

Drugs, international challenges



FROM OPIUM TO FENTANYL: RURAL LIFE, POLITICS AND CRIME IN MEXICO

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In its 'World Drug Report 2021', the United Nations Office on Drugs and Crime (UNODC) ranked Mexico as the third largest producer of illegal opium in the world (behind Afghanistan and Myanmar), with a potential of 440 tons and an estimated 21 500 hectares of poppy cultivation from July 2018 to June 2019 (UNODC, 2021a).

Unlike in other parts of the world, poppy cultivation and opium use are recent phenomena in Mexican history. Their development during the 20th century was the product of social and political factors which must be examined in order to understand Mexico's current position in the international market for illegal opioids, as well as the turning point which seems to have taken place in recent years with the emergence of a new type of substance: illegal fentanyloids. While from the early 2010s onwards, poppy cultivation and opium production, galvanised by rising heroin use in the United States, increased significantly, the most recent data has indicated a decline in both the areas of poppy cultivation¹ and in seizures of its main by-product, heroin, both in Mexico² and in the United States³. At the same time, US authorities

report an increase in use and seizures of illegal fentanyloids from Mexico (DEA, 2021). The concomitance of these two opposing trends therefore fuels the hypothesis of a substitution effect, in favour of fentanyloids to the detriment of heroin, in the Mexican-US market for illegal opioids (Le Cour Grandmaison *et al.*, 2019). In order to understand how the illegal poppy economy in Mexico was built and the consequences of its decline on the stakeholders involved, this issue of 'Drugs, international challenges' proposes to place the development of poppy cultivation and heroin production in Mexico in its geographical and historical context, before exploring, through an analysis of descriptive statistics and secondary field sources, the impact of recent fluctuations in the heroin market on poppy cultivators.

■ Poppy in Mexico, a social and political history (1870s-1910s)

While traces of opium poppy (*Papaver somniferum*) cultivation have been found in Neolithic sites in Central and Eastern Europe dating back to the sixth

millennium BCE (Salavert *et al.*, 2020), as well as in writings referring to the medical use of opium during the Tang dynasty in China (618-907) (Zheng, 2003), the presence of poppies and opium in Mexico is thought to date only from the end of the nineteenth century, with the arrival of a wave of Chinese immigration (Astorga, 2015; Cedillo, 2020).

Indeed, following the famine that hit China from 1876 to 1879, causing between 9 and 13 million deaths⁴, thousands of young men embarked for the southwestern United States to

1. 23% decrease in poppy cultivation area in the 2018-2019 cycle, compared to the 2017-2018 cycle, as estimated by UNODC (UNODC, 2020).

2. -24% in 2020 compared to 2019, according to figures reported by the Coordination Group of the National Effort to Combat Drug Trafficking and available in the Mexican Government Report 2020-2021 (Informe de Gobierno 2020-2021) (p. 74 of the statistical appendices).

3. -7.5% in 2020 compared to 2019 at the US Southwest border, according to data published by US Customs and Border Protection (accessed at <https://www.cbp.gov/newsroom/stats/drug-seizure-statistics> on 15 October 2021).

4. Estimate available on the Food and Agriculture Organization of the United Nations website, <http://www.fao.org/3/U8480E/U8480E05.htm> (accessed on 15 October 2021).

find work in railway construction and mining. Anti-Chinese racism quickly developed among the white population⁵ and prompted the President of the United States, Chester Alan Arthur, to adopt the Chinese Exclusion Act in 1882, arguing that “the coming of Chinese laborers to this country endangers the good order of certain localities thereof”⁶. This prohibited the entry of all Chinese persons, with the exception of diplomatic personnel and representatives of the Chinese government, for an initial period of ten years – it was in fact extended in 1892, then in 1902, and was not repealed until 1943.

This context north of the border coincided with a period in which the dictatorship of Porfirio Díaz in Mexico (1876–1911) promoted the importation of skilled, low-paid labour for the railways and cotton production in the northwest of the country. From then on, Chinese workers would favour Mexico as a land of emigration (Buchenau, 2001; González Oropeza, 1997). A Treaty of Amity, Commerce and Navigation was thus signed in 1899 – the first between the two countries – and authorised “[Mexican] citizens and subjects [of the Empire of China] to go freely to the respective countries of the High Contracting Parties [of the treaty] and to reside in them”⁷. The number of Chinese immigrants residing in Mexico thus rose from one thousand in 1895 to 13 203 in 1910, 99% of whom were men (Buchenau, 2001), inhabiting a country that at the time had only about fifteen million inhabitants⁸.

