021; characterization of the productive coca hotspots: Catatumbo, Valdivia-Cáceres-Taraza (2021), Putumayo-Border, Orito Vides (2022), Argelia and El Tambo, El Charco-Olaya Herrera (2023); monitoring of illicit drug prices, based on the information available in the years 2019, 2020, 2021, 2022, 2023, studies carried out in the years 2021 and 2023, among others.

## The persistence of the fields in the same territories for more than ten years, together with a greater concentration of the area under coca cultivation and greater stability of the fields, facilitates higher productivity

Among the key factors to understand the increase in production potential, persistence, concentration and stability of the cultivation in strategic areas must be considered.

In the last 10 years, 89.5% of the coca has *remained* in the same territories; hence, it can be deduced that producers in these areas have greater expertise and are better suited to adapt to external processes that may affect, for example, the market.

Similarly, during this period, 50% of the coca is located in only 30% of the territory with a coca presence in 2023, a clear evidence of the *concentration* of the phenomenon that is also evident from the administrative standpoint: only 10 municipalities concentrate 45% of the coca and 63% of it is located in three departments (Nariño, Norte de Santander and Putumayo).

In studying the other factors that influence higher productivity, the *stability of the fields* should be analyzed. 53% of the coca fields in 2023 had been reported more than twice between 2020-2022 and 76% of the coca fields in 2023 coincide with a coca field identified in 2022, i.e. there are territories where the fields reached their ideal maturity stage in terms of leaf production; This is consistent with what was reported by producers in the production and yield studies, whose national results indicate that 54% of Phase V fields are between 2-4 years old, this being the optimal production period and in turn is related to the maturity reached by those new fields identified in the peak of coca planted area reported in 2021.

## Are coca fields being harvested?

The estimate of potential cocaine production is based on the assumption that the detected fields are being destined for cocaine production and, therefore, their leaves are harvested; nevertheless, the market situation seems to indicate that, in some cases, the fields remain under cultivation but are not harvested. UNODC conducted three exercises to answer this question, whose results are presented below.

92% of the fields evaluated by indirect methods showed changes in biomass that could be attributable to harvesting activities. Although the exact frequency of these harvests could not be determined, recurrent patterns were identified in most of the fields, suggesting the existence of harvest cycles. These findings were supported by 450 field surveys conducted in the Pacific region, which provided information on harvest frequency indicating that producers harvest an average of four crops per year.

In the deconcentration zones, 13% of the fields showed no changes in leaf density, indicating that they were not being harvested; in the concentration and productive hotspot zones, 92% and 94% of the fields evaluated, respectively, showed cyclical harvesting patterns (Figure 10).

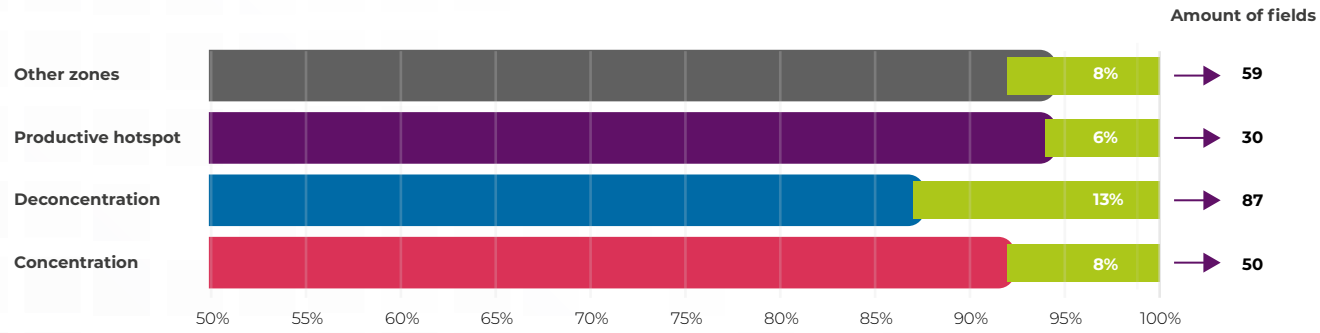



**Figure 10.**
Percentage of seasonality of coca cultivation per study area

The measurements were carried out in fields resulting from the interpretation of satellite images for the 2023 coca cultivation survey, as well as in fields identified in the PREVER capture platform, categorized as harvested. In both cases each field was geo-referenced, which allowed the results to be disaggregated into hotspot, concentration and deconcentration zones.

For the indirect method, Landsat, Sentinel-2, Planet and other high resolution (50 cm) satellite images were used to calculate the NDVI spectral index, positively related to biomass, which allowed us to evaluate changes in leaf density over time. Image processing was performed in Google Earth Engine, generating three-year time series (2021-2023) for each selected pixel[74].

**74-**The analysis included careful treatment of the data from the coca fields to minimize factors such as leaf variability within the fields. To this end, specific points were analyzed, eliminating outliers associated with field boundaries or mixed plant cover. In addition, the high cloud cover in the study areas limited the continuity of the time series, which forced us to integrate readings from multiple sensors to guarantee at least one observation per month.

For example, the Pacific region, comprising the departments of Cauca, Chocó, Nariño and Valle del Cauca, represented 42% of the area detected in the country in 2023, concentrating 57% of this increase; in other words, nearly 13,000 ha of the 22,544 ha additional to those detected in 2022.

The stability of the fields has a special significance when evaluating whether the field was productive all year round. In this regard, UNODC estimates the continuity throughout the year based on the persistence factor in which, from the integration of available information, the percentage of the year in which a field is productive is estimated; when this percentage is multiplied by the area of the field, the productive area variable is obtained. The productive area during the year is estimated to have increased from 222,000 ha in 2022 to 248,000 ha in 2023 (Figure 11); i.e., an increase of 12%.

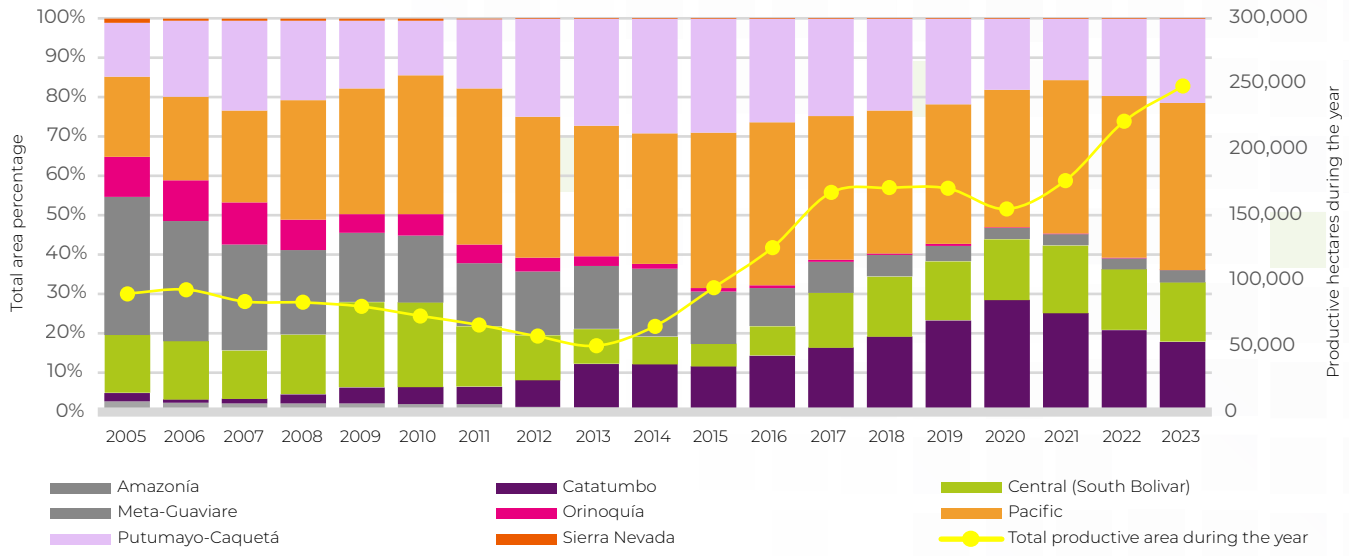
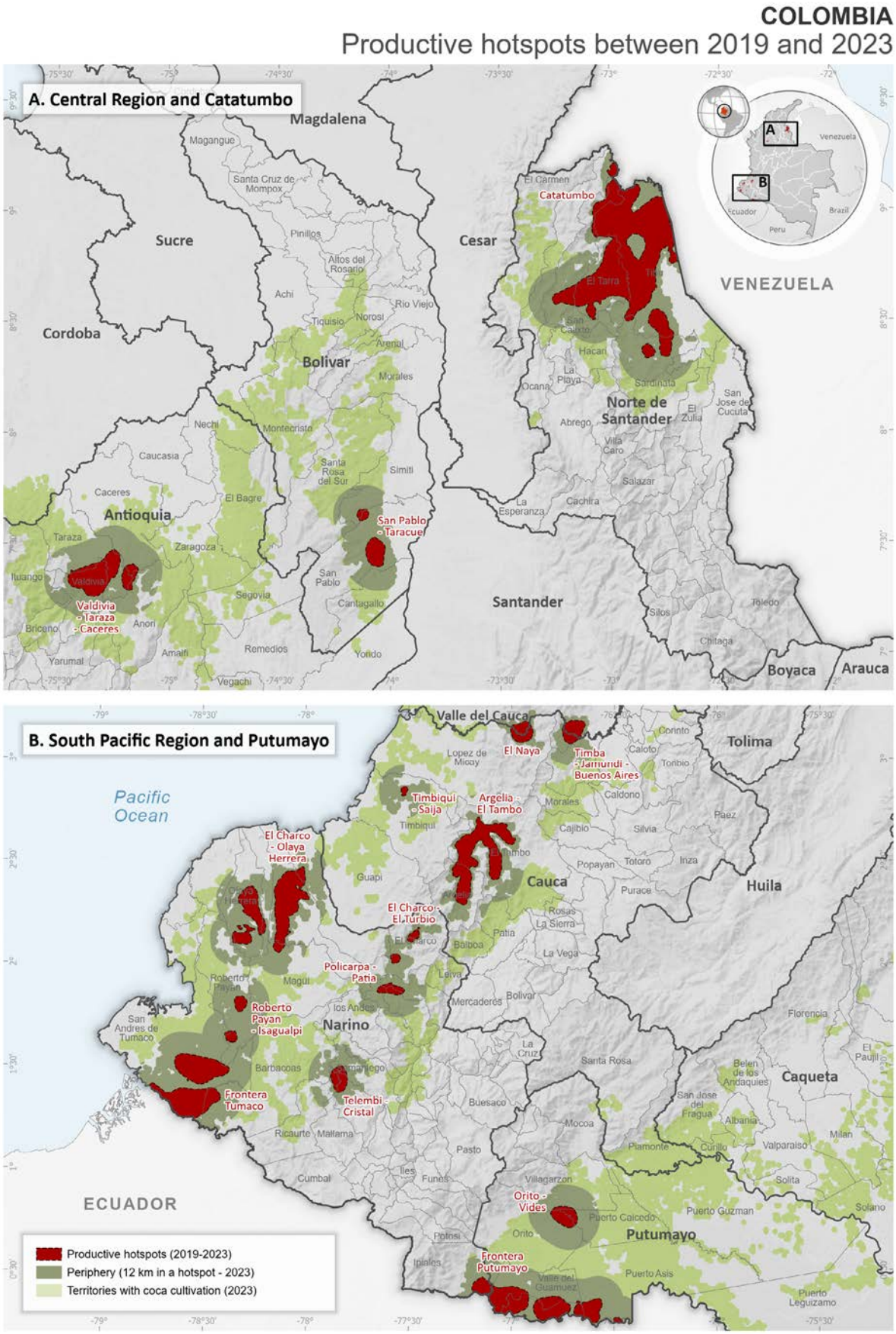



**Figure 11.**
Total productive area vs. annual regional share, 2005-2023




*Sources: Government of Colombia - Monitoring System Supported by UNODC.*
*The Boundaries, names and titles used on this map do not constitute recognition or acceptance by the United Nations.*

**Map 4.**
Productive hotspots, 2019-2023

## **Productive hotspots:** concentration, persistence and stability

Starting in 2015, the establishment of strategic zones was identified in which the area with coca tended to concentrate and remain, and in which, subsequently, different activities associated with the cultivation and processing of coca leaves into cocaine hydrochloride converged. As a result, the generation of incentives gradually materialized in better agricultural practices with higher levels of productivity in the fields, with the purpose of obtaining more cocaine per hectare planted, in the case of the productive hotspots and their peripheries.

Since then, the increased productivity and coordination between illicit activities for cocaine production and trafficking in strategic areas has given rise to the establishment of *coca production hotspots*[75]. The analysis has evolved into a multidimensional understanding that reveals the interaction of geographic, socioeconomic, institutional and security factors, contributing significantly to the sustainability and consolidation of these areas in the cocaine production chain.

The cluster-type production model with connections to the global market centered around coca-cocaine was identified in 2014, on a smaller scale, in the Pacific region[76]; subsequently confirmed in 2019 not only from the analysis of the geography of coca, but also by the productivity conditions of the fields[77].

Hotspots provide incentives to increase coca-cocaine production in less territory, especially in areas that are key to the sustainability of connections with international trafficking corridors, whether they are territories close to international borders or areas with hegemonic IAG control.

At the end of 2023, the 15 identified hotspots[78] remain, concentrating 39% of coca, an increase of 8% compared to 2022, and occupying 14% of the territory with coca cultivation presence. Out of these 15 hotspots, 14 show an upward trend, while only one (San Pablo-Taracué) shows a downward trend. The hotspots contributing most to this increase are, in order: Tumaco-Border (Nariño), El Charco-Olaya Herrera (Nariño) and Timba Jamundí-Buenos Aires (Valle del Cauca), located in the Pacific region; and the hotspots of Putumayo-Border (Putumayo) and Catatumbo (Norte de Santander), the latter still concentrating the largest area under cultivation, with nearly 29,000 hectares, representing 30% of the total number of hotspots and 11% of the national total.

In the coca productive hotspot areas, the production of larger quantities of raw material (coca leaf, cocaine paste or, in a few cases, cocaine base) and even final products (cocaine base and cocaine hydrochloride) is promoted, mainly for international trafficking. Nevertheless, areas peripheral to the productive coca hotspots were also identified

**75-**A productive hotspot is defined spatially (hotspots with 99% confidence) as a territory with a highly significant concentration of coca cultivation (hectares under cultivation per square kilometer) and where the phenomenon has persisted for more than four of the five years analyzed.

**76-**By identifying outliers in the yields promoted by growers in the area of Algeria and El Tambo, in the department of Cauca.

**77-**Thus, in 2019, the average annual yield per hectare in Argelia and El Tambo (Cauca) was 12 metric tons/ha/year, while in the rest of the region it was 5 metric tons/ha/year.

**78-**To date, the 15 hotspots correspond to areas identified at different times: (1) group consolidated in 2019: (a) Catatumbo (Norte de Santander); (b) Tumaco-Border (Nariño); (c) Putumayo-Border (Putumayo); (d) El Charco-Olaya Herrera (Nariño); (e) Argelia-El Tambo (Cauca); (f) Valdivia-Tarazá-Cáceres (Antioquia); (g) El Naya (Cauca); (2) group identified in 2020: (h) Orito-Vides (Putumayo); (i) San Pablo-Taracué (Antioquia); (3) group identified in 2021: (j) Telembí-Cristal (Nariño); (k) Policarpa-Patía (Nariño); (l) Roberto Payán-Isuagualpi (Nariño); (m) El Charco-El Turbo (Nariño); (n) Timbiquí-Saija (Cauca), and (4) hotspot identified in 2022: (ñ) Timba-Jamundí-Buenos Aires (Valle del Cauca).

to play a crucial role in the logistics for cocaine manufacture and trafficking, both as input and raw material supply (if necessary) and as key areas for the outflow of the drug.

The communicating vessels within the concentration zones (inside and on the periphery of the hotspots) generate great concerns regarding local dynamics due to the higher level of economic and territorial dependence. Out of the 100% of the territory under coca cultivation in 2023, 52% belongs to concentration zones with 80% of the area in that year. This is why the homogenization trend of production models across the hotspot zones to their peripheries, now seen in the Pacific, is a cause for concern.

Therefore, the growth of the productive area during the year and the convergence of incentives in the territory, among other factors, have generated an increase in the annual coca leaf yield per hectare. Considering the productive hectares and the production of fresh coca leaves per hectare per year by region, the average capacity to produce coca leaves at the national level per hectare went from 6.8 mt/ha/year in 2005 to 4.1 mt/ha/year in 2013 and then recovered in 2014 (4.7 mt/ha/year), increasing to 8.5 mt/ha/year in 2023.

Productive coca hotspots tend to expand their production patterns[79]; this situation has been evidenced by the higher productivity levels of coca fields, both within the hotspot and in peripheral areas (0-7.5 km and 7.5-15 km)[80] (Table 9).

Among the possible explanations for this situation are the geographic continuity and local connections of the territory within its social, economic, cultural and institutional spheres (seen as formal and informal rules of the game); which facilitate the dissemination and networking among producers' networks to embrace the incentives and "best practices associated with coca-cocaine processing", enacted in the extended territory of the coca-producing hotspots.

**79-** Studies characterizing the productive hotspots: Catatumbo, Valdivia-Tarazá-Cáceres (2021); Orito-Vides and Putumayo-Border (2022); Argelia-El Tambo and El Charco-Olaya-Herrera (2023). The other hotspots were not evaluated as they were not characterized in order to avoid bias.

**80-**The choice of 15 km as the limit in the studies characterizing the productive hotspots is based on research regarding the productivity and yield of coca cultivation. In said research it was emphasized that the PACs travel up to 15 km for activities such as the acquisition of inputs and the sale of produce, thus defining the maximum area of interest. Two comparison zones were established, close (0 to 7.5 km) and far (7.5 to 15 km), with the aim of analyzing the possible area of influence of the hotspots beyond their geographical center and determining differences between the hotspots and their periphery.

**Table 9.**
Productivity indicators in the characterized hotspots, compared to their peripheral areas

| | Indicator | Characterized hotspots | Peripheral zone (0-7.5 km) | Peripheral zone (7.5-15 km) |
|---|---|---|---|---|
| Increased productivity of coca fields | Average annual yield of fresh coca leaves (mt/ha/year) | (8,4-1 0,8) mt/ha/year | (7,7-12,9) mt/ha/year | (6,9-12,6) mt/ha/year |
| More productive harvests | Number of harvests per field (average) | 98 days elapse between harvests in 1 year 2,8 mt/ha/harvest | 94 days elapse between harvests in 1 year 2,5 mt/ha/harvest | 95 days elapse between harvests in 1 year 2,5 mt/ha/harvest |
| The fields are in their most productive years | Percentage of fieldsl in their moast productive years (2-4 years) | (43,7%-75,3%) | (50,9%-74,9%) | (67,3%-75,4%) |
| Increased productive specialization of the PACs | Increased productive specialization at UPACs (% of PACs) | 62% PACs produce CBP/CB | 59% PACs produce CBP/CB | 57% PACs produce CBP/CB |

**Source:**
Government of Colombia and UNODC Characterization studies of the productive hotspots: Catatumbo, Valdivia-Tarazá-Cáceres (2021); Orito-Vides and Putumayo-Border (2022) and Argelia-El Tambo and El Charco-Olaya Herrera (2023).

