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SIDE EVENT

April 28, 2025

06:15 pm

Exhibition Area (CICG)

REGISTER FOR ONLINE PARTICIPATION

https://bit.ly/POPsCOP

FOR MORE INFORMATION

https://bit.ly/GlobalNIP

CONTACT

anastasiya.buchok@ggkp.org

SIDE EVENT

APRIL 28, 2025 | 06:15 pm | Exhibition Area (CICG)

The importance of data in chemicals management:

Leveraging publicly available data for national POPs inventories and the need for POPs data management systems

gef | UN environment programme | GGKP

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National Implementation Plans (NIPs) implementation status in Ethiopia

Addisu Tibebu Kumsa

Head, Environmental Compliance and Enforcement Desk and National Focal Point for Stockholm Convention, EPA, Ethiopia

28 April 2025

Content

- **Introduction**
- **Coordination and Inventories to be developed during the NIP update in Ethiopia**
- **Achievements**
- **Challenges**

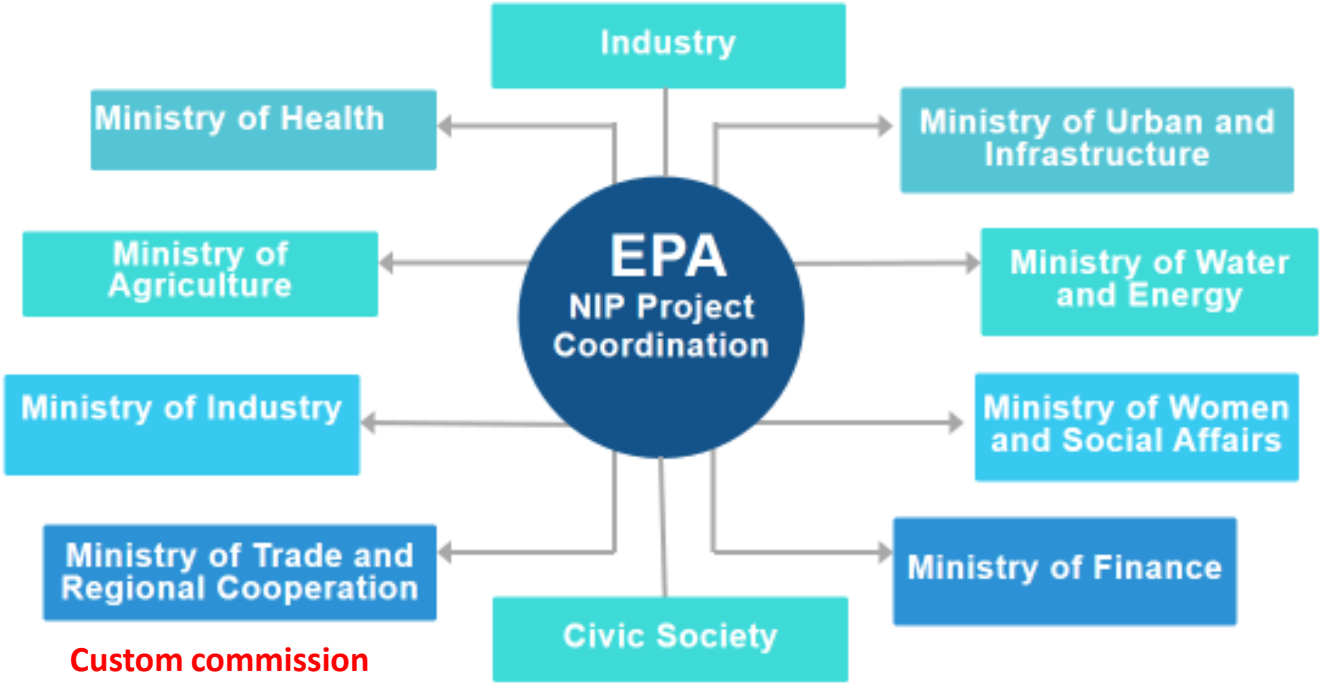
Introduction

- Signed on 22 May 2001 in Stockholm and effective from 17 May 2004
- Ethiopia ratified the instrument on 2 July 2002.
- Ethiopia developed it's first National Implementation Plan (NIP) in 2006.(summited)
- Updated the NIP in 2017. (not submit to the Conference of Parties (COPs) to the Stockholm Convention)

2nd Update and Development of the NIP Project

- Project duration: 2022 – 2026
- Project budget: $ 279,000

Key Stakeholders involved in the Update and Development of the NIPs



Coordination and Inventories to be developed during the NIP update in Ethiopia

- Pesticide team
- POP-BFR team (PBDEs, HBCD, HBB) & SCCP
- PCB Team
- POP-PFAS team (PFOS, PFOA, PFHxS)
- UPOPs team
- legal team
- social economic team and
- data management and controlling team

Achievements of the NIP on POPs Chemicals

1. Stakeholder Engagement and Institutional Setup

- **Inclusive Development & Endorsement**:

✓ The updated NIP was developed with the involvement of key stakeholders and endorsed by the national government.

✓ Roadmaps were adopted by relevant institutions for future implementation.

- **Workshops and Committees**:
  - Conducted a **National Inception Workshop** to launch the NIP update project.
  - Established a **National Project Steering Committee** and **Technical Teams** composed of key stakeholders.

2. Development of NIP Review & Update System

- **Capacity Building**:
  - Delivered targeted **training sessions** for the technical teams.

Achievements of the NIP on POPs Chemicals

- **Knowledge Management**:
  - Facilitated knowledge sharing through various channels, including the **EPA website**, banners, and awareness materials.

3. Meetings and Trainings Conducted

- Participated in **Capacity Building Workshop** and virtual sessions on NIP development, Stockholm Convention obligations, and public engagement (with GGKP).
- Organized a **Training Workshop on POPs Inventory** (Nov 19–23, 2024) for the technical inventory team.

Achievements of the NIP on POPs Chemicals

4. Monitoring, Reporting, and Action Planning

- **Progress and Financial Reporting**:
  - Regular quarterly progress and financial reports ensure transparency and informed decision-making.
- **Committee Updates**:
  - Continuous updates provided to the Steering and Technical Committees to facilitate responsive management.
- **POPs Inventory Action Plan**:
  - A national inventory action plan was developed to identify, manage, and reduce POPs, contributing to public health and environmental safety.

Challenges

1. **Financial Constraints**:
   - Insufficient budget to fully implement activities as scheduled.
   - Heavy reliance on donor funding, affecting sustainability.(delay of releasing the budget from the AI)
2. **Knowledge and Capacity Gaps**:
   - Need for continuous training for stakeholders and technical teams.
   - Limited availability of inventory toolkits for specific POP chemicals.
3. **Data Integration and Accessibility**:
   - POPs-related data is fragmented across various institutions.
   - Absence of a centralized data platform reduces transparency and coordination.
4. **Coverage of Newly Listed POPs**:
   - **New POPs** are underrepresented in inventories systems.

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Sectoral Approach for POP Inventories – Using UN Comtrade Data for Inventory of POPs & Plastics in Electronics

Dr. Roland Weber

International Panel on Chemical Pollution (IPCP)

28 April 2025

34 POPs listed in the Stockholm Convention (2024)

Chemical	Pesticides	Industrial chemicals	Unintentional production	Annex
DDT	+			B
Aldrin, Dieldrin, Endrin, Chlordane,	+			A
Chlordecone, Toxaphene	+			A
Alpha-, Beta-, Gamma-HCH	+		By-product of lindane	A
Endosulfan, Heptachlor, Mirex	+			A
PCP, Dicofol, Methoxychlor	+	+		A
Commercial PentaBDE		+		A
Commercial OctaBDE (Hexa/HeptaBDE)		+		A
Commercial DecaBDE		+		A
Hexabromobiphenyl (HBB)		+		A
Hexabromocyclododecane (HBCD)		+		A
PFOS, its salts and PFOSF	+	+		B
PFOA and related compounds				
PFHxS and related compounds		+		A
SCCPs, Dechlorane Plus		+		A
UV-328		+		A
PCB, PeCBz, HCB, PCN, *HCBD*	+	+	+	A/C
PCDD, PCDF			+	C

Many of the new listed POPs are plastic additives or were used otherwise in polymers.