Chinese immigrants settled particularly in the north-western states of Mexico: Sonora, Chihuahua, Coahuila, Sinaloa and Baja California accounted for two-thirds of the Chinese population in Mexico in 1910 – one-third in Sonora alone. They imported opium use, initiated small-scale poppy production (Astorga, 2015, p. 347) and opened the first opium dens. In his book *Drogas sin fronteras*, the social historian Luis Astorga reports, for example, a correspondence between the US consul based in Chihuahua and the Secretary of the State Department, mentioning the presence of opium

dens in the city of Chihuahua in 1911. At the time, the sale of opium was controlled but not illegal. The substance was even prescribed by some doctors as an analgesic or sedative, in the same way as heroin, and its non-therapeutic use was very rarely prosecuted by the Mexican authorities (Schievenini Stefanoni, 2013).

The 1910s were a turning point in several respects. On the one hand, the Mexican revolutionary process was accompanied by an intensified nationalism on the part of the various parties involved, with the result that anti-Chinese racism, which had already developed along the same lines a few decades earlier in the United States, was stirred up (González Oropeza, 1997). This phenomenon assumed extreme proportions at the very beginning of the revolution when, on the basis of rumours accusing the Chinese community of supporting the dictator Porfirio Díaz, 303 Chinese – or Chinese-looking – people were massacred on 15 May 1911 by a contingent of insurgents aided by the mob in the town of Torreón (Coahuila State). In addition, the International Opium Convention – the first multilateral agreement on drug control – was signed in 1912 by 12 states⁹. Although Mexico did not ratify the Convention until 1924, it had already subscribed to its provisions in 1912 and promoted reforms to further control the production, trade and consumption of medicinal opium and to prevent smuggling.

■ Development of poppy production: the Mexican state’s “double dealing” (1920s-1940s)

The 1920s began with the rise to power of the ‘Sonora Dynasty’, a group of revolutionary military leaders (*caudillos*) from the eponymous north-western state. The sons of large landowners – Álvaro Obregón Salido and Plutarco Elías Calles – or merchants – Adolfo de la Huerta and Abelardo Rodríguez Luján –, they governed the country

between 1920 and 1934 and favoured the development of agriculture for export to the United States, which mainly benefited the agricultural bourgeoisie (*terratenientes*) of Sonora, as well as the neighbouring state of Sinaloa, further south (Farfán-Mendez and Porter, 2020). At the same time, anti-Chinese racism continued to grow to such an extent that the Treaty of Amity, Commerce and Navigation with China was revoked by Mexico in 1920 (González Oropeza, 1997) and a series of measures were adopted by the federal government of Álvaro Obregón Salido – as well as by local governments – to tighten the conditions of entry into Mexico for Chinese immigrants and to restrict the freedoms of those who had already settled there. In particular, properties and businesses were confiscated and ghettos created to confine them (de la Rosa Palomares, 2016). Public discourse had by that point been completely liberated and, in 1921, Senator Andrés Magallón went so far as to propose a plan with the objective that “*the Chinese who are already in the country should not continue to cause harm, both in the commercial, moral and physical spheres, through their illnesses and vices to the Mexican population*” (González Oropeza, 1997, p. 53).

With political support from the ‘Sonora Dynasty’ and protected by movements that blamed Chinese immigrants for much of the opium smuggling into the United States, the *terratenientes* in Sonora and Sinaloa began to produce poppy on their own land and take over the latex crops of smaller farms without direct access

5. Racism, which was expressed in an extreme way in the massacres of Rock Springs (Territory of Wyoming) in 1885 and Hells Canyon (Oregon) in 1887, where 28 and 34 Chinese immigrants were murdered, respectively.

6. Document available at: <https://www.ourdocuments.gov/doc.php?flash=false&doc=47&page=transcript> (accessed on 15 October 2021).

7. Document available at http://cdigital.dgb.uanl.mx/la/1080046961/1080046961_46.pdf (accessed on 15 October 2021).

8. 1910 census data, available at <https://www.uv.mx/apps/censos-conteos/1910/menu1910.html> (accessed 15 October 2021).

9. Germany, China, Japan, Persia, Russia, the United Kingdom, Italy, the Netherlands, Siam, France, Portugal and the United States.

to the illegal market (Cedillo, 2020; Farfán-Mendez and Porter, 2020). This was the case, for example, of Alejo Bay Valenzuela, Governor of Sonora from 1923 to 1927 and a close ally of the President of the Republic, Álvaro Obregón Salido (Astorga, 2015), and, a few years later, of the Mayor of Badiraguato, Melesio Cuén (Enciso, 2015).

The post-revolutionary Mexican governments then began double dealing. On the one hand, alongside the ratification of international treaties, they enacted laws to prohibit the use, production and trade of ‘stimulant drugs’ (Schievenini Stefanoni, 2013) – opium, morphine, heroin, cocaine and marijuana are included in the Mexican Health Code of 1926 (Ibarra, 2021). The subject of drugs was gradually gaining ground in internal political discourse too, particularly in the aftermath of the Second World War. From 1945 onwards, under the presidency of Manuel Ávila Camacho, references to suppression of trafficking drugs can be found in all the annual reports presented by successive presidents of the Republic to Congress. Miguel Alemán Valdés, his successor, was the first to speak about the destruction of poppy plantations by the authorities, in the following terms:

“True to its unwavering goals and respect for its international commitments, [Mexico] has succeeded in destroying several poppy plantations”¹⁰.