**Note:** yields correspond to those reported by the PAC.

## Higher productivity of the fields in terms of leaf production compared to historical records, this being a generalized trend in most of the regions under coca cultivation

When analyzing the historical trend (Figure 12), in 2013 the lowest level of leaf potential in Colombia was observed (208,237 mt), explained by the registration of the lowest indexes of both productive hectares (50,760 ha) and annual leaf yield (4.1 mt/ha/year); conversely, since 2020 it is possible to observe that the potential coca leaf production has increased to historical levels; during this year, the potential coca leaf production reached 997,283 mt, a fact that is marked by the implementation of agricultural practices, which resulted in an increase in annual leaf yield (6.4 mt/ha/year).

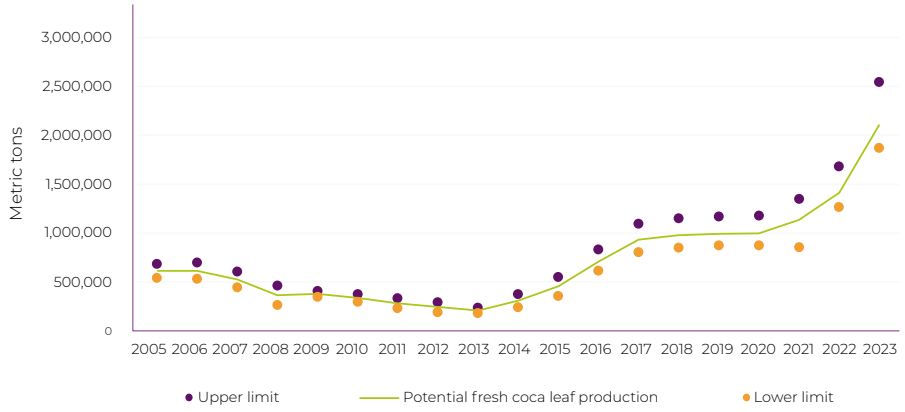



**Figure 12.**
Trend in fresh coca leaf production, 2005-2023

**Source:** Government of Colombia and UNODC-SIMCI.

**Potential fresh coca leaf production in 2023 is estimated at 2,108,635 mt, which represents a 50% increase compared to 2022, yielding 1,413,621 mt. At the regional level, the increase in leaf production is concentrated in the Pacific region (54% vs. 2022)**

The analysis of coca cultivation productivity in the different regions of the country, carried out between Phases I and V, reveals a series of key factors that have been decisive in understanding the agricultural and socioeconomic dynamics in the regions studied (Table 10).

**Table 10.**
Estimated fresh coca leaf production potential in Colombia, 2023

| Region | Productive area during the year (ha) | | | Annual fresh coca leaf yield (kg/ha/year) | | | Potential production of fresh coca leaf (mt/year) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Average | Lower interval | Upper Interval | Average | Lower interval | Upper Interval | Average | Lower interval | Upper Interval |
| Amazonía | 156 | 150 | 175 | 6,900 | 6,300 | 7,500 | 1,077 | 948 | 1,313 |
| Catatumbo | 44,434 | 42,808 | 49,811 | 5,900 | 5,500 | 6,300 | 262,162 | 235,444 | 313,808 |
| Central | 37,524 | 36,150 | 42,064 | 7,700 | 7,300 | 8,100 | 288,931 | 263,896 | 340,717 |
| Meta-Guaviare | 7,456 | 7,183 | 8,359 | 6,600 | 5,900 | 7,200 | 49,212 | 42,382 | 60,181 |
| Orinoquía | 351 | 338 | 394 | 7,600 | 6,700 | 8,600 | 2,668 | 2,266 | 3,385 |
| Pacific | 105,385 | 101,528 | 118,136 | 10,800 | 9,900 | 11,700 | 1,138,154 | 1,005,123 | 1,382,193 |
| Putumayo-Caquetá | 53,105 | 51,161 | 59,531 | 6,900 | 6,300 | 7,500 | 366,424 | 322,316 | 446,480 |
| Sierra Nevada | 3 | 3 | 3 | 2,000 | 1,500 | 2,500 | 6 | 4 | 8 |
| Total nacional | 248,414 | 239,322 | 278,472 | 8,500 | 7,800 | 9,200 | 2,108,635 | 1,872,379 | 2,548,086 |

**Source:** Government of Colombia and UNODC-SIMCI.

One of the most important findings is that the PACs[81] have managed to increase the productivity of coca fields by implementing different agricultural practices, some of which are: use of more productive cultivars, frequent stumping to maintain the crop at its most productive ages, optimization of plant density per hectare, intensified use of agrochemicals, among others; this has had an impact at the regional level in obtaining high yields per hectare (infographic 6, figure 13 and table 1)

**81-** Agricultural Producer with Coca: Natural or legal person who manages the operations of the UPAC and takes the main decisions regarding the use of available resources. The PAC has technical and economic responsibility for the UPAC and can carry out its functions directly or delegate those relating to the day-to-day management of the work to a contracted manager or administrator.

Optimization of plant density per hectare

Phase I **11,600** plants/ha

Phase V **9,300** plants/ha

**20%**

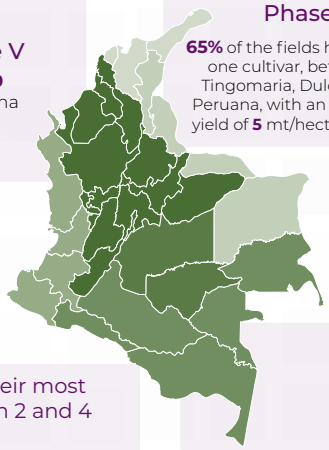
The combination of various types of cultivars

Phase I

**65%** of the fields have only one cultivar, between Tingomaria, Dulce, and Peruana, with an average yield of **5** mt/hectare/year

Phase V

**94%** of the fields with only one cultivar between Chipara, Injerta and Bonita with an average yield of **6.8** mt/hectare/year



Increased and more frequent use of agrochemicals

Phase I

**95** agrochemical products including fertilizers, pesticides and herbicides, applied to UPAC, where **36%** and **20%** of fields reported crop loss and decline respectively (pests and fumigation)

Phase V

**181** agrochemical products including fertilizers, pesticides and herbicides, applied to UPA, where **2%** and **19%** of fields reported crop loss and decline (weather and pests)

Most coca fields are in their most productive years, between 2 and 4 years old

Phase I **40%** of fields 5.7 mt/ha/year

Phase V **54%** of fields 7.3 mt/ha/year

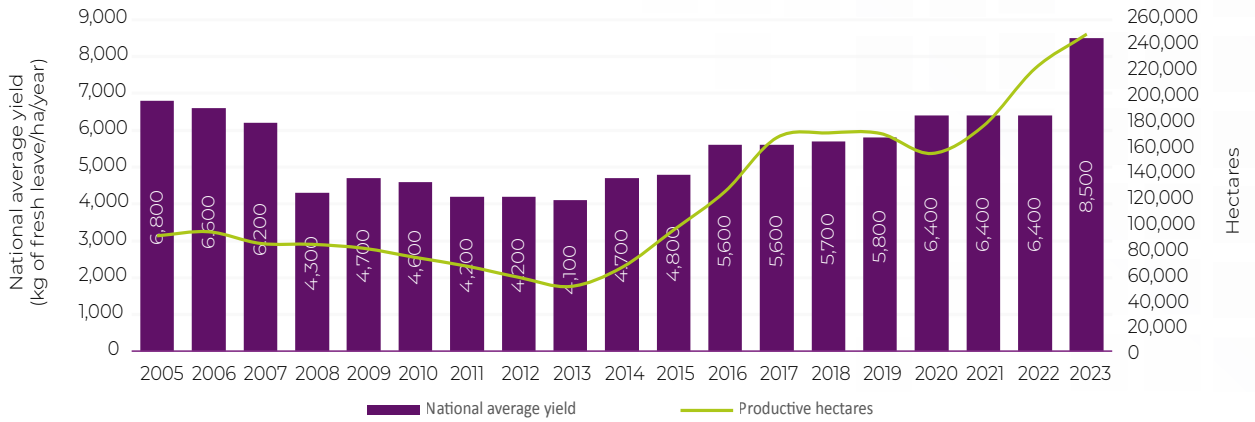
The number of harvests has remained constant

Phase I **4.2**

Phase V **3.8**

## Infographic 6.

Factors influencing coca cultivation productivity in Colombia between Phase I (2005) and Phase V (2020-2023)




## Figure 13.

Trend of productive hectares with coca during the year[1] (ha) vs. annual national average yield of coca leaf per hectare (kg/ha/year)[2]

**Source:** Government of Colombia and UNODC-SIMCI.

**Note:**

**(1)** The productive area during the year corresponds to the application of a spatial analysis methodology that allows the estimation of the persistence of coca cultivation by developing a factor that allows modeling, field by field, the dynamics of the cultivated area in the year, based on the incorporation and systematization of available information on the variables that directly affect stability, such as forced eradication, aerial spraying and plant cover, among others. This figure is estimated by UNODC-SIMCI.

**(2)** The annual national average yield of coca leaf per hectare was estimated through the implicit yield resulting from the ratio between the total tons of fresh coca leaves obtained in the different regions affected by coca cultivation and the productive area during the year at the national level. The annual productivity of coca cultivation in each of the regions was obtained from the results of the regional updates of the coca cultivation productivity studies, by means of harvest testing.

**Table 11.**

Annual yields of fresh coca leaf per hectare in Colombia vs. Proportion of productive area during the year, by region[1], [2]

| Region | Proportion of productive area, 2023 (%) | Latest year of updated coca cultivation productivity studies[2] | Annual fresh coca leaf yield (kg/ha/year) | | |
|---|---|---|---|---|---|
| | | | Average | Lower interval | Upper Interval |
| Amazon[4] | 0.1 | 2021 | 6.9 | 6.3 | 7.5 |
| Catatumbo | 17.9 | 2020 | 5.9 | 5.5 | 6.3 |
| Central | 15.1 | 2020 | 7.7 | 7.3 | 8.1 |
| Meta-Guaviare | 3.0 | 2023 | 6.6 | 5.9 | 7.2 |
| Orinoquía | 0.1 | 2023 | 7.6 | 6.7 | 8.6 |
| Pacific | 42.4 | 2023 | 10.8 | 9.9 | 11.7 |
| Putumayo-Caquetá | 21.4 | 2021 | 6.9 | 6.3 | 7.5 |
| Sierra Nevada | 0.001 | 2020 | 2.0 | 1.5 | 2.5 |
| **National total** | **100** | **Closing of Phase V 2023** | **8.5**[3] | **7.8** | **9.2** |

**Source:**

Government of Colombia and UNODC-SIMCI, as part of the regional updates of the coca cultivation productivity studies carried out for Phase V.

**Note:**

**(1)** Average annual yields per hectare per year by region were obtained through harvest tests.

**(2)** It is worth mentioning that the annual productivity of coca cultivation in each region was obtained from the results of regional updates of coca cultivation productivity studies, through harvest tests.

**(3)** The annual national average yield of coca leaf per hectare was estimated through the implicit yield resulting from the ratio between the total tons of fresh coca leaves obtained in the different regions affected by coca cultivation and the productive area during the year at the national level.

**(4)** Productivity studies do not collect information in the Amazon region, so production estimates are made taking into account the results of the Putumayo-Caquetá region.

Optimizing the density of plants per hectare was one of the key aspects, as it allowed for maximum use of the land, increasing production without the need to expand the cultivated area. This adjustment in density was complemented by the fact that most of the coca fields were at their peak yield stage, between two and four years, which ensures maximum production in terms of quantity and quality of the leaf.

Another crucial factor was the diversification in the type of associated crops and the stable maintenance of the number of harvests, which offered farmers greater control over production and mitigated risks associated with adverse climatic or economic factors. Furthermore, the increase in the frequency and quantity of agrochemicals applied to cultivated land has played an important role in improving productivity, although it also raises questions about environmental impacts and long-term sustainability. These factors, as a whole, reveal an increasingly intensified and technified coca production system, which accounts for a continuous adaptation on the part of the growers to maintain and increase their yields in a context of socioeconomic changes and public policies.

## Given the increase in the potential production of fresh coca leaves, production modes (methods, infrastructures and equipment) tend to be optimized in order to increase the efficiency of cocaine production

Traditionally, the coca-growing farmer (PAC) has been involved in the first stage of the coca leaf transformation process, insofar as they can choose to sell fresh coca leaves to be processed by another PAC or a specialized third party, or transform them directly or by hiring an expert to obtain and sell cocaine paste or cocaine base, depending on the availability of chemical inputs (figure 14).

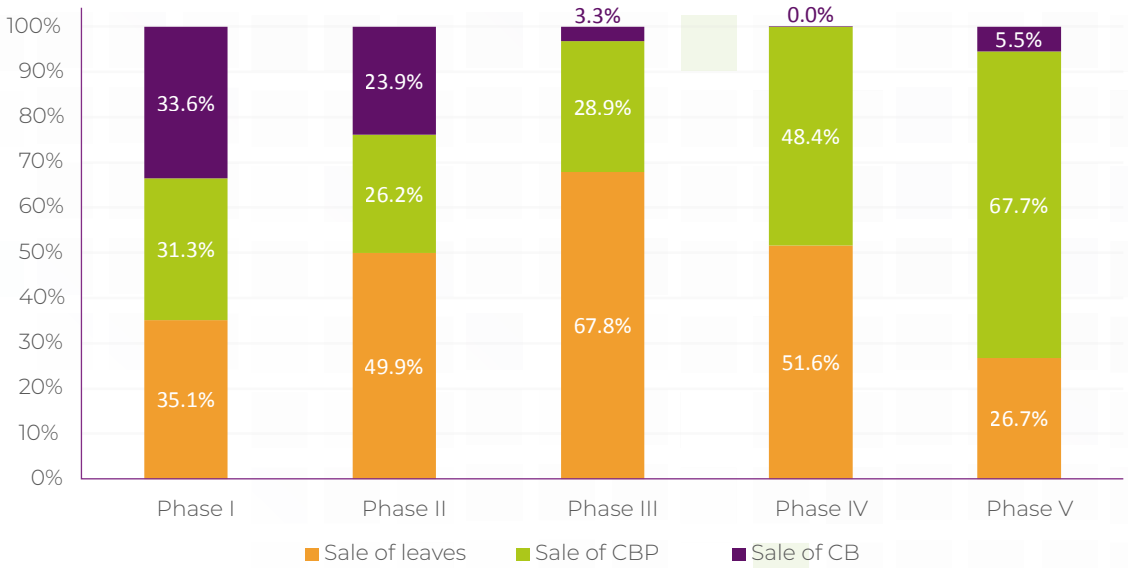



**Figure 14.**
Participation of the PACs by sales method for the production of coca crops, national total 2005-2023

**Source:** Government of Colombia and UNODC-SIMCI.

**Note:**
* Calculated as the difference between the PACs that did not process coca base or cocaine base (they did not report yields) and the total number of PACs.

** In Phase I, no questions were asked about cocaine base processing.

Taking the three possible scenarios as a basis, it is estimated that, in 2023, out of the total fresh leaf available in the country, approximately 1,543,521 metric tons were processed directly by the PACs; in contrast, it is calculated that around 565,114 metric tons of leaf were sold by the PACs, this being the lowest proportion of coca leaf sales recorded in coca cultivation productivity studies. Lastly, over the last four years, the sale of cocaine base on farms has increased again.

Based on the information generated in the course of investigations led by the Colombian Government and UNODC-SIMCI, an increase has been observed in the trend towards specialization in the cocaine extraction process, both in terms of the infrastructure and equipment used and the stakeholders involved. This process, which was previously characterized by being more artisanal, has evolved towards an increasingly technical system, where specific phases of production are managed, such as coca cultivation, the extraction of cocaine paste and refining to obtain cocaine base. This level of specialization has led to an increase in production capacity and the constant adaptation of techniques to avoid detection[82, 83].

Adopting more efficient practices in the transformation of coca leaves into cocaine can significantly increase the production potential of this substance, optimizing the use of resources and improving yields at each stage of the process (figure 15).

To this end, it is possible that the increased supply of cocaine alkaloid will be accompanied by adaptive strategies implemented in cocaine hydrochloride infrastructures, seeking to respond to the greater availability of coca-derived raw materials.

**82-**Government of Colombia, United Nations Office on Drugs and Crime and Integrated Illicit Crop Monitoring System, Characterization of production units associated with the transformation of coca into cocaine hydrochloride and identification of changes in conversion methods, chemical inputs and infrastructures (UNODC; SIMCI, 2017).

**83-**Government of Colombia and United Nations Office on Drugs and Crime, Characterization of the infrastructures and dynamics of illicit cocaine hydrochloride production (UNODC, 2021).

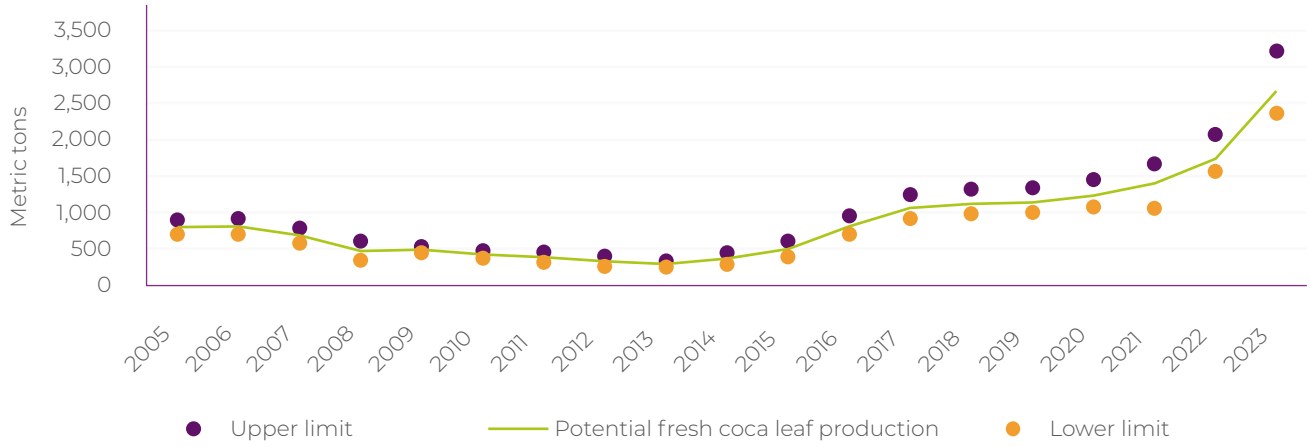



**Figure 15.**
Potential domestic cocaine hydrochloride production, 2005-2023

One of the factors that is highly likely to occur is the rapid adaptation of laboratories for the processing of cocaine and the chemical substances necessary for its transformation. Although different players come together in the coca-cocaine transformation process, as part of the investigations carried out by the Government of Colombia and UNODC-SIMCI some of the strategies to increase the production capacity of the extraction infrastructures were documented[84]; for example, the use of 100-gallon drums in the Putumayo-Caquetá region, which has enabled the processing of up to 13.7 arrobas of leaf per batch, a finding uncovered during the development of Phase V (carried out between 2020 and 2023), increasing the efficiency to obtain cocaine base paste. These results indicate a continuous improvement in the efficiency and productivity of the PACs, focused on maximizing the economic gain of their transformation activities.

On the other hand, there are warning signs of an industrialization of extraction with changes in the infrastructure, which is capable of processing a greater quantity of leaves thanks to the implementation of industrial chopping systems (the traditional process is carried out with scythe-type tools), hydraulic presses to optimize the extraction of the fuel from the cocaine, and platforms where several batches of up to 13 arrobas of coca leaves would be developed simultaneously. However, it is worth mentioning that the full extent of the changes in extraction dynamics is currently unknown, making it necessary to carry out research to explore this phenomenon in greater depth.

