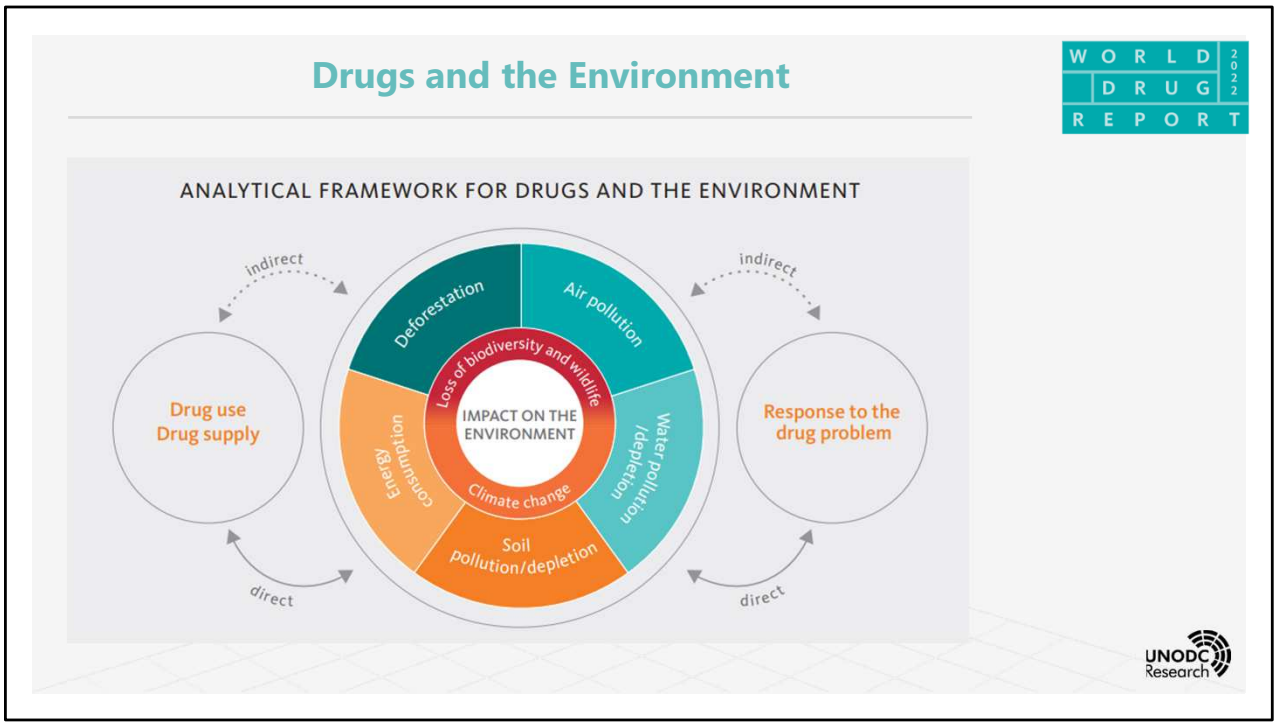
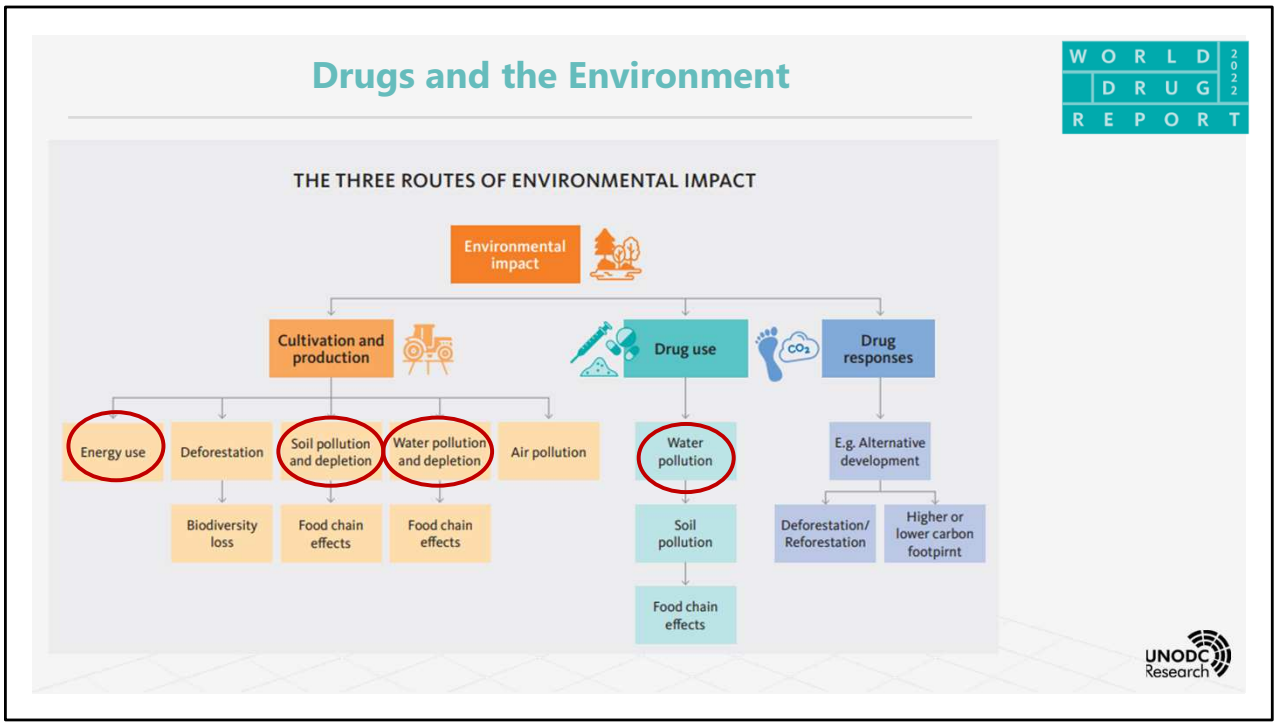
Drugs and the Environment