On the other hand, at the same time as the Mexican state was taking a tougher stance and reinforcing the legal frameworks on drugs, Mexican state agents were involved in the illegal production of poppies and the trafficking of its derivatives (opium and heroin) in the northwest of the country. Documented by the US authorities since the beginning of the 20th century (Astorga, 2015), the links between the Mexican political sphere and this illegal economy took on a whole new dimension in the 1940s. On 21 February 1944, Rodolfo Tostado Loaiza, Governor of Sinaloa and a close ally of former President Lázaro Cárdenas del Río,

was assassinated. Immediately, part of the national press reported on the hypothesis of a settling of scores linked to opium trafficking and which could have been ordered by the man who would succeed Tostado Loaiza as governor, Pablo Macías Valenzuela. However, another hypothesis seemed to prevail afterwards: Tostado Loaiza was allegedly killed on the orders of the *terratenientes* of Sinaloa, in retaliation for his support for the agrarian reform that promoted a redistribution of their lands (Astorga, 2004, 2015). This case marked a turning point because, for the first time in a murder of a Mexican political leader, the argument of drug trafficking was used to hide political motivations and public opinion accepted it all the more easily since links between certain politicians and traffickers were notorious.

■ Militarisation of the “War on Drugs” (1950s-2020s)

In the aftermath of the Second World War, the United States experienced a new opiate crisis – the previous one having occurred in the 1910s with a sharp increase in morphine use. Opium gave way to heroin on the illegal painkiller market and several major cities, such as New York and Chicago, reported a significant increase in the number of users, particularly in the black community. The authorities’ repressive actions were particularly focused on the latter, to the extent that in 1950s Chicago, 7 out of 8 people arrested for a drug offence were black (Hughes *et al.*, 1972). John Ehrlichman – an adviser to President Richard Nixon from the 1960 campaign until 1975, when he was convicted during the Watergate trials – would reveal much later that one of the aims of the “war on drugs”, launched by the White House official with Operation Intercept in 1969 and then in a 1971 speech¹¹, was to focus the repressive apparatus of the State on “two enemies: the anti-war left and black people”¹², in a context marked by the Vietnam War, the rise of the Black Power movement and a transposition of the Cold War to Latin America.

In addition to supporting coups to remove governments deemed hostile to US interests, the United States also pushed for a strengthening of the international drug control regime, using security arguments¹³ that would allow it to fund and/or participate directly in military operations in countries producing illegal crops. In Mexico, where the Institutional Revolutionary Party (PRI) governed with an iron fist, the 1970s saw the start of major drug ‘eradication’¹⁴ operations¹⁵. Under the pretext of the fight against drugs, the Mexican government took advantage of US financial and tactical aid to carry out its *Guerra Sucia*¹⁶, deploying thousands of soldiers – who committed their share of human rights violations (Fernández-Velázquez, 2018) – in rural areas where

10. “Informe del presidente Miguel Alemán”, 1 September 1947, p. 360.

11. President Richard Nixon’s press conference on 17 June 1971, in which he called drug abuse “public enemy number one”.

12. Baum, “Legalize it all”, Harper’s Magazine, 22 March 2016.

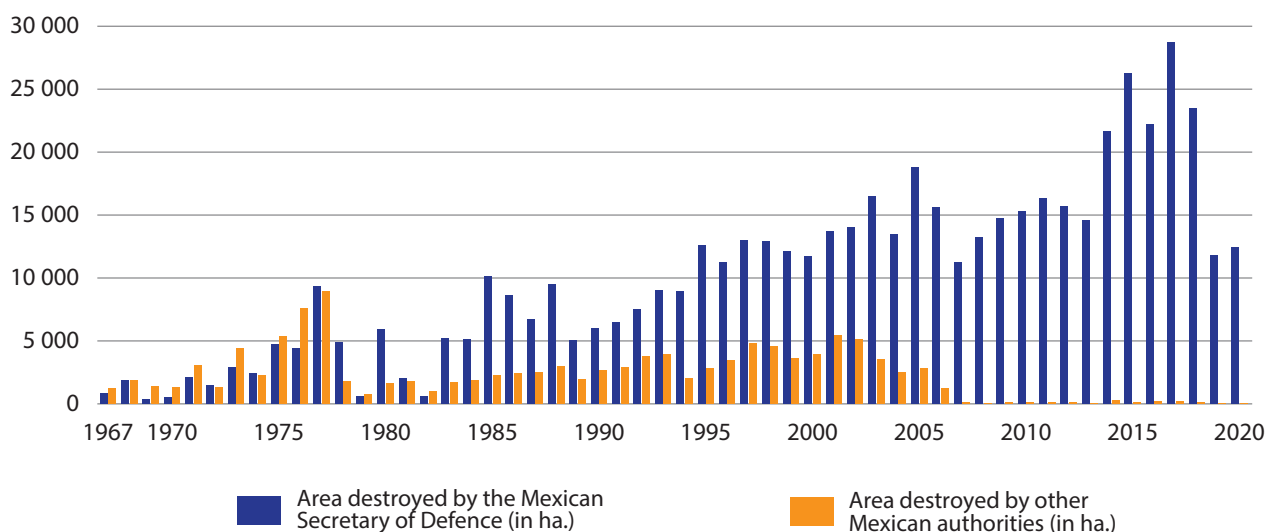
13. It culminated in the signing of the Vienna Convention in 1988, the preamble to which presented drug trafficking as a threat to “the stability, security and sovereignty of States”, i.e. an issue of internal and national security, justifying the involvement of the military. In addition, Article 14 of the 1988 Convention sets out a series of measures to “eradicate” the illegal cultivation of plants containing narcotic drugs or psychotropic substances. The word was not chosen at random and had been absent from the 1961 Single Convention.