Concerning the dismantling of cocaine processing infrastructures by the authorities, it can be observed that this variable has fluctuated in recent years. According to ODC-SIDCO data, between 2018 and 2023, operations in primary production (extraction) infrastructures have increased by 18%, going from 4,228 to 4,992 (in 2021 it peaked at 5,513). Regarding cocaine hydrochloride production laboratories, between 2018 and 2023 operations on this type of infrastructure have decreased by 38%, from 339 to 208 (in 2022 the number dropped to 186).

Overall, the increased availability of coca leaves, the growing specialization of the extraction process and the rapid adaptation of cocaine processing laboratories reflect an increasing sophistication in the production

**84-** As a reference for the extraction processes (and also for the refining processes when the PAC is capable of carrying them out), these have traditionally been carried out in rudimentary infrastructures, made up of plastic containers, a wooden platform for extraction with fuel, the area where the leaves are chopped, among others; these spaces were adapted to have the capacity to process up to 6 arrobas (75 kg) of coca leaves in each batch. However, given the increased availability of coca leaves for processing, these infrastructures have evolved, seeking to be more efficient.

chain of this narcotic drug. These factors are interconnected and mutually reinforcing, facilitating a more efficient and technified process, while posing greater challenges for control and interdiction efforts.

## More cocaine requires more chemicals for its transformation

Chemicals play a fundamental role in the transformation of the coca leaf into cocaine hydrochloride; their use allows the extraction of cocaine, contained in the coca leaf, for the subsequent oxidation of alkaloid impurities and the crystallization of cocaine (its conversion into hydrochloride). Depending on the process to be carried out, chemical substances have a defined role in the processing of cocaine, which varies according to their physicochemical characteristics (chemical group): acids, bases, salts, hydrocarbons/fuels and solvents.

As part of the investigations carried out by the Colombian Government and UNOD more than one hundred different chemical substances have been identified as possibly being involved in these processes[85], only three of which are considered indispensable or difficult to substitute in the transformation of the coca leaf into cocaine hydrochloride: sulfuric acid[86], potassium permanganate[87] and hydrochloric acid[88]; the above due to the production methods used and the expertise of the chemists who develop the production process[89]. Even when other substances are necessary, it is worth mentioning that these can be easily replaced by others with the capacity to perform the same role, due to their properties.

Given the need to meet this demand, and insofar as most chemical substances are required according to their availability (with the exception of essential substances), organized crime has developed strategies to guarantee a permanent supply of this type of input[90], including: smuggling[91], diversion of resources from the legal industry[92], substitution of chemical substances[93], recycling of solvents[94, 95, 96, 97] and illicit or artisanal production[98]. Regarding this last strategy, to assess its impact (as a variable proxy), the authorities in Colombia dismantled ten laboratories

**85-** This data refers to the fact that, throughout the research, more than 100 substances have been identified in cocaine processing, between essential and substitute substances. This does not mean that more than 100 substances are involved in a single process.

**86-**A mineral acid necessary in the process of extracting cocaine from coca leaves.

**87-**Oxidizing substance used in cocaine refining and to obtain cocaine base.

**88-**Mineral acid necessary for the process of converting and obtaining cocaine hydrochloride.

**89-**United Nations Office on Drugs and Crime and Prevention of the diversion of drug precursors in Latin American and the Caribbean countries, Characterization of the process of transformation of the coca leaf into cocaine hydrochloride in Colombia (UNODC; PRELAC, 2014).

**90-**Strategies taken from the document of the Ministry of Justice and Law and the United Nations Office on Drugs and Crime, Baseline characterization of the normative and operational models for the main processes of integral control (UNODC, 2023), under the framework of the International Cooperation Agreement 957/2023, between the Ministry of Justice and Law and UNODC.

**91-**A form of trafficking in chemical substances that involves their clandestine transportation across borders, whether by land, sea or river. Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC), 2023. Among its diversified strategies there is transit through extensive and permeable borders in areas where the authorities do not exercise control (open contraband), as well as fictitious and fraudulent registration of tariff headings to evade controls (technical contraband).

**92-**It is a strategy that involves obtaining chemical substances from the legal industry, given their availability in lawful companies through formal channels, through fraudulent operations, false documentation, theft, among other actions. The effectiveness of this strategy is subject to the level of risk of diversion due to the capacity of organized crime to infiltrate the administrative and operational control system attached to the Ministry of Justice and Law and the National Police.

**93-**Due to the nature and characteristics of chemical substances, most of them can be substituted within the cocaine manufacturing process, depending on the desired effect. This means that, for example, a base such as sodium hydroxide can be substituted by another substance that also has basic characteristics such as ammonium hydroxide or sodium carbonate. The same applies to acids, solvents or salts.

**94-** This practice consists of the recovery and reuse of solvents and hydrocarbons throughout the different phases of the production process. This activity is carried out because it enables the recovery of most of the volume of these substances and their reintroduction into the production cycle in the required qualities and quantities. Moreover, this reduces operating costs as it minimizes the purchase of large quantities of solvents, which can be expensive, and avoids the need to transport large volumes of chemical substances, thus avoiding the risk of being detected by the authorities.

**95-**International Narcotics Control Board, Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances (INCB, 2022).

**96-** Government of Colombia, UNODC and SIMCI, Characterization of production units.

**97-**UNODC and PRELAC, Characterization of the transformation process.

**98-**Chemical substances such as potassium permanganate, mineral acids (sulfuric and hydrochloric), ammonium hydroxide (ammonia in solution), among others. This strategy involves the clandestine manufacture of chemical inputs, thus avoiding official controls and guaranteeing a direct supply for the production of illicit drugs.

manufacturing potassium permanganate in 2023, with similar numbers of interdiction operations being recorded annually since 2016; similarly, six sulfuric acid laboratories were dismantled in 2023, according to data from the Colombian Drug Observatory[99].

In this context, UNODC-SIMCI has found evidence of a growing demand for chemical substances used in the coca/cocaine transformation process in Colombia, which could be interpreted as a direct result of the increase in the production of fresh coca leaves, and therefore of the increase in the potential for cocaine production. To a lesser extent, changes in production methods, infrastructures and equipment, possible improvements in production methods and efficiencies in processing also have an impact on the type and quantity of chemicals demanded in this context. In this regard, it is necessary to strengthen the generation of technical evidence in the characterization of the transformation processes from coca leaf to cocaine hydrochloride in order to strengthen strategies and actions for the comprehensive control of chemical substances.

The increase in the potential demand for chemical substances generates major challenges for their control, in an attempt to prevent them from being supplied by the illicit production circuit, as well as an increase in the risks of environmental impact caused by the various activities associated with the production processes of alkaloids, such as cocaine.

Figure 16 shows signs of growth in the illicit demand for the chemicals used in cocaine production, reaching record levels since 2016, a situation that is consistent with the increase in the potential quantity of coca leaf produced, and with the increase in the potential for cocaine production. Based on the hectares of productive land during the year in 2023, it is estimated that 2,664 metric tons of pure cocaine hydrochloride could potentially be produced, using around 235.8 thousand tons of solid chemicals and 1,219.1 million liters of liquid chemicals for its transformation. Out of these, cement (208,100 tons) and fuels (1,159,900,000 liters) represent more than 90% of the chemical substances needed to produce cocaine. Its accelerated growth rate, six times higher than the estimate for 2015, poses challenges to the controls established in Resolution 001 of the National Narcotics Council (CNE, acronym in Spanish).

**99-**Ministry of Justice and Law, "SIDCO: Colombian Drug Information System", Colombian Drug Observatory, August 16, 2024, https://www.minjusticia.gov.co/programas-co/ODC/Paginas/SIDCO.aspx.

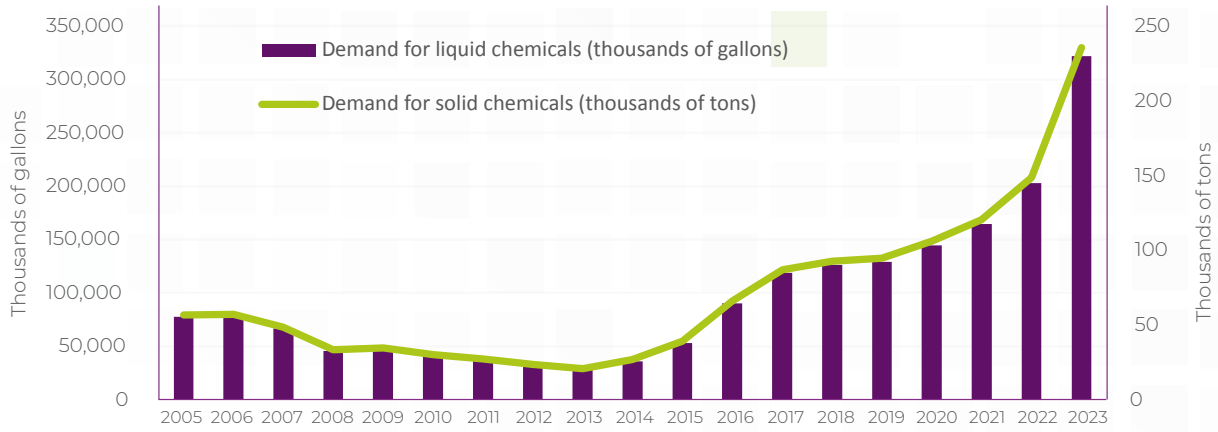



**Figure 16.**
Trends in the estimated demand for chemical substances used in the potential production of cocaine in Colombia, 2005-2023

**Source:** UNODC, SIMCI (2024). Own estimates based on cocaine production potential.

In order to facilitate comparisons over time, Table 12 contrasts estimates of the illicit use of chemicals for cocaine production, by type of substance, between 2005 and the last three years for which data are available.

**Table 12.**
Estimated illicit use of chemicals for cocaine production

Magnitude of use of chemical substances in cocaine production

| Indicator | 2005 | 2013 | 2015 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| Total liquid chemical substances (millions of gallons) | 77.7 | 27.6 | 52.7 | 164.5 | 202.8 | 322.1 |
| Number of trucks employed for mobilization | 4,902 | 1.738 | 3,321 | 10,380 | 12,791 | 20,319 |
| Total solid chemical substances (Tons) | 55.6 | 20.5 | 39.2 | 120.5 | 148.5 | 235.8 |
| Number of trucks employed for mobilization | 1,617 | 586 | 1,120 | 3,443 | 4,244 | 6,738 |

According to type of chemical substances

| Indicator | 2005 | 2013 | 2015 | 2021 | 2022 | 2023 |
|---|---|---|---|---|---|---|
| Acids (thousands of gallons) | 732.3 | 247.2 | 457.0 | 1,348.5 | 1.665,6 | 2,616.4 |
| Bases (thousands of gallons) | 281.2 | 98.5 | 189.0 | 572.2 | 704.9 | 1,121.5 |
| Bases (thousands of tons) | 55.2 | 20.0 | 38.3 | 117.7 | 144.9 | 230.6 |
| Solvents (thousands of gallons) | 76,693.1 | 27,208.0 | 52,004.9 | 162,615.7 | 200,390.8 | 318,356.3 |
| Salts (thousands of tons) | 1.2 | 0.4 | 0.7 | 2.5 | 3.1 | 4.5 |
| Others (thousands of tons) | 0.2 | 0.1 | 0.1 | 0.4 | 0.5 | 0.8 |

**Source:** UNODC, SIMCI (2024). Own estimates based on cocaine production potential.

**Note:**

- The illicit demand for chemical substances is estimated based on the factor between potential cocaine production and the chemical substance use coefficient; this coefficient is obtained from experimental validation exercises carried out by the Government of Colombia and UNODC-SIMCI.
- Indicator to facilitate the order of magnitude of mobility of the chemical substances used in the transformation of coca leaves into cocaine hydrochloride. A truck with the capacity to move 60 cubic meters of liquid substances or 35 tons of solid chemical substances.
- Corresponds to the US gallon unit of measurement; one US gallon is equivalent to 3.785 liters.
- Groups of chemical substances were estimated in order to facilitate the analysis of the types used. To this end, the acids group is made up of hydrochloric and sulfuric acid; the bases group is made up of ammonia, cement, urea and sodium hydroxide; the solvents group is made up of fuels, acetates (ethyl, butyl, n-propyl), isopropyl alcohol, methyl ethyl ketone and recycled solvents; salts group is made up of potassium permanganate, sodium metabisulfite, calcium chloride and other substances such as activated carbon and cutting agent.

## The consolidation and spread of the coca productive hotspot model throughout the entire Pacific region

In line with the previous section, attention is drawn to the convergence of the growing trend of the area under coca in the Pacific region and the productivity of the fields at unprecedented levels. This region is estimated to have increased its cocaine base production capacity[100] per hectare per year from 4.4 kg/ha/year in 2005 to 17 kg/ha/year in 2023, a situation that influences its position as the main production center for both coca leaf and cocaine (base and hydrochloride).

**100-**This estimate is the result of the ratio between the potential cocaine base production and the productive area during the year in the Pacific region, according to year. This approximation is based on the assumption that the hectare was productive throughout the year, with an average of 3.7 harvests per year. The purity of cocaine base is considered to be 80%.

As part of the comprehensive monitoring carried out by UNODC-SIMCI, fed by the strategic lines of research developed with the Government of Colombia and with the support of international cooperation, it has been possible to identify the complexity and convergence of a multiplicity of factors, both conjunctural and structural, that have a local impact on improving and optimizing coca cultivation and its transformation towards a specialization scenario. The following, among others, stand out:

1. In 2023, **the Pacific is consolidated as the region with the highest proportion of hectares under coca cultivation**, with 42.4% of the national total. The historical evolution of coca in this region is characterized by an upward trend, increasing from 17,633 ha in 2005 to 107,078 ha detected in 2023. Between 2005 and 2023, the increase in the area is closely related to the territorial dynamics of Nariño, mainly, concentrating between 57% (in 2012) and 83% (in 2006) of the detected hectares in the region; considering that Cauca has contributed between 11% (in 2006) and 33% (in 2023) of the hectares detected in this same period. Out of the 295 municipalities where coca has been detected between 2005 and 2023, the following are in the top 20 places with the highest concentration of coca: Tumaco, El Charco, Barbacoas, Roberto Payán (San José), Olaya Herrera (Bocas de Satinga) and Magüí (Payán) in Nariño, and El Tambo in Cauca (figure 17).

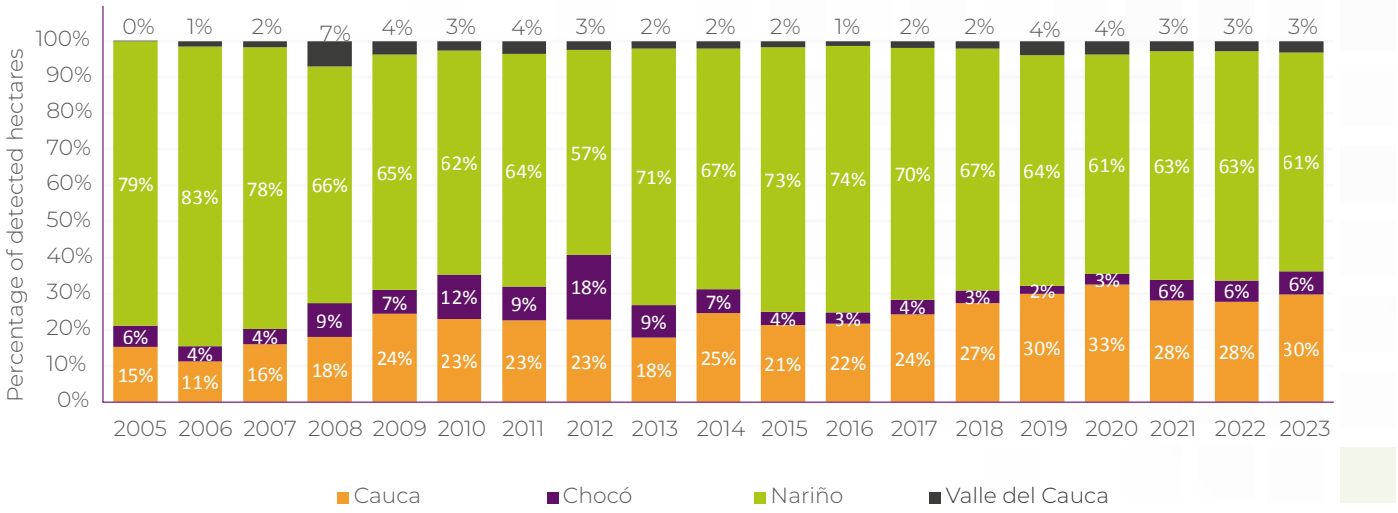



**Figure 17.**
Trend in the percentage of the area detected with coca in the Pacific region (%), 2005-2023

**Source:** Government of Colombia and UNODC-SIMCI.

- Cauca, one of the departments with the highest concentration of coca cultivation, registered an increase of 857.4%, going from 3,326 ha in 2013 to 31,844 ha in 2023. Along these lines, in Valle del Cauca there were 398 ha in 2013 compared to 3,362 ha in 2023, an increase of 744.7%; in addition, in the same period, Nariño and Chocó also reported increases in the detected area of 393.2% and 314.3%, respectively.

- In the Pacific region, coca tends to stick to the same territory. If we analyze the persistence of coca over the last 10 years, out of the 100% of the territory in the Pacific region where coca cultivation is present, 44% is permanently affected, while 30% is intermittently affected; only 17% of the territory shows a trend towards abandonment. 9% of the region has been affected for the first time in recent years; the expansion of the

area is mainly occurring in Cauca and Valle del Cauca, particularly in the mountains of these two departments.

- An increasing trend in the establishment of coca-producing hotspots in the region. The concentration and persistence of coca in the same territory could be based on the exploitation of strategic areas that facilitate connections with the international cocaine trafficking network. This situation has an impact on the generation of incentives of different kinds, seeking to ensure that the local dynamics of coca cultivation and its transformation are coordinated with this purpose.

Thus, since 2015, the detection of coca production hotspots in the region began, with the definition of four strategic areas, out of the seven registered in the country[101]: Argelia and El Tambo (Cauca), El Naya (Cauca), Tumaco-Border (Nariño) and El Charco-Olaya Herrera (Nariño). In contrast, by 2023 these areas have expanded, with ten coca-producing hotspots in the region, out of the 15 registered in the country.

- According to the results of the *Coca cultivation productivity studies*, updated in Phase V (2023)[102], this region reports a historical record in the average capacity to obtain fresh coca leaves per hectare per year, going from 2.6 metric tons/hectare/year in 2005 to 10.8 metric tons/hectare/year in 2023. These levels stand out not only in terms of historical records for the region but also for the country, surpassing the maximum found in the Meta-Guaviare region in 2005, the highest point in the entire series of coca productivity (9.9 metric tons/hectare/year).

- Expansion of the production model of coca hotspots throughout the region. In 2019, it was hypothesized that the areas of productive coca hotspots were the only territories in the country with a high capacity to obtain coca leaves per hectare per year; this trend was fractured following the findings of the regional update of the productivity studies of coca cultivation in the Pacific. This has led to the creation of incentives for coca productivity to be homogeneous in areas both inside and outside the hotspot, a situation that weakens the territories due to the high economic and territorial dependence on activities associated with coca and its transformation.

The grower is investing in the fields, a situation that is evident in the improvement of agricultural practices. Most of the fields count with strategies such as (1) stumping, an agricultural technique for cutting the stem that encourages leaf production; (2) renewal of the fields to keep them at the most productive ages between two and four years; (3) planting with stakes to reduce the time to the first harvest, and (4) the use of more productive cultivars[103], as well as a reduction in planting densities, among others. This convergence of factors has led to structural changes in the way coca is cultivated, resulting in unprecedented levels of productivity.