5 are brominated flame retardants.

2 chlorinated FRs (DP & SCCPs)

SCCPs plasticizer in PVC/rubber.

PFAS were/are used in side-chain fluoropolymers.

Some of these had high production volumes: **DecaBDE, HBCD and SCCP**.

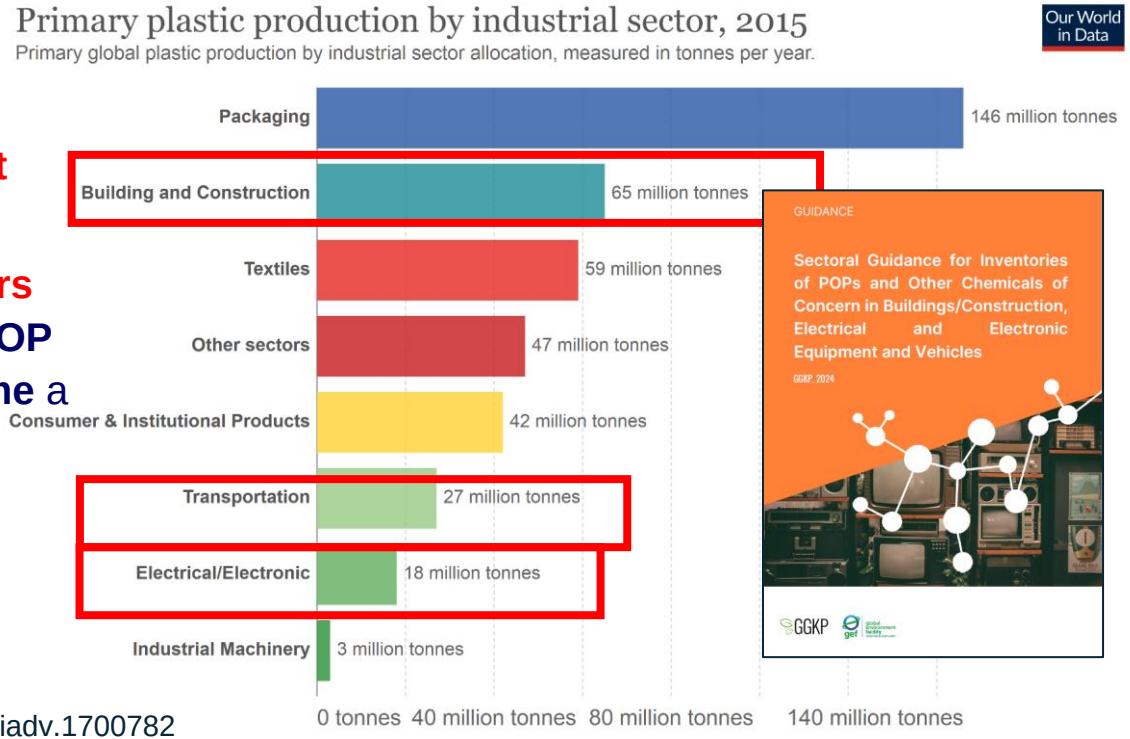
One **non-halogenated** plastic UV stabilizer (**UV-328**) was listed as POP in 2023.

MCCPs, LC-PFAA & Chlorpyrífos proposed @COP12 2025.

POP Review Committee: PBDD/F & PXDD/F

Main reservoirs of POPs in plastic: EEE, transport & buildings

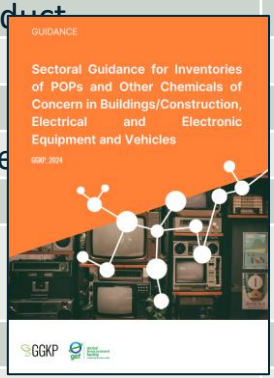
- **Major share of the POPs plastic additives** are **included in electronics, transport & buildings/ construction sectors**.
- **These sectors make a relevant share of the overall stock of plastic worldwide**: **approx. 33% of plastic production is used in the three sectors** (Geyer et al. 2017).
- Considering the **long service life in the three sectors, likely more than 50% of all plastic stocks** are contained in these 3 **sectors today** and are **highly relevant** for **plastic** management and **recycling**.
- The **POPs management in these sectors requires the management of plastic**. **POP inventory and management can become** a good **synergy** with **upcoming Plastic Treaty**!



Geyer et al. (2017) 10.1126/sciadv.1700782
Reproduced by National Graphics (Issue June 2018)

POPs present in the three sectors and main use period

POP (main production & use period)*	Building & Construction Sector	Electrical & electronic equipment	Transport Sector
c-PentaBDE (1970-2004)	Former use	Minor former use	Major former use
c-OctaBDE (1970-2004)	Minor former use	**Major use**	Minor former use
decaBDE (since 1970s)	**Major use**	**Major use**	**Major use**
HBCD (1980 to 2021)	**Major former use**	Minor former use	Minor former use
HBB (1970 to 1976)	Not relevant	Minor former use	Minor former use
SCCP (Since 1930s)	**Major use**	Minor use	Minor use
MCCP (Since 1930s)	**Major use**	Use	Use
PFOS (1960 to 2012)**	Former use	Former use	Former use
PFOA (since 1960s)	Former use	Minor use in product	Use
PFHxS (1960 to 2021)	Former use	Former use	Former use
PCB (1940 to 1980)	**Major former use**	Former use	Minor former use
PCN (1930 to 1970s)	Minor former use	Minor former use	Minor former use
PCP (1930 to 2015)	Major former use	Not relevant	Minor former use
DDT, aldrin, dieldrin, lindane, endosulfan, Mirex (1940 to 2000)	Former use	Not relevant	Not relevant
Dechlorane Plus (DP)	Use	Use	Use
UV-328	Major use	Major use	Major use

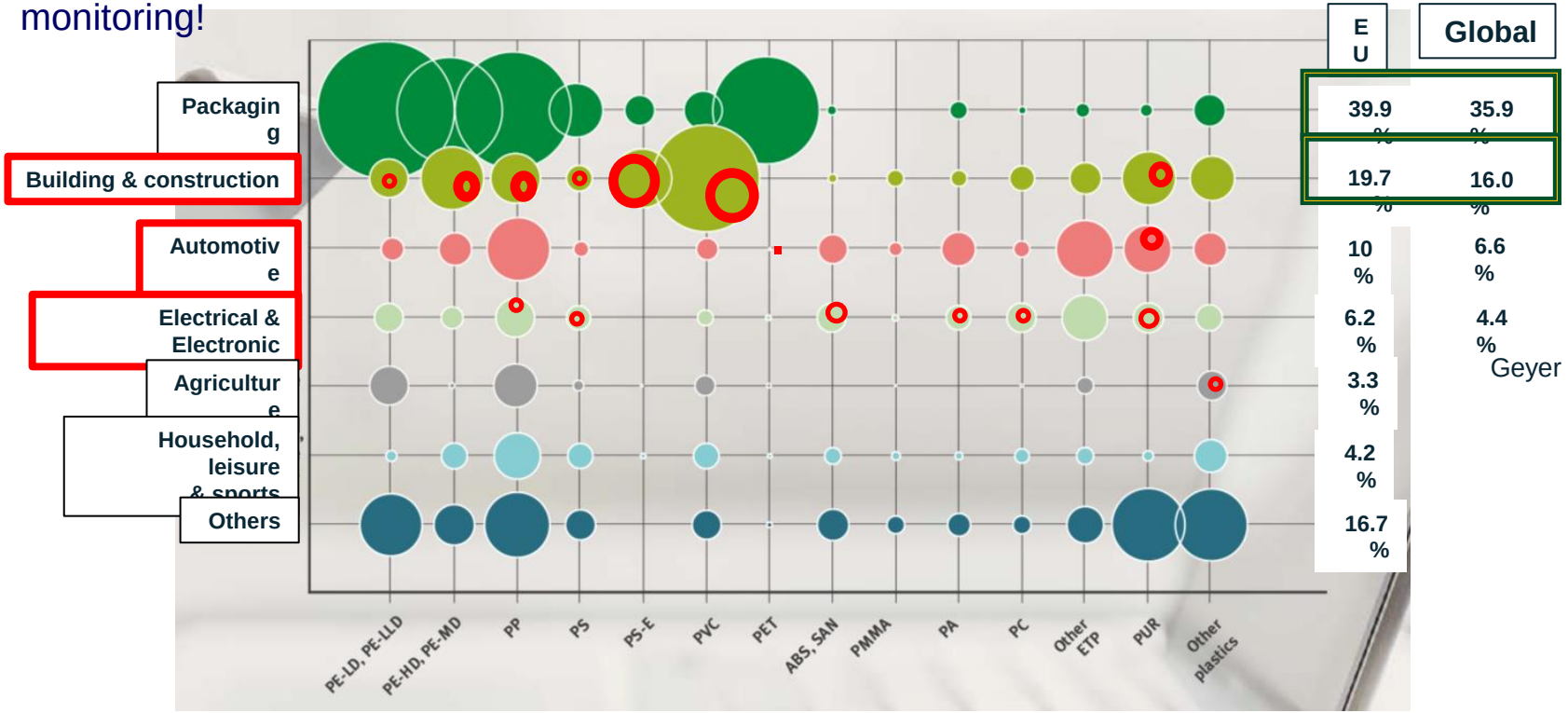


*Main period for production and use in these sectors;