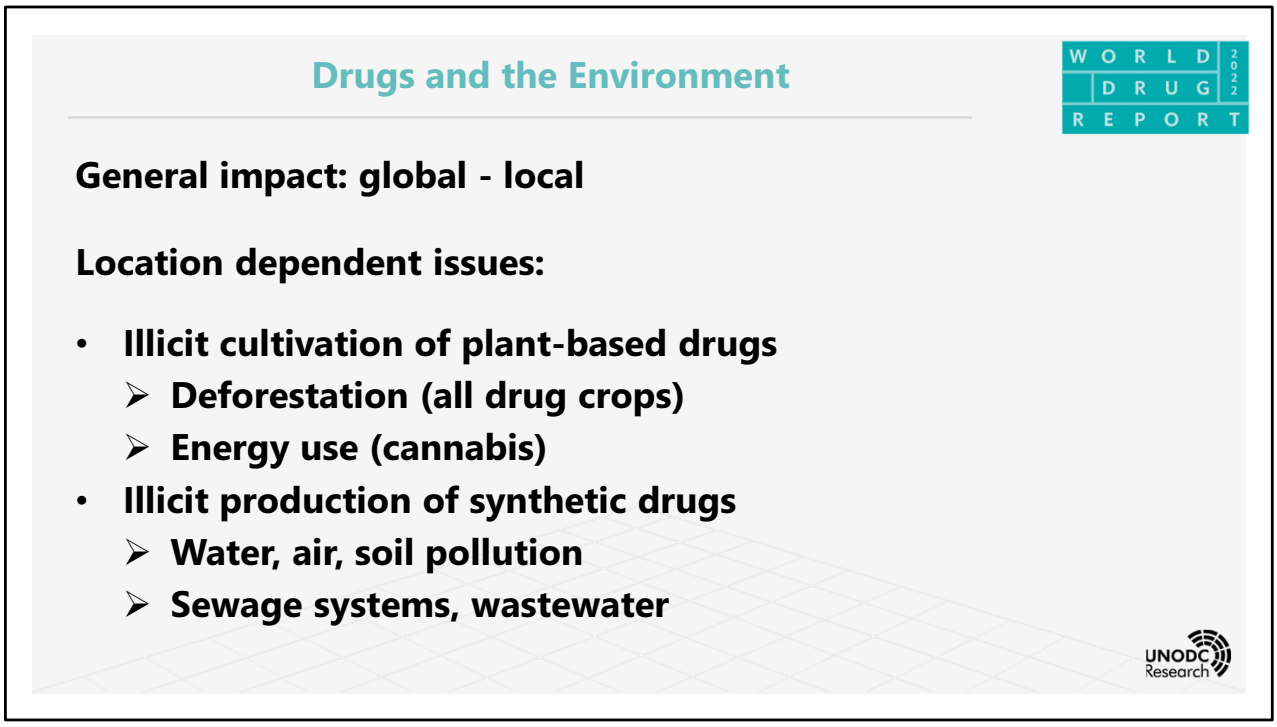
Good afternoon ladies and gentlemen. I am pleased to set the scene for your discussion on drugs and the environment. I will base it on booklet 5 of the 2022 WDR which looked at this topic in detail.



The analytical framework used, includes all the possible impacts on the environment such as deforestation, pollution of air, water and soil, depletion of soil and water and energy consumption. We considered the direct and indirect impacts of drug supply and drug use, as well as responses to the drug problem.