- The incentive structure for in-farm coca processing or in partnership scenarios with other PACs for larger-scale production. If we analyze

**101-**In 2019, the first seven productive hotspots for coca production registered in the country were: (1) Catatumbo (Norte de Santander), (2) Valdivia-Tarazá-Cáceres (Antioquia), (3) Argelia and El Tambo (Cauca), (4) El Naya (Cauca), (5) El Charco-Olaya Herrera (Nariño), (6) Tumaco-Border (Nariño) and (7) Putumayo-Border (Putumayo).

**102-T**hese studies are being carried out as part of the cooperation between the Colombian government and UNODC-SIMCI. In Phase V, the Pacific region was updated (2023).

**103-**According to the results of the Productivity studies of coca cultivation, the main three cultivars, chipara, bonita and guayaba, account for 85% of the fields with coca and generate around 11 metric tons/hectare/year.

their historical trajectory, the majority of PACs in the Pacific region were mainly engaged in the sale of coca leaves; in contrast, in 2023 a significant change was observed: 63.3% of PACs now process and sell cocaine base and a small percentage (0.7%) are even engaged in the production and sale of cocaine base. In this context, given the proportion of PACs that process the leaf into cocaine base paste, the Pacific region does not show a trend towards the use of potassium permanganate for in-farm coca leaf processing.

- In most productive hotspots there is evidence of a high proportion of PACs producing in-farm cocaine base paste (more than 70% of PACs). For example, in the Catatumbo hotspot, 96% of the PACs produce cocaine base paste. This situation suggests an increased inclusion of the PACs in the agro-industrial links of the cocaine production chain, which could be the result of access to incentives in the territory, such as guaranteed purchase, financing of inputs, better prices, among others.

## What impact does the increased demand for chemical products and substances have on the environment?

In Colombia, the convergence between the concentration of coca, where a greater proportion is located in specially managed areas, and the increase in the productivity of the fields means that processing *in situ* involves greater quantities of leaves. This situation could imply a greater risk of environmental impact, given the possible contamination caused by the use of large quantities of chemicals necessary for processing[104].

The growing trend in the capacity to produce coca leaf, which has been consolidated over the last few years, is causing great concern, not only in terms of the implications of having higher levels of drug supply and demand, but also in terms of the possible consequences for the environment in the regions. In many cases they involve areas with the presence of coca cultivation, especially in specially managed zones, which are mostly characterized by being ecosystems unique on the planet, with high levels of biodiversity and endemism, as they are strategic and fragile corridors, with a high diversity of flora and fauna, with biotechnological potential yet to be determined[105].

The geography of coca highlights the following dynamics in the territories where coca cultivation is present: Out of the total hectares of coca detected, 48% are located in areas of special management and conservation interest, which represents a threat to areas of Afro-descendant Communities (20% of the coca), National Natural Parks (4% of the coca), Indigenous Reserves (10% of the coca) and forest reserves (14% of the coca). The worrying trend of coca concentration in productive hotspots could intensify the negative environmental effects on ecosystems[106]; this means that a comprehensive understanding of the territorial dynamics in these areas is essential for the design of intervention strategies aimed at prevention and conservation, which respond adequately to the challenges presented by these productive hotspots.

The high risk of environmental impact could be generated in areas with high densities of coca cultivation and productive hotspots, where 39% of the coca area is concentrated. The hotspots tend to be located in isolated

**104-**Mimi Yagoub, "Which regions of Colombia are playing the biggest role in the coca boom?", InSight Crime, March 23, 2017, https://insightcrime.org/news/analysis/which-regions-colombia-biggest-role-coca-boom/.

**105-**United Nations Environment Programme, "Colombia: Country Profile, Biodiversity Facts", Convention on Biological Diversity, 2024, https://www.cbd.int/countries/profile?country=co.

**106-**Humboldt Institute Press, "Factors in the loss of biodiversity in Colombia," Colombian biodiversity: numbers to bear in mind, September 11, 2017, https://www.humboldt.org.co/noticias/biodiversidad-colombiana-numeros-para-tener-en-cuenta.

and hard-to-reach areas, characterized by a high convergence of activities related to the transformation of coca leaves into cocaine hydrochloride in the same territory, as well as the high presence of organized crime that encourages deforestation and the clandestine production of chemical substances, among other activities necessary for the production of large quantities of the alkaloid.

One of the warnings about the current dynamics of coca geography and increased processing capacity is related to the increased risk of environmental impact caused by the various activities associated with alkaloid production processes, including the following[107, 108, 109, 110]:

1. Deforestation and the burning of vegetation to increase the agricultural area and grow new coca fields, activities that can have the greatest negative impact on ecosystems due to the destruction of genetic resources.

2. Introduction of large quantities of agrochemical products for maintenance and increased productivity of coca cultivation.

3. Entry of greater quantities of chemical substances for the processes of extraction, refining and conversion of coca alkaloids.

4. Demand for larger quantities of water for cultivation and production processes: dissolution of chemical substances for processing and washing materials.

5. Generation of thermal pollution caused by the return of hot water to watercourses or the ground.

6. Implementation of clandestine chemical production processes, which could negatively affect ecosystems due to spills and the deposit of chemical waste in soil and water sources.

All the aforementioned activities should be the subject of detailed field studies that allow for the generation of indicators necessary to estimate the possible negative effects that are currently being generated in these ecosystems, related to the increase in the areas of cultivation and in the production processes of coca alkaloids.

## The coca economy is increasingly interrelated with legal economies

The relationship between coca and populated centers is fundamental, not only because of the dependence of licit economies on the resources generated by illicit activities, but also because of the diversification of goods and services that can be accessed. This situation may be creating powerful incentives to sustain illicit activities in the territory.

In order to understand these economic incentives in a region, it is crucial to analyze how income from local economic activities is generated and distributed. In this context, it is established that regional economic development is influenced by the interaction of economic forces and the individual and collective initiatives of different stakeholders, a process that results from the social construction of the environment. Furthermore, interaction with other dimensions of the territory (social, political, cultural, environmental and

**107-**Anti-Narcotics Directorate, Coca: deforestation, pollution and poverty: an approach to the agronomic activity and environmental problems of coca cultivation in Colombia (Bogotá: National Police, 2014), https://www.minjusticia.gov.co/programas-co/ODC/Publicaciones /Publicaciones/OF5022014-coca-deforestacion-contaminacion-pobreza%20(1).pdf.

**108-**David Restrepo, "Erythroxylum coca: factores ambientales y productivos de la pasta de coca en Colombia", INDEPAZ, February 22, 2024, https://indepaz.org.co/erythroxylum-coca-factores-ambientales-y-productivos-de-la-pasta-de-coca-en-colombia/.

**109-**Victoria A. Greenfield and Letizia Paoli, "An Application of the Framework to Coca Cultivation and Processing in Colombia", in Assessing the Harms of Crime: A New Framework for Criminal Policy [Clarendon Studies in Criminology], ed. by Victoria A. Greenfield y Letizia Paoli (Oxford: Oxford University Press, 2022), 178-231, https://doi.org/10.1093/oso/9780198758174.003.0006.

**110-**Héctor Hernando Bernal Contreras, Environmental impact generators of illicit crops and the extraction and refining of alkaloids (National Narcotics Agency, 2007), http://www.mamacoca.org/docs_de_base/Fumigas/Generadores_de_impacto_Ambiental_DNE.pdf.

technological) is equally relevant. Through these interactions and connections, the aim is to improve the living conditions of the population, facilitating access to goods and services that satisfy basic needs and promoting the development of the capacities of the inhabitants.

When analyzing the conditions of economic development in areas with coca cultivation, institutional weaknesses become evident where alternatives for the generation and distribution of income are limited. As a result, coca becomes a catalyst for economic transactions. Therefore, an initial approach to understanding the economic dimension in these territories is proposed, from the perspective of economic dependence, by comparing the economic flows associated with the value added[111] perceived both by the establishment and maintenance of coca fields, and those derived from processing the leaf within the Agricultural Production Unit with Coca (UPAC, acronym in Spanish), compared with the Value Added (VA) of the legal economic activities established in these areas.

To this end, an approach is proposed to the level of incidence of the coca economy and primary transformation; this scenario estimates the ratio between the generation and distribution of income from coca cultivation and its transformation into cocaine, in comparison with other productive activities in the region. This indicator is defined as the quotient of the value added generated at municipal level by the sale of coca leaf, cocaine base paste and cocaine base, compared to the value added of the legal economic activities of each municipality. This ratio can be summarized in the following equation:

Where: $IAE: \frac{VAMCCMi}{VAMi}$

IAE (acronym in Spanish) = Economic Impact Indicator[112].

**VAMCCMi** (acronym in Spanish) = Value added per municipality of the economic activities associated with coca cultivation and its transformation. This result is obtained from the difference between the total value of production in monetary terms minus the intermediate consumption (production costs) necessary to generate said production (e.g., agrochemicals, chemicals and minor services).

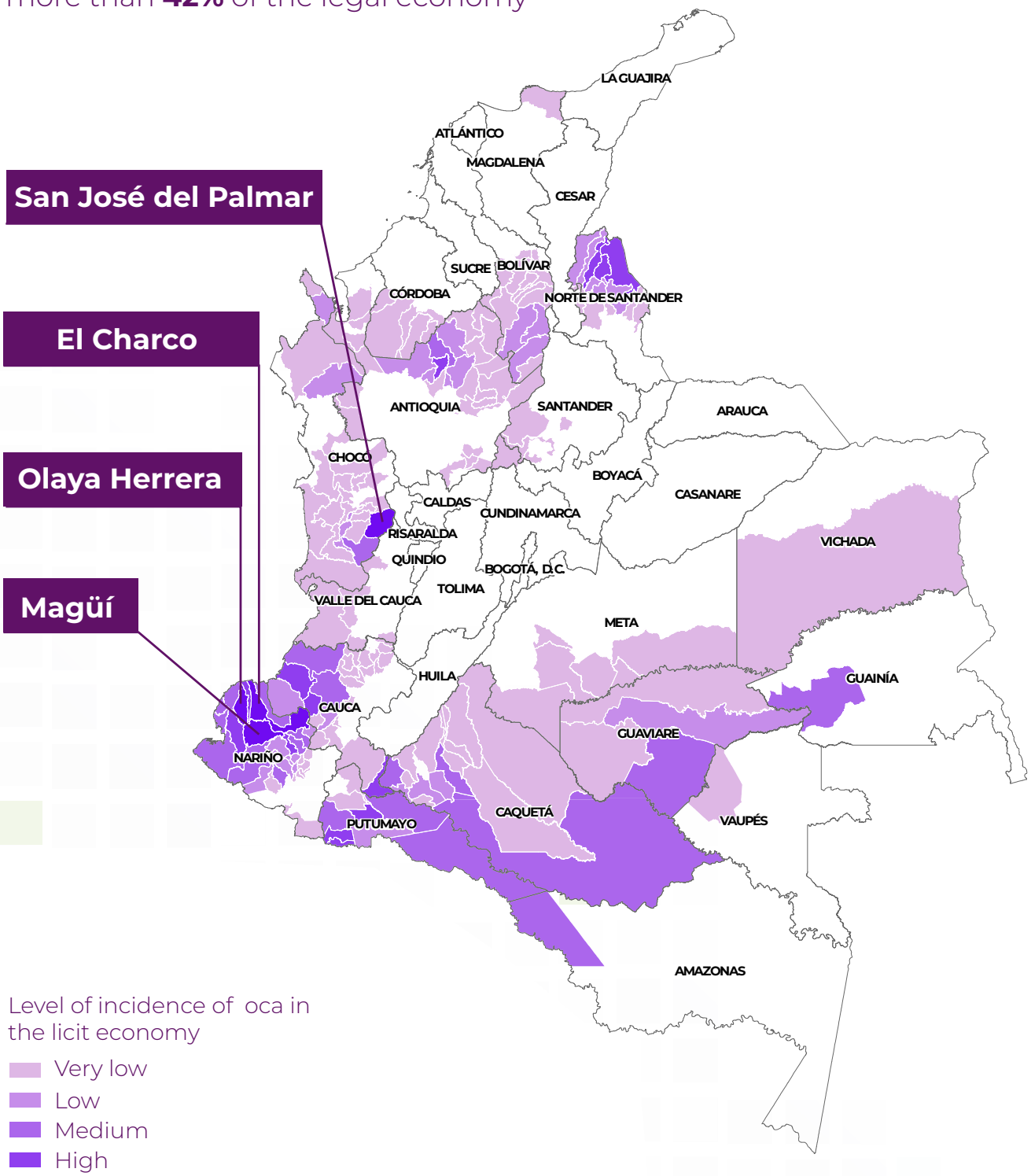
**VAMi** (acronym in Spanish) = Value added of municipality i, obtained from direct and indirect indicators.

In some municipalities in the country, the economy associated with the transformation of coca leaves into cocaine base and cocaine paste is increasingly interrelated with the legal economies; in these territories, the coca economy has a considerable share, which can account for more than 42% (comparable to the relative weight of sectors such as agriculture and industry in the Colombian economy) (infographic 7). The map shows that, in these areas, coca plays a very important role in the local economy (darker areas, see map 4), while in other areas of the country this relationship may be less prominent (lighter areas). Therefore, this scenario poses a great challenge to the formulation of differentiated intervention strategies with the purpose of answering questions such as: what effect would it be generating? What will happen to those territories?

**111-**Value added conceptually measures the value created by production - System of National Accounts 2008, taken from DANE, National Accounting Base.

**112-**The indicator was constructed from the combination of the following variables generated at the municipal level:
Value added per municipality of the economic activities associated with coca cultivation and its transformation, as a proxy variable for estimates of the generation of value added in Colombian pesos, according to the methodological guidelines for illicit financial flows.
Value added per municipality - Base 2005, variable estimated and published by the National Administrative Department of Statistics (DANE), which presents the results of the estimates of the aggregate heat of the different economic activities generated at the municipal level, according to the national accounts classification.

There area municipalities in which the illegal economy of the market represents more than **42%** of the legal economy




**Infographic 7.**
Level of incidence of coca in the legal economy

While analyzing the relationship between licit and illicit economies with respect to the degree of incidence of the illegal economy on the legal one allows us to establish criteria when intervening in a territory, seeking that it does not lead to harmful action; along these same lines and contributing to understanding the dynamics of the findings of census monitoring, exploring the relationship between coca cultivation and populated centers is necessary.

A populated center, according to DANE's definition constructed for statistical purposes, is determined *"when there is a minimum concentration of twenty (20) contiguous, neighboring or attached dwellings, located in the municipal remainder area or in a non-municipalized area (considered departmental townships before the Political Constitution of 1991). Said concentration presents characteristics such as the delimitation of vehicular and pedestrian lanes"*[113].

There are more than 7,000 defined populated centers in the country that are grouped into different types of categories: hamlet, police department, municipal district, municipal capital; however, many of them are established without a category. The latter are the ones that have a closer relationship with coca cultivation; in fact, 86% of the populated centers closest to coca[114] are in a category lower than municipal capital, which means that transactions between the coca economy and goods and services take place in sub-municipal settings where capacities and the institutional presence tend to be weaker.

On average, during the historical series, around 80% has been located within a radius of 12 km from a populated center regardless of its category; by 2023, 83% of the coca is located within this range. The number of hectares under coca cultivation within 12 km of a populated center increased from around 189,000 ha in 2022 to around 209,000 ha in 2023; in 2013 it was around 37,000 ha (figure 18).

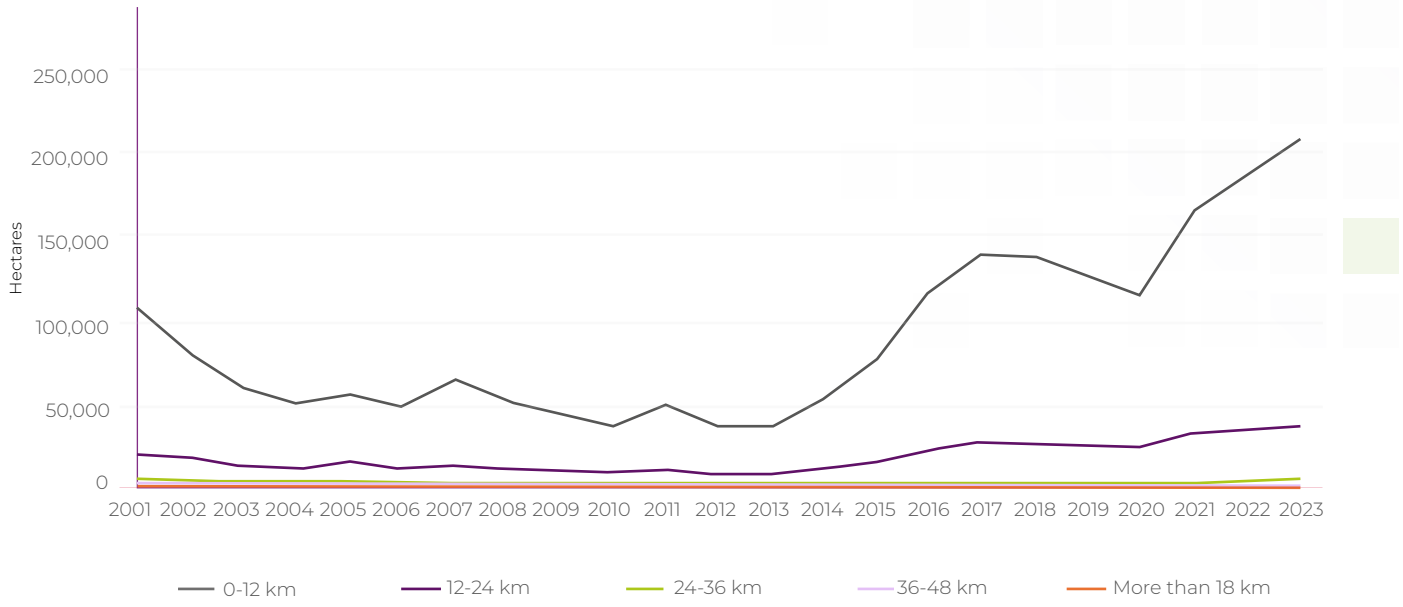



**Figure 18.**
Amount of coca in distance ranges from a populated center, 2001-2023

**113-**National Administrative Department of Statistics, "Populated center", Standardized Concepts Consultation System, 2018, https://conceptos.dane.gov.co/conceptos/conceptos_catalogo.

**114-**The populated areas closest to the coca are identified by calculating the Euclidean distance of each populated area from the 1 km² grids that presented coca cultivation in 2023.

The ten populated centers with the highest coca concentrations on their outskirts account for 19% of the coca in 2023, with La Gabarra having the most coca, with nearly 4% of the 2023 total. Upon reviewing their category of populated center, none of them are municipal districts, the most common type being hamlets; i.e., areas with low service coverage, restricted access to goods, low population in most cases and limited accessibility (table 13).

**Table 13.**
Populated centers closest to coca, 2023

| Department | Populated center | Type/category |
|---|---|---|
| Norte de Santander | La Gabarra | Municipal district |
| | Vetas de Oriente | Not defined |
| Nariño | El Cuil | Hamlet |
| | Inda Zabaleta | Not defined |
| | San Pedro | Municipal district |
| Norte de Santander | Filo Gringo | Not defined |
| Cauca | Filo Gringo | Municipal district |
| Nariño | La Balsa | Hamlet |
| | Guayacana | Hamlet |
| Putumayo | Las Vegas | Not defined |

Although most of coca is still far from market centers in highly vulnerable and difficult to access areas, this behavior is showing significant changes that should be incorporated into territorial intervention actions.

