



TALLYING THE HIDDEN ENVIRONMENTAL COSTS OF DRUG PRODUCTION

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Drug production is a significant factor in widespread environmental degradation, yet a lack of reliable data makes it difficult to pinpoint the extent of this damage. Future research should be directed at illuminating the connections between organized crime and environmental crime, in order to devise appropriate strategies to tackle these issues in tandem.

Drug production causes air, water, and soil pollution through, among other things, deforestation, soil exhaustion, extensive use of pesticides and fertilizers, and the hazardous disposal of large amounts of chemical waste. In Colombia and Afghanistan, for example, forests are destroyed to plant coca and opium fields. In Europe, criminal organizations release large amounts of chemicals resulting from amphetamine-type stimulants (ATS)—namely methamphetamine, Ecstasy, and synthetic drugs—into both nature and populated areas. To date, there are no precise figures to allow a clear analysis of the environmental destruction caused by drug production. Nevertheless, it is clear that the extent of illegal damage has been underrated. Furthermore, drug traffickers are seldom prosecuted for environmental crimes, because of the high cost of proceedings and the low priority assigned to such crimes. Also, effective prosecution is hindered by the lack of research. As a result, such environmental crime flourishes and remains a high-profit/low-risk endeavor.

Drug Cultivation and Environmental Crime

The most obvious environmental effect of coca and opium poppy cultivation is the deforestation of rain forests. In Colombia, at least 60 percent of illicit crops are grown on newly-deforested land.¹ When unsustainable farming practices lead to soil fertility exhaustion, drug traffickers clear more forest for cultivation to supply the high global demand for drugs. Although it is difficult to find reliable information on how much deforestation is linked to illicit drug crops, the UNODC suggests that in Peru 2.5 million hectares of the Amazon forest have been destroyed to grow illicit coca crops.² The most common method used by drug traffickers is slash and burn farming,³ 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). Drug cultivation also results in high soil-carbon losses. Activities such as deforestation speed the rate of decomposition of the organic forms of carbon, which causes CO₂ fluxes. Deforestation results in a carbon loss of approximately 250 tons per hectare, or 666 tons of CO₂ per hectare.⁴

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. 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 in one Cambodian wildlife sanctuary alone at the peak of Ecstasy production in Southeast Asia.⁵

The production of ATS such as Ecstasy, amphetamine, methamphetamine, and semisynthetic drugs such as cocaine and heroin requires 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 amphetamines 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. The consequences of this pollution are felt in small rivers where aquatic life and biodiversity are devastated. 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.⁶ Such chemicals are typically disposed of in woods, rivers, and seas, and are sometimes buried in the soil, where they keep burning for days.

What is more, 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 the police can discover them. The restoration of areas polluted by ATS chemical emissions is extremely expensive. In January 2014, the clean-up of 88 tons of ATS chemical waste dumped into the port of Antwerp cost the city's taxpayers 100,000 euros.⁷ Law enforcement is largely left in the dark as traffickers turn to illegal fertilizers and pesticides.

Policy Recommendations

- Exposing the costs and the magnitude of environmental destruction linked to drug cultivation is critical to promote awareness and political engagement. 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. The consequence of releasing blends of several types of chemicals into nature is a particular area demanding further analysis. Environmental organizations with the networks and means to study the issue must analyze the consequences of drug trafficking on soil, air, waterways, and biodiversity.
- The European countries with the highest rates of synthetic drug production—such as the U.K., Germany, Poland, and Lithuania—must acknowledge the problem and start to gather information, working cooperatively to uncover the links between environmental degradation and organized crime. Following the example set by the Dutch police, they must also provide law enforcement with the tools to understand the health risks associated with handling chemicals, to study disposal methods, and to improve the effectiveness of investigations into combating environmental crime.
- Drug production is a crime with many victims, but no one should underestimate its effects on the environment. Environmental crime is often treated as a “second-class” crime, despite its connections to global drug trafficking and other types of criminality. Traffickers are charged only for drug offenses, while the environmental consequences are insufficiently considered during the judicial procedure. Politicians

must show greater engagement and strengthen laws against this type of criminality.

Endnotes

¹ “Coca Cultivation in the Andean Region: A Survey of Bolivia, Colombia, and Peru,” United Nations Office on Drugs and Crime, June 2006, https://www.unodc.org/pdf/andean/Andean_full_report.pdf

² “Colombia: Coca Cultivation Survey 2011,” United Nations Office on Drugs and Crime, June 2012, https://www.unodc.org/documents/crop-monitoring/Colombia/Colombia_Coca_cultivation_survey_2011.pdf

³ “The Drug Problem in the Americas,” Organization of American States, 2013, http://www.oas.org/documents/eng/press/introduction_and_analytical_report.pdf

⁴ Veera Kainiemi, Department of Soil and Environment, Swedish University of Agricultural Sciences.

⁵ Ian MacKinnon, “Ecstasy Oil’ Factories Destroyed in Cambodian Rainforest,” *The Guardian*, February 25, 2009.

⁶ “Police Discover Largest Synthetic Drugs Production Site Ever Found in the EU,” *Europol*, October 23, 2013.

⁷ Colin Clapson, “88 Tons of Drug Refuse Found in Port of Antwerp,” *Flanders News*, January 5, 2014.

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