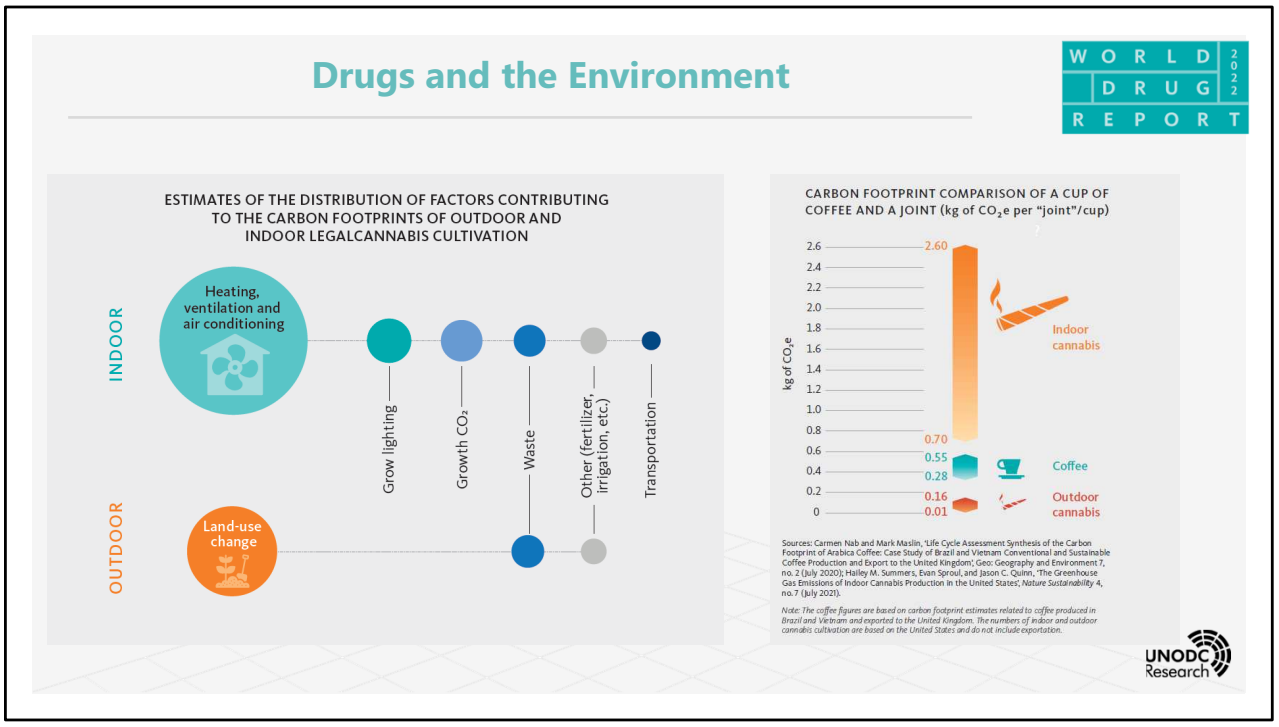


Today we are particularly interested in issues relating to law enforcement responses. While some of the drug responses can have a direct impact on the environment such as alternative development and drug crop eradication, most law enforcement responses in Europe have an indirect impact by preventing or reducing damage to the environment.



The main conclusion of the WDR is that the global environmental impact of illicit crop cultivation and drug manufacture is relatively small compared with that of the legal agricultural or pharmaceutical sector, however the effects can be significant at the local, community, and individual levels. It depends very much on the location how much somebody is confronted with the environmental impact of drugs.