This recent dynamic can be identified by analyzing coca in relation to metropolitan market centers[115], where it is evident that in recent years coca is moving closer to areas where access, economic, social and institutional conditions may be better than those found in populated centers in general.

Between 2001 and 2015, an average of 70% of coca was found more than 162 km away from a metropolitan center; between 2016 and 2023, this percentage drops to an average of 47%, indicating a reduction in certain territories of the distance between crops and areas with greater possibilities for commercial insertion. In 2023, 47% of the coca was located more than 162 km away from a metropolitan center; in contrast, the range closest to these types of populated centers (0-42 km) increased from an average of 0.7% of the coca between 2001-2015 to an average of 2.7% in the last eight years, 2023 being the year with the highest amount of coca in this range: 4%, that is to say, close to 10,500 ha of coca (figure 19).

**115-**The metropolitan centers were defined as the twelve main cities in Colombia: Medellín, Barranquilla, Cartagena, Manizales, Popayán, Santa Marta, Ibagué, Santiago de Cali, Pereira, Bucaramanga, Cúcuta and Bogotá.

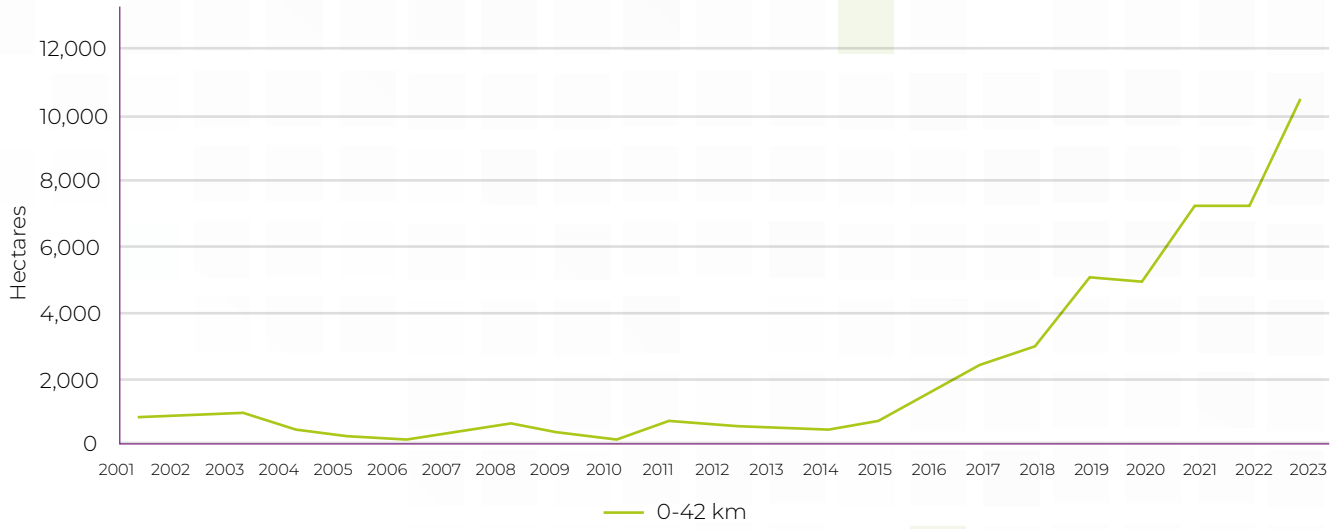



**Figure 19.**
Amount of coca in the 0-42 km range of a metropolitan market center, 2001-2023

When reviewing behavior in the range closest to metropolitan centers, changes have been incremental and although stability is observed in the 2021-2022 period, in the last period of analysis, nearly 3,000 hectares increased in this range (figure 20). This dynamic is not generalized throughout Colombia and tends to be more visible in the Pacific region, more specifically in the departments of Cauca and Valle del Cauca, in the area of productive hotspots and expansion zones.

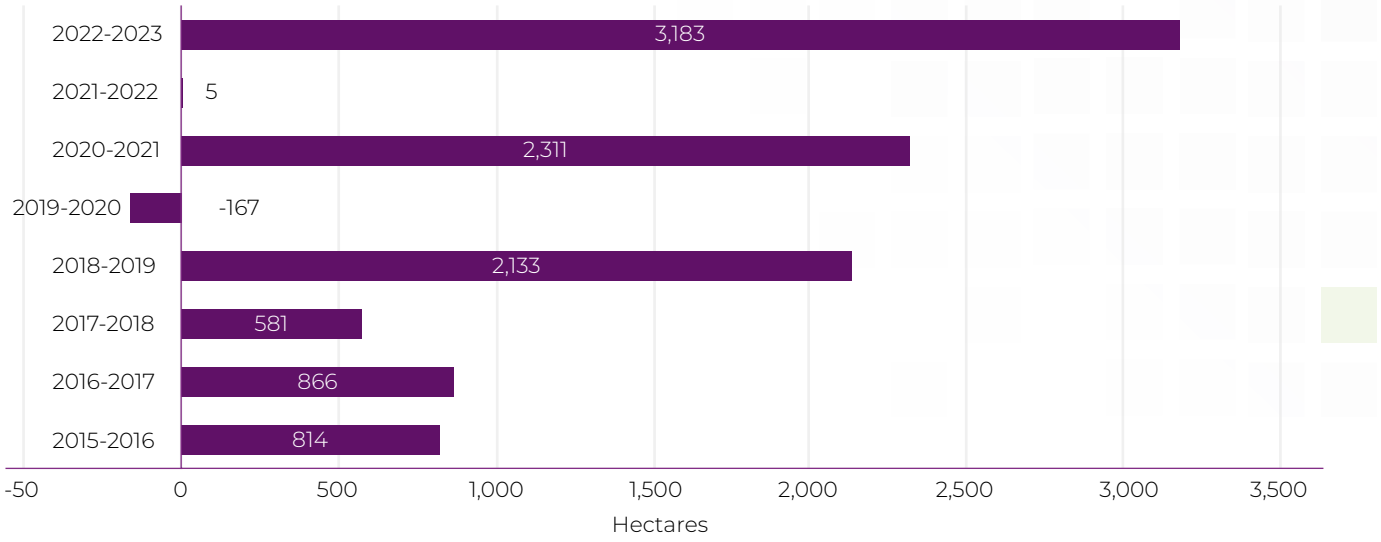
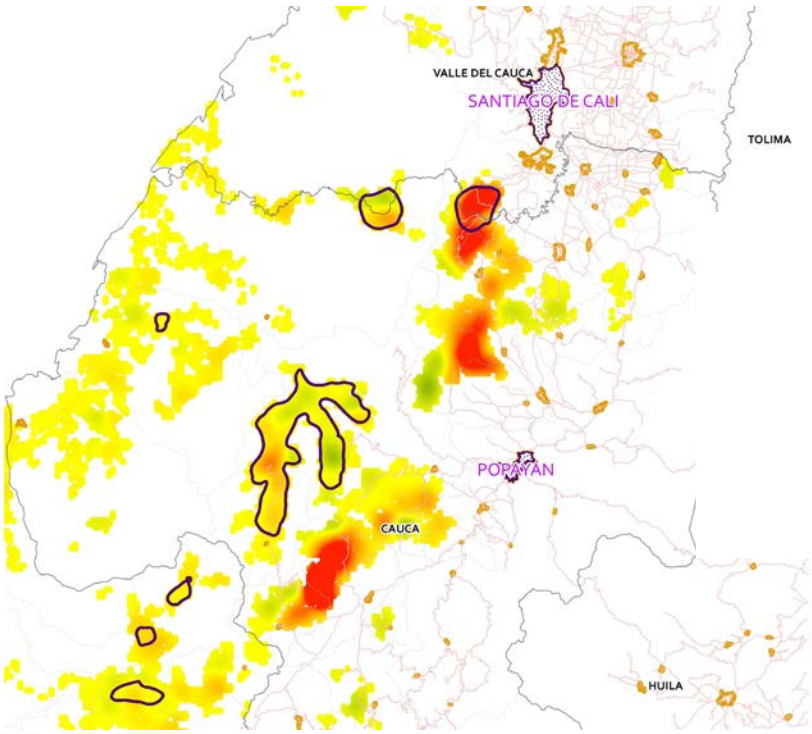



**Figure 20.**
Absolute variation for the 0-42 km range of a market metropolitan center, 2015-2023

The localization characteristic of infographic 8 should be added to the criteria for the evaluation of intervention actions because the economic or territorial development alternatives to be implemented must anticipate accessibility and the demanding population.




**There are only 2 hours of travel time between Cali and Popayan, metropolitan market centers, to the municipal capitals of Morales and El Bordo (zones of expansion) or the populated center of La Liberia (Timba hotspot).**

Metropolitan market centers

Hotspots

**Variation 2022-2023**

Reduction Stability Increase

**Infographic 8.**
Map of expansion zone alerts in Cauca

# Chapter 3

# Conjunctural aspects to understand the findings

The increase in coca cultivation, and particularly in potential cocaine production, has occurred in the same year in which many community leaders have expressed their concern about the situation of the markets associated with the coca leaf and its derivatives[116]. Several regions with coca crops have experienced restrictions on commercialization or reductions in sales prices, leading to the perception of a crisis in the coca markets. Given these conditions, *how can the increase in potential cocaine production be explained? If commercialization is difficult, why invest in improving agricultural practices?*

Research carried out by UNODC and the Colombian government indicates that it was possible to identify conjunctures in the *coca crisis* in certain markets and in part of the cocaine production chain between 2022 and 2023 that affected local markets without evidence of an impact on the flow of cocaine to international markets. This means that in 2023 there were conjunctural factors that affected coca growers in some geographical areas, but at the same time there were others under normal conditions for commercialization.

To better understand the changes in the dynamics that may eventually affect the coca/cocaine market, it is important to understand the following concepts:

## What do we understand by "conjuncture"?

A conjuncture implies changes in the coca/cocaine market derived from diverse factors or a combination of these that negatively impact the coca/cocaine market in the short term, in specific territories. These factors can affect any of the three main components of the market: supply, demand or price, mainly representing temporary adjustments.

## What do we mean by crisis?

A crisis refers to a structural reconfiguration of the dynamics between supply, demand and price. This term implies challenges that could suggest the unviability of the market in Colombia, evidencing a significant alteration in the conditions of operation in the medium and long term.

Among the research that allows these scenarios to be contextualized, the following

**116-**Several investigative media outlets have referred to it: "The coca crisis affected the peasants worse than the rest of the market", Mutante, November 1, 2024, https://mutante.org/contenidos/la-crisis-de-la-coca-afecto-a-los-campesinos-pero-no-al-resto-del-mercado -maria-alejandra-velez/; "Famine in Colombia: the coca crisis spreads", La Silla Vacía, March 23, 2023, https://www.lasillavacia.com/silla-nacional/aguantando-hambre-la-crisis-cocalera-se-expande -por-colombia/; "Coca market crisis in Colombia will not impact cocaine trafficking", InSight Crime, April 28, 2023 and "GameChangers 2023: Cocaine, between flash and boom in 2024", InSight Crime, January 5, 2024.

stand out[117]: production and yield (2023), characterization of productive hotspots (2023), characterization of infrastructures (2021) and of the dynamics of illicit cocaine hydrochloride production, collection of illicit drug prices and information for understanding their markets in areas of illicit crop cultivation (2022). Among the main findings of these studies, the following can be highlighted:

High probability of an increase in the potential cocaine production in Colombia, given that the new hectares detected in 2021 would tend to be productive in 2023, leading to an increase in potential cocaine production.

Trend towards local specialization in coca processing following the appearance of productive hotspot areas, which encourage a greater flow of financial resources, boosting trade and access to goods and services.

Growers with fewer cultivated hectares seem to be affected by the exclusion of local market negotiations in coca-growing areas: by the specialization of the market, which is responsible for guaranteeing production volume and product quality.

Structural changes in coca markets; there used to be a model in which the FARC-EP set the price and protected it from market fluctuations. Now, it is perceived that the setting of prices is determined by the law of supply and demand, where a scenario of oversupply could be driving prices down.

Changes in business models are evident, depending on the territory where the cultivation is located, mainly in hotspot areas where all the links in the production chain are present and their location is strategic in relation to the main drug departure routes.

Mobility of the production links to non-traditional areas, both in terms of cultivation (in the case of Central America) and crystallization (in the case of Europe, Africa and the Southern Cone of America). This evidence would suggest that, in order to minimize risk and loss of merchandise, the groups are basing these activities in countries where the production and commercialization of cocaine is more profitable, either because of a shorter journey to user markets (for example, promoting production in Mexico for the US market) or to mitigate losses due to interdiction activities.

This dynamic results not only from market forces but also from their interaction with multiple local elements including social processes, institutional dynamics and the conditions of conflict in these territories.

## There is current interest from illegal armed groups in municipalities with presence of coca cultivation

One of the reasons behind this dynamic is that the interest of illegal armed groups in controlling territories where coca cultivation is present persists, but it manifests itself in different ways.

There is a clear convergence between the presence of illegal armed groups and coca cultivation in Colombia. In 2023, **93% of coca-growing municipalities** reported the

**117-**Various studies: Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC). Report on the Measurement of Production and Yield in the Pacific Region (2023); Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC). Characterization studies of the productive hotspots: El Charco-Olaya Herrera and Argelia-El Tambo (2023); Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC). Characterization of the infrastructures and dynamics of the illicit production of cocaine hydrochloride (2021); Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC), Illicit Drug Price Monitoring Report, 2022-2023, (2022).

presence of armed actors in their territory. This figure remained stable in comparison with the previous year, with reporting in 92% of cases.

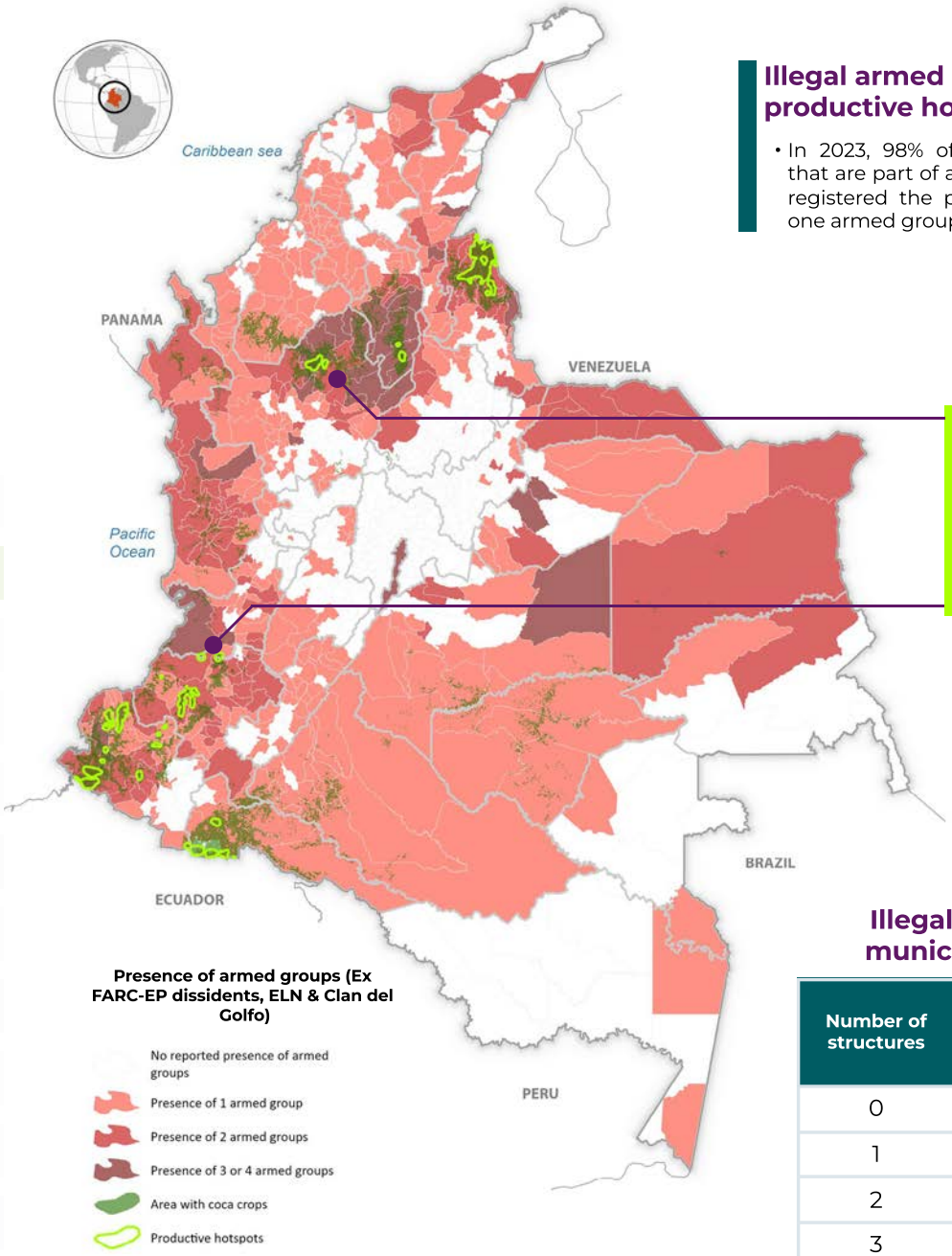
As shown in table 14, nearly half of the municipalities with coca are home to at least one armed group in their territory, in contrast to the 35% that report 2 groups and the 13% that register the presence of 3 or 4 groups.

**Table 14.**
Presence of illegal armed structures in municipalities with coca, 2023

| Number of illegal armed groups | Number of coca-growing municipalities | Total number of municipalities with coca and groups (%) |
|---|---|---|
| 0 | 12 | 7 |
| 1 | 82 | 45 |
| 2 | 64 | 35 |
| 3 | 21 | 12 |
| 4 | 2 | 1 |
| **Total** | **181** | |

**Source:** own elaboration based on data provided by the JEP and SIMCI.

In 98% of productive coca hotspots the presence of these illegal armed groups has been recorded (out of the 41 municipalities within the 15 productive hotspots, 40 have reported their presence). In most cases this involves the operation of a single armed group, with the exception of the productive hotspots of El Naya and Valdivia-Tarazá-Cáceres, which report the presence of up to four groups.




## Illegal armed groups in productive hotspots

- In 2023, 98% of the municipalities that are part of a productive hotspot registered the presence of at least one armed group.

Two hotspots **(Valdivia-Taraza-Caceres and El Naya)** have presence of **four illegal armed groups**. (Ex FARC-EP dissidents, ELN, Clan del Golfo and Others).

## Illegal armed groups in municipalities with coca

| Number of structures | Number of municipalities | Percentage of municipalities |
|---|---|---|
| 0 | 12 | 7 |
| 1 | 82 | 45 |
| 2 | 64 | 35 |
| 3 | 21 | 12 |
| 4 | 2 | 1 |
| **Total** | **181** | **100** |

## Presence of illegal armed groups in coca cultivation zones

- Coca cultivation tends to coincide with municipalities where illegal armed groups are present. In 2023, 93% of the municipalities that reported the presence of coca cultivation also reported the presence of at least one OAG, r-OAG or OCG.

- Fueled by the profits generated by the drug trade on the national and international markets, in 2023 various armed groups continued to be interested in the profits of the cocaine trade, which is why they have maintained their position in areas where coca cultivation is present.

