

DISCUSSION DIGEST

Chemicals in Plastics

Issue: 2 of 2024
Date: 28 March 2024

The UCT Chemical Network (CN) held a discussion on the 28th of March 2024 titled 'Chemicals in Plastics'. This was presented by **Dorothy Otieno** of the Centre for Environmental Justice and Development, Kenya (CEJAD) and **Ece Koc Martin** of the European Chemical Industry Council (Cefic). Click to view: [the PowerPoint presentation](#), [discussion recording](#), and [newsletter](#).

KEY MESSAGES

Over **16 000 different chemical additives** are found in plastic products, and currently, over **3 200 of these are considered concerning to human health** ([UNEP 2023](#)), with thousands more not yet tested. Many of these **harmful chemicals persist after recycling**, introducing health concerns from recycled plastic products ([UNEP 2023](#)).

Dorothy presented research from a CEJAD project in Kenya, where hazardous chemicals from plastics such as brominated flame retardants (which are POPs – persistent organic pollutants) were tested for in products such as clothing and everyday items (including toys, utensils, hair accessories, and office equipment), as well as food chain contamination. The aim was to “**reduce and eliminate the production, trade, and use of toxic “non-circular” plastics**”. Non-circular plastics refer to those plastics products which contain hazardous chemicals, and should therefore not be recycled, hence the goal to **reduce their presence in or remove them from the market**.

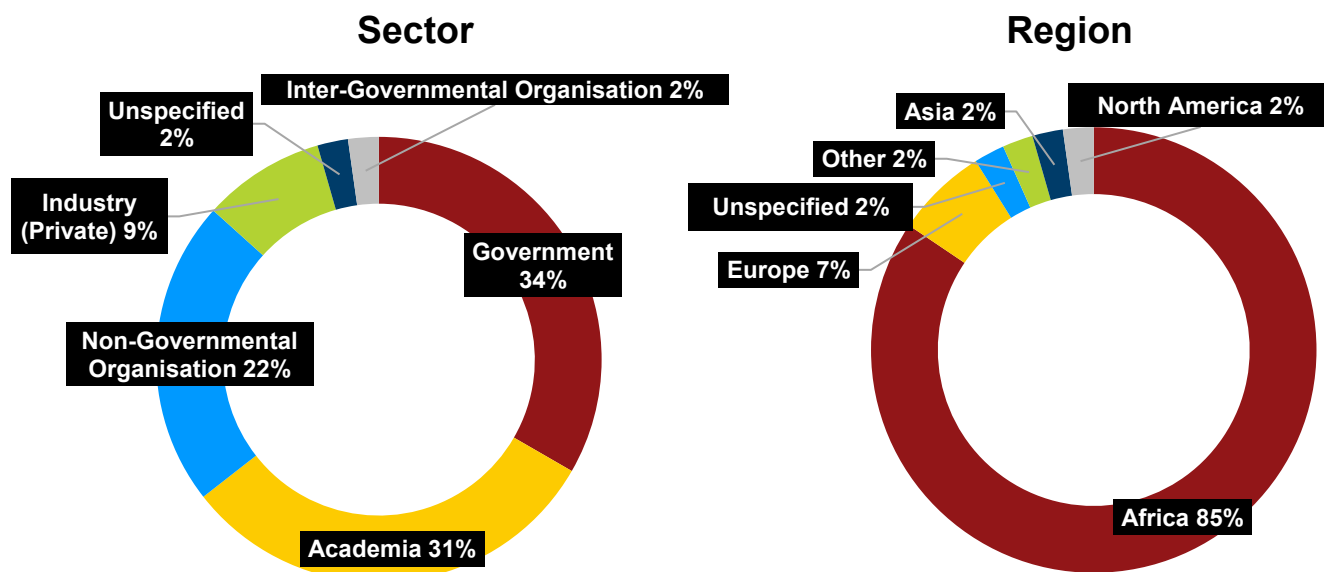
The study found **hazardous POPs in consumer products** that are used every day, **indicating regular exposure**, especially concerning women and children. The study also found **harmful POPs in eggs**, which was an **indicator of food chain contamination**, despite some of these chemicals being listed under the Stockholm Convention for elimination. **Clothing such as jackets and raincoats were found to contain harmful POPs**, raising concerns about products imported into **low- and middle-income countries** (LMICs).

Ece explained that **information on chemicals in plastics is not often shared optimally** and could be unavailable to regulators, consumers, and waste managers. This **lack of information** could **hamper risk assessments** and **impact recycling and product safety**. The International Council of Chemical Associations has developed a complementary initiative to the UNEP database, with a **database project of chemical additives**, to **increase transparency and support chemical management capacity-building** and advocate and provide tools to regulators to use risk-based regulations.