14. Although the term “eradication” is used both in the international arena and in Mexico’s internal political discourse, it has an equivocal connotation that leads us to prefer the term “destruction”. Indeed, as Álvarez & Samamé point out, “eradication” implies the pursuit of a zero objective, which in the case of illegal cultivation in Mexico would correspond to a complete destruction of poppy and marijuana plots (Álvarez Amézquita & Samamé, 1963). As the Mexican state has never really pursued this objective, the use of the term “eradication” is more a matter of affirming its commitment to the fight against drugs through discourse, rather than a policy of eradicating illicit crops as such (Piñeyro, 2004).

15. Plan Canador in 1966, Taskforce Condor in 1977, Taskforce Marte in 1987, Taskforce Azteca in 1996, Directive Azteca XXI in 2000 and the Millennial General Plan against drug trafficking in 2001.

16. Refers to the low-intensity conflict through which the Mexican State sought to repress political protest movements from the 1960s until the early 2000s, which were marked by the first defeat of the PRI in presidential elections and the creation of the Special Prosecutor’s Office for Social and Political Movements of the Past (FEMOSPP). The ¡Eureka! Committee has counted hundreds of enforced disappearances and other cases of serious human rights violations perpetrated by government agents during this period.

Figure 1. Authorities in charge of poppy destruction from 1967 to 2020



Sources: Federal Government Annual Reports 1977, 1987, 1989 and 2021, as well as the 1992 and 2001 Statistical Yearbooks

protest movements were emerging and demanding a redistribution of land and an end to the plundering perpetrated by the caciques and local authorities (Orraca Corona, 2012).

Some researchers even suggest that poppy production in the State of Guerrero (southwestern Mexico) was driven by the army itself in order to justify the dispatch of almost 24 000 soldiers during the 1970s (FEMOSPP, 2006) and thus subdue Lucio Cabañas' Party of the Poor and other insurgent movements (Gaussens, 2018; Mora Bayo, 2013). From this period onwards, the Mexican Secretary of Defence (*Secretaría de la Defensa Nacional* or SEDENA), which until then had been involved in supporting the Public Prosecutor's Office in the destruction of illegal poppy and marijuana crops, gradually became the main strategist and operator (Carvente Contreras, 2017). The percentage of areas destroyed reported¹⁷ by the Secretary of Defence thus rose from 40% under the presidency of Gustavo Díaz Ordaz (1964-1970) to over 98% from the presidency of Felipe Calderón Hinojosa (2006-2012) (see Figure 1), which enabled it to justify not only a very large territorial deployment - over 98 000 soldiers in 2021¹⁸ compared to around 70 000 in 1970 (FEMOSPP,

2006, p. 52) - but also a budgetary increase (Carvente Contreras, 2017, p. 133).

The aim of "eradicating" drug production and trafficking, on the other hand, was never achieved, so that its use in the Mexican government's official communication seemed to be more of a response to a "conditioned reflex" or to the requirements of the bilateral diplomatic relationship with the United States. The programme to destroy illegal crops was thus renewed year after year without any real evaluation of its effectiveness and externalities. The sociologist and specialist on the Mexican Army, José Luis Piñeyro, wrote in 2004 that the US evaluation of the Mexican government's anti-narcotics figures was more an "act for the internal consumption of the [US] electorate than an objective analysis of the situation. [...] It states whether or not there is a will on the part of the Mexican government and not the concrete results, such as: achieving a substantial and sustained decrease in the shipments, quality, diversity, competitiveness and availability of drugs in the US market." (Piñeyro, 2004, p. 173).