**Major production/use stopped 2002 by 3M.

Major plastics and their applications and link to POP additives

- **Only a share of plastics** in **major sectors** (EEE, transport, buildings) **contain POPs**
- Here the use distribution of major polymers in Europe in the major sectors are compiled.
- POP **use-frequency** is often unknown – can be high as for EPS/XPS in buildings or low. Need monitoring!



	EU	Global
Packaging	39.9 %	35.9 %
Building & construction	19.7 %	16.0 %
Automotive	10 %	6.6 %
Electrical & Electronic	6.2 %	4.4 %
Agriculture	3.3 %	
Household, leisure & sports	4.2 %	
Others	16.7 %	

Geyer et al. (2017)

PlasticsEurope (2017) https://plasticseurope.org/wp-content/uploads/2021/10/2017-Plastics-the-facts.pdf
Please note: The **red circles** **were added to the figure** and **indicate that these polymers in these uses are known to partly contain POPs**.

Method development of assessing plastics & POPs in EEE (Nigeria)

- **Based on UN Comtrade data for major** EEE categories we have compiled the EEE imports 1990 to 2022.
- Additionally a large amount of WEEE was imported to Nigeria which was not included in Comtrade (EUPiP).
- **Based on impact factors on plastics and POPs** compiled in the inventory guidance documents we estimated the total plastic and POPs content.

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Comprehensive inventory of imports of electrical and electronic equipment and related plastics and POPs plastic additives into Nigeria in the past 32 years (1990–2022)

Joshua O. Babayemi [a, b, *], Innocent C. Nnorom [b, c], Roland Weber [d]

[a] Department of Environmental Management and Toxicology, University of Medical Sciences, Ondo, Nigeria
[b] Basel Convention Coordinating Centre for the African Region (BCCC Africa), Ibadan, Nigeria
[c] Department of Pure and Industrial Chemistry, Abia State University, Uturu, Nigeria
[d] POPs Environmental Consulting, 73527, Schwäbisch Gmünd, Germany

Estimating total EEE, plastics POPs for categories

Estimating total POPs for each category

Determining the POPs content of each category

Estimating total plastics for each category

Determining the plastic fraction of each category

Synthesizing the data

UN Comtrade Database

Extracting data for product/ category from UN Comtrade

Determining the HS codes of the relevant EEE products/ categories

Determining the EEE categories relevant for plastics/ POPs inventory

Plastic- & POP-content in EEE/WEEE plastics

The sectoral POP inventory guidance include impact factors for PBDEs & several POPs. PBDEs have the highest impact factors differentiated according to major EEE categories

Relevant EEE	Total plastic fraction	Hexa/heptaBDE content in plastics	DecaBDE content (mean) in plastics
	$f_{Polymer}$ [in % by weight]	$C_{\sum hexa/heptaBDE;Polymer}$ in [mg/kg]*]	$C_{decaBDE;Polymer}$ in [mg/kg]*]
Cooling/freezing appliances; washing machines	25%	<50	<50
Heating appliances	30%	<50	800
Small household appliances	37%	<50	170
ICT equipment. w/o monitors	42%	120	800
CRT comp. monitor casings	30%	1370	3200
Consumer equipment w/o monitors (1 composite sample)	24%	80	800
TV CRT monitor casings	30%	470	4400
Flat screens TVs (LCD)	37%	9	2750

***Note: Impact factors are based on European studies (Wäger et al. 2010; Hennebert et al. 2019).**

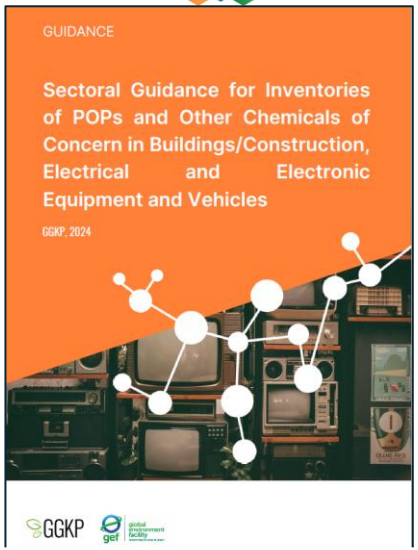
More studies needed!

Estimation of relevant POPs in imported EEE

- **Other POPs of concern (PBDEs, HBCD, SCCPs, MCCP, and DP) were estimated based on impact factors of GGKP Sectoral POPs Guidance.**

$$POP_c = E_m \times fplasti_c \times C_{POP}$$

- ***POP*$_c$ is the amount of other POPs of concern, and C_{pop} is the average concentration of the respective POPs.**
- **Impact factors derived and Data sources: The average impact factors (POP concentrations) measured in the Swiss national WEEE study was 14 g/t for HBCD in WEEE (or 42 g/t of HBCD in WEEE plastic) (Taverna et al., 2017; UNEP 2024). Based on data from the Swiss national study (Taverna et al., 2017) and that of the Norwegian EPA (Norwegian Environment Agency, 2021) an impact factor of 40 g/t of Dechlorane Plus was used (UNEP 2024).**
- **In the study of the Norwegian EPA, the SCCP and MCCP concentrations measured in some WEEE plastic fractions (UNEP 2024; Norwegian Environment Agency, 2021). Based on these data, preliminary impact fac of 25 g/t for SCCPs and 100 g/t for MCCP are suggested (UNEP 2024).**



Other POPs in EEE plastic	Average (mg/kg (W)EEE plastic)
HBCD	42
SCCPs	25
MCCP	100
Dechlorane Plus	40

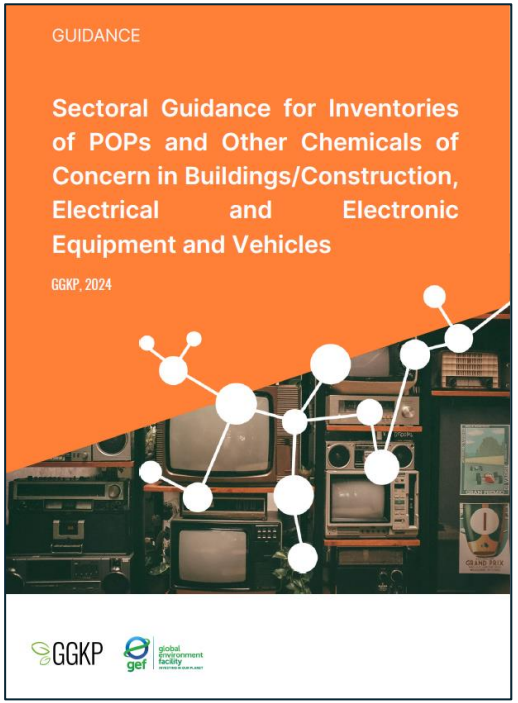
https://www.greenpolicyplatform.org/guidance/sectoral-guidance-inventories-pops-and-other-chemicals-concern-buildingsconstruction and Webinar https://www.greenpolicyplatform.org/webinar/sectoral-approach-inventories-pops-and-other-chemicals-concern-construction-electronics-and

Importation of 28 EEE product groups to Nigeria (1990-2022) based on UN Comtrade data and the corresponding plastic and PBDE contents