Ece also elaborated that **many countries do not have regulatory frameworks**, and while some countries do, many do not apply them well. The global chemical industry devotes significant resources to **building capacity worldwide to develop, implement, and improve effective chemical management programmes** in different regions.



ATTENDANCE BREAKDOWN



Total number of live participants = 45
Total number of participants who posted their responses prior = 5

ABOUT THE PRESENTERS



Ece Koc Martin has a PhD in Polymer Science, obtained from Eindhoven Technical University. She worked for several years at DuPont de Nemours as a Polymer Scientist and Luxembourg-based cosmetic enterprise as a research and design manager. She is currently a product stewardship manager at Cefic, the European Chemical Industry Council.

Dorothy Adhiambo Otieno is an environmental scientist, specialising in environmental law, with experience in tackling environmental pollution and addressing waste management challenges. She is currently the programme officer at the Centre for Environment Justice and Development where she leads the Plastics and Waste Management Programme. Over the last 6 years, she has advocated for the implementation of zero-waste principles and a toxics-free circular economy at the national, regional, and international governance levels. She has supported communities impacted by plastic pollution i.e., coastal communities and waste pickers, to organise and call for their environmental and social justice against exposure to toxic chemicals. She is the national coordinator of the Kenya Critical Care Registry Project, which aims to improve critical care in the country.



CONTRIBUTIONS FROM PARTICIPANTS

Disclaimer: The information in this digest represents the opinions of members participating from different stakeholder groups expressed during the discussion. The views expressed in this document do not necessarily represent the opinion or the stated policy of the Swedish Chemicals Agency (KemI) or DEH UCT, nor does citing trade names or commercial processes constitute an endorsement

The key discussion points raised by participants are presented under each question. Throughout the discussion, informal polls were conducted to help encourage discussion among the participants. They do not provide any representative data but rather provide a snapshot of participants' views.

QUESTION 1

How is industry addressing transparency in your country in relation to disclosing hazard-related additives used in plastics?

Guyana

- The Pesticides and Toxic Chemicals Control Board (PTCCB) works closely with international conventions and monitors the new development of plastic products with hazardous additives. This knowledge is transferred to local bodies with measures in place to prevent import of these plastics. If this knowledge is not available and the plastics do not fall under tariff codes governed by the PTCCB, it is possible that these plastics with potentially hazardous additives could go unnoticed and enter the market

Ghana

- There are regulations regarding plastics, but knowledge of these additives are not known

Zambia

- A regulatory framework that requires disclosure

Uganda

- Industry feels insecure with the information, and there is a need for more awareness to build trust and increase transparency
- National standards prescribe temperature limits for food grade plastic packaging

South Africa

- The Department of Forestry, Fisheries and the Environment (DFFE) oversees regulations related to chemicals and hazardous substances. However, there is no evidence that companies must disclose any potentially hazardous additive in plastic
- There are many online platforms which import "cheap plastic" products. These are often not labelled and have no

information on their composition or where they were manufactured

- Transparency is poor in South Africa. It is a challenging area, considering South Africa has many poor communities and a high unemployment rate, so people tend to settle for seemingly harmless cheap products

Lesotho

- No regulatory body concerning chemicals therefore no specific ways or disclosed actions when dealing with plastics

Zimbabwe

- Not much
- Ingredients are listed on packaging but there is no legal requirement for this

Malawi

- Measures are in place, though not specific for chemicals in plastics
- Laws and available standards from regulatory bodies, e.g. Malawi Bureau of Standards (MBS), such as labelling with standard symbols depicting hazards of the chemicals on the labels and providing material safety data sheets of the products to relevant buyers/users so they are aware of the hazards

Nigeria

- Presently, through its national regulatory agency, formulating regulations on plastics to include standards for chemicals in plastics
- Industry is yet to adopt the disclosure requirement for hazardous additives

Guinea-Bissau

- No regulations



Namibia

- No regulations

Benin

- There are regulations but capacity-building is needed

POLL QUESTIONS

Poll 1: Are there regulations in your country that require industry to deal with hazard-related additives used in plastic?

| | |
|------------|---|
| Yes | 2 |
| No | 6 |
| Don't Know | 3 |

Poll 2: Provide examples of regulations in your countries or the barriers to why there are no regulations. Include your country in your response