**Infographic 9.**
Illegal armed groups in municipalities with coca

## Illegal armed groups and transnational criminal groups in coca production areas

Since the signing of the 2016 Peace Accord between the Colombian Government and the FARC-EP, both old and new illegal armed groups have taken advantage of the power void left by the former guerrillas to expand their territory, directly confronting each other for control of illegal economies, with coca leaf production being one of their main interests.

In 2023, 14 main armed groups were reported in Colombia, including ELN, Clan del Golfo and dissidents from FARC-EP, which stand out for the systematic violation of human rights due to their wide territorial reach[118]. The growth of these groups in the country by 2023, according to the Early Warning System of the Ombudsman's Office, indicates that Clan del Golfo experienced the greatest increase, going from having influence in 253 municipalities in 2022 to 392 in 2023. This was followed by the FARC-EP dissidents, increasing from 230 towns to 299, and the ELN from 189 to 231 (table 15).

**Table 15.**

Structure of organized armed groups (OAGs), residual organized armed groups (r-OAGs) and organized criminal groups (OCGs) reported in 2023[119]

| Name of the OAG, r-OAG or OCG | Structure | Number of substructures |
|---|---|---|
| CLAN DEL GOLFO | Arístidez Mesa Páez Block (formerly Erlín Pino Duarte) | 9 |
| | Central Urabá Front | 7 |
| | Jairo de Jesús Durango Front | 4 |
| | Nelson Darío Hurtado Simanca Front | 2 |
| | Roberto Vargas Gutiérrez Front | 5 |
| FARC-EP DISSIDENTS | Coordinated by Iván Mordisco | 32 |
| | Second Marquetalia | 10 |
| ELN | Dario Ramirez Front | 8 |
| | Northeastern Front | 8 |
| | Northern Front | 1 |
| | Western Front | 7 |
| | Eastern Front | 11 |
| | Frente Suroccidental | 5 |
| | Urban Front | 1 |
| La Inmaculada | Not applicable | Not applicable |
| Las Palmas | | |
| Los Caparros | | |
| Los Chiquillos | | |
| Los Espartanos | | |
| Los Mexicanos | | |
| Los Pachenca | | |
| Los Puntilleros | | |
| Los Rastrojos Costeños | | |
| Los Shotas | | |

**Source:** own elaboration based on data supplied by the JEP.

**118-**"The expansion and consolidation of illegal armed groups is the main threat to the country", Colombian Ombudsman's Office, January 23, 2024, https://www.defensoria.gov.co/-/la-expansi%C3%B3n-y-consolidaci%C3%B3n-de-los-grupos-armados-ilegales-son-la-principal-amenaza-para-el-pa%C3%ADs.

**119-**Pursuant to the provisions of Act 1908/2018, Organized Armed Groups (OAGs) are understood to be: "Those who, under the direction of a responsible commander, exercise such control over a part of the territory as to enable them to carry out sustained and concerted military operations". On the other hand, the residual Organized Armed Groups (r-OAG) are armed groups that emerged from the FARC-EP, a guerrilla group that demobilized in 2016, whose members did not accept the peace accords and returned to arms. Whereas Organized Criminal Groups (OCGs) are defined as "a structured group of three or more persons that exists for a period of time and cooperates in order to commit one or more crimes."

Another crucial aspect of the post-demobilization scenario of the FARC-EP is the strengthening of connections between transnational criminal groups and local organized crime in areas of cultivation and production of cocaine[120].

Given the fragmentation of the parties involved in the Colombian cocaine market, transnational criminal groups found themselves in difficulties guaranteeing a constant supply of cocaine to supply international markets. Therefore, some of these foreign groups chose to send emissaries to supervise production, ensure the cocaine trafficking and do business with the different national OAGs that control the production stage in the country[121].

Between 2018 and 2022, the Colombian Ombudsman's Office[122] issued more than 20 alerts about the presence of associates of the world's largest and most powerful drug cartels, especially from Mexico, in coca-growing areas with the intention of controlling the cocaine production and trafficking chain. However, there have also been reports of emissaries from the Balkans and Brazil, among other countries[123].

## Illegal armed groups continue to perpetrate violence in municipalities with coca cultivation

The expansion policy of the main illegal armed groups triggered a rise in violence nationwide in 2023. This manifested itself in an increase in territorial conflicts, where different armed groups sought to consolidate their presence in strategic areas of the country to ensure control over illegal economies, especially drug trafficking.

Clashes between armed groups remained high throughout the year, with a total of 145 clashes according to the Special Jurisdiction for Peace (JEP) and 169 according to information from the United Nations Office for the Coordination of Humanitarian Affairs (OCHA). Nonetheless, disputes with law enforcement bodies decreased from 220 in 2022 to 161 in 2023, partly as a result of the ceasefires arising from the Total Peace policy negotiations between the government and some armed groups such as the ELN.

Violence in coca-producing areas was not only the result of clashes between armed groups; it was also due to actions taken by these groups against the civilian population as a mechanism for exerting social control in municipalities where coca cultivation was present.

In 2023, it was found that 61% of these municipalities reported cases of homicides related to the armed conflict[124]. The three municipalities with the highest incidence were Caloto (Cauca), San Andrés de Tumaco (Nariño) and Jamundí (Valle del Cauca).

When observing this indicator at the level of productive hotspots, Tumaco-Border and Roberto Payán-Isagualpi are the ones that report the highest number of homicides, followed by the Argelia-El Tambo hotspot.

**120-**United Nations Office on Drugs and Crime, Global Report on Cocaine 2023: Local Dynamics, Global Challenges (Vienna: UNODC, 2023, p. 144), https://www.unodc.org/documents/data-and-analysis/cocaine/Global_cocaine_report_2023.pdf.

**121-**Ibid.

**122-**"Early Warning System", Colombian Ombudsman's Office , January 2023.

**123-**Ministry of Justice and Law. National Drug Policy (2022-2033). By sowing life, we banish drug trafficking. https://www.minjusticia.gov.co/Sala-de-prensa/Documents/Pol%C3%ADtica%20Nacional%20de%20Drogas%202023-2033%20%27Sembrando%20vida,%20desterramos%20el%20narcotr%C3%A1fico%27.pdf

**124-**The data related to the victimizing events in the context of the armed conflict were collected from the Unit for the Comprehensive Attention and Reparation for Victims (UARIV), August 2024. https://www.unidadvictimas.gov.co/es/transparencia-y-acceso-la-informacion-publica/publicacion-de-datos-abiertos/161

According to the JEP, homicides of social leaders were recorded in 28% of municipalities with coca cultivation in 2023, a decrease of 5% compared to the previous year. San Andrés de Tumaco (Nariño) was the municipality with the highest number that year, with a total of seven homicides of social leaders. In terms of coca-producing hotspots, Tumaco-Border and Roberto Payán-Isagualpi are once again at the top of the list for the assassination of leaders, followed by Catatumbo. These hotspots account for 13% of all homicides of leaders in municipalities with coca cultivation[125].

On the other hand, although 99.5% of the municipalities with coca cultivation registered incidents of communities being forcibly displaced by the dynamics of violence in these territories in 2023, a figure that remains constant with respect to the previous year, there was an overall reduction in the number of cases. In the concentration zones it dropped by 34% while in the deconcentration zones it dropped by 44%[126].

The three municipalities with the highest number of displacements in 2023 were Buenaventura (Valle del Cauca), San Andrés de Tumaco (Nariño) and Argelia (Cauca)[127]. At the hotspot level, the phenomenon was concentrated in El Naya and Telembí-Cristal, which account for 21% of all displacements in Colombia[128].

## There are elements[129] that contribute to local conjunctures

Interactions have facilitated various elements that provoke strategic reactions from producers; there is evidence that these elements were presented asymmetrically in different regions and at different times, without leading to a generalized crisis throughout the country. These conjunctural elements include:

Conflicts between illegal armed groups over territorial disputes in strategic production and trafficking areas. When territorial control is not clearly defined, territorial disputes often arise, affecting markets at a local level. Almost half of the municipalities with coca cultivation have more than one illegal armed group and between 145 and 169 clashes between illegal armed groups have been reported[130].

Under these conditions prices tend to be affected, as the determination of how much and to whom the *tax* on the purchase and sale of raw materials should be paid (transactional permits) fluctuates, generating anxiety, mistrust and a high risk of loss.

In opposition to this scenario, the other half of the municipalities with coca cultivation only have one armed group in the territory, which creates conditions favorable to technological improvement and investment to increase productivity.

**125-**Special Jurisdiction for Peace (JEP). Investigation and Prosecution Unit (June 21, 2024). Request for information from UNODC

**126-**The data related to the victimizing events in the context of the armed conflict were collected from the Unit for the Comprehensive Attention and Reparation for Victims (UARIV), August 2024. https://www.unidadvictimas.gov.co/es/transparencia-y-acceso-la-informacion-publica/publicacion-de-datos-abiertos/161

**127-**Ibid.

**128-**Special Jurisdiction for Peace (JEP). Investigation and Prosecution Unit (June 21, 2024). Request for information from UNODC

**129-**These factors were identified in the studies carried out to date by the Ministry of Justice and Law and UNODC-SIMCI: (1) monitoring of illicit drug prices (2022 and 2023); (2) updating of the productivity studies of coca cultivation in the regions of Putumayo-Caquetá, Meta-Guaviare, Orinoquía and Pacífico (November and December 2023 ); (3) characterization of the productive hotspots of Argelia and El Tambo and El Charco-Olaya Herrera (2023) and of Putumayo Orito-Vides and Putumayo-Border (2022), and (4) monitoring of illicit drug prices in strategic populated centers, a pilot study implemented by UNODC-SIMCI.

**130-**Andrés González Díaz, "Assessment in the issue of homicides, human rights violations and armed confrontations in Colombia during the year 2023: Report 1-2024", Universidad Externado de Colombia, March 11, 2024, https://www.uexternado.edu.co/centro-externadista-de-paz/balance- en-materia-de-homicidios-afectaciones-de-derechos-humanos-y-enfrentamientos-armados-en-colombia-durante-el-ano-2023-reporte-1-2024.

Increased production of coca leaves and their derivatives may exceed the available cash flow of a region. In some areas, the rate of growth of potential production could exceed commercialization capacity at the traffic level. In productive hotspots, for example, the area under coca cultivation has tripled in the last three years and in hotspots such as El Charco-Olaya Herrera and Tumaco-Border the production of coca leaves per hectare per year has increased from 5.0 metric tons/ha/year to 10.0 metric tons/ha/year. These conditions could create oversupply scenarios where the ability of buyers to absorb the product is limited. Under these conditions it is common for intermediaries (collectors) to prefer to negotiate with large producers in order to obtain raw materials (paste and base) more quickly, making growers with less hectares planted participate less in the market.

In contrast to this situation, there are production-to-order agreements in which the incentives favor technological improvements. When the groups reach agreements to traffic large quantities, the markets open up, creating favorable conditions; this is particularly observed in the zones of concentration, where they have managed to implement strategies that allow them to wait for these moments of prosperity[131].

Fewer buyers of leaves, paste and base in territories far from trafficking routes. The new geography of coca prioritizes concentration, efficiency and proximity to cocaine exit routes; this means that there is less interest on the part of buyers in going to territories that do not meet these conditions. In areas where this situation arises, there is a perceived decrease in cash income due to the absence of buyers[132].

Changes in agreements and payment methods. The sale of raw materials (cocaine base paste and leaves) via credit, without the guarantee provided by illegal armed groups due to the lack of liquidity in the regions and with the risk of not selling it, results in *loan-based* purchases of raw materials, which have a high risk of non-payment. Consequently, producers can no longer buy agrochemicals and chemical substances on credit because they do not have the payment guarantee that they previously had.

Changes in the rules of the game, in the guarantee and sustainability of transactions associated with the primary coca market. Given the increase in *tax* collection on the sale of coca products, as well as extortion by illegal armed groups, the profit margin of agricultural producers who grow coca is reduced.

These factors, or the interaction between them, create conjunctures in the territories that have different levels of impact on the potential production of cocaine. From a theoretical perspective, different levels of impact can be observed, generating different levels of response.

Growers who abandon cultivation are associated with factors such as: the absence of buyers, which affects their final income, the insertion in a profitable legal economy in their territory, by conviction, among others; therefore they prefer to abandon cultivation and become socially involved in the search for other sources of legal income.

Growers reduce investment and productivity: given the decrease in price in territories isolated from productive hotspots, growers sold their products at less profitable prices, affecting their final income.

**131-**Institutional workshops and ethnographies carried out in the studies of characterization of the productive hotspots of Putumayo-Border and Orito-Vides and workshops carried out in the framework of the research on the behavior of illicit drug prices in Colombia 2022 and first semester 2023.

**132-**Ibid.

Growers who stockpile production: in some parts of the country, such as southern Caquetá, producers decided to stockpile the product generated, particularly cocaine base paste, in the hope of a recovery in purchase prices; on the other hand, it became evident that the production that did not reach the market was used as a means of payment or barter.

Growers who adopt improvements in favor of greater productivity: as has happened in the Pacific region where the productive hotspot model is consolidated and spread throughout the territory, strategies that shape the coca economy towards agro-industrialized models.

Growers who are integrated into the drug trafficking chain: the profile of the agricultural producer in hotspot areas has changed over time; they have specialized in transforming coca leaves into cocaine base paste and in some territories, such as in the hotspots of the department of Putumayo, they sell cocaine base. These types of producers react and adapt more efficiently to changes in the drug trafficking chain.

It is quite difficult to focus on these reactions or to associate them in a differentiated way with specific conditions of the phenomenon; however, based on the field exercises, two extreme positions can be observed between which the conjunctural factors fluctuate.

## a. Changes in production models regarding specialization in coca cultivation, cocaine production and in the increase in the quality of cocaine[133]

The areas of the country least affected by the market conjuncture have been those where the productive hotspots and their peripheries are located; in these territories, where around 40% of coca leaf production is generated, considerable changes are evident in their business model, as the presence of all the links in the production chain is guaranteed, a chain favoured by the strategic location in search of proximity to the main routes of international traffic. This scenario has promoted a solid agro-industrial model that guarantees the production, transformation and trafficking of cocaine.

The trend towards local specialization in coca processing generates incentives for a greater flow of financial resources, boosting trade and access to legal goods and services in the populated centers close to productive hotspots[134], given the market specialization which is responsible for guaranteeing high production volumes and product quality. In this scenario, growers are more efficiently integrated into the drug trafficking chain and adopt improvements for better productivity; an example of this is the productive specialization of coca growers in hotspot areas: around 74% transform the leaf into cocaine base paste, and in a significant percentage (21% and 50%, respectively), in the

**133-**SIMCI has developed and implemented research projects that generate technical evidence regarding the current conjuncture of the coca/cocaine market and that can explain, to a certain extent, the current regional market dynamics. Among these investigations, the following stand out: production and yield, characterization of productive hotspots, characterization of the infrastructures and dynamics of the illicit production of cocaine hydrochloride, collection of illicit drug prices and information for understanding their markets in areas of illicit crop cultivation.

**134-**Ministry of Justice and Law and the United Nations Office on Drugs and Crime (UNODC). Characterization studies of the productive hotspots: Catatumbo, Valdivia-Tarazá- Cáceres (2021); Orito-Vides and Putumayo-Border (2022) and El Charco-Olaya Herrera and Argelia – El Tambo (2023).

Putumayo-Border and Orito-Vides hotspots, transform their coca leaf into cocaine base.

In these territories, which are functional not only for the cultivation phase but also for its transformation and trafficking, drug trafficking offers incentives for its establishment, transforming the territories where certain economic activities are boosted or influenced in different ways, allowing the circulation of illicit money that is incorporated into the licit economy, transforming and generating a greater dependence on this illicit economy.

Thus, the growth and expansion of the hotspots does not only depend on the capacity to produce coca/cocaine, but also on various factors that influence the sustainability of the activities that take place there. These factors include the definition of dominant parties, clarity in the rules of the game, security of facilities and protection of illicit activities, among other aspects that contribute to the increase in potential cocaine production in 2023 [135].

## b. A decrease in cash income is perceived in areas isolated from productive hotspots

There is evidence of factors such as the low level of market specialization and the low level of interest of illegal armed groups in drug trafficking in areas isolated from the productive hotspots, which managed to create a state of crisis: faced with scenarios of increased production generated by the hotspot areas, the intermediaries (collectors) preferred to negotiate with consolidated producers in order to obtain raw materials more quickly, which means that isolated, small and new coca growers participate to an ever lesser degree in local market negotiations. Therefore, the decrease in income is based on two fundamental factors: the first, associated with the absence of buyers of leaves, paste and base, and the second, due to the decrease in the prices at which the products were usually sold.

In isolated areas of the productive hotspots of the Putumayo-Caquetá region, conflicts between illegal armed groups over territorial disputes were shown to affect purchasing levels, as the determination of how much and to whom to sell was unclear given the atmosphere of anxiety, uncertainty and risk of product loss.

As has been presented throughout the document, the phenomenon of cocaine production in Colombia has been undergoing multiple changes associated with the geography of cultivation, the system of incentives and the focus of strategies to control it; these changes suggest the need to make methodological adjustments and expand the analysis towards indicators that allow a broader understanding of the phenomenon and a better estimation of the impact of interventions. UNODC and the Government of Colombia are engaged in technical discussions aimed at implementing the relevant technological and methodological improvements, guaranteeing the continuity of the historical series and respect for impartiality and transpar.

**135-**According to sources consulted by UNODC-SIMCI as part of fieldwork with producers in the area, the new Timba-Jamundí-Buenos Aires hotspot could have a high risk and incidence if the production model and linking of the hotspots in the Pacific region is implemented.

# Chapter 4.

## National Drug Policy 2023–2033

### 'By sowing life, we banish drug trafficking'

In compliance with Article 193 of Law 2294 of 2023, which established the 2022-2026 National Development Plan, the National Government formulated the 2023-2033 National Drug Policy, "By Sowing Life, We Banish Drug Trafficking." This process was developed through broad participation and dialogue with state entities and multiple civil society actors, including rural communities, women, and youth, among others. The policy was presented by President Gustavo Petro on October 3, 2023, in the municipality of El Tambo, Cauca.

This new policy marks a shift in focus, prioritizing the care of life and the environment, with a perspective centered on human rights, public health, and peacebuilding.

The National Drug Policy defines a mixed strategy under which actions are implemented aimed at providing **"OXYGEN"** to territories, communities, people and ecosystems that have been disproportionately affected by the illegal drug market, whilst advancing actions that generate **"ASPHIXIA"** on the strategic nodes of the criminal system, which are those that generate violence and profit the most from this illicit economy.

Additionally, the Drug Policy contains three key pillars: fair and responsible regulation, changing narratives, and international diplomacy for change. These pillars serve as convergence points for the strategic components of the Oxygen and Asphyxiation pillars.

### Axes and objectives of the National Drug Policy

| Oxygen | Suffocation |
|---|---|
| Transition to legitimate economies in rural and specially managed areas | Impact on strategic and high-value actors in the drug trafficking system |
| Environmental protection of territories affected by the illicit drug economy | Production infrastructure |
| Attention to vulnerable populations facing urban drug markets | Chemical inputs and precursors |
| Psychoactive substance use from the perspective of comprehensive care, public health, and human rights | Maritime, river, air and land interdiction |
| | Illegal finance and money laundering |
| | Strategic and efficient use of eradication |
| | Strategic nodes |
| | International Cooperation |
| | Peace talks and processes of submission |
| | Intersectionality of illicit trafficking with other licit and illicit economies |
| | **Combating corruption by protecting the implementation of the Drug Policy** |

**Weavers**

Fair and responsible regulation—changing narratives—international diplomacy for change

**Source:** Document "National Drug Policy 2023-2033 "By sowing life, we banish drug trafficking"

## Territorialization of Drug Policy

The Ministry of Justice and Law, through the Directorate of Drug Policy and Related Activities, leads the territorial implementation of the National Drug Policy, adapting actions to the specific needs of each region to comprehensively address the use and supply of psychoactive substances. The Sectional Narcotics Councils (CSE) and the Departmental Drug Committees (CDD) have established themselves as the main liaison bodies between the territories and the Ministry, enabling coordination of actions with local and national stakeholders.