EEE	Quantity imported (t)	Plastic fraction	Plastic contents (t)	Hexa and heptaBDE contents (kg/t)	decaBDE contents (kg/t)	Amount of hexa/ heptaBDE (kg)	Amount of DecaBDE (kg)	Total PBDE (kg)
Cameras	280	0.24	67	0.08	0.8	5	54	59.1
Hot Water equipment	1437	0.3	431	0.05	0.8	22	345	367
Vacuum Cleaners	2536	0.73	1851	0.08	0.8	148	1481	1629
Dishwashers	2761	0.24	663	0.05	0.05	33	33	66
Washing machines	5196	0.25	1,299	0.05	0.05	65	65	130
Food processing equipment	3118	0.3	935	0.05	0.8	47	748	795
Dryers	3744	0.3	1123	0.08	0.8	90	898	988
Small Consumer Electronics	5068	0.24	1216	0.08	0.8	97	973	1070
Other Cooling	8011	0.25	2002	0.05	0.05	100	100	200
Desktop PCs	8387	0.42	3523	0.12	0.8	423	2818	3241
Household Heating & Ventilat	7435	0.3	2,231	0.05	0.8	112	1,784	1896
Microwaves	19,895	0.3	5969	0.05	0.8	298	4775	5073
Household Tools	21,664	0.24	5199	0.08	0.8	416	4159	4575
Professional IT	21,988	0.42	9235	0.12	0.8	1108	7388	8496
Flat display panel monitor	30,561	0.37	11,308	0.009	2.7	102	30,530	30,632
Laptop, notebooks and tablets	16,801	0.42	7,056	0.12	0.8	847	5,645	6,492
Small IT	35,707	0.42	14997	0.12	0.8	1800	11998	13797
Printers	53,795	0.26	13987	0.12	0.8	1678	11189	12868
Kitchen Equipment	67,707	0.37	25052	0.05	0.17	1253	4259	5511
Photovoltaic Panels	71,312	0.1	7131	0.05	0.8	357	5705	6061
Mobile phones	82,100	0.24	19,704	0.08	0.8	1,576	15,763	17,340
Profes. heating & ventilation	31,495	0.3	9,448	0.05	0.8	472	7,559	8,031
Other Small Household	105,573	0.37	39062	0.08	0.17	3125	6641	9766
CRT Monitors	160,114	0.3	48034	1.37	3.2	65807	153709	219516
Flat display panel TVs	229,544	0.37	84,931	0.009	2.7	764	229,314	230,079
Household air conditioners	508,339	0.25	127,085	0.05	0.05	6,354	6,354	12,708
Fridge & Freezers	505,432	0.25	126,358	0.05	0.05	6,318	6,318	12,636
CRT TVs	2,558,043	0.3	767413	0.47	4.4	360684	3376617	3737301
Total	**4,568,043**		**1,337,310**			**454,101**	**3,897,222**	**4,351,323**

Estimated POPs imported in EEE and WEEE to Nigeria (1990-2022) and impact factors used for these estimates

POPs in EEE plastic	Impact factors (mg/kg)	Total (t) based on Comtrade	Total (t) based on Comtrade & additional imports from WEEE
DecaBDE	Various	3,897	8,511
hexaBDE/heptaBDE	Various	454	1,043
HBCD	42	57	154
SCCPs	25	33	91
MCCP	100	133	364
Dechlorane Plus	40	54	146

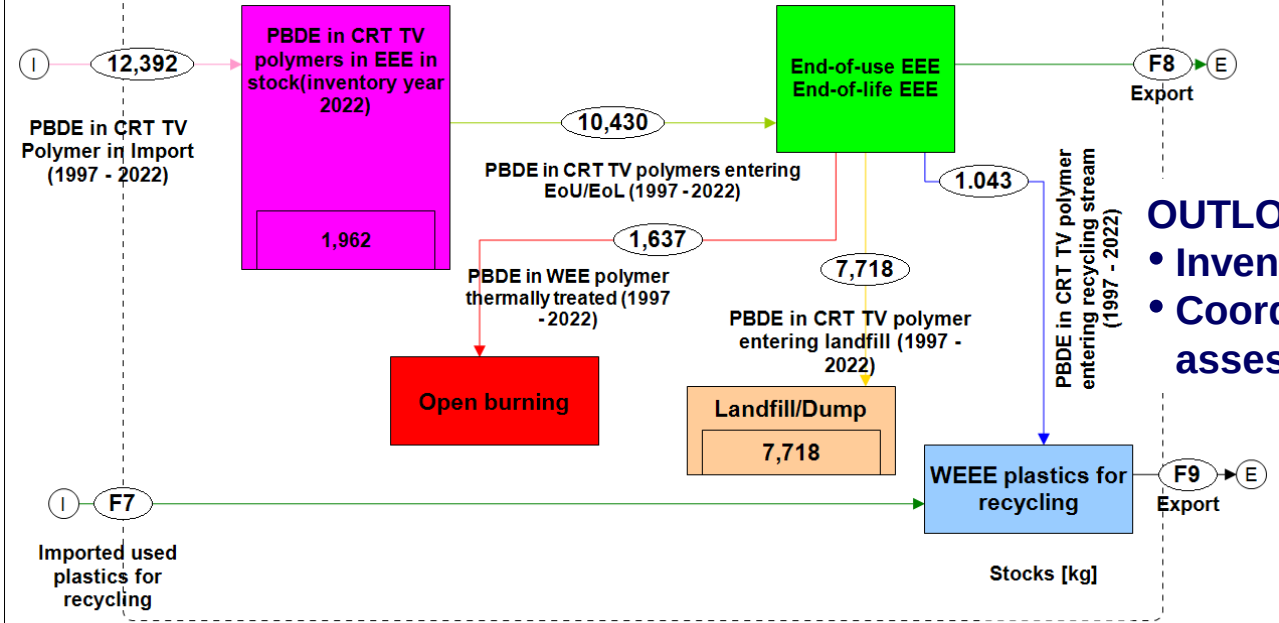


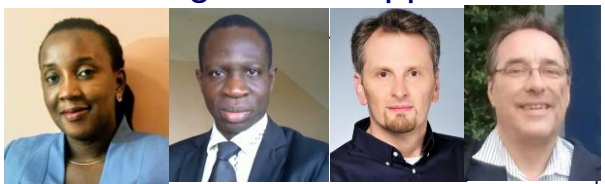
https://www.greenpolicyplatform.org/guidance/sectoral-guidance-inventories-pops-and-other-chemicals-concern-buildingsconstruction

Material & substance flow of POPs in EEE/WEEE for Zambia

- If Comtrade import data are robust for a country**, they can be used for a material and substance flow analysis. Zambia was selected as pilot country in** a project of BRS Secretariat.
- In total **155200 t of EEE** has been officially **imported to Zambia** from 1990 to 2022 **containing 44,323 t of EEE plastic**. All relevant POPs in EEE were calculated based on the Sectoral guidance approach.

The MFA/SFA allows to calculate the flow of plastic and POPs for EEE – **Substance flow of PBDE in CRT TVs for Zambia.**





Inventory of POPs in Electrical and Electronic Equipment (EEE) and Related Wastes (WEEE) in Zambia considering the UNEP Sectoral Approach

OUTLOOK:

- **Inventories for other African countries**
- **Coordination with UNITAR assessment**

Dr. Bupe Getrude Mutono Mwanza[1], Assoc. Prof. Joshua Babayemi[2], Prof. Hans Fellner[3], Dr. Roland Weber[4*]

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[2]Department of Environmental Management and Toxicology, University of Medical Sciences, Ondo, Nigeria

[3]Institute for Water Quality, Resource & Waste Management, Vienna University of Technology, 1040 Vienna, Austria

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How the Global E-waste Statistics Partnership supports countries with data on electronics and related plastics

Following the E-waste Trail

Prof. Dr. Ruediger Kuehr

Senior Manager UNITAR, SCYCLE Programme

Adjunct Professor, Dep. for Electronics & Computer Engineering, University of Limerick (Ireland)

28 April 2025

Meet the Team

SCYCLE is based in

Bonn, Germany

We are part of UNITAR's

Division for Planet

20 years of research, policy advise training and capacity building

Electronics (e-waste), automotives (a-waste), batteries (b-waste), plastics (p-waste), textiles (t-waste)