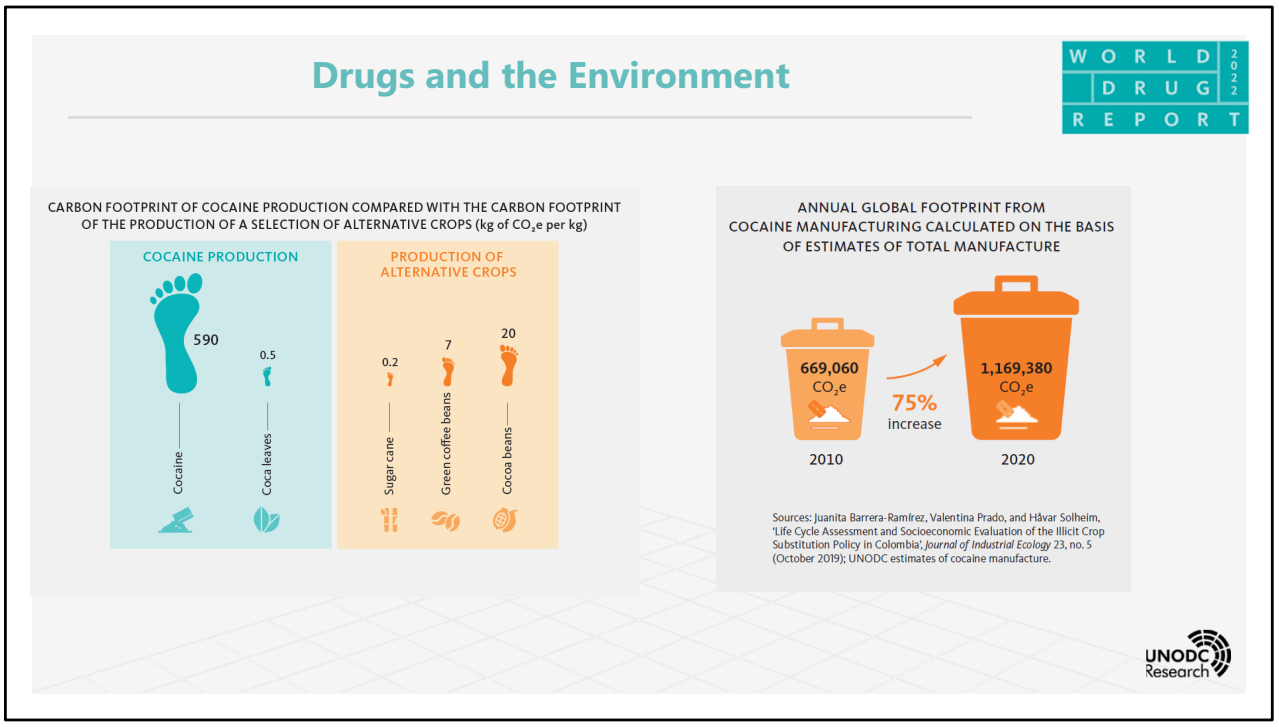
Today I will mainly focus on issues relevant for the European context, including cannabis cultivation and synthetic drug production.



We can analyse the environmental impact of plant-based drugs by estimating the carbon footprint. The carbon footprint is a measure of the greenhouse gas emissions, represented as carbon equivalents, resulting from the economic activities that are part of the production chain.

In the slide you see the different functional units for indoor and outdoor cannabis cultivation. For indoor cannabis cultivation, the carbon footprint is determined especially by energy use, including for Heating Ventilation and Air Conditioning (HVAC) equipment to maintain temperature and humidity and for growing lights. Taken together, such climate control measures represent more than 80 per cent of the carbon footprint. For outdoor cultivation the land-use change (clearing of land or forest) is the main factor.

To better understand what this means, the right infograph shows the carbon footprint comparison of a cup of coffee and a joint. You can see that the carbon footprint of a joint with indoor cannabis is 5-10 times higher than a cup of coffee or a joint with outdoor cannabis.

