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NOTE

From:	Presidency
To:	Groupe Horizontal Drogues
Subject:	The environmental impact of drugs

With a view to the thematic discussion at the HDG meeting on 7 June 2022 on the environmental impact of drugs, delegations will find attached the Presidency note on this subject.

French Presidency of the Council of the European Union
Background Document: Horizontal Working Party on Drugs
The environmental impact of drugs

Courtesy translation

Introduction

Drugs are generally considered from a health, social and security perspective, but rarely from an environmental perspective. Although they are closely related, the ecological impact of drugs is much less explored than their consequences on users' health. However, with increasing awareness of the effects of human activities on the environment and the need to reduce them, it would appear to be important to look at the environmental impact of drugs.

The international framework already exists. The outcome document of the 2016 United Nations General Assembly Special Session on the World Drug Problem (UNGASS), recommends to "ensure that measures to prevent the illicit cultivation of and to eradicate plants containing narcotic and psychotropic substances [...] take due account [...] of the protection of the environment[1]". The UNGASS also calls for addressing "the environmental consequences of illicit cultivation and illicit manufacture and production of narcotic drugs and psychotropic substances[2]".

In addition, the "Omnibus" resolution, adopted by the United Nations General Assembly (UNGA) in November 2021 on international cooperation to address and combat the world drug problem, reiterates this desire to take into account the harmful impact of drugs on the environment. It states that it is "concerned that aspects of the world drug problem associated with illicit drug production can cause serious harms to the environment, including deforestation, soil erosion and degradation, loss of endemic species, contamination of the soil, groundwater and waterways, and the release of greenhouse gases[3]".

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1 Outcome document of the 2016 United Nations General Assembly special session on the world drug problem, *Our joint commitment to effectively addressing and countering the world drug problem*, UNGASS 2016, 19-21 April, 2016, https://www.unodc.org/documents/postungass2016/outcome/V1603301-E.pdf

2 *Ibid*.

3 Résolution adoptée par l'Assemblée générale le 11 novembre 2021, A/C.3/76/L.14/Rev.1, « Coopération internationale pour aborder et combattre le problème mondial de la drogue » https://undocs.org/en/A/C.3/76/L.14/Rev.1

During the 65th session of the UN Commission on Narcotic Drugs, held in Vienna in March 2022, delegations adopted the resolution entitled "Promoting alternative development as a development-oriented drug strategy, taking into account environmental protection measures", jointly introduced by Germany, Peru and Thailand. Paragraph 5 of the resolution aims, inter alia, to encourage "Member States to examine and address, within the efforts of alternative development, the harmful impact of the illicit cultivation of crops used for the production of narcotic drugs on the environment, which may lead to deforestation and the pollution of soil and water, and to seize the opportunities offered by alternative development with to the conservation and sustainable use of the environment and the protection of biodiversity".

At European Union level, this issue is now clearly included in the EU Drugs Strategy and Action Plan (2021-2025).

The Strategy states that: "*Environmental crime related to illicit drug production and trafficking needs to be targeted. As regards environmental damage, it is crucial to address the environmental impacts, hazards to health and costs associated with the chemical waste generated by illicit synthetic drug production […]. In this context, aspects related to the handling and destruction of seized illicit drugs, precursors and other chemicals and equipment used in illicit drug production, as well as the ecological disposal of the resulting waste should also be considered*"[4].

The environmental issue is currently emerging and should be fully incorporated into the drugs issue at national, European and international levels. In line with this approach, France has proposed to the United Nations Office on Drugs and Crime (UNODC) to address this issue and has contributed to the funding of the World Drug Report booklet on the environmental impact of drugs, which is expected to be published in late June 2022. Germany is also contributing to the funding of this booklet, notably concerning the carbon footprint of drug production and the water pollution it can cause.

The environmental impact of drugs is multi-faceted and complex. In order to assess it, we can distinguish between the effects linked to production (I), transport (II) and consumption (III).

[4] EU Drugs Strategy 2021-2025, https://www.emcdda.europa.eu/system/files/attachments/13642/Council%20of%20the%20EU%20%282020%29%20EU%20Drugs%20Strategy%202021-25.pdf

Given that very few studies and research are available on this subject, it is still very difficult to have a comprehensive overview of this phenomenon and its extent. Although it is difficult to measure the environmental impact of drug production, it should nevertheless be emphasised that the existing studies on the subject make it possible to identify causal links between drug production and environmental degradation.