When Felipe Calderón Hinojosa became President of Mexico in 2006, the "war on drugs" took a new turn on national soil. While, on the one hand, crop destruction campaigns

were less sustained than under his predecessor, on the other hand, militarised special operations aimed at "decapitating" certain organisations specialised in drug trafficking (cartels) were intensified. This adaptation to Mexico of the kingpin strategy - a strategy advocated by the US Drug Enforcement Administration (DEA) since the 1990s, according to which the arrest of leaders would help weaken criminal organisations¹⁹ - has led to a fragmentation of the cartels and a sharp increase in homicides (Calderón *et al.*, 2015) in which the country is still mired. During Calderón Hinojosa's

17. It is important to distinguish the figures on the areas reported as destroyed by the authorities from the areas actually used for poppy (or marijuana) cultivation. The figures on destruction do not accurately reflect the cultivation areas, as they may have depended on incentives - exogenous to the phenomenon of cultivation as such - given to government agents to intensify simulated or real anti-drug actions in particular territories and during particular periods. Under the pretext of the fight against drugs, the Mexican Secretary of Defence, for example, "inflated" poppy destruction figures to justify a large deployment of military personnel in certain municipalities in the State of Guerrero, in order to carry out counter-insurgency actions (Álvarez, Gaussens & Frissard, In the Name of Poppy: Eradication and Counterinsurgency in Southern Mexico [under editorial review]).

18. Figure reported in the Security Report presented by the Presidency of the Republic on 20 August 2021.

19. Pérez-Ricart, "The Kingpin Strategy: ¿qué es y cómo llegó a México?", Nexos, 21/10/2019.

tenure, the annual homicide rate rose from 9.7 per 100 000 inhabitants in 2006 to 22.2 in 2012.

Currently, the government of Andrés Manuel López Obrador (known as AMLO) is offering a different discourse from that of its predecessors, which could be summarised by the now famous maxim *Abrazos no balazos* (“Hugs, not bullets”), uttered in response to questions about the crime problems that Mexico still faces²⁰. In the 2018 presidential campaign, his drug policy agenda was also reformist. The National Development Plan 2019–2024 proposed a “paradigm shift in security”, stating the need to “reformulate the fight against drugs” and that “the State should give up the pretence of combating addictions through the prohibition of the substances that generate them”. Three years after his inauguration, however, the destruction of illegal crops continues – including the aerial spraying of non-selective herbicide²¹ – as does massive military deployment. In addition, parliamentary discussions on the legal regulation of non-medical cannabis are at a standstill – even though the President’s political party has a majority in both the Chamber of Deputies and the Senate – and those on the production of poppies for therapeutic use have stalled.

■ Mexican poppy producers: heterogeneous social situations

Since the late 19th century, the geography of poppy production in Mexico has been shaped by political processes. According to the most recent official data, current poppy production – as well as plant destruction by the authorities – is concentrated in six western states crossed by the Sierra Madre Occidental and Sierra Madre del Sur mountain ranges (see Figure 2): Chihuahua, Durango, Guerrero, Nayarit, Oaxaca and Sinaloa²².

In addition to the political factors that have influenced the emergence of poppy production within them,

these regions also share topographical features that have favoured the concealment of plots (Ospina *et al.*, 2018) – which, even when cultivated in collusion with government agents, can hardly be cultivated in the open. Thus, the presence of poppies has been mainly reported in municipalities with poor road access and steep terrain – up to altitudes of over 3 000 metres. It is also common for *Papaver somniferum* to grow alongside maize plants (Frissard Martínez, 2021; Tamariz, 2020), in a country where 45% of the legal agricultural area is occupied by this plant²³. Nevertheless, it would be wrong to consider Mexico’s poppy production as a homogeneous whole. In Culiacán (capital of the State of Sinaloa, where the HDI is 0.79²⁴), for example, this illegal cultivation goes hand in hand with diversified legal agriculture with high added value on the national and international market²⁵ – the production of tomatoes, chillies and aubergines. In contrast, in Santiago Xanica, (a municipality in the State of Oaxaca, with an HDI of 0.52), unirrigated and unmechanised maize cultivation is one of the only legal alternatives to poppies²⁶. Although poppy cultivation carries risks associated with its illegal nature – foremost among them the forced destruction of plots by the authorities – the lack of legal and climate-proof options creates a greater dependence on poppy income for farmers in Santiago Xanica²⁷ than in Culiacán.

In some municipalities in Oaxaca, fieldwork (Tamariz, 2020) has documented that farmers specialising in poppy production – particularly in territories where frosts reduce options in terms of crop plants – have become extremely vulnerable to external shocks. In 2018, for example, the collapse in the price of latex – a product extracted from the poppy plant by cutting the capsule – led to significant emigration to the state capital. Further north, in the municipality of El Nayar, located in the State of Nayarit, an emigration of poppy farmers to Culiacán and other municipalities in Sinaloa was reported when its profitability decreased (Morris, 2021). They sought work as day labourers on maize and vegetable

export farms, as well as on other poppy farms that manage to remain competitive due to their geographical proximity to the powerful agri-food sector in Sinaloa (Farfán-Mendez and Porter, 2020), or to the laboratories that extract morphine from latex and then process it into heroin²⁸.