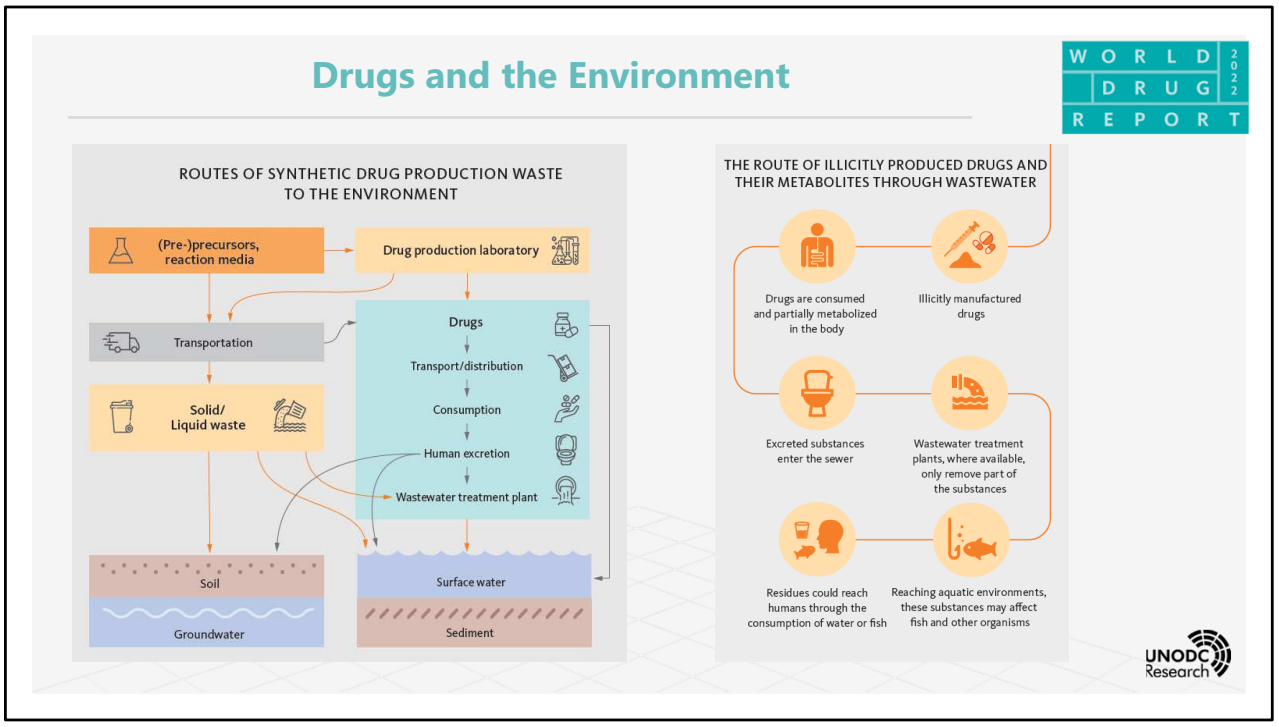


As a main consumer market of cocaine, Europe also contributes to the environmental damage done by cocaine production. On the left side you see the carbon footprint of cocaine production compared with the production of crops, such as green coffee beans, cocoa beans or sugar cane.

Using 2020 global production data, the estimated total carbon emissions of global cocaine manufacture amounts to 8.9 million tons of CO_2e per year, which is equivalent to the average emissions of more than 1.9 million gasoline-powered cars driven in the course of one year, or more than 3.3 billion litres of diesel fuel consumed.

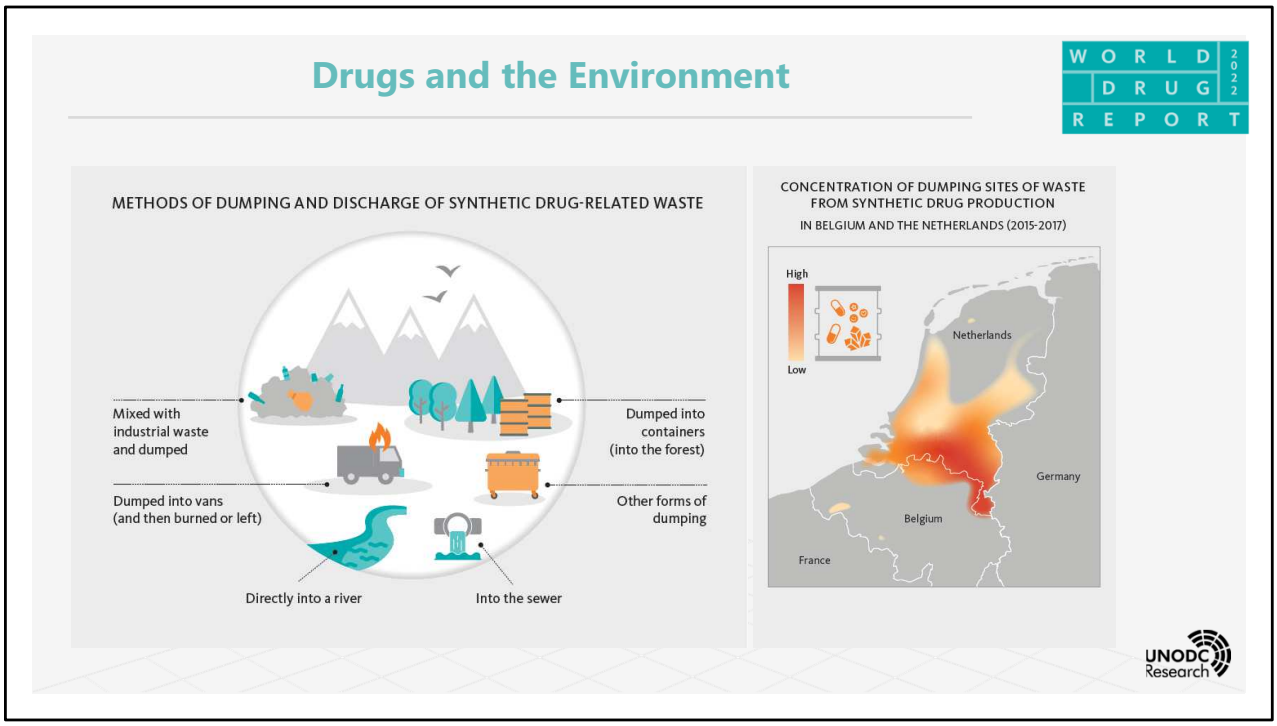
In the past people have tried to use the environmental impact/deforestation caused by cocaine production as a prevention message, but at the level of the individual users the average carbon footprint is much less significant as for example for meat.