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Sustainable Cycles (SCYCLE) Programme

Quantification studies

- Global and Regional E-waste Monitors
- National country studies
- Statistics Guidelines
- EVERPV
- FutuRaM
- ReduCE

Capacity building & trainings

- E-waste Academies EWAM, EWAS & Business Bootcamp
- WasteForce
- Workshops on E-waste statistics
- Circular Economy Academy

Policy advice & Partnerships

- Studies on Article 7 & 11 and review of the WEEE Directive
- WEEE Impact Assessment
- UN E-waste Coalition
- Global E-waste Statistics Partnership

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THE GLOBAL E-WASTE STATISTICS PARTNERSHIP

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A Partnership managed by the ITU and UNITAR-SCYCLE

The goals of the GESP are to:

- Collect and improve worldwide e-waste statistics
- Enhance the understanding and interpretation of global e-waste data
- Improve the quality of e-waste statistics by guiding countries and building national capacity through e-waste statistics trainings
- Raise awareness and communicates the data to the general public and relevant stakeholders

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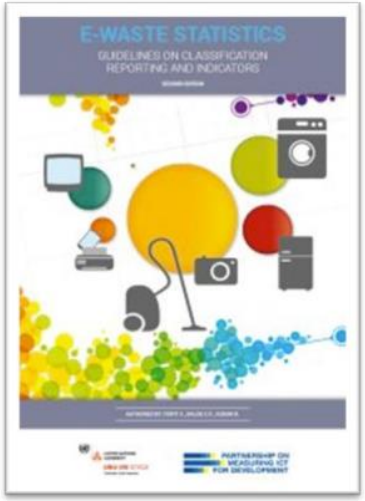
International comparable comprehensive monitoring and analysis of quantities, flows, legislations, policies, stakeholders, projects etc. to monitor progress and define corrections

The Monitors



- **Global E-waste monitor** since 2014
- **Regional E-waste monitor** for the Arab States, CIS, Latin America, East and Southeast Asia, West Asia, Western Balkans
- **National E-waste Monitors** for Botswana, Kazakhstan, Kyrgyzstan, Lebanon, Namibia, Netherlands, Tanzania, Uzbekistan
- **E-waste Statistics Guidelines**

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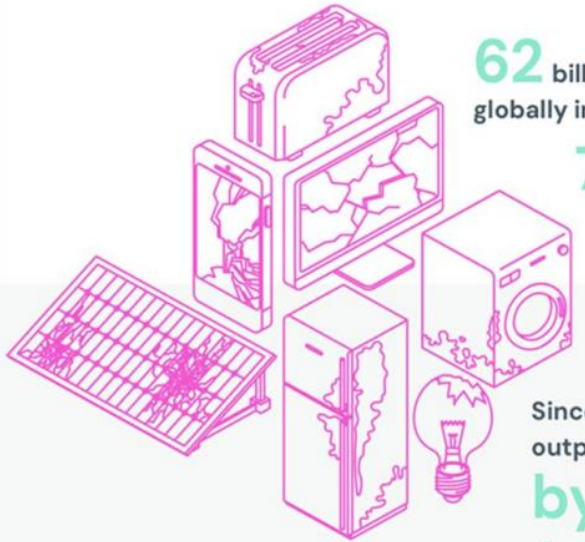
Status of Global E-waste Management 2022



62 billion kg of e-waste generated globally in 2022.

7.8 kg per capita.

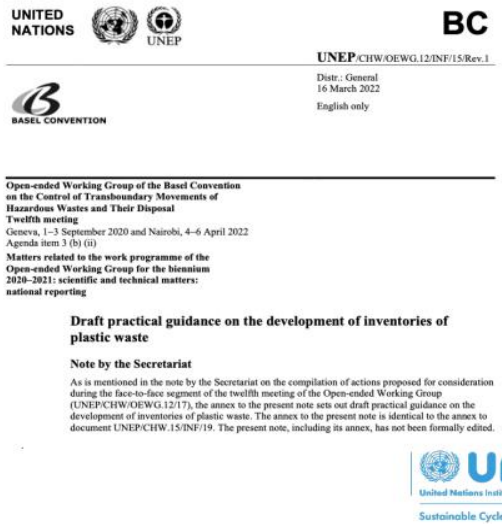
22.3% of this e-waste was documented as formally collected and recycled in an environmentally sound manner.

Since 2010, the growth of e-waste generation is outpacing the formal collection and recycling **by almost a factor of 5.**

Training on plastic waste inventory conducted

Countries:

- *West Balkan*: Bosina and Herzegovinam Serbia;
- *Caribbean Region*: Antigua & Barbuda, Suriname, Sant Lucia;
- *Asia*: China (Hainan), Mongolia, Nepal, Kazakhstan, Vietnam;
- *Africa*: Benin, Mali;



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BASEL CONVENTION

Open-ended Working Group of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
Twelfth meeting
Geneva, 1–3 September 2020 and Nairobi, 4–6 April 2022
Agenda item 3 (b) (ii)
Matters related to the work programme of the Open-ended Working Group for the biennium 2020–2021: scientific and technical matters: national reporting

Draft practical guidance on the development of inventories of plastic waste

Note by the Secretariat

As is mentioned in the note by the Secretariat on the compilation of actions proposed for consideration during the face-to-face segment of the twelfth meeting of the Open-ended Working Group (UNEP/CHW/OEWG.12/17), the annex to the present note sets out draft practical guidance on the development of inventories of plastic waste. The annex to the present note is identical to the annex to document UNEP/CHW.15/INF/19. The present note, including its annex, has not been formally edited.

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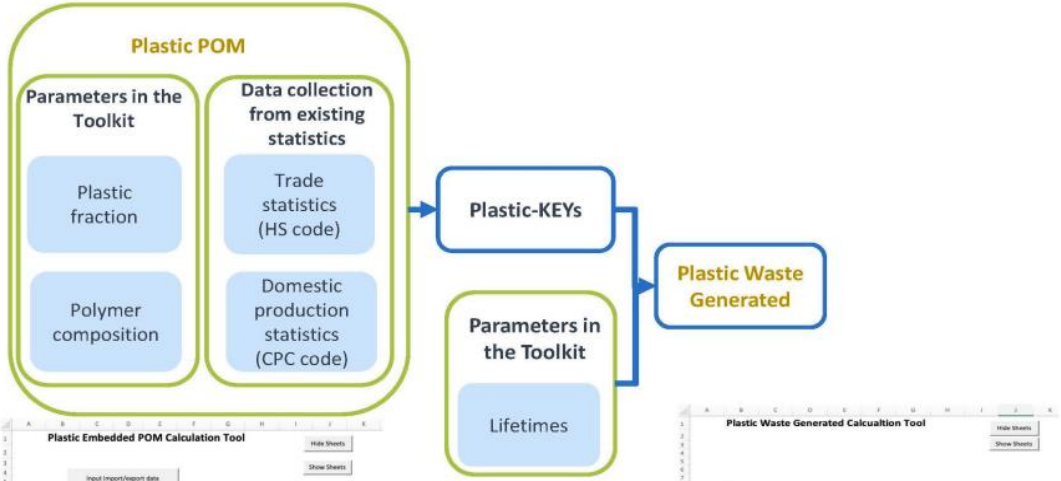
United Nations Institute for Training and Research
Sustainable Cycles (SCYCLE) Programme

How to calculate plastics amounts – also in e-waste



unitar
United Nations Institute for Training and Research
Sustainable Cycles (SCYCLE) Programme

Preliminary calculations for e-waste plastics data

Data Sources: EU27+EFTA (Comextand ProdComStatistics), Pilot countries (National datasets - Antigua & Barbuda; Suriname; Saint Lucia; Kazakhstan; Mongolia, Benin), & Rest of the world (Comtrade)

+

Datasets from the “Global E-waste Monitor 2024”

=

Globally annually app. 17 million tonnes (2kg per capita) embedded plastics in e-waste

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The Forever Pollution Project