- Benin: none yet
- Lack of political will to know what hazardous chemicals are in plastics
- Ethiopia: none
- Zambia: there has been no research and testing facilities to support the problem. There is need for a legal review to inform the decision
- Zimbabwe: none
- Madagascar: there is a regulation but no application
- Ethiopia: there is a hazardous waste management regulation but it is general, not specific to plastics
- A lot of countries do not have chemicals management regulations
- Burkina Faso: Law no. 017-2014/AN on the prohibition of the production, importation, commercialisation, and distribution of non-biodegradable plastic packaging and bags
- Lesotho: the most prominent barrier is the lack of a regulatory framework aligned with chemicals. Additionally, there are no research centres that could focus on chemicals that may be present in plastics
- Uganda: the National Environment Act restricts circularity in hazardous waste, and limits industries to specific plastics categories but no detail on toxic content
- Gabon: there are regulations but a lack of enforcement
- Some countries do not know which chemicals are produced or entering the country
- Countries' technical capacity needs to be enhanced to develop such law
- The Agricultural Chemical Industry Association (ACIA) in Zimbabwe should finance the management system

QUESTION 2

For countries without domestic chemical management systems, how can industry develop and implement plastics chemical management programmes? For countries with management systems, what improvements are needed and why?

Countries With

Guyana

- More can be done to work with international bodies that have the resources and capabilities to identify hazardous additives in plastics and to have this information shared with the local customs authority to prevent importing these products
- The regulatory body can also work closely with the standards authority to require that importers submit detailed breakdowns of the properties of the

plastics they want to import before a license can be given

South Africa

- An integrated approach should be used, considering the entire lifecycle of plastics
- Consumer associations should be tasked with driving initiatives. The Consumer Goods Council of South Africa represents the main retailers and has the capacity to establish relevant workgroups and drive industry change



- Industry can contribute to the financing of prevention and remediation of harmful effects from their plastic products' chemical additives

Zimbabwe

- The government has received support from UNEP to develop a legal framework for chemicals in products
- Since industry has expertise and funding, there should be a science-industry-policy framework where industry can share information on chemical hazards and also fund research and development

Malawi

- Proactively implement international best practices for reducing chemical hazards from plastics e.g. proper disposal
- Undertake research to develop new materials that substitute hazardous chemicals in plastics

General

- Industries have a big role in providing information that could help put systems in place
- Most developing countries that have chemical management systems can still do more with support from development partners towards awareness-raising,

research into hazardous additives, and providing general transparent consumer information to mitigate harm

- It is hard for industry to put in place systems and plastic management. There is need for industry to provide information on the additives in plastic through research and funding programs for awareness

Countries Without

Burkina Faso

- Industry can develop plastics chemical management programmes by aligning with international standards. They should perform risk assessments, prioritise the use of safer chemicals, and ensure proper waste management.
- Building partnerships for knowledge sharing and training is essential, as is participating in global initiatives like the Strategic Approach to International Chemicals Management (SAICM) to ensure effective and sustainable chemical management in the plastics industry

General

- A starting point would be a multidisciplinary committee including industry to develop a chemical policy

POLL QUESTIONS

Poll 1: In your country, what are the plastic chemical/additive management systems in place or needed? Include your country in your response

- Ghana: the only concern that has been raised on additives is the rate at which these chemicals could degrade. There is the need to go further into the health implications
- Ethiopia: there is the industrial chemical registration system, but it needs to identify the additives used in plastics
- Zambia: there are no regulations for plastic/additives in plastic. However, there are hazardous waste management regulations that regulate waste containing, contaminated with, or consisting of hazardous materials
- Jamaica: There are no publicly stated management systems in place for chemicals/additives, and they are not mentioned in legislation or national standards
- Lesotho: there was an initiative, "No Plastic Wednesday". Shops were requested not provide plastics for buyers every Wednesday, but this stopped as it was not well-received by the general public

Poll 2: Who should finance plastic chemical/additive management systems in your country? Include your country in your response

- Zambia: producers should be financing through the Extended Producer Responsibility (EPR)
- Jamaica: plastic producers should finance all control and exposure measure systems structured through mandatory government taxes



- The polluter pays. Our law is mandating the industry to implement buy-back and recycling mechanisms for plastics
- South Africa: industry, through taxes and EPR programmes
- As we are a net importer, import duties may also be an option (a lot of our chemicals attract 0% duty)
- Polluter Pays
- Ethiopia: the government, industry and importers especially through EPR systems
- Polluter pays in Ghana
- Jamaica: plastic producers should do comprehensive finances for control, exposure mitigation and testing through mandatory government taxes
- Lesotho: industry and government
- The Association of Chemical Industries in Zimbabwe should finance the management systems
- The government in collaboration with manufacturers (RSA)
- Kenya: industry, the EPR regulation is tasking ALL producers to be responsible for all that they produce
- Uganda: it should be the industry and importers
- The input manufacturer should be made responsible as well

QUESTION 3

What research activities are ongoing or needed in your country to identify chemicals in plastics?