The carbon foot print of 100 gram beef is 144 times larger than a line of cocaine. (0.025 vs 3.6)



A carbon footprint assessment does not cover aspects such as water use, toxicity and biodiversity and impacts related to waste disposal and wastewater treatment practices which are typical in the production of synthetic drugs. Therefore, we assessed the environmental impact of synthetic drug production in a different way.

In addition to the production and transport of precursors, the environmental impact of synthetic drugs is mostly due to the toxic waste generated during the production process. The producers of synthetic drugs typically dispose of this waste in two ways: through dumping and discharges. Dumping is the disposal of synthetic drug waste in some kind of container (plastic barrel or a metal drum), while discharges are the liquid waste directly or indirectly discarded onto land or into water. The distinction between dumping and discharge is important from an environmental harm perspective. Dumped containers are visible and can eventually be identified, while discharges are more invisible. Discharges are also seen as a more direct cause of harm as human beings and nature are more directly exposed to the toxic substances.

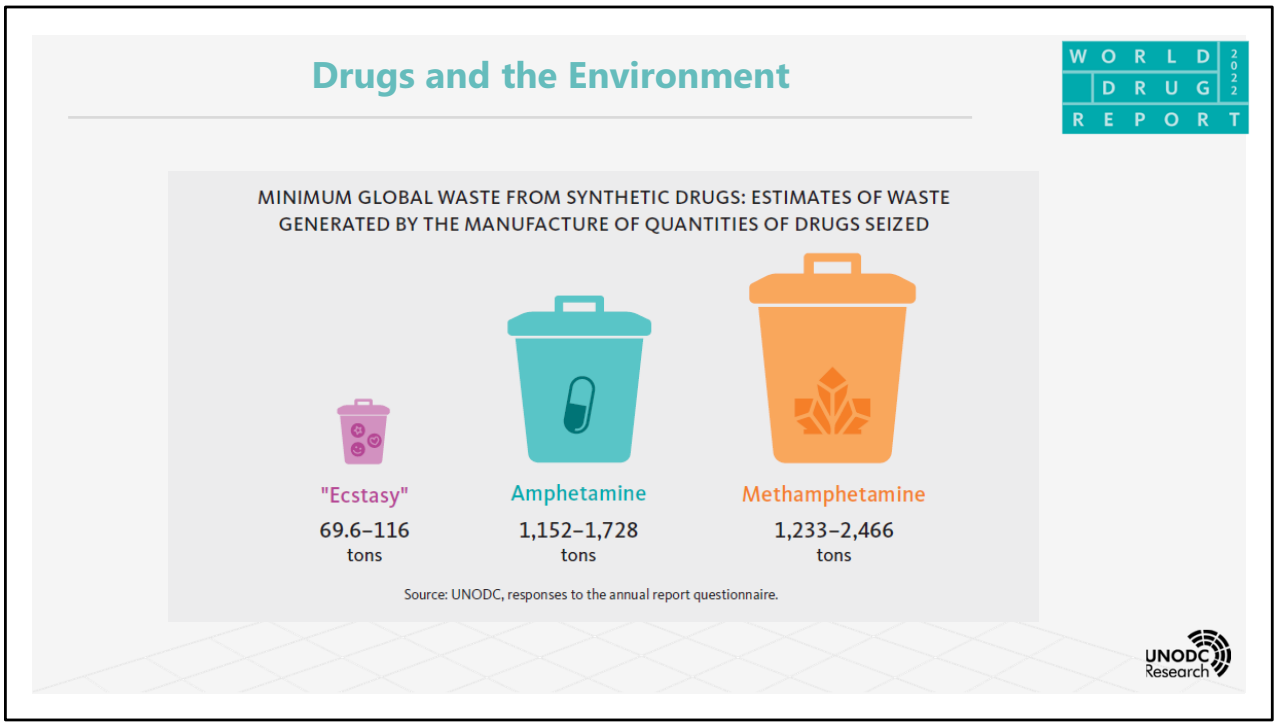


Dumping and discharging can take many forms, including burying, dumping on land or in surface waters, or storage in basements, mixing with manure or other chemical waste, incineration, illegal disposal at local recycling centres, and direct or indirect dispersal through indoor plumbing drains that drain either into a city sewer system or individual sewage treatment system. Drug synthesis waste can also be collected in vessels, jerry cans or large intermediate bulk containers and stored in the production facilities or in vans that may subsequently be abandoned or set on fire.

The environmental impact of discharged waste varies. The waste may contain toxic substances, such as the highly toxic, metallic mercury which may be generated in the synthesis of methamphetamine or MDMA.