In 2023, the Directorate supported 65 CSE sessions, 38 CDD sessions, and 144 technical roundtables in the 32 departments and Bogotá, DC, strengthening institutional capacities and monitoring the territorialization of the policy. In addition, workshops were held to develop comprehensive territorial drug plans throughout the country, involving local institutions, academia, and civil society. These plans are positioned as key tools for the effective implementation of the National Drug Policy at the local level.

In 2024, 247 technical assistance projects were provided to support the implementation of the National Drug Policy at the territorial level. As part of this effort, 65 sessions of the Sectional Narcotics Councils, 38 sessions of the Territorial Drug Committees, and 144 territorial Technical Roundtables were supported, covering all 32 departments and Bogotá, DC.

## Oxygen component

*Drug policy went from being an isolated issue – which fell under the jurisdiction of a couple of institutions – to being the responsibility of the Executive as a whole.*

### Axis 1. Transition to licit economies in rural and special management areas

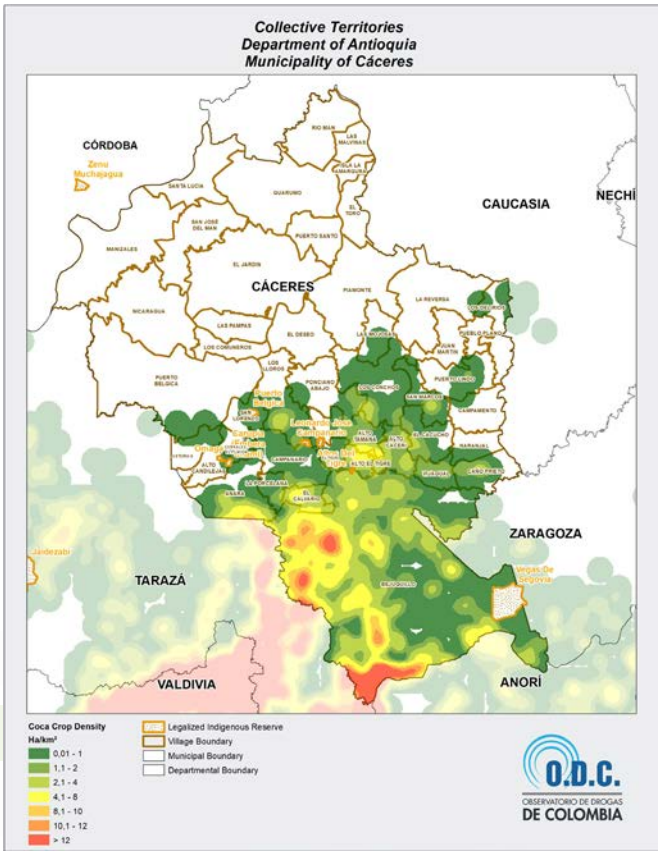
## **1.1.** Territorial Missions for the implementation of the Drug Policy

Among the most relevant aspects of the new approach proposed by the National Drug Policy is a comprehensive approach to addressing the drug phenomenon, addressing the causes and not just the symptoms. This involves addressing vulnerability, promoting social justice, and promoting community well-being.

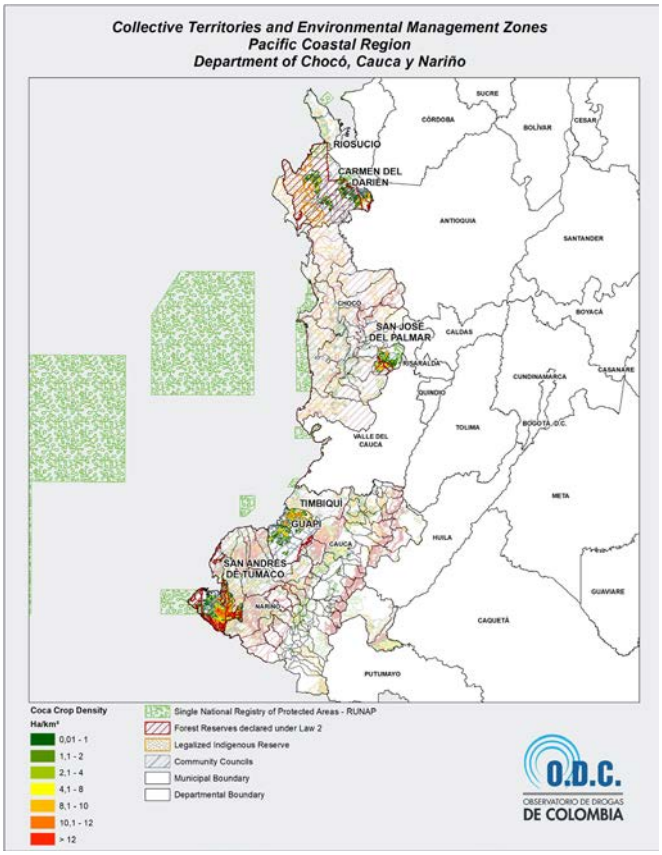
Therefore, the Territorial Missions Strategy is highlighted as a mechanism for inter-institutional coordination and coordination for the comprehensive and targeted implementation of the strategic lines of the National Drug Policy. Through the interagency action proposed by this strategy, rural communities dependent on illicit drug-related economies seek to progressively and sustainably transition to licit economies through a process of productive reconversion.

The *Missions* are designed with the territories in mind, in collaboration with ethnic communities, peasant organizations, and other strategic stakeholders. They also include strategic alliances with the private sector and international cooperation agencies.

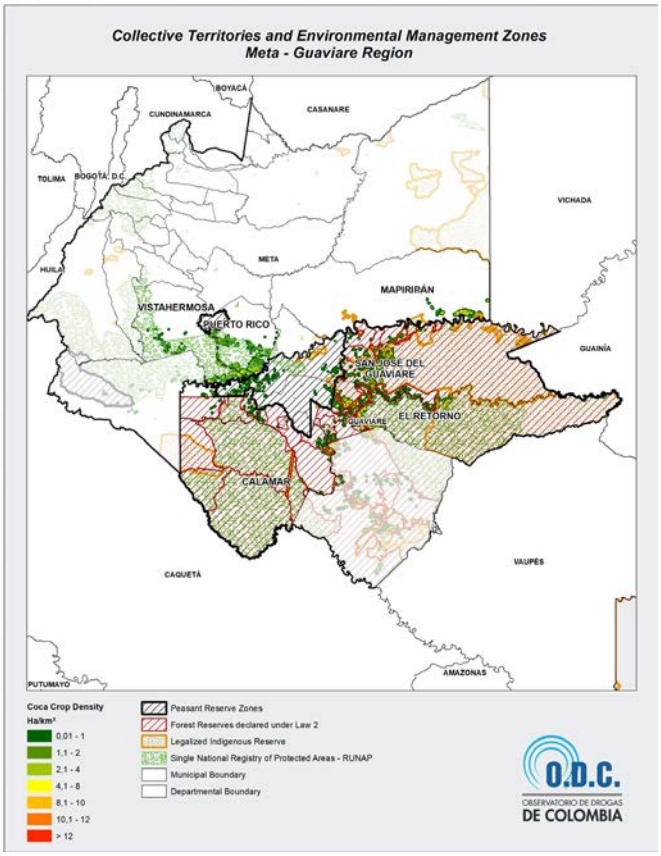
The Ministry of Justice and Law, together with the Ministry of Defense, the Ministry of Agriculture, the Ministry of Environment, the Ministry of Health, the Ministry of Commerce, the Ministry of Equality, and the Directorate for the Substitution of Illicit Crops, focused on the following territories, taking into account the presence of illicit crops in the municipalities, the trends in these crops, and other variables such as the multidimensional poverty index (MPI) of the municipalities, the municipal informality index, as well as environmental and security criteria.



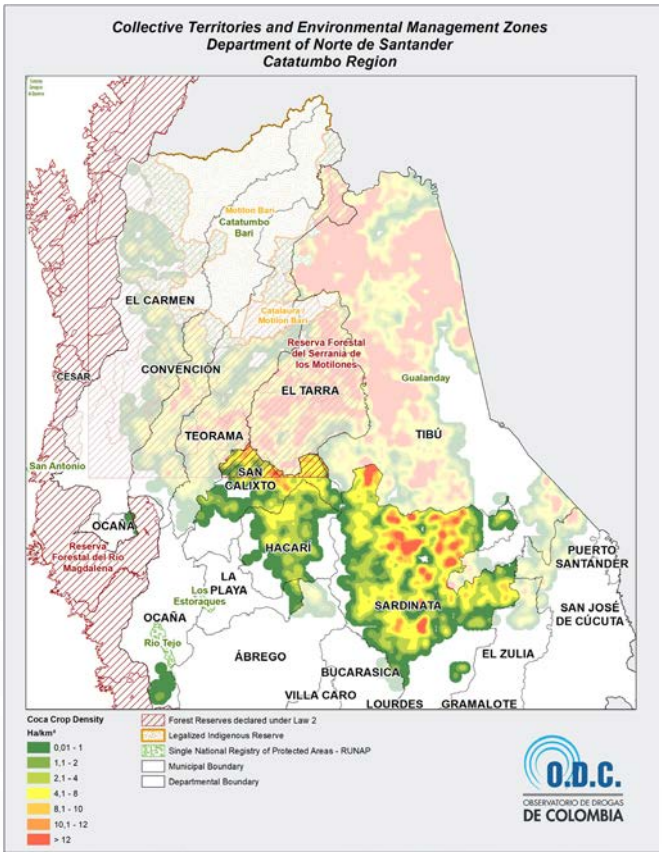

**Antioquia:** Cáceres




**Cauca:** Guapi - Timbiquí
**Nariño:** Tumaco
**Chocó:** San José del Palmar - Carmen del Darién - Riosucio




**Meta:** Mapiripán - Puerto Rico - Vista Hermosa
**Guaviare:** Calamar - El Retorno - San José del Guaviare




**Norte de Santander:** Hacarí - La Playa - Ocaña - San Calixto - Sardinata

## Infographic 10.

Focalization of territorial missions

The "Cauca Territorial Mission" is an initiative led by the Ministry of National Defense, the National Planning Department, and the Ministry of Justice, in coordination with local governments, Indigenous, Afro-descendant, and rural communities, the private sector, and international cooperation agencies, to promote economic, productive, cultural, and social transformations in Cauca, especially in areas affected by illicit crops. This strategy combines institutional interventions with military and police operations to dismantle illicit economies related to drug trafficking, illegal mining, and extortion, thereby promoting comprehensive development and security in the region.

## **1.2.** . Substitution of Illicit Crops

Within the framework of the National Development Plan[136], the National Government reaffirmed its commitment to meeting the objectives set out in the National Comprehensive Program for the Substitution of Illicit Crops (PNIS – from its original Spanish language initials: Programa Nacional Integral de Sustitución de Cultivos de Uso Ilícito), considering (1) the renegotiation of short- and long-cycle productive projects of the PNIS; (2) the appropriation of resources to fulfill the PNIS commitments acquired with families linked to ethnic collective territories (Indigenous Reservations in Cauca and Community Councils in San Andrés de Tumaco); and (3) the formulation of productive reconversion and territorial transformation projects that contribute to the implementation of Total Peace and the National Drug Policy 2023-2033 "By Sowing life, we banish drug trafficking."

### **1.2.1.** Compliance with the Peace Agreement–National Comprehensive Program for the Substitution of Illicit Crops (PNIS – from its original Spanish language initials: Programa Nacional Integral de Sustitución de Cultivos de Uso Ilícito)

As a result of this commitment, between 2017 and August 31, 2024, resources totaling $2.3 billion were committed to implement the National Comprehensive Program for the Substitution of Illicit Crops (PNIS) to implement the components of the Immediate Family Attention Plan (PAI), with the more than 80,000 families linked to the program.

### **1.2.2.** Contingency plan to comply with the commitments acquired in the individual agreements signed within the framework of the implementation of the PNIS

- Settlement of contracts signed with large operators during previous administrations due to poor technical execution: review and analysis of the 28 agreements and contracts signed during previous administrations with large operators, resulting in the release of COP $218.049 billion, which will be returned to the resources of the components associated with the Family PAI, primarily short- and long-cycle projects.

- Addressing the humanitarian crisis in PNIS families generated by the "recession" in the illicit coca economy 72,979 families have been assisted, with a value of COP $146 billion.

- Advance the implementation of short- and long-cycle projects, for which a renegotiation process was initiated with the PNIS families, which has generated the following results:

- 51,909 investment plans subscribed: each family defines according to the productive vocation, the interest of the holders, and the resources available in the PNIS for the implementation of productive projects.

**136-**See articles 9, 10 and 11 of Law 2294 of 2023, which issues the National Development Plan.

- Preparation: To date, the DSCI has managed the delivery of this resource to 46,726 families, equivalent to COP $140 billion.

- Creation of the Local Supplier Bank: as a tool for boosting the local economy through the proposal by beneficiary households of local suppliers who can meet the needs of each approved productive project.

- Differential care: Resolution to expedite care for beneficiaries over 70 years of age and with disabilities.

- Unification of short- and long-cycle resources to increase the impact of projects.

- Comprehensive technical assistance: for productive projects of PNIS holders from implementation to commercialization.

- Strengthening associativity: for the sustainability of businesses in the markets.

### **1.2.3.** New strategy for the transition from illicit to licit economies

The new strategy for transitioning to licit economies aims to implement economic diversification mechanisms and promote sustainable alternatives that reduce dependence on the illegal drug economy, in line with the 2023-2033 National Drug Policy. This requires comprehensive actions that address the structural causes of this dependence, mobilizing coordinated efforts from the State, the private sector, academia, civil society organizations, and communities.

The objective is to consolidate territorial development in regions affected by illicit crops through the strategic use of PNIS investments. This includes the development of sustainable, high-quality production systems that diversify the local economy, the strengthening of associative value chains that promote community cohesion, and the transition toward industrial models that increase competitiveness and added value. Furthermore, the project seeks to connect production with strategic national and international markets and guarantee environmental protection through sustainable practices and conservation projects.

Implementation is structured into three levels: first, ensuring immediate income for communities committed to substituting illicit crops through environmental incentives, conditional transfers, and guaranteed marketing, while developing sustainable, legal activities. Second, consolidating the comprehensive substitution of the illicit economy by promoting the production, marketing, and diversification of goods and services from local associative or emerging economies, with a focus on the grassroots economy and products with guaranteed demand. Third, generating an enabling environment for sustainability by facilitating access to land, improving road infrastructure, educational offerings, and recreational activities, and guaranteeing safe environments that drive long-term economic development.

The success of this strategy will depend on coordination among various state entities. Presidential Directive No. 8 of October 15, 2024, established the operating committee responsible for coordinating projects, defining strategic lines, and ensuring budgetary support for the substitution of illicit crops. Furthermore, partnerships with the private sector and international cooperation will play a fundamental role in strengthening production chains and ensuring the commercialization of the products generated. Progress was made in partnerships with *Nutresa* and *El Éxito* (sic)

to improve production quality and guarantee fair marketing as a strategy to enhance substitution processes

A significant reduction in illicit crops is expected by strengthening the social and economic fabric through sustainable production systems, increasing local competitiveness through strategic industrialization and marketing. Likewise, the goal is to improve the quality of life of communities with greater access to education, land, and security, while protecting the environment through sustainable production practices and ecological restoration projects.

### **1.2.4.** Prioritization of the 2024 intervention of the Directorate of Illicit Crop Substitution

*A total of 76,206 families (94 percent) of the National Comprehensive Program for the Substitution of Illicit Crops (PNIS) have immediate food assistance, 65,498 have comprehensive technical assistance, and 77,430 are moving forward with self-sustainability and food security projects.*

*In addition, 438 initiatives from the Comprehensive Substitution and Alternative Development Plans have implementation plans in 50 PNIS and PDET municipalities, corresponding to 53.9 percent.*

Twenty-two municipalities located in seven departments were targeted, selected in coordination between the Ministries of Environment and Sustainable Development, Agriculture and Rural Development, and Justice and Law, and the Directorate for the Substitution of Illicit Crops, within the framework of joint interventions and/or within the framework of the implementation of policies such as Comprehensive Rural Reform and Reindustrialization, strategies such as Restoration and the Comprehensive Plan for the Containment of Deforestation.

### **1.2.5.** Project bank of the Drug Policy Directorate

The Ministry of Justice and Law has a Project Bank, created as per Resolution 0958 of 2021 and amended by Resolution 0719 of 2023 of the Ministry of Justice and Law, through which it seeks to assist in the territorial implementation of the National Drug Policy.

The Project Bank provides technical and financial assistance for the development of initiatives that generate synergy between communities, regional authorities, and the National Government.

In 2023, the Project Bank supported 12 productive initiatives of peasant communities and organizations, Indigenous reservations, and community councils located in the regions of Catatumbo, Nariño, Guaviare, Caquetá, and Sur de Bolívar. These projects focused on products such as cocoa, coffee, fruits, sustainable livestock farming, guinea pig production systems, and forest conservation, reaching a total of 1,978 families directly and 20,000 indirect beneficiaries in five departments of the country, with an investment of 8.5 billion.

In 2024, the Project Bank allocated COP 9.015 billion to finance initiatives in the departments of Chocó and Meta, as well as in the municipality of San Andrés de Tumaco (Nariño). These initiatives, part of the strengthening of the National Drug Policy, will directly benefit 1,235 families.

## Successful experiences of the oxygen component

Progress has been made in successful experiences in the transition to a legal economy

### The "Our Land Prospers" Program, and the new approach to Drug Policy:

The USAID-funded Nuestra Tierra Próspera* program supports the Colombian government in improving the living conditions of rural households and fulfilling the commitments of the Peace Agreement through land management and institutional strengthening. Focused on regions affected by armed conflict and illicit crops, it seeks to promote the transition to legal economies through land formalization, integration into legitimate value chains, and investment in public goods and services to improve quality of life. Its territorial transition strategy includes property formalization, food assistance for those eradicating illicit crops, and the construction of community-prioritized infrastructure.

In the municipality of Cáceres, the program has made significant progress in 27 villages with illicit crops. To date, 304 properties have voluntarily eradicated illicit crops, benefiting 275 families, 156 of which already have property titles. Additionally, five production chains have been characterized and public-private partnerships strengthened in sectors such as beekeeping and fish farming. Similarly, 19 community infrastructure projects have been defined, while 100 leaders and 27 Community Action Boards have received training to promote associations and regional development. Cáceres now has an updated land registry of 11,859 properties and 100,000 hectares free of suspected mines.

The program has the potential to formalize 4,040 properties in all areas of operation, strengthening territorial transformation and promoting legal and sustainable economies as an integral part of Colombia's new drug policy. This comprehensive approach seeks to guarantee economic, social, and environmental development in the most vulnerable regions.

*Five-year program (2019–2024)

### Sacha Inchi - High nutritional value foods strengthened through alternative development projects

The project "Strengthening the Agricultural Economy of the Department of Putumayo through the Cultivation and Marketing of Alternative Crops", implemented by UNODC, supported by the Korea International Cooperation Agency (KOICA), in cooperation with the Agency for Territorial Renewal - Directorate of Illicit Crop Substitution, the Putumayo Governor's Office, local municipalities, among others, seeks to increase income and improve the living conditions of beneficiary peasant households, contributing to the substitution of illicit crops and strengthening the agricultural economy in the department. It is worth noting that 17% of the participants are indigenous, 4% Afro-Colombians, and 79% farmers, with an almost equitable distribution between men (52%) and women (48%).