■ Fentanyl boom and falling heroin demand

In this context, recent falls in latex prices – which appear to have been caused by a negative shock to heroin demand in the United States – are of concern to the most vulnerable communities.

President Andrés Manuel López Obrador himself explained in a press conference on 30 July 2021 from Badiraguato (a municipality in Sinaloa): “The production of the most cultivated drugs is clearly declining, like marijuana and poppies, because today, unfortunately, what is most used to poison young people is fentanyl, synthetic drugs. And these are not produced in Mexico. What is going

20. Since the beginning of his mandate in December 2018, the annual homicide rate has stagnated at around 28 per 100 000 inhabitants.

21. SEDENA continues to use the method of destruction by aerial spraying of paraquat, a non-selective herbicide banned by the European Union because of the health hazards it represents (Judgement of the Court of First Instance of 11 July 2007 on Case T-229/04 between the Kingdom of Sweden and the Commission of the European Communities).

22. Mexican authorities have recorded 99.4% of the poppy areas destroyed from 2000 to 2020 in these six states.

23. Statistics from the Agricultural and Fisheries Information Service (SIAP) for the year 2020.

24. Human Development Index, according to 2015 data from the National Institute for Federalism and Municipal Development.

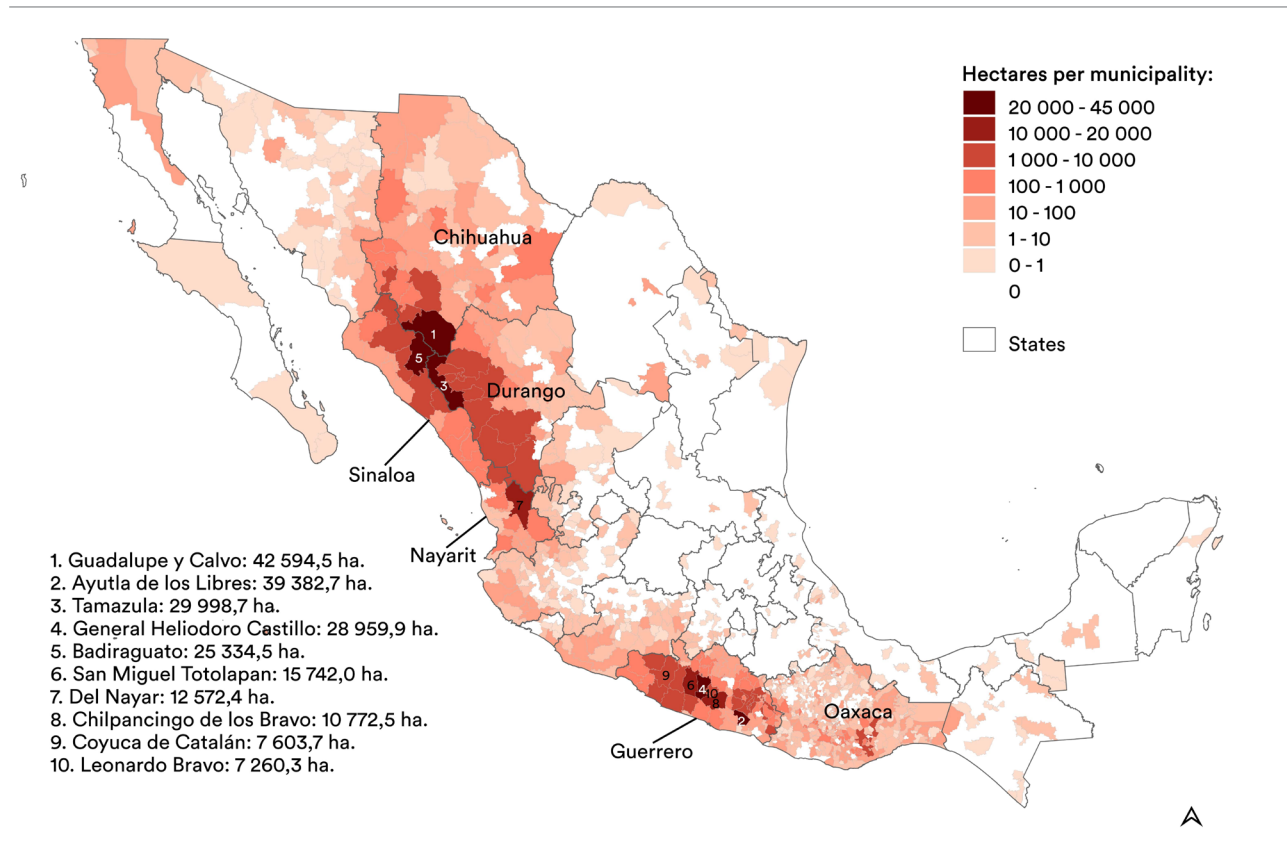
25. Production value equal to €1 277 per sown hectare per year, on average, from 2003 to 2020, according to SIAP data.