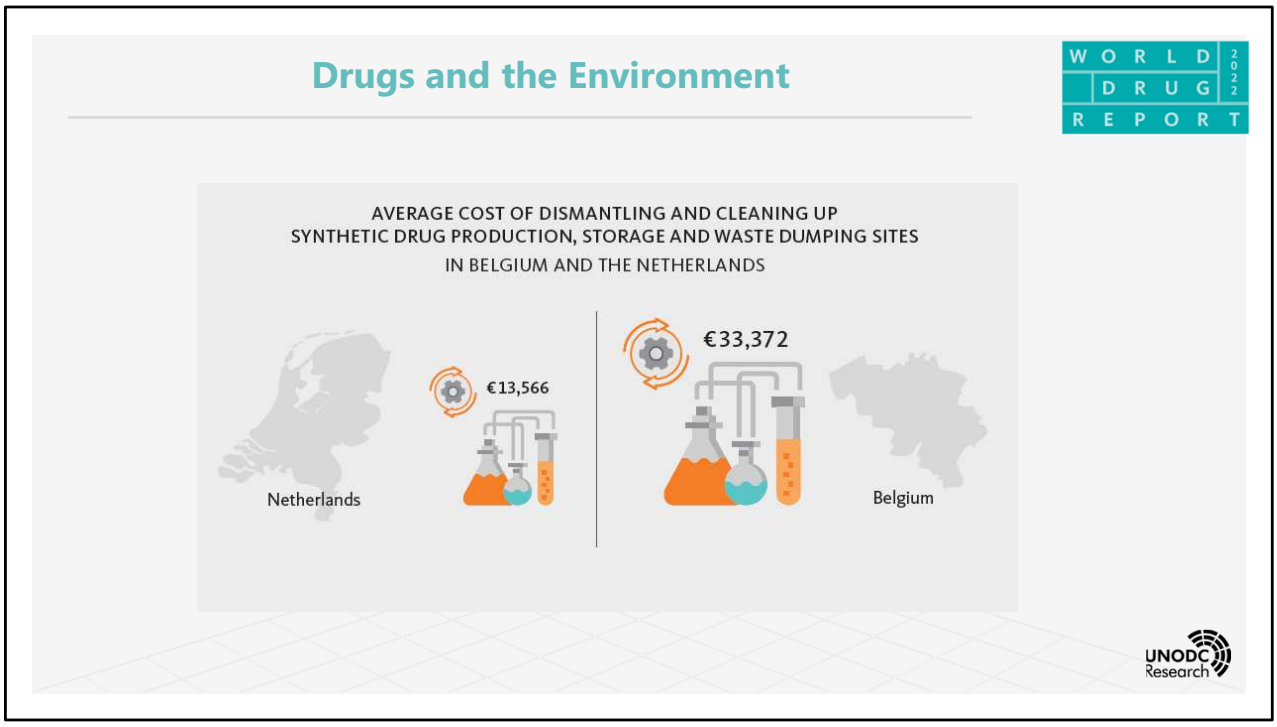
The impact of a spilled or dumped acidic solution, alkaline solution or solvent may vary with the physical and chemical properties of the natural surface onto which it has been spilled and the dilution it undergoes. When water is present in the soil environment, for example, the waste can more easily spread, while its concentration decreases through dispersion and diffusion.

Organic solvents may evaporate or be transported with water to underground waters. In the provinces of Noord-Brabant and Limburg of the Netherlands, for example, about 20 per cent of the dumps for discharge waste discovered were in groundwater protection areas, used for the production of drinking water.



The volume of synthetic drug waste is determined by the methods of production. The use of pre-precursors and pre-pre-precursors increases the volume of waste. The waste produced during the process of synthesizing drugs such as amphetamine, methamphetamine and MDMA (“ecstasy”) is between 5 and 30 times the volume of the end product.

Since the dumping and discharge of synthetic drug waste often go undetected and we also do not know global production data, it is difficult to estimate the environmental impact of synthetic drug production. On the slide you see a minimum estimate of the waste produced calculated on the basis of annual quantities seized.
The total global waste per year:
amphetamine between 1,152 - 1,728 tons
Methamphetamine between 1,233 - 2,466 tons
MDMA between 69.6 - 116 tons.
Given that seizures only reflect a small part of global production, the actual total global waste production can be expected to be much higher.