Guyana

- More research is needed locally
- Regulatory bodies mostly depend on research of developed countries and the guidance of international conventions which deal with chemicals in plastic

Zimbabwe

- A baseline survey is needed to determine the current production levels of plastics. There is a potentially worrying booming industry on plastic production especially for household products
- Research areas would include conducting a chemicals inventory and risk assessments for the chemicals identified to inform the chemicals policy
- Toxicovigilance is also very important to identify the burden of disease from exposure

France

- A few studies and tests are being conducted, some linked to EPR (buildings, cars, electronics) to identify chemicals of concern and improve treatment organisation, with a strong focus on per- and polyfluorinated substances lately

South Africa

- Lifecycle assessment of plastics, exposure assessment and biomonitoring and evaluation of migration potential (how chemicals migrate into food, water, etc.)

- Investigate the composition of cheap plastic products sold online and imported from other countries

Uganda

- Industries are reserved and secretive about their formulations, and the country lacks capacity

Ghana

- The Federal Drugs Authority in Ghana needs to investigate and research more into plastic containers containing foods on sale before giving certification to businesspeople. Nothing of this sort is being done
- Increasing consumption of electronics with its attendant high levels of E-waste has made the management of E-waste in Ghana a societal challenge that requires a new sociotechnical solution
- More research evidence to advocate and educate

Burkina Faso

- Studies are needed on the types of plastics in use and consumer behaviour (non-compliance to regulations)
- Environmental impact assessments and policy evaluations are essential to understand the implications of plastic pollution and to develop sustainable alternatives
- Increased public awareness and education can drive the transition towards a more sustainable management of plastics



Nigeria

- More research on chemicals in plastics is needed
- Some work was carried out on Brominated Flame Retardants (BFRs) in different media, not necessarily in plastics, but more support is needed for more research
- Largely depends on data on chemicals in products from developed countries and the countries of export

Lesotho

- Activities beneficial to identifying non-circular plastics would involve laboratory-based tests on plastics, exposure assessments and safety data sheets

Malawi

- Research activities needed include screening of hazardous chemicals/additives in plastics and assessing the country's capacity to manage chemicals in plastics e.g. laws, policies and infrastructure

POLL QUESTIONS

Poll 1: Are chemicals in plastic products tested for in your country?

| | |
|------------|---|
| Yes | 3 |
| No | 5 |
| Don't Know | 3 |

Poll 2: What are some of the hazardous chemicals found in recycled products in your country? Include your country in your response

- Brominated flame retardants
- Ethiopia: phthalates, bisphenol A
- Zimbabwe: plastic softeners
- Uganda: no concluded findings

RESOURCES

1. Ochieng G., Otieno DA, Kecha A, et al. POPs in Plastic Products and Chicken Eggs from Kenya in the Light of the Basel and Stockholm Conventions. September 2023. <https://www.researchgate.net/publication/373874902> [POPs in Plastic Products and Chicken Eggs from Kenya in the Light of the Basel and Stockholm Conventions](https://www.researchgate.net/publication/373874902)
2. United Nations Environment Programme. Chemicals in Plastics: a Technical Report. May 2023. <https://www.unep.org/resources/report/chemicals-plastics-technical-report>
3. International Pollutants Elimination Network (IPEN). IPEN Plastics Treaty Platform. <https://ipen.org/documents/ipen-plastics-treaty-platform>
4. Centre for Environmental Justice and Development, Kenya & Heinrich Boll Stiftung. Policy Brief: Regulation of hazardous chemicals in plastic products is urgently needed in Kenya. June 2023. <https://cejadkenya.org/wp-content/uploads/2024/02/CEJAD-HBF-Policy-Report.pdf>
5. PlastChem. State of the science on plastic chemicals. 2024. <https://plastchem-project.org/>
6. IPEN. Toxics in Our Clothing. <https://ipen.org/documents/toxics-our-clothing>

Chemical Network: The Chemical Network is a non-partisan online forum established by the Division of Environmental Health (DEH) at the University of Cape Town's (UCT) School of Public Health. It was established as part of a knowledge management and sharing project supported by the Swedish Chemicals Authority (KemI).

This forum has been produced with financial assistance from Sweden, through the Swedish International Development Cooperation Agency (SIDA), which has been arranged by the Swedish Chemicals Agency (KemI). The views herein shall not be taken to reflect the official opinion of SIDA or the Swedish Chemicals Agency.

If you have any questions or require clarification on this initiative, please contact UCT at chemicalistserver@gmail.com. If you are not already a member, join the Chemical Network at: <http://eepurl.com/hf9nwf>