26. Production value equal to €186 per sown hectare per year, on average, from 2003 to 2020, according to SIAP data.

27. In 2004 and 2006, droughts affected almost the entire maize area planted in the municipality of Santiago Xanica (Frissard Martínez, 2021).

28. 47% of the heroin laboratories dismantled by SEDENA between January 2000 and July 2021 were in the state of Sinaloa, according to data obtained from the author’s request for information No. 0000700234121 sent to SEDENA.

Figure 2. Poppy destruction by municipality from 2000 to 2020



Source: Mexican Secretary of Defence and Navy

to happen in the regions producing marijuana or poppies? What will people live on?'

The rise in fentanyloid consumption in the United States, referred to by AMLO, has its roots in the 1990s. At the time, some pharmaceutical companies and doctors' associations were encouraging more opioids to be prescribed to control pain²⁹. In this context, the pharmaceutical company Purdue Pharma launched its drug OxyContin in 1996 - a semi-synthetic opioid whose active ingredient is oxycodone - and embarked on a massive marketing strategy that enabled it to increase its sales figures thirty-fold in seven years³⁰. Driven to respond to the increase in OxyContin addiction and a diversion of its routes of administration - the tablet was crushed and then snorted, smoked, or dissolved and injected to accelerate the analgesic effect - Purdue Pharma launched a new formulation of OxyContin in 2010, with properties that were intended to prevent its misuse³¹. People addicted to this opioid then turned to illegal

alternatives, foremost among which was heroin (Evans *et al.*, 2018), before this was gradually replaced or mixed with fentanyloids.

According to the Drug Enforcement Administration (DEA), it is the potency of fentanyloids (Álvarez and Farré, 2005, p. 32) and their price that have made them attractive to users addicted to painkillers. Since 2014, US forensic laboratories have reported a steady increase in the presence of fentanyl in their toxicology reports - an increase of more than 2 000% between 2014 and 2019 - while heroin has declined by 22% (NFLIS, 2020). In the United States, the number of overdose deaths from synthetic opioids - the category to which fentanyloids belong - accounted for almost half of all drug overdose deaths in 2019 and is also rising - 11 times higher in 2019 than in 2013³².

In recent years, the growth of the market for fentanyloids in the United States - substances not produced from Mexican poppies and whose precursors

are believed by the US authorities to have come mainly from China (Greenwood and Fashola, 2021) - has posed a threat to Mexican cultivators who had specialised in poppy production. Le Cour-Grandmaison *et al.* hypothesised that the fall in latex prices in 2018 in communities in Nayarit and Guerrero was linked to this process of substitution of the demand for heroin by a demand for fentanyloids on the North American illegal opioid market (Le Cour Grandmaison *et al.*, 2019). The rebound in latex prices since then, however, has seemed to encourage cultivators to continue or

29. Opioid prescriptions increased from 76 million in 1991 to 211 million in 2011 (Evans *et al.*, 2018).

30. From \$44.8 million per year in 1996 to \$1.5 billion in 2003 from OxyContin sales (Evans *et al.*, 2018).

31. When the pill is crushed, it becomes gelatinous instead of powdery and therefore more difficult to inject or snort (Evans *et al.*, 2018).

32. Data viewed at <https://www.cdc.gov/drugoverdose/deaths/synthetic/index.html> (accessed 15 October 2021).

Heroin and fentanyl

Heroin, invented by the German chemist Heinrich Dresser in 1898, is a semi-synthetic analgesic derived from the diacetylation of morphine – the main alkaloid extracted from the latex in the capsules of the opium poppy, *Papaver somniferum*. Historically, the heroin produced in Mexico was black tar heroin (Le Cour Grandmaison *et al.*, 2019; Ospina *et al.*, 2018) and had a purity of less than 50% (DEA, 2017). From 2014 onwards, however, the DEA identified an increase in white powder heroin manufactured in Mexico – with a much higher purity (DEA, 2017, 2019).

