



environmental

CATASTROPHE

Drug producers + traffickers are responsible
for massive worldwide pollution



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he impact of drug trafficking and production on civil society in terms of health and criminality has been addressed by political bodies and law enforcement with varying success. A global threat that has not been previously considered, and which is not assessed properly, is the environmental damage caused by drug production and trafficking. This article will try to expose some of the current and short-term consequences. The long-term consequences, mainly mutagenic effects, have yet to be fully understood.

Drug trafficking causes air, water and soil pollution through, among other things, deforestation, extensive use of pesticides and fertilizers, chemical waste and increased energy use. In Colombia and Afghanistan, forests are destroyed to plant coca and opium fields. In the United States, traffickers burn sections of national parks to grow marijuana. Large amounts of chemicals resulting from amphetamine-type stimulants (ATS), namely methamphetamine,

Ecstasy and synthetic drugs, are released into nature. Individuals, and especially law enforcement officers, who are confronted with chemicals each day might suffer from carcinogenic, mutagenic and teratogenic effects (effects on a fetus).

This article summarizes information received from international agencies such as Interpol, Europol and the UN Office on Drugs and Crime (UNODC), environmental organizations (World Wildlife Fund Sweden, or WWF) and open sources. Exposing and estimating the costs and the magnitude of environmental destruction linked to drugs are critical to promote research, awareness and political engagement.

For the sake of consistency, and as noted by environmental organizations, it should be pointed out that so-called legal unsustainable land-use practices and pollution, including those by the pharmaceutical or transportation industries, are the main source of environmental damage worldwide. Yet, hidden and illegal pollution has grown consistently. To date, there are no precise figures to allow a clear comparison and analysis between both types of



Dutch police show a cache of seized Ecstasy pills, cocaine and weapons. The Dutch have paid close attention to potential environmental damage from drug trafficking.

GETTY IMAGES

ISTOCK

environmental destruction. Louise Carlsson, a biologist at WWF Sweden, stresses that legal exploitation conceals the fact that many of the so-called official permits are obtained through corruption.¹

Nevertheless, it is clear that the extent of illegal damage, such as that caused by drugs, is underrated. Members of criminal organizations are seldom prosecuted for environmental crimes, because of the high cost of proceedings and the low priority assigned to such crimes. Crimes such as trafficking of human beings, drug trafficking, organized crime and especially terrorism yield greater sentences.² Also, effective prosecution is hindered by lack of research. As a result, environmental crime flourishes and remains a high profit/low risk endeavor.

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DESTRUCTION OF FORESTS

The most obvious environmental effect of coca and opium poppy cultivation is the deforestation of rain forests. The WWF estimates that an area one-fourth the size of Sweden disappears each year. Furthermore, 50 percent of this destruction is linked to illegal exploitation, the WWF suggests. Although it is difficult to find reliable information on how much deforestation is linked to illicit drug crops, some studies provided by the UNODC suggest that in Peru 2.5 million hectares of the Amazon forest have been destroyed to grow illicit coca crops,³ while Europol states that 25 percent of all deforestation in Peru is associated with coca cultivation. In the Andean region of Peru, Bolivia and Colombia, an estimated 1 million hectares of native forest have been eliminated in the past 20 years. This is roughly an area covered by El Salvador or Slovenia.

One hectare of coca field produces only 7.4 kilograms of cocaine per year, and one field suffices for only three or four

crop cycles. When the fertility of the soil has decreased to a level where production is low, drug traffickers clear more forest for cultivation to supply the high global demand for drugs. A 2013 report by the Organization of American States titled “Drug Problem in the Americas” estimates that for each hectare of coca leaves, four hectares of forest are cut down. The most common method is slash and burn farming,⁴ which is also a major source of air pollution in rain forests, resulting in high emissions of greenhouse gases (methane, carbon dioxide, carbon monoxide and nitrogen oxides). According to the Intergovernmental Panel on Climate Change, as of 2004, deforestation accounted for 17.3 percent of all greenhouse gas emissions caused by human activity.⁵ For comparison’s sake, that amount equals emissions from electrical plants to power 998 million homes yearly.