This project has helped 700 beneficiary families establish 490 hectares of sacha inchi, respecting good environmental practices and ecosystem conservation. More than 1,500 hectares of coca have been registered in this area, and 60% of beneficiary families, who previously cultivated coca, now see sacha inchi as an opportunity to break away from illicit economies.

In 2023, the Colombian Institute of Family Welfare (ICBF) launched "Bienestarina Más Nuestra" - a revamped version of its flagship nutritional supplement that incorporates Colombian ingredients such as cassava and sacha inchi from Alternative Development Projects.

This supplement, distributed since 1976, benefits 2.2 million vulnerable people on a monthly basis – including children, adolescents, pregnant women, nursing mothers, and older adults, with the goal of improving their nutritional status and combating malnutrition. The new formula not only enhances the nutritional value of sacha inchi, but also supports local agriculture by

replacing imported ingredients with domestic crops, ensuring the purchase of agricultural production in Putumayo and other regions. This initiative reinforces the sustainable development of communities and strengthens child nutrition in Colombia.

### Café Paraíso - Paradise Coffee

In the municipalities of Toledo and Convención, a joint project between UNODC and CENIT, a subsidiary of Ecopetrol (Colombia's largest public-private company), is being implemented. It supports approximately 150 families who have switched from coca to coffee crops.

Joint efforts between UNODC, CENIT, and the Colombian government have promoted the economic, social, and productive development of beneficiary families by strengthening the value chains, production lines, and marketing strategies of Catatumbo associations. This is achieved through partnerships between institutional actors and the private sector.

Café Paraíso is now sold in one of the country's best-known supermarket chains, such as Carulla.

Café Paraíso demonstrates that it is possible to prosper with legal products, showing other farmers that, with quality products and clear marketing channels, they can move away from illicit crops.

### Empowering former women coca harvesters in Colombia

UNODC and UNDP implemented the project "Strengthening the Economic Autonomy of Women Former Coca Harvesters and Their Families," linked to the PNIS Program. This initiative, carried out between 2021 and 2023, promotes the production and marketing of goods and services through sustainable processes, contributing to the revitalization of the local economy, reducing gender gaps, and supporting the implementation of the Fund's Stabilization Area through the MPTF for Peace in Colombia.

The project, implemented in coca-affected territories such as Caquetá, Cauca, Meta, and Putumayo, successfully developed 198 inclusive businesses in sectors such as agriculture, livestock, and services, benefiting 600 women previously involved in coca harvesting under the National Program for the Promotion of Agricultural Development (PNIS). These women received training and strengthened their productive, social, organizational, and commercial skills, generating more than USD 280,000 in sales. Furthermore, the project incorporated a gender perspective to reduce gender gaps and consolidate sustainable businesses in their territories.

### Malongo Coffee

Colombia exported 20 tons of export-grade coffee from Ituango, Antioquia, and Miranda, Cauca, to Europe, in collaboration with the French company Malongo. This coffee, produced by families who previously relied on coca cultivation, was served to heads of state during the 2024 Paris Olympic Games. The export of three additional containers is planned, consolidating these communities' access to international markets. The negotiation, led by the Colombian Embassy in Vienna under the management of Ambassador Laura Gil, was based on fair trade principles, guaranteeing above-market prices and economic stability through long-term purchase contracts.

By offering viable legal alternatives such as gourmet coffee production, the initiative seeks to strengthen local economies, reduce dependence on coca cultivation, and promote peace and stability in communities.

## Axis 2. Environmental care of territories affected by the illicit drug economy

For the first time ever, Colombia has a program to replace illicit crops aimed at areas of special environmental importance.

### **2.1.** National Program for Ecological and Productive Transformation for the substitution of illicit crops in areas of special environmental importance

On October 29, 2024, within the framework of COP16, the Ministries of Environment, Agriculture, Justice, and the Directorate for the Substitution of Illicit Crops signed the "Framework Agreement of the National Program for Ecological and Productive Transformation for the Substitution of Illicit Crops in Areas of Special Environmental Importance in the Departments of Nariño, Cauca, and Chocó," with the aim of protecting biodiversity in areas affected by drug trafficking.

COP $200 billion will be invested through this agreement – including a FRISCO budget from assets seized from drug trafficking, allocated to the Ministry of Agriculture for 2024. As a result of the first phase of the project, 1,300 families will exchange illegal crops for conservation activities in the departments of Nariño, Cauca, and Chocó. One of the initial goals is the ecological restoration of 2,600 hectares affected by drug-related illicit economies.

Furthermore, the Ministry of the Environment developed a specific strategy to address the impacts of illicit crops in areas of special environmental importance. This strategy will be implemented jointly with the Ministry of the Environment, the National Natural Parks Unit, and the Directorate for the Substitution of Illicit Crops, among other entities

### **2.2.** Comprehensive Deforestation Containment Plan (PICD)

The Comprehensive Deforestation Containment Plan (PCID – from its original Spanish language initials - *Plan Integral de Contención a la Deforestación*) is an essential tool for building peace with social and environmental justice in Colombia. This plan sets forth the guidelines and orientations for achieving the goal of reducing deforestation by 20% by 2021, according to the National Development Plan "Colombia, a World Power for Life 2022-2026."

The Forest and Carbon Monitoring System of the Institute of Hydrology, Meteorology and Environmental Studies (IDEAM) identified 44 Active Deforestation Nuclei (NAD), defined as areas of the national territory that, in the last 20 years, show persistent deforestation rates. The PICD prioritizes efforts in 28 NAD, 22 of which are located in the Amazon-Orinoquia, with the objective of transforming these nuclei into Forest and Biodiversity Development Nuclei (NDFyB). The prioritization criteria to identify portfolio areas for NDFyB are i) remaining natural forest, ii) deforestation behavior, iii) presence of ethnic and peasant communities, iv) number of potentially benefited families, v) territories historically affected by illicit crops, and vi) accessibility to the territory.

Within the framework of the National Drug Policy (2023-2033), a profile of families involved in Payment for Environmental Services (PES) agreements was conducted, assessing their relationship with illicit crops such as coca, poppies, and marijuana. Based on these results, and under the leadership of SINA in coordination with the Directorate of Forests, Biodiversity, and Ecosystem Services (DBSE) and the Fund for Life and Biodiversity, specific value chains will be developed in the Direct Action Nodes (NAD). Communities will be key to the approval and implementation of these

actions, promoting forest and biodiversity economies that contribute to the sustainable use of resources and the containment of deforestation

### **2.3.** National Restoration Strategy (ENR)

The Ministry of Environment launched the 2023–2026 National Restoration Strategy (ENR), aimed at restoring landscapes, restoring ecosystem functionality, ensuring ecosystem goods and services, and strengthening territorial resilience in the face of the climate crisis. Based on the ecological integrity model, the Strategy identifies priority areas for intervention and promotes social inclusion, with a prominent focus on the role of women, through conservation, sustainable management, restoration, and anti-deforestation actions.

Within this framework, the project "Ecological and Productive Transformation of Areas Degraded by Illicit Crops or Socio-Environmental Conflicts" was approved by the Fund for Life and Biodiversity. Focused on the areas of special environmental interest in Nariño and Chocó, it seeks to restore 2,500 hectares affected by illicit crops through sustainable agroforestry systems and provide 1,300 incentives to families committed to restoration. It will benefit 900 families in Tumaco and 400 families in the communities of Río Sucio, Carmen del Darién, and San José del Palmar, promoting the transformation toward legal and sustainable economies.

In addition, the Ministry of Environment and Sustainable Development has coordinated efforts with the Directorate of Illicit Crop Substitution to disseminate the Strategy's vision and conduct a geographic analysis that identified nearly three million hectares in urgent need of restoration in areas affected by coca crops. These actions seek to integrate environmental restoration with productive and social solutions to address degradation and promote sustainable development in vulnerable territories

## Components of asphyxiation

Targeting strategic and high-value actors in the drug trafficking system has been prioritized. The persecution of vulnerable populations is a thing of the past.

### Impact on strategic and high-value actors in the drug trafficking system

The Ministry of National Defense, through the Security, Defense and Citizen Coexistence Policy "Guarantees for Life and Peace 2022 - 2026" and its alignment with the current drug policy of the National Government, which prioritizes the impact on the links that accumulate the most value, focuses its management mainly on i) the strengthening of land, sea, air and river interdiction, ii) the dismantling of infrastructure at the service of drug trafficking, iii) the strategic pursuit of illegal finance and the fight against money laundering, and iv) the strategic and reasoned use of forced eradication with full observance of human rights.

Thus, the Public Force focuses its actions on affecting the capabilities and profits of the most powerful drug trafficking organizations and nodes, from a systemic perspective, understanding their complexity and their relationship with other illegal and legal economies.

### **3.1.** Strengthening maritime, river, air and land interdiction

As a result of the application of the capabilities and development of maritime, river, air, and land interdiction operations of the Public Force, a total of 884 tons of cocaine were seized in 2024, being the largest historical record, which means an impact of approximately $26.52 billion dollars on the structures that drive drug trafficking, considering that one kilogram in the United States is around $30,000 USD.

Furthermore, in 2023, cocaine hydrochloride seizures reached 746.3 tons, representing a 13.2% increase compared to 2022..

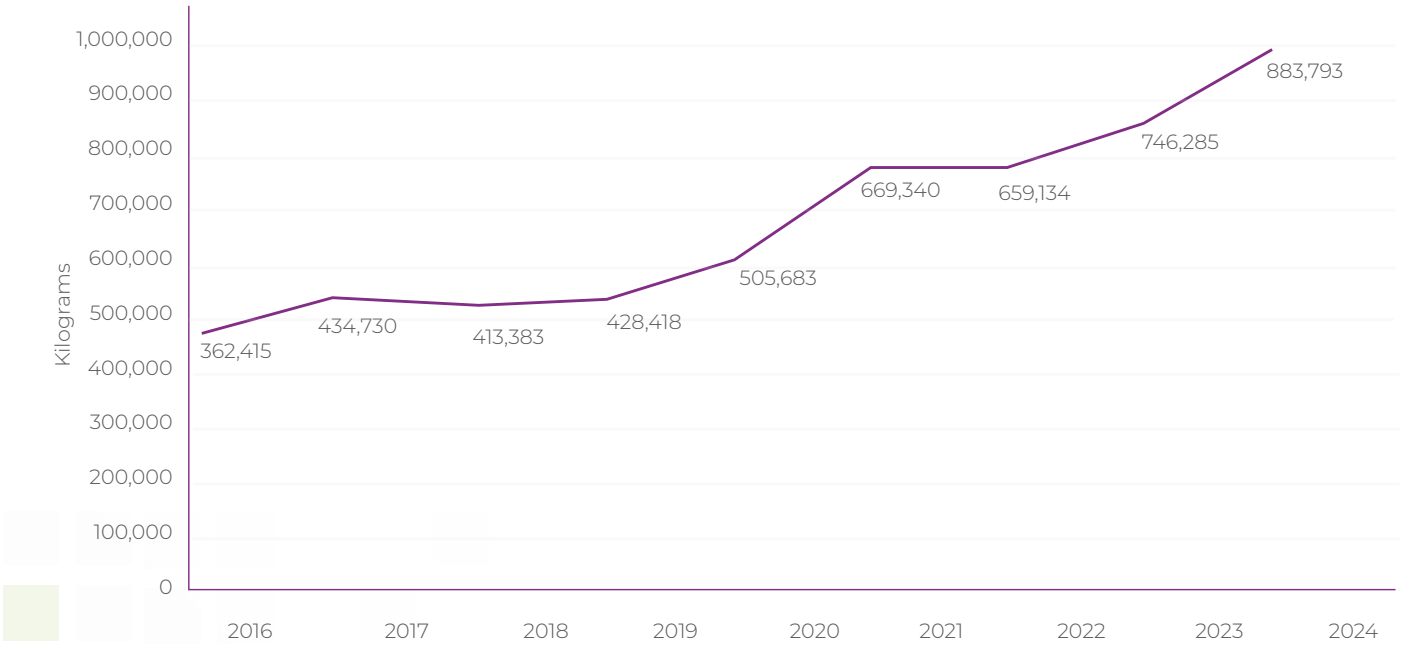



**Figure 21.**
Cocaine hydrochloride seizures in Colombia 2016-2024

**Source:** Ministry of National Defense - Data as of December 31, 2024 - Preliminary information subject to review and validation

In 2024, 76% of cocaine hydrochloride seizures involving Colombian security forces took place outside the country. This represents a significant impact on the economy and the logistical support of criminal organizations financed by illegal drug trafficking revenues. These results are the result of international cooperation and the principle of shared responsibility that underpins the Navy's Orion strategy, the Air Force's Zeus strategy, and the Police's Esmeralda Plus strategy. Regarding international cocaine hydrochloride seizures, 13.5% were recorded in Ecuador, followed by 11.5% in Panama, 9.5% in international waters, 9.3% in the Dominican Republic, and 8.7% in Mexico.

Regarding cocaine hydrochloride seizures within the country during the same period, 24.3% of the seizures were concentrated in the department of Nariño, 11.4% in Valle del Cauca, 10.8% in Bolívar, and 10.1% in Norte de Santander. This coincides with a large portion of the productive enclaves identified in SIMCI's 2023 Monitoring of Territories with Coca Cultivation.

The results obtained in terms of marijuana seizures are also worth highlighting. 2023 closed with a total of 421.1 tons seized, representing a 7.7% increase compared to 2022. In 2024, the impact on criminal networks increased with a 6.8% increase, representing a total of 450 tons of marijuana seized (28.8 tons more than the same period last year).

### **3.2.** Seizures of solid chemical substances between 2023 and 2024 - tons

In 2023, law enforcement disrupted drug production with the seizure of 30,055 tons of controlled solid chemical substances, while in 2024, seizures reached 3,312 tons.

### **3.3.** Seizures of liquid chemicals between 2023 and 2024 - gallons

In 2023, law enforcement disrupted drug production with the seizure of 14,586,114 gallons of controlled liquid chemical substances, while in 2024, seizures reached 5,872,747 gallons.

### **3.4.** Impact on infrastructure used for the production of illicit drugs of natural and synthetic origin

The destruction of drug production infrastructure is key to the fight against drug trafficking, as it temporarily disrupts production and, when carried out systematically, forces criminal organizations to relocate to lower-risk environments. This impact is greatest in cocaine hydrochloride laboratories due to their high investment. In 2023, 209 hydrochloride laboratories were affected, 12% more than in 2022, and in 2024, 165 infrastructures were destroyed. These operations were concentrated in Norte de Santander, Nariño, Antioquia, Putumayo, and Cauca.

Likewise, in 2023, 5,009 laboratories producing cocaine base paste and cocaine base from coca leaf (primary production infrastructure) were dismantled, while in 2024, 5,038 of these laboratories were dismantled.

Regarding the destruction of other structures, it is noteworthy that in 2023, 10 infrastructures nationwide used for the clandestine manufacture of potassium permanganate were dismantled, and in 2024, the destruction of 21 such structures was recorded, mainly in the departments of Putumayo and Nariño

Finally, it is worth highlighting that, in 2024, the Colombian Air Force has managed to reduce illegal flights by 55% in the Caribbean, Bahamas, and Pacific corridors, and has also achieved the destruction of two illegal runways in 2023 and one in 2024.

### **3.5.** Strategic and efficient use of the eradication of illicit crops

The strategic and reasoned use of forced eradication, with full respect for human rights, has led the Defense and Security sector to strengthen inter-institutional coordination, especially with entities such as the Directorate of Illicit Crop Substitution and the National Land Agency. This allows for maintaining up-to-date databases and geographic layers of illicit crops to identify areas where forced eradication operations cannot be carried out, in compliance with legal and human rights provisions.

Crops or polygons outside the excluded entities are the input for planning operations to intervene in illicit crops, employing all available technological advances to ensure precise operations, as well as inter-institutional monitoring as precautionary measures and parameters to avoid and minimize potential risks of harm to third parties.

The role played by the Defense sector in compliance with Unified Ruling 545 of 2023, issued by the Supreme Court of Justice, should be highlighted. It mandates immediate and strict compliance with the orders issued by the Superior Court, within the scope of its jurisdiction. It also requests the suspension of forced eradication efforts in the 101 municipalities designated by said ruling, in the departments of Cauca, Nariño, Putumayo, and Norte de Santander.

At the same time, and within the framework of human rights and international humanitarian law, as outlined in the ruling, the security forces respect human rights and act in accordance with the hierarchy established by the Court, which prioritizes voluntary substitution over forced eradication. The latter will only proceed if the former fails and must adhere to the precautionary principle.

In 2023, the Public Force eradicated 20,325 hectares of coca crops, while in 2024, the National Police eradicated a total of W9,403 hectares of coca crops. Of these, 87.3% were concentrated in Putumayo, 5.8%

in Bolívar, and 4.4% in Antioquia. Finally, it should be noted that in the departments of Santander and Boyacá, eradication work is being carried out in the Serranía las Quinchas National Natural Park as a measure to protect the country's strategic ecosystems, such as the National Natural Parks.

### **3.6.** Administrative Control of Chemical Substances

The Ministry of Justice and Law, in partnership with UNODC, strengthened response capacities for the comprehensive control of chemical products and substances for 130 officials from various entities, including the National Police, the Attorney General's Office, the National Navy, and the DIAN (National Tax Agency), in key cities such as Medellín, Cúcuta, Popayán, Putumayo, Puerto Asís, and Buenaventura. In addition, 20 international engagements (20% bilateral and 80% multilateral) were held with organizations such as COPOLAD, UNODC, and INCB, and an inter-institutional guide was developed on the prosecution and disposal of seized chemical substances. In December, a Program Implementation Letter (PIL) was signed with the United States Embassy's INL Program, thereby strengthening the control and disposal of widely used chemical substances.

## **3.7.** Extraditions

### Table 16.

Effective extraditions for drug trafficking-related crimes 2017-2024

During President Petro's administration, 356 people have been extradited to various countries for drug trafficking-related offenses, of which 291 were extradited to the United States.

| 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| 127 | 152 | 128 | 121 | 199 | 133 | 142 | 171 |

**Source:** Directorate of International Affairs. Ministry of Justice and Law – Data as of December 31, 2024

### Table 17.

Number of people with indictments for money laundering offenses

In 2024, the Attorney General's Office's Specialized Anti-Money Laundering Directorate filed 73 indictments related to money laundering, the investigations of which are related to drug trafficking.

| 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| 19 | 97 | 93 | 56 | 73 |

**Source:** SPOA - Scoreboard of the Delegate for Criminal Finance

### Table 18.

Number and value of assets with precautionary measures of extinction of the right of ownership for crimes related to drug trafficking

As of December 31, 2024, the Specialized Anti-Money Laundering Directorate of the Attorney General's Office reports the following results regarding the number and value of assets affected by precautionary measures of seizure, confiscation, and loss of the power of attorney over ownership.

Number of assets and value of assets in Colombian pesos.

| | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| Número de bienes | 6,420 | 4,768 | 3,582 | 4,052 | 1,337 |
| Valor de los bienes pesos colombianos | 11.6 billones | 7.2 billones | 2.3 billones | 1.4 billones | 532 mil millones |

**Source:** SPOA - Scoreboard of the Delegate for Criminal Finance

**United Nations**
Office on Drugs and Crime

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