A tried and tested methodology to make likely PFAS contamination visible

Stéphane Horel
Journalist, Le Monde

28 April, 2025

the forever pollution project

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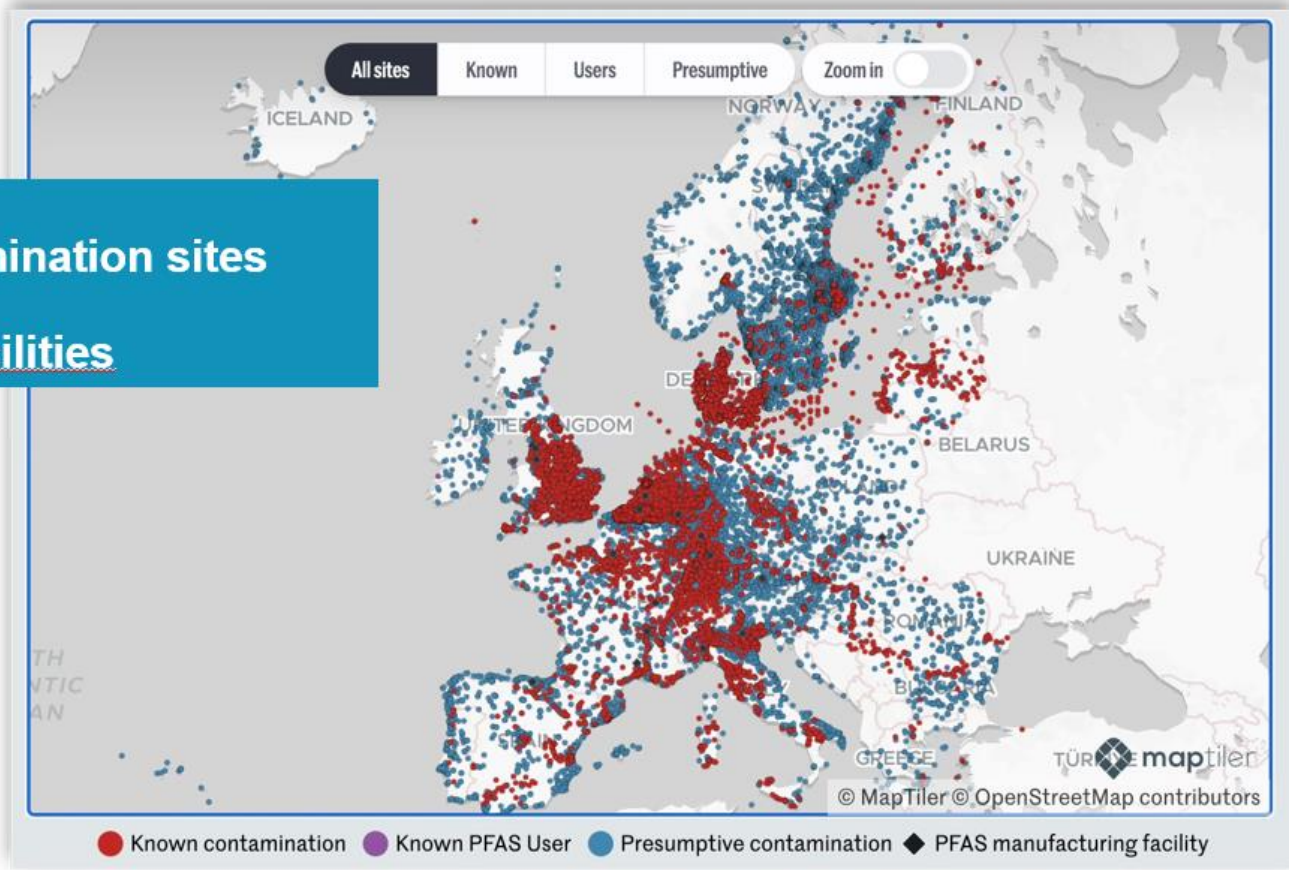
23,000 contaminated sites
21,420 presumptive contamination sites
231 PFAS users
20 PFAS manufacturing facilities

Le Monde (France) · Süddeutsche Zeitung, NDR, WDR (Germany) · RADAR, le Scienze (Italy) · The Investigative Desk, nrc (The Netherlands) · Knack (Belgium) · Denik Referendum, DR (Czechia) · POLITIKEN (Denmark) · yle (Finland) · Reporters United (Greece) · Latvijas Radio (Latvia) · DATADISTA (Spain) · SRF (Switzerland) · WATERSHED, The Guardian (United Kingdom)



Presumptive contamination sites: definition

"Locations where high-quality testing for PFAS is not available, but which can be presumed to be contaminated on the basis of scientific investigations and expert advice" (Salvatore 2022).

(1) fluorinated aqueous film-forming foam (AFFF) discharge sites
= airports, military bases, fire-fighting training sites

(2) sites related to PFAS containing waste
= waste water treatment plants, non/hazardous waste treatment facilities, incinerators

(3) certain industrial facilities

Environmental Science & Technology Letters

pubs.acs.org/journal/estlcu

Letter

Presumptive Contamination: A New Approach to PFAS Contamination Based on Likely Sources

Derrick Salvatore, Kira Mok, Kimberly K. Garrett, Grace Poudrier, Phil Brown, Linda S. Birnbaum, Gretta Goldenman, Mark F. Miller, Sharyle Patton, Maddy Poehlein, Julia Varshavsky, and Alissa Cordner*

Cite This: Environ. Sci. Technol. Lett. 2022, 9, 983−990

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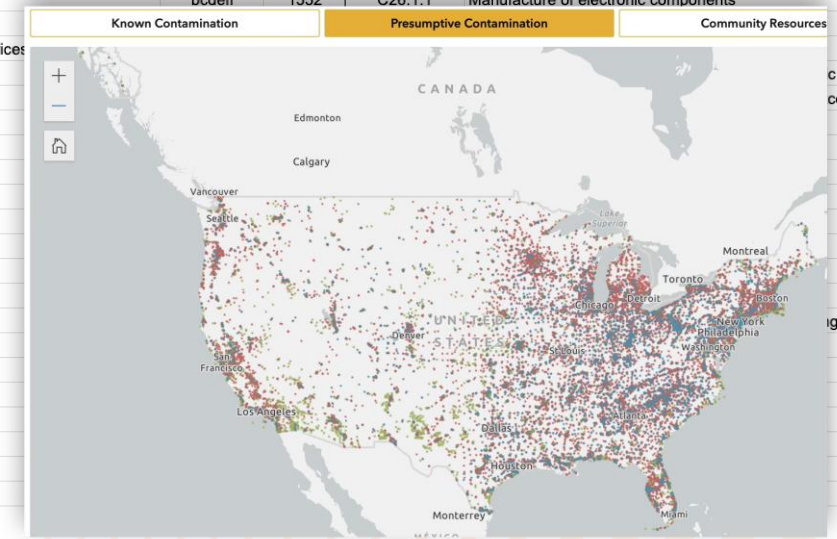
ABSTRACT: While research and regulatory attention to per- and polyfluoroalkyl substances (PFAS) has increased exponentially in recent years, data are uneven and incomplete about the scale, scope, and severity of PFAS releases and resulting contamination in the United States. This paper argues that in the absence of high-quality testing data, *PFAS contamination can be presumed* around three types of facilities: (1) fluorinated aqueous film-forming foam (AFFF) discharge sites, (2) certain industrial facilities, and (3) sites related to PFAS-containing waste. While data are incomplete on all three types of presumptive PFAS contamination sites, we integrate available geocoded, nationwide data sets into a single map of presumptive contamination sites in the United States, identifying 57,412 sites of presumptive PFAS contamination: 49,145 industrial facilities, 4,255 wastewater treatment plants, 3,493 current or former military sites, and 519 major airports. This conceptual approach allows governments, industries, and communities to rapidly and systematically identify potential exposure sources.