Drug cultivation also results in high soil-carbon losses. Soil is the main terrestrial carbon sink — that is, the amount of carbon contained in the soil is greater than in the living biomass and the atmosphere together. Soil carbon is composed of organic material from flora and fauna in various stages of decomposition. Carbon lost from the soil enters the atmosphere as CO₂. Activities such as deforestation speed the rate of decomposition of the organic forms of carbon, which causes CO₂ fluxes. The quantity of CO₂ released depends on the initial amount of carbon in the soil, which is difficult to estimate. In rainforests or good soils, organic carbon can exceed 10 percent.⁶ Thus, deforestation results in a carbon loss of approximately 250 tons per hectare, or 666 tons of CO₂ per hectare. This corresponds to electricity use for 83 homes for one year, according to the U.S. Environmental Protection Agency.⁷

Forests are also cleared to build landing strips to transport crops. In northern Guatemala, for instance, traffickers have built dozens of landing strips, including one nicknamed the “international airport” that hosted three runways and more than a dozen abandoned aircraft.⁸ The result was the loss of 40,000 hectares of forest, equal to 26 million tons of CO₂ in terms of soil-carbon loss. This corresponds to burning 55 million barrels of oil, roughly the amount used by 5 million cars in a year.

Forest exploitation for sassafras oil (a component of Ecstasy) in Southeast Asia pushes extremely rare trees toward extinction. Sassafras oil is extracted from the roots of the mreahprewphnom tree. While this oil is used to make cosmetics, it is also a major Ecstasy precursor — a reagent in the process of drug manufacturing. In 2013, the Cambodian Environment Ministry collaborated with an environmental organization, Fauna and Flora International (FFI), to destroy two illegal distilleries in Cambodia. The ministry welcomed FFI’s help because illegal production of the “Ecstasy oil” could have caused extinction of the mreahprewphnom tree in Cambodia within five years. The oil is produced by shredding and boiling the roots for 12 hours. Surrounding trees are also cut down to fuel fires, and rivers are polluted by effluent resulting from the oil production. The number of illegal factories is unknown, although an estimated 75 existed in 2006 at the peak of Ecstasy production in the region.⁹



Brazilian police and journalists inspect an illegal air strip cut from the rainforest in the Amazon basin near the border with Colombia by drug traffickers. Drug traffickers wreak environmental destruction by destroying forests to grow and transport drugs.

REUTERS



A member of the Bolivian combined forces uproots an illegal coca plant near Chimore, about 600 kilometers southeast of La Paz, in January 2013. During that month, Bolivia's government officially inaugurated the eradication of illegal coca plants. REUTERS

U.S. State Department studies indicate that 10 million liters of sulfuric acid, 16 million liters of ethyl ether, 8 million liters of acetone and between 40 million and 770 million liters of kerosene are poured directly into the soil annually by cocaine processors working in the Andean region, mainly Colombia. The consequences of this pollution are felt in the small rivers where aquatic life and biodiversity are devastated. The Caqueta river basin, which is the primary growing area in southern Colombia, is particularly affected.¹⁰

SYNTHETICS: BIG DUMPING

The production of ATS such as Ecstasy, amphetamine, methamphetamine and semisynthetic drugs such as cocaine and heroin require huge amounts of chemicals and precursors. The amount of chemical waste depends on the production method, the knowledge of the producer and the equipment used. The Leuckart reaction — the most popular method for synthesizing illicit amphetamine in the U.S, the United Kingdom and the Netherlands — requires the use of highly dangerous and carcinogenic products and results in 6 to 40 liters of chemical waste per manufactured kilogram.

According to UNODC, 51 tons of methamphetamine

were seized worldwide in 2010. That amount rose to 88 tons in 2011, creating 440,000 to 2.11 million kilograms of toxic waste while producing methamphetamine. The illicit manufacture of methamphetamine has been detected in more than 60 countries, according to UNODC. Major production occurs in the U.S., Canada, Mexico, Europe and increasingly Central America.¹¹

The Netherlands' situation illustrates what is happening in Europe. In 2006, Dutch police seized 4 tons of ATS (10 percent of the Netherlands' total), from which they estimated that 430,000 to 960,000 liters of chemicals had been released into the environment. In August and October 2013, Dutch police and Europol dismantled the largest facilities ever discovered in Europe, covering 1,000 square meters and containing high-volume, custom-made equipment. Police seized more than 40 tons of chemicals in the two raids.¹² In 2013, the police discovered 130 dumping sites in the Netherlands, almost three times as much as in 2012, when 50 dumping sites were found. The chemicals are disposed of in the woods, rivers and seas, and are sometimes buried in the soil, where they keep burning for days. Trees in surrounding areas are contaminated by poison fumes and must be cut down.



