

United Nation Environment Programme (UNEP)

MetMUNC XLIX

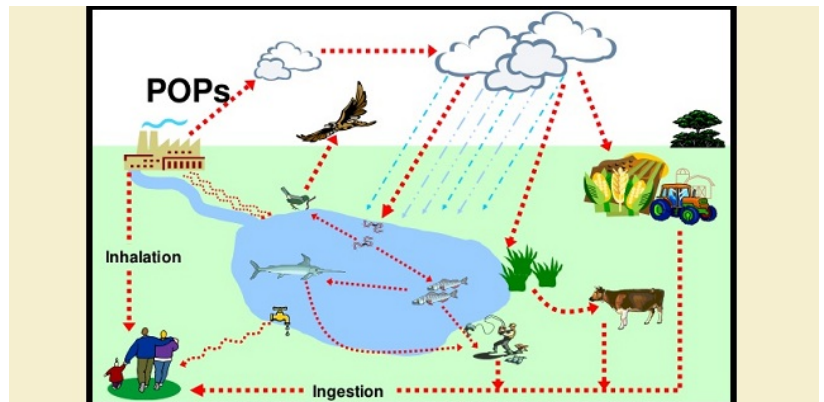
Topic: Persistent Organic Pollutants

Chairpeople: Alyssa Reiss, Stein Philip, Jessica Klein



Persistent organic pollutants (POPs) are types of chemicals that are created by industries that are toxic to humans, animals, and the environment. They were first introduced after World War II because of the spike in industrial production and new chemicals that were introduced for commercial use.¹ POPs are used in substances meant for pest and disease control, crop production, and industrial work. Some of the most common POPs include pesticides (such as DDT), industrial chemicals (such as polychlorinated biphenyls, PCBs) and the unintentional by-products of industrial processes (such as dioxins and furans).²

Though economically beneficial to some, POPs pose threats to our environment. Hence the “persistent” part of its name, POPs survive in the environment for long periods of time and therefore bioaccumulate and biomagnify



in ecosystems. Biomagnification and bioaccumulation both refer to the gradual increase of substances, such as pesticides or chemicals, in an organism due to long-term exposure. These

¹ <https://www.epa.gov/international-cooperation/persistent-organic-pollutants-global-issue-global-response>

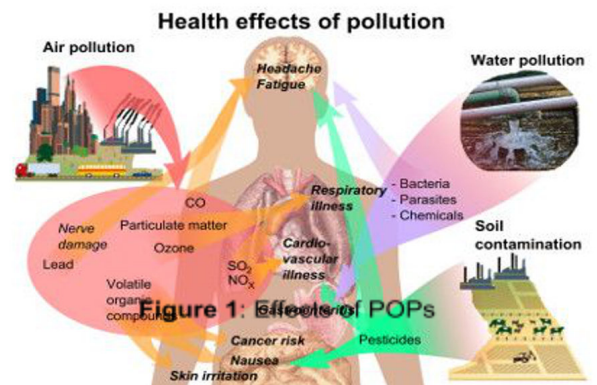
² [https://www.who.int/news-room/q-a-detail/food-safety-persistent-organic-pollutants-\(pops\)](https://www.who.int/news-room/q-a-detail/food-safety-persistent-organic-pollutants-(pops))

phenomena occur specifically when an organism's rate of excretion of a specific substance is slower than its rate of absorption.

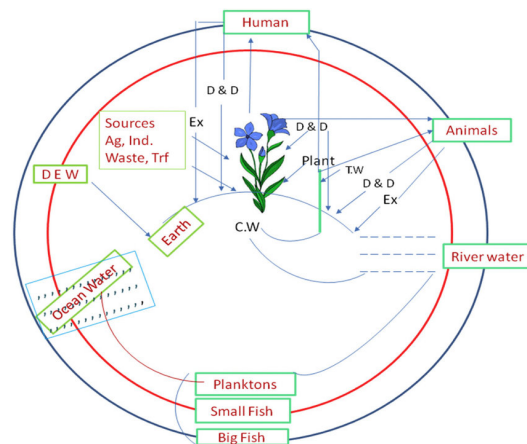
Humans are exposed to these chemicals in a variety of ways, mainly through the food we eat, but also through the air we breathe-- whether it be outdoors, indoors, or even at the workplace. POPs have become an ubiquitous part of commercial life, included in products in order to improve characteristics such as flame retardants or surfactants. As a result, POPs can be found virtually everywhere on our planet in measurable concentrations. POPs bio-magnify throughout the food chain and bioaccumulate in organisms. The highest concentrations of POPs are thus found in organisms at the top of the food chain. Consequently, background levels of POPs can be found in the human body.