This note therefore provides an initial, partial assessment of this phenomenon. Its aim is to encourage an exchange between the Member States, institutions and agencies and to identify some guidelines for the future.

I. Drug production leads to water and soil contamination and contributes to accelerated global warming

Some 200 chemicals can be used in the production of synthetic drugs. The characteristics of these chemicals also highlight their impact on the environment. In France, these products, which may be corrosive or harmful in themselves, are subject to a highly regulated destruction procedure to ensure that they are not misused, even when they are no longer of economic interest. On the other hand, discarded chemical products are disposed of without any environmental precautions. It can therefore be dumped on industrial sites, in the public domain or in the environment. It is estimated that the clean up of contaminated areas can cost between 20 and 150 euros per kilo of waste. The cost of decontamination can therefore be quickly substantial when it is known that clandestine laboratories dismantled in recent years may have been housing up to several tones of chemicals.

The cultivation of cannabis, opium poppy and coca leaf requires the use of agrochemicals resulting in soil and water contamination and harmful effects on fauna and flora. The threats are global as coca leaf is mainly grown in Bolivia, Colombia and Peru, poppy cultivation is concentrated in Afghanistan, and to a lesser extent in Myanmar, Mexico and Colombia, and cannabis is now grown in several other regions of the world.

The production of heroin from poppies requires the use of a wide range of chemicals. The extraction, acetylation and crystallisation phases require calcium hydroxide, ammonium chloride, sodium carbonate, diethyl ether or hydrochloric acid, depending on the synthesis process, all of which are then present in the waste produced at the various stages of the manufacturing process and which contaminate the surrounding environment. Similarly, the manufacturing process for cocaine involves the use of chemical precursors (acetone, sulphuric acid, petrol, paraffin), the remains and containers of which are usually released directly into the environment by the criminal organisations responsible for its production.

The growing consumption of cocaine leads criminal organisations to clear primeval forests, especially the Amazon forest, in order to free up areas for coca cultivation. It is estimated that one gram of cocaine is equivalent to the destruction of four square meters of forest[5]. In this way, cocaine production contributes to deforestation, thus accelerating global warming.

The production of synthetic drugs such as MDMA and methamphetamine in Europe is mainly carried out by clandestine laboratories within the EU[6]. One of the main components of MDMA is safrole, for which significant amounts of water are required for distillation. The production of one kilogram of MDMA is estimated to generate 6-10 kg of toxic waste[7], which is either disposed of in a sewage system, incinerated or discharged into the environment, particularly into rivers[8]. Similarly, estimates are made for the manufacture of one kilogram of methamphetamine, which requires the use of numerous chemicals for its synthesis.

Moreover, the production of certain drugs is not neutral in terms of greenhouse gas emissions. The energy cost associated with indoor cannabis cultivation, for example, is of concern. According to estimates by the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), indoor cannabis cultivation in the Netherlands would result in an annual electricity consumption of one billion kWh, or as much as the consumption of the city of Rotterdam, which has a population of 650 000[9]. On average, 4,600 kilograms of greenhouse gases are emitted for one kilogram of finished product[10]. The carbon footprint of cannabis cultivation is therefore not negligible. This observation is also shared across the Atlantic, where some twenty American states and territories have legalised the cultivation and consumption of cannabis. Several studies conducted in California show that pumping water for cannabis cultivation hinders the flow of waterways and the level of groundwater[11]. Given the rapid increase in cannabis cultivation in the United States, these results illustrate that the potential depletion of streamflow by cannabis groundwater irrigation should be a current and future concern.

In addition, most of the precursor chemicals used in drug production are in themselves particularly toxic products whose misuse results in a large amount of waste being discharged into the environment.