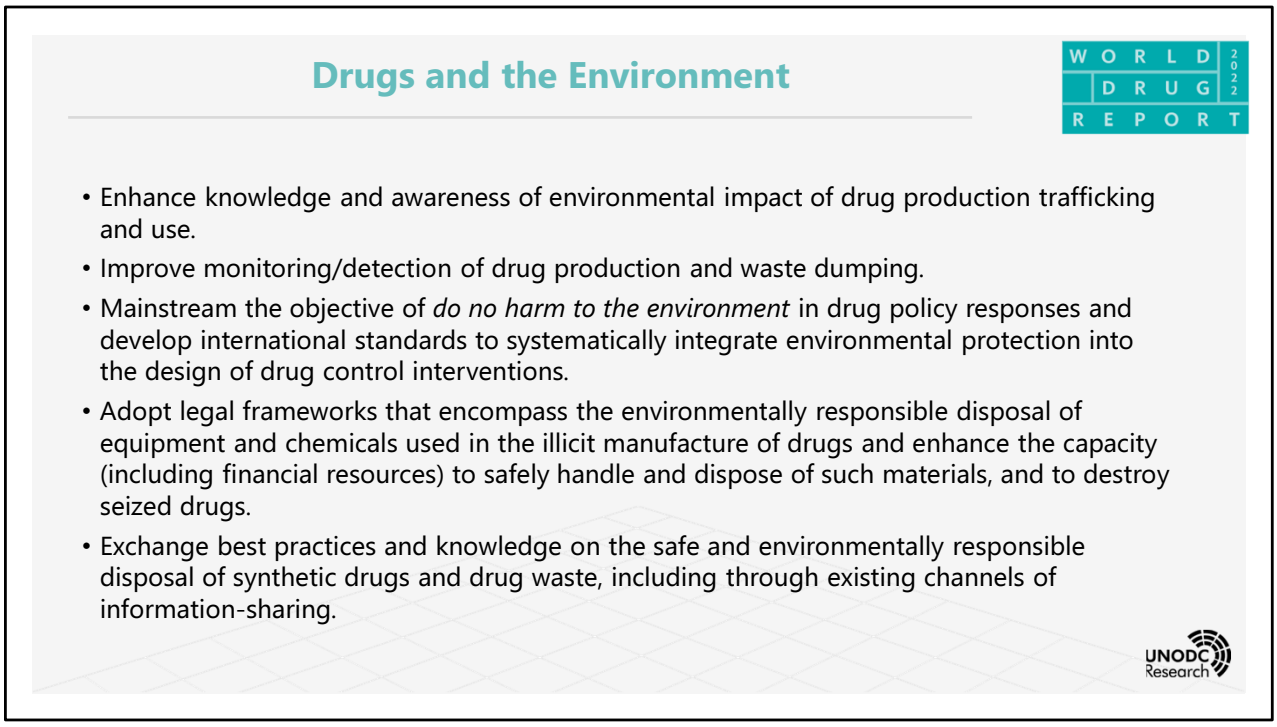
What is done to prevent or deal with the environmental issues related to synthetic drug production? Responses with regard to synthetic drug production are mostly reactive in nature, ranging from the detection and dismantling of clandestine laboratories and wastewater analysis, to cleaning operations on production or waste dumping sites, and the proper disposal of confiscated drugs.

This brings about significant costs, both in terms of the financial costs of clean-up operations and the health costs resulting from pollution.

Available estimates of clean-up from Belgium and the Netherlands amount to an average of €33,372 and €13,566, per site, respectively. While other estimates of clean-up costs for drug laboratories have been much lower, for example, in the United States, an average of $2,200 per clean-up (2009), such estimates are often limited to only the costs of the cleaning operation and do not include, for example, the costs of law enforcement officers or other local government agencies involved

Wastewater treatment can reduce the environmental impact of dumped and

discharged waste, but the capacity to treat water is distributed unevenly around the world. The majority of the global manufacture of amphetamine and methamphetamine is typically carried out in remote areas with no water treatment. (For some substances, such as MDMA, the removal rates are relatively low.)



What can be done to prevent or mitigate the environmental damage related to drug production, trafficking and use? I would like to put forward a few points for discussion:

- Enhance knowledge and awareness of environmental impact of drug production trafficking and use.
- Improve monitoring/detection of drug production and waste dumping.

Wastewater analysis can support law enforcement, as waste profiles may be used to identify ongoing drug production in the wastewater catchment areas. It could also help to identify trends, for example, in terms of geographical location, the types of precursors used and the drugs produced. However, when precursors are also used for licit purposes, wastewater analysis to identify illicit manufacture becomes very challenging.

- Mainstream the objective of do no harm to the environment in drug policy responses and develop international standards to systematically integrate environmental protection into the design of drug control interventions.
- Adopt legal frameworks that encompass the environmentally responsible

disposal of equipment and chemicals used in the illicit manufacture of drugs and enhance the capacity (including financial resources) to safely handle and dispose of such materials, and to destroy seized drugs.

- Exchange best practices and knowledge on the safe and environmentally responsible disposal of synthetic drugs and drug waste, including through existing channels of information-sharing.