If humans are exposed to POPs, they are more inclined to develop reproductive disorders, different types of cancers, birth defects, and they can severely harm immune systems. They can be found all around us, from the air we breathe to the food we eat. Animals are also adversely affected by the consequences of POPs. For example, in Jamaica, an increase in fish mortality in coastal areas coincides with the period in which pesticides are applied on coffee plantations.

Regions such as Central, South America, and East Asia rely on the use of POPs (like DDT) that support their agrarian-based economy. In the Arctic, both the levels of these pollutants and their rates of persistence are high, meaning that the harmful chemicals have an elongated period and therefore a greater chance of sinking into the ecosystem's water. Data shows that in areas such as Europe,



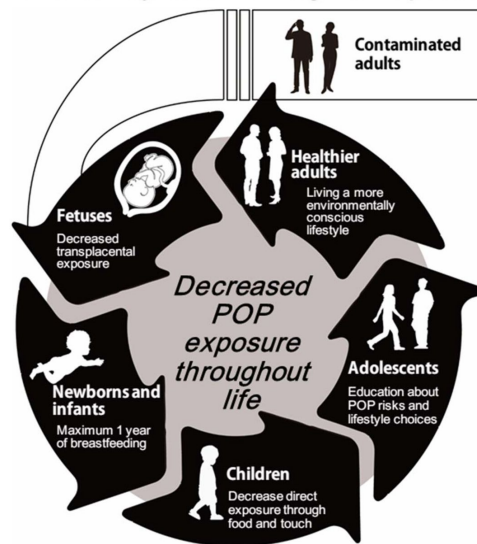
North America, East Asia and the Mediterranean, POPs like dioxins and furans are very common among the industrial cities of these regions poor waste management practices and improper burning.³ In addition, there are many countries that do not even monitor their use of harmful POPs. There's a lack of data in over 23 countries within Central America and the Carribean.



For obvious reasons, this is a serious implication on our environment. Organisms and entire ecosystems alike may perish, and our environment as we know it could be forever altered for the worse.

To address the risks associated with these substances, several steps have been taken to reduce or eliminate emissions of dioxins, dioxin-like PCBs and other related persistent organic pollutants. Many countries, such as Argentina, Chad, Thailand and Yemen, have now implemented the Stockholm Convention on POPs, which suggests ending

A Virtuous Cycle for Reducing POP Exposure



commercial use of 12 POPs and reducing or eliminating their emission into the environment. The 12 targeted POPs include eight pesticides (aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, mirex, and toxaphene), two types of industrial chemicals (polychlorinated biphenyls or PCBs and hexachlorobenzene), and two chemical families of unintended by-products of the

³ <https://www.thearcticinstitute.org/persistent-organic-pollutants-pops-in-the-arctic/>

manufacture, use, and/or combustion of chlorine and chlorine-containing materials (dioxins and furans).⁴

The Convention requires Parties to eliminate or restrict the production and use of the intentionally produced POPs, subject to specified exemptions, with special provisions for DDT and PCBs. DDT is placed in the restriction annex, which means that its production and use is restricted to disease-vector control.⁵ The Convention also establishes a public DDT registry of users and producers, and it encourages the development of safe, effective, affordable, and environmentally friendly alternatives.

During committee, it will be your job as a delegate to debate cohesively with your peers in order to find a feasible solution to the controversy over POPs. You should look to address each country's current reliance on these pesticides, how one can adapt more environmentally-friendly means of promoting their economies, which countries can serve as sources for necessary capital, and which countries are most adversely affected by the widespread use (or lack thereof) of POPs. The future of global ecosystems relies on the actions we take today, so it is of utmost importance that committee works to make progress in the complex intersection between ecosystems and economies.

⁴ https://wwf.panda.org/knowledge_hub/teacher_resources/webfieldtrips/toxics/our_chemical_world/pops/

⁵ <http://www.pops.int/>

Questions:

1. What types of POPs, if any, does your country currently use?
2. What actions is your country taking to limit the amount of POPs depended on?
3. Is your country a part of the Stockholm Convention?
4. If so, what part do they play in its effectiveness?

Helpful Links:

- [https://www.who.int/news-room/q-a-detail/food-safety-persistent-organic-pollutants-\(pops\)#:~:text=Persistent%20organic%20pollutants%20\(POPs\)%20are, human%20health%20and%20the%20environment.](https://www.who.int/news-room/q-a-detail/food-safety-persistent-organic-pollutants-(pops)#:~:text=Persistent%20organic%20pollutants%20(POPs)%20are, human%20health%20and%20the%20environment.)
- <http://www.pops.int/>
- https://ec.europa.eu/environment/chemicals/international_conventions/index_en.htm