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5 Publicacion Oficial - Diario Oficial El Peruano (lpderecho.pe)

6 EMCDDA: EU Drug Markets: In-depth analysis. Cocaine. May 2022

7 *5 ways that drugs damage the environment*, Tim Schauenberg, 07/10/2020, https://www.dw.com/en/drugs-environment-impacts-cannabis-cocaine-opium-ecstasy/a-55177638

8 Pardal et al: Synthetic Drug Production in Belgium – Environmental Harms as Collateral Damage?, Synthetic Drug Production in Belgium – Environmental Harms as Collateral Damage? (lse.ac.uk)

9 20192630_TD0319332ENN_PDF.pdf

10 Mills, Evan. "The Carbon Footprint of Indoor Cannabis Production", Energy Policy 46 (2012): 58-67

11 Samuel C Zipper *et al* 2019 *Environ. Res. Commun.*

II. The carbon footprint of drug transport fuels global warming

The transport of drugs is a downstream activity in the production process and also has environmentally damaging dynamics. However, it is important to place the environmental impact of drug transport in the general context of the high carbon footprint of legal trade in order to fully understand its significance. However, although some dynamics are highlighted in a few studies, gaps remain and their impact remains to be accurately assessed. It is therefore necessary to take a cautious approach to the dynamics described below.

The transport of drugs is multifaceted, with all means of travel being considered and used. Cocaine produced in Colombia can travel up to 10,000 kilometers before reaching its most distant consumers[12]. The consequences for the environment, particularly in terms of greenhouse gas emissions, are therefore not negligible. However, it is difficult to measure the real impact of drug transport on greenhouse gas emissions from global maritime freight, as large quantities of drugs are often concealed in legal shipping.

In addition, although their impact on the maritime environment is poorly understood, the transport of cocaine by semi-submersible vessels, which are then abandoned, and the ballots of cocaine thrown overboard by traffickers controlled at sea contribute to a general dynamic that is harmful to the environment. The illicit nature of this type of transport leads to drugs being concealed in a multitude of packages that are hardly ever recycled. Since the final sale is at the retail level, a large amount of additional packaging is then required. This increased need has even led some trafficking networks to open packaging plants to package their illicit products[13].

The supply channels for chemical products diverted for the manufacture of drugs can also follow very long circuits on a continental scale because of the multiplicity of transport, storage and supply phases generated by the multiplication of intermediaries involved in the diversion[14]. India and China are the two leading producers of active ingredients of drugs classified as precursors, such as pseudoephedrine, which is an essential product for the manufacture of methamphetamine (Ice). Nevertheless, this is also the case in Europe, which is a manufacturing area for MDMA, methamphetamine and LSD.

12 https://www.gentside.com/environnement/l-impact-ecologique-desastreux-de-la-cocaine-sur-l-environnement_art92562.html
13 https://www.dea.gov/press-releases/2017/06/01/law-enforcement-disrupts-active-heroin-packaging-operation
14 « The Netherlands and synthetic drugs : an inconvenient truth » de Pieter Tops, Judith van Valkenhoef, Edward van der Torre, Luuk van Spijk, eleven international publishing, 2018.

III. Drug use is responsible for multiple pollutions

Drug use is also a factor in multiple forms of pollution. Wastewater treatment facilities do not completely remove the residues of illicit drugs from the collected water[15]. These residues are found in the form of micropollutants in the treated wastewater, which is then discharged into the natural environment (surface water, groundwater, infiltration into the soil) and consequently into the water collected for the production of drinking water[16].

Drug residues are also present in the sediment of wastewater treatment facilities, which is then spread on agricultural land. Wastewater treatment facilities are the main sources of micropollutant emissions into the aquatic environment. Although some wastewater treatment plants have been equipped with tertiary treatment to reduce the concentration of micropollutants in the treated wastewater, the majority do not, due to the high cost of this treatment phase[17].

In addition, some substances can be released into the ambient air mainly in the form of smoke during consumption. For example, nitrous oxide remains in the earth's atmosphere for 120 years, whereas methane degrades in 15 years[18]. The increasingly widespread use of nitrous oxide as a recreational drug is therefore a challenge for the preservation of the environment, especially as nitrous oxide cartridges are often abandoned in the environment after consumption. The used cartridges also cause serious damage by exploding in the ovens of incineration centers when they are disposed of indiscriminately with the rest of the household waste.

15 Zuccato et Castiglioni, 2009, Science Direct
16 Pedrouzo et al., 2011 ; Terzic et al., 2010 ; Valcárcel et al., 2012, Science Direct
17 *Ibid*.
18 https://www.geo.fr/environnement/gaz-a-effet-de-serre-quest-ce-que-le-protoxyde-dazote-193486

IV. Further reflection: how can the European Union better address the environmental impact of drugs?

Within the framework of the EU Strategy and Action Plan, it is worth proposing some ideas on how the environmental impact of drugs can be better taken into account in European policies and in international cooperation on drugs:

1. Implement the recommendations of the EU Action Plan on Drugs

Action 24 (Strategic priority number 4)[19] :

"*Boost the operational activities of law enforcement agencies and their cooperation with administrative authorities and other relevant parties with regard to the fight against environmental crime related to illicit drug production and trafficking, the transfer, custody and storage of drugs, precursors and seized equipment, and the destruction and treatment of the waste produced, as well as their associated costs where possible*".