Fentanyl, on the other hand, is a fully synthetic analgesic invented by the Belgian chemist Paul Janssen in 1959 and is about 50 times more potent than heroin. While both substances were originally used as medicines, as stronger pain relievers than morphine, heroin is now completely illegal in the United States – where it is listed in Schedule I of the Controlled Substances Act of 1970 – while the pharmaceutical fentanyl is highly restricted – in Schedule II of the same act. The illicit consumption of fentanyl observed in recent years in the United States has therefore been taking place in two ways: on the one hand, the diversion of pharmaceutical fentanyl, and on the other, the trafficking of illegal derivatives of fentanyl – fentanyloids.

such as the production and export of methamphetamines and the import-export of cocaine in Culiacán (Farfán-Mendez, 2021), or the extortion and illegal extraction of wood in the Sierra Tarahumara of Chihuahua (Chaparro, 2021) – but also to their capacity to enter the new fentanyloid market. According to a 2021 report by the US-China Economic and Security Review Commission (Greenwood and Fashola, 2021), China's tightening of controls on direct exports of fentanyl and its precursors to the US in 2019 appeared to have changed the trade route for these products. They are now reported as having been shipped from China to ports on the Pacific coast of Mexico, synthesised – if they are precursors – and exported by Mexican criminal organisations to the United States in the form of pills or powder containing fentanyloids. Of these organisations, the Jalisco Nueva Generación Cartel and the Sinaloa Cartel are believed to be the main Mexican beneficiaries of this new market (Greenwood and Fashola, 2021).

resume poppy production (Álvarez Rodríguez, 2021; Vizcarra Ruiz, 2021) and suggests that the supply of Mexican heroin is not likely to disappear in the short term.

Adaptation of Mexican criminal organisations

The adaptation of poppy and heroin production to the new competition from fentanyloids is still the subject of very limited study, due to the lack of data³³ linked to insufficient hindsight. The information released so far, however, suggests that the adjustment was made at the top of the production chain, i.e. by the organisations responsible for heroin synthesis and trafficking; on the one hand, by cornering the trafficking routes of fentanyl and its precursors between China and the United States, and on the other hand, by mixing fentanyloids with other substances that were already trafficked – and in some cases produced – by Mexican criminal organisations, such as heroin, so as to continue to move the “traditional” goods north of the border.

Firstly, regarding the stakeholders in terms of production, several ethnographic studies (Álvarez Rodríguez, 2021; Le Cour Grandmaison *et al.* 2019; Morris, 2021; Vizcarra Ruiz, 2021) conducted in the states of Guerrero, Sinaloa and Nayarit have documented similar production chains: farmers sell the harvested latex to intermediary traders – called *acopiadores*, *corredores* or *coyotes* depending on the region – who in turn resell it to larger organisations – which the farmers call *la maña* or *el patrón*. These organisations have the laboratories to turn it into heroin and the criminal and political networks to get the drug to the United States. As in legal agricultural markets, the highest margins are achieved by the stakeholders with the most bargaining power, i.e. the intermediary traders and especially the organisations in charge of processing and distribution.

While it seems that Mexican heroin trafficking organisations have not suffered much from the recent fall in heroin prices – unlike poppy cultivators – this has mainly been due to a certain diversification of their activities –

In addition, Mexican criminal organisations have also taken advantage of their central position in the flow of fentanyloids to mix them with other substances. In its latest annual report (2021), the DEA reported that fentanyl/heroin combinations detected in toxicology test results – performed in the United States by forensic laboratories – have increased nineteen-fold between 2014 and 2019³⁴ (DEA, 2021). Also south of the border, in Tijuana (Baja California State), a study conducted between 2018 and 2019 identified the presence of fentanyl in 93% of doses of what users thought was pure white heroin (Fleiz *et al.*, 2020).

33. The latest estimates made by the UNODC and the Mexican authorities for poppy and latex production refer to the July 2018 to June 2019 cycle.

34. While fentanyl/cocaine combinations increased twenty-two-fold and fentanyl/methamphetamine combinations 124-fold over the same period.

Conclusion

In Mexico, the political and social history, as well as the bilateral relationship with the United States – the main consumer market – have shaped poppy cultivation and opium production. Firstly, migration policies at the end of the 19th century led to the attraction – and then the exclusion – of thousands of Chinese workers fleeing famines in their own country. The arrival of opium in this part of the Americas was, however, restricted to small-scale production and use, until political leaders took over the market from the 1920s onwards, and then promoted a prohibitionist drug policy in the following decades, while

ensuring local support for illegal poppy production to serve private interests or for “reasons of state”. The 1970s and the beginning of Richard Nixon’s internationally driven “war on drugs” doctrine were a boon for the Mexican National Secretary of Defence, which was able to expand its involvement in the anti-narcotics struggle and considerably increase its power in the state apparatus.

In this context, the recent negative shocks to heroin demand – which seem to have been induced by the fentanyl boom – have highlighted disparities in terms of the vulnerability of the stakeholders, depending on the region and the place occupied

in the production chain. In some municipalities, farmers have legal alternatives that allow them to plant or not plant poppies depending on the advertised purchase price of their crop. However, in others, poppies are one of the few crops that ensure survival and the current decline in income – due to competition from fentanyloids – has meant emigration. On the other hand, the criminal organisations responsible for processing latex into heroin and selling it illegally on the US market would have been only marginally affected thanks to their capture of the fentanyloid flow, as well as the development of substances mixing these products with their traditional commodity – heroin.

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