Thai waste disposal officials prepare more than 240 barrels of sassafras oil, a reagent in the production of Ecstasy, for incineration near Bangkok in September. REUTERS

Criminal organizations are using creative methods to get rid of chemical waste, such as equipping trucks with pipes to discharge chemicals on roads while traveling. In fact, new disposal methods are invented more quickly than police can discover them. The restoration of areas polluted by ATS chemical emissions is extremely expensive. One small contaminated area can cost 80,000 euros to clean up.

PESTICIDES AND FERTILIZERS

According to Roel Willekens, national program manager for Environmental Crime in the Netherlands,¹³ the legal and illegal use of pesticides takes a huge toll on the environment. For example, China has 2,600 factories producing 14 million tons of chemicals for agriculture each year. Fifty percent of world food production depends on those fertilizers and pesticides. To obtain authorization to export these products to Europe, manufacturers must go through a complex procedure, which takes years and costs up to 200,000 euros. To avoid those costs, and to meet the pressing demand for drugs, traffickers turn to illegal fertilizers and pesticides. Law enforcement is largely left in the dark.

Another unforeseen problem of legal pesticides linked to drug trafficking is that the “War on Drugs” includes spraying the herbicide glyphosate on crops. Governments and environmental organizations have started to fight this technique, which has proven to be ineffective and harmful. The International Relations and Security Network in Zurich states that the concentration of glyphosphate used for fumigation in Colombia is 26 times higher than recommended.¹⁴

Aerial herbicides are nonselective chemicals and affect all plants and the surrounding population. According to the Center for International Policy Plan Colombia,¹⁵ between 2000 and 2003, the fumigation program sprayed 380,000 hectares of coca, equivalent to more than 8 percent of Colombia’s arable land. One of the peculiarities of the coca plantation business is that it is very mobile. Intensive spraying led to the proliferation of areas where coca bushes were under cultivation (growing was observed in 22 provinces after the spraying, compared to 12 provinces three years before the spraying). According to U.S. government studies, land devoted to coca cultivation in Colombia has increased

23 percent since U.S.-backed fumigation began in 1999. This has also led to population displacement and rocketing health complaints. Dutch journalist Marjon van Royen revealed that 80 percent of the children of the Aponte Indian indigenous community¹⁶ fell sick with skin rashes, fever, diarrhea and eye infections. According to a survey conducted by the U.S. Office of National Drug Control Policy, 157,200 hectares of cultivated areas were detected in 2006, 13,200 hectares more than in 2005, despite the most intensive fumigation campaign in the history of Colombia.¹⁷

POLICY RECOMMENDATIONS

More research is necessary to estimate the scale and impact of emissions more accurately. To date, it has been impossible to give a precise estimation of chemical waste worldwide. Further, the consequences of blending several types of chemicals and their release into nature must be subject to more analysis.

The Dutch police represent one of the more active authorities combating environmental crime linked to drug production. European countries, for which the issue is particularly pressing owing to high synthetic drug production in places such as the U.K., Germany, Poland and Lithuania, must cooperate urgently.

The public must be informed through the right channels to raise awareness of links between drug abuse and environmental harm. Information must be spread and provided to different age groups, especially the youth and young adults who are the main target of drug traffickers. University programs in sustainability must study the impact of crimes such as drug production and trafficking.

Politicians must show greater engagement and strengthen the laws against this type of criminality. Environmental crime is often treated as a second-class crime, despite its connection to global drug trafficking and other types of criminality. Environmental organizations with the networks and means to study the issue must analyze the consequences of drug trafficking on soil, air, waterways and biodiversity.

Finally, law enforcement must stay alert to health dangers from handling chemicals, study disposal methods and improve the effectiveness of investigations to combat environmental crime. Drug production is a crime with many victims, but no one should underestimate its effects on the environment. □

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