"*Develop detection technologies, information exchange and coordinated investigations by involving relevant EU agencies to support Member States, including to develop a comprehensive method regarding the implementation and coordination of efficient and environment-friendly disposal of waste*".

2. Developing research and data collection

An increasing number of studies are being carried out on the environmental impact of drugs. However, in order to understand the complexity of the phenomenon, more research is needed. In particular, the EU could consider conducting surveys and investigations to measure the real impact of drug transport on the environment, which remains poorly known at this stage, due to the concealment of drugs in legal shipments. In addition, more data on the toxicity and adverse effects of precursor chemicals and new psychoactive substances (NPS) on the environment are needed where they are lacking.

There is consequently a need to develop research on these substances, and to assess the carbon footprint of the movement of the chemicals needed to manufacture synthetic drugs. This would also lead to better international cooperation on the monitoring of waste where appropriate.

[19] EU Action Plan on Drugs, 2021-2025 : https://www.emcdda.europa.eu/system/files/attachments/13933/eu-drugs-action-plan-2021-2025.pdf

In general, an environmental dimension should be systematically included in drug-related studies and data collection by Member States should be encouraged to facilitate the production of regular data on this topic.

3. Raising awareness and informing the general public about drug pollution

In order to raise awareness, particularly among young people in particular, who are often the predominant drug users but also the most committed to protecting the environment, it is necessary to improve public awareness of the environmental impact of drugs. Without excluding possible national initiatives on this subject, the European Union, with the support of the EMCDDA, could therefore support awareness-raising measures aimed at young Europeans, in order to inform them about the environmental risks of drug production, trafficking and consumption.

4. Encouraging and financing alternative development

Encouraging cannabis, coca and poppy growers to switch to other types of legal crops with less environmental impact, while ensuring a comparable level of income and security, is key. This is the objective of so-called "alternative development" projects carried out by several governments and international organisations. These interventions are becoming more and more conceived as a long-term strategy for the rural development of the affected territories, allowing the gradual elimination of illicit crops. Germany is making a major contribution to this issue. As mentioned in the introduction, the resolution adopted during the 65th session of the United Nations Commission on Narcotic Drugs promotes alternative development that respects environmental and climate issues.

The European Union already supports alternative development projects, notably through the funding of the COPOLAD III programme[20], which includes among its objectives the promotion of alternative development, but could consider further increasing its support to such programmes, hence contributing to the reduction of drug production and thus to the protection of the environment.

[20] Cooperation programme funded by the European Commission through EuropeAid, between the Community of Latin American and Caribbean States (CELAC) and the EU, aimed at developing drug policies supported by objective monitoring tools and based on effective strategies.

Partnerships between the public and private sectors could also be promoted. As an example, France contributes to the financing of an alternative development programme of the UNODC in Bolivia. This programme enables farming communities in rural areas to replace old coca leaf crops with coffee crops, through a partnership with the French fair trade company Malongo[21] . The negotiated contract price, higher than the conventional market price, allows these communities to grow better quality crops while maintaining food security and helping to protect the environment. This project represents a successful example of partnership between international actors, private firms and local governments in the fight against drug production.

5. Promoting closer partnership among different international agencies

Reducing the environmental impact of drugs also requires increased international cooperation, particularly with the various United Nations agencies involved, such as the UNODC, the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), the Food and Agriculture Organisation (FAO), and the International Fund for Agricultural Development (IFAD).

6. Implementing mechanisms to compensate for direct or indirect damage to the environment

It may also be proposed to go further by including in the sanctions a clause on "compensation for direct or indirect damage to the environment". This reparation could then be mainly economic in nature. The sums of the fines pronounced upon sentencing could be allocated into a dedicated fund, which could then be used to finance alternative development or environmental protection projects.

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[21] https://www.unodc.org/unodc/fr/frontpage/2021/January/beneficiaries-of-unodc-coffee-project-in-bolivia-receive-first-payment-for-exporting-high-quality-beans-to-france.html