KEYWORDS: *per- and polyfluoroalkyl substances (PFAS), presumptive contamination, PFAS testing and investigation, AFFF, PFAS waste and disposal*

41,145 presumptive contamination sites in the US

NAICS code US	Title	Sources	Quantity	NACE code EU	Activity	Definition
313320	Fabric Coating Mills	bcdefghik	380	C13.96	Manufacture of other technical and industrial textiles	https://nacev2.co
325510	Paint and Coating Manufacturing	abcdefhik	2100	C20.3	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	https://nacev2.co
322220	Paper Bag and Coated and Treated Paper Manufacturing	bcdefghi	0	C17.1	Manufacture of pulp, paper and paperboard	https://nacev2.co
313210	Broadwoven Fabric Mills	bcdefhk	484	C13.2.0	Weaving of textiles	https://nacev2.co
322121	Paper (except Newsprint) Mills	bcdefhk	610	C17.1	Manufacture of pulp	https://nacev2.co
	Idem			C17.2	Manufacture of paper and paperboard	https://nacev2.co
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring	bcdefhi	5642	C25.6.1	Treatment and coating of metals	https://nacev2.co
324110	Petroleum Refineries	abcdehk	594	C19.2.0	Manufacture of refined petroleum products	https://nacev2.co
325612	Polish and Other Sanitation Good Manufacturing	abdefhk	673	C20.4.1	Manufacture of soap and detergents, cleaning and polishing preparations	https://nacev2.co
334413	Semiconductor and Related Device Manufacturing	bcdefi	1552	C26.1.1	Manufacture of electronic components	https://nacev2.co
326113	Unlaminated Plastics Film and Sheet (except Packaging) Manufacturing					https://nacev2.co
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services					https://nacev2.co
333318	Other Commercial and Service Industry Machinery Manufacturing				c equipment	https://nacev2.co
	Idem				cept computers and peripheral equipment)	https://nacev2.co
334419	Other Electronic Component Manufacturing					https://nacev2.co
	Idem					https://nacev2.co
562212	Solid Waste Landfill					https://nacev2.co
325199	All Other Basic Organic Chemical Manufacturing					https://nacev2.co
323111	Commercial Printing (except Screen and Books)					https://nacev2.co
	Idem					https://nacev2.co
313110	Fiber, Yarn, and Thread Mills					https://nacev2.co
314110	Carpet and Rug Mills					https://nacev2.co
316110	Leather and Hide Tanning and Finishing				g of fur	https://nacev2.co
325211	Plastics Material and Resin Manufacturing					https://nacev2.co
	Idem					https://nacev2.co
	Idem					https://nacev2.co
324191	Petroleum Lubricating Oil and Grease Manufacturing					https://nacev2.co
325998	All Other Miscellaneous Chemical Product and Preparation Manufacturing					https://nacev2.co
562211	Hazardous Waste Treatment and Disposal					https://nacev2.co
562213	Solid Waste Combustors and Incinerators					https://nacev2.co
313310	Textile and Fabric Finishing Mills					https://nacev2.co



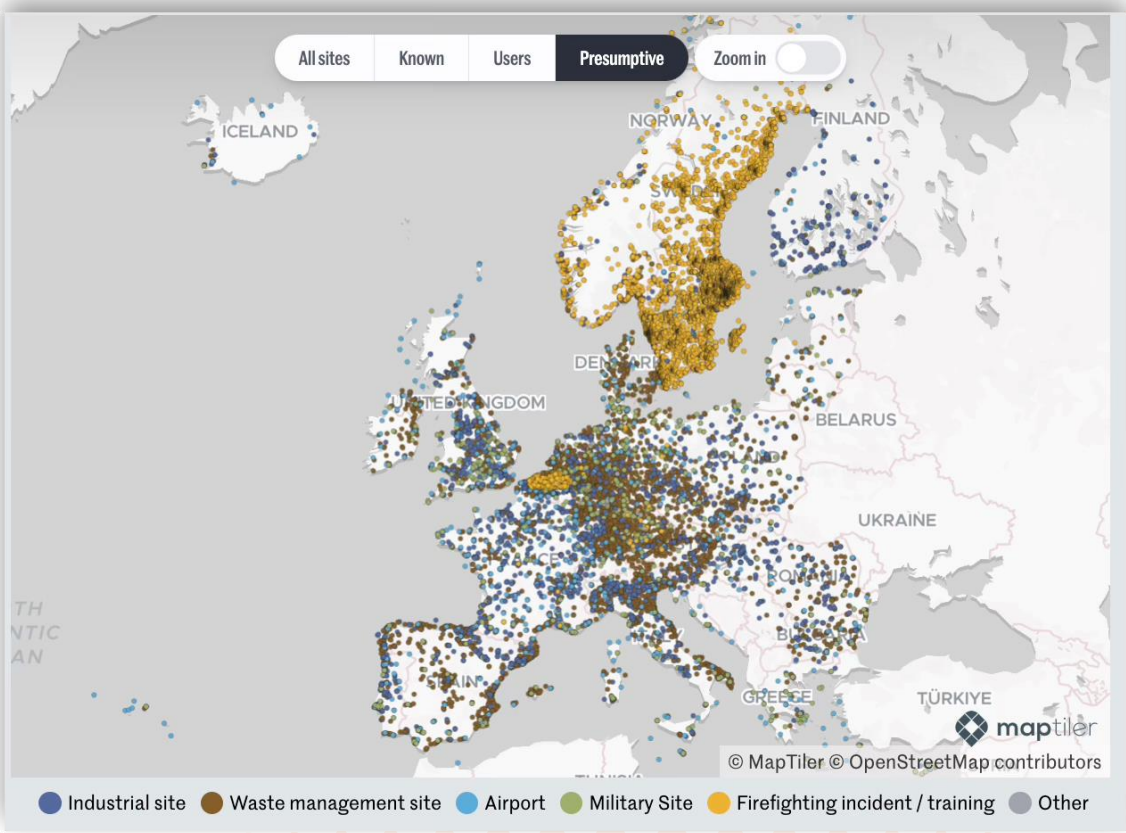
21,500 presumptive contamination sites in Europe

We counted **21,500+** sites

Danish regional autorities counted **15,000** sites for Denmark alone

100,000 sites in Germany and France?

The establishment of presumptive PFAS contaminated sites is a first important step for a country and can also be done by developing countries without measurements (cheap effort)!
→ How many sites in your country?



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Thank you

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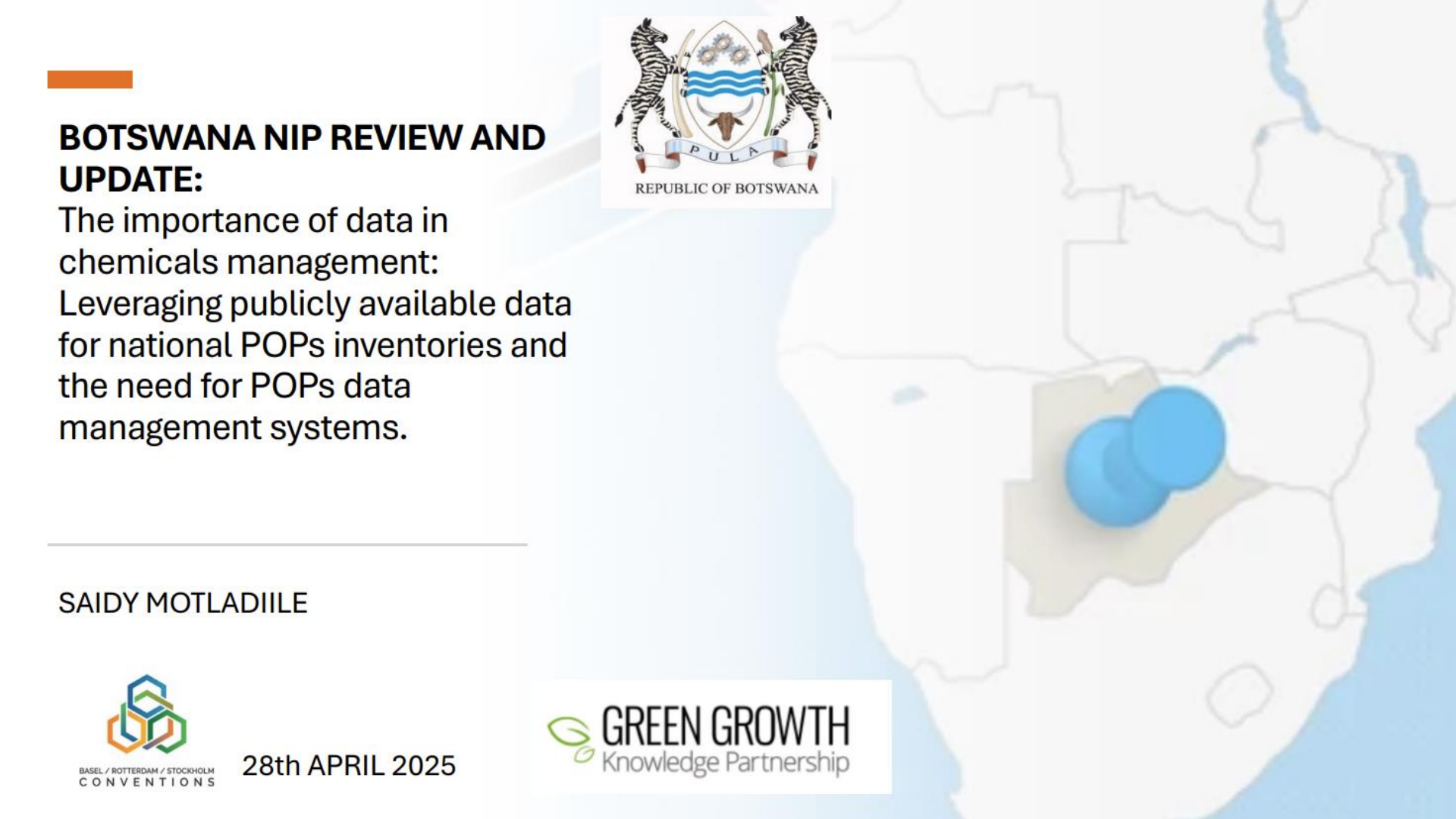
BOTSWANA NIP REVIEW AND UPDATE:

The importance of data in chemicals management: Leveraging publicly available data for national POPs inventories and the need for POPs data management systems.

SAIDY MOTLADIILE

28th APRIL 2025



Botswana Demographics, Economy, and Chemical Industry

Population Overview

- **Total Population:** 2.36 million (2022)
- **Annual Population Growth Rate:** ~1.54%
- **Urban Population:** 75.6%
- **Median Age:** 23.4 years
- **Major Ethnic Groups:** Tswana (79%), Kalanga (11%), San, and others
- **Official Language:** English (Setswana widely spoken)

Economic Overview

- **GDP (2023):** $19.67 billion (estimated)
- **GDP Growth Rate:** ~4.2%
- **Main Industries:** Mining (diamonds), tourism, agriculture, manufacturing
- **Unemployment Rate:** ~27%
- **Main Export Partners:** EU, South Africa, China

Botswana's Chemical Industry

Key Sectors:

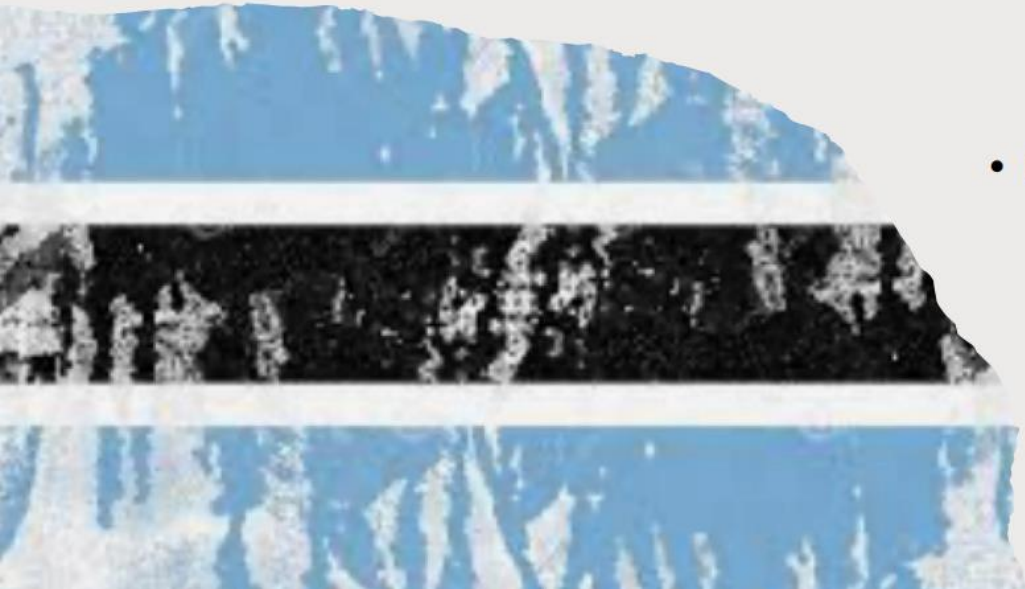
- **Mining Chemicals** – Used in diamond and copper mining
- **Agrochemicals** – Fertilizers, pesticides
- **Pharmaceuticals** – Local production and imports
- **Petrochemicals & Lubricants** – Fuel additives, synthetic lubricants
- **Environmental Chemicals** – Water treatment chemicals, waste management

Key Takeaways

- Botswana has a **small but rapidly urbanizing** populati on.
- The economy is largely **dependent on mining**, but diversification efforts are ongoing.
- The **chemical industry supports mining, agriculture, and manufacturing**.
- **Investment opportunities** exist in sustainable and locally produced chemicals.

SC Ratification Date: Botswana ratified the Stockholm Convention on Persistent Organic Pollutants (POPs) in **October 2002**.

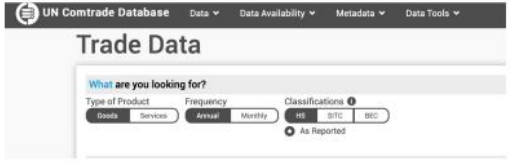
Purpose of Botswana's NIP Review and Update



- **First NIP Submission**: Botswana transmitted its first National Implementation Plan (NIP) in **2011** to fulfill its obligations under **Article 7** of the Stockholm Convention.
- **Expansion of POPs List**:
  - In **2016**, Botswana approved the inclusion of **9 additional POPs** through a **Cabinet Directive**.
  - These additions aligned Botswana with decisions made at the **2009 COP** and subsequent updates.
- **Ongoing NIP Review Process**:
  - The Current **NIP review process** incorporates all **Stockholm Convention amendments** from **2009 to 2019**.
  - This ensures Botswana remains compliant with international commitments to phase out and manage **newly listed POPs**.

Use of Publicly available data for NIP review

- **Publicly available data**
  - **Statistics Botswana**
    - Provided a lot of information on country demographics and data of certain electronic products, which upon evaluation by the NIP review team were found to be containing some POPs chemicals.
  - **UN-Comtrade database**
    - UN Comtrade provided **comprehensive global trade data**, which helped Botswana access historical and current import/export records of **chemicals, pesticides, vehicles and industrial products** that may contain POPs using specific HS codes POPs containing articles.
  - **Web-searches especially on publications**
    - Research by local academia especially on DDT
  - **Company waste returns / annual returns**
    - Provided information on Agrochemicals disposed outside the country through the Basel convention
    - Information on Metal srap dealers especially for Vehicles BFR, Transformer refurbishment and transformer oil purification.



STATISTICS BOTSWANA

ANNUAL RETURNS

Data Gaps were closed by actual site visits (Tier II) and sourcing data from the affected institutions e.g Data on vehicles was compared with data of registered vehicles in Botswana through the dapartment of transport. Were Tier III was used testing was done in regional accredited laboratories.

Available data

Publicly available data

- Brominated fleme ratardants
  - PBDEs
  - decaBDE
- SCCP
- MCCPs
- PCBs (# of Tx entering the country)

- PCBs
- DDT
- POPs Pesticides
- PFOS/PFOA PFHxS
- uPOP (Dioxins and Furans)
- Also used to Close data GAPS for Publicly available data

Data Quality QA/QC guidance was used

Data validation using Validation Workshops (Tier II and Tier III-using Accredited laboratories in the region)

e.g. By cross-referencing local customs and trade records with international databases, inconsistencies in data were identified and corrected, leading to a more accurate inventory of POPs in Botswana.

GUIDANCE

Short Guidance on Implementing Quality Assurance and Quality Control (QA/QC) for POPs Inventories Data Validation

UNEP, 2024

Challenges in Collecting and Managing POPs Data in Botswana

1. **Data Fragmentation:**
   - Data is often scattered across different institutions, leading to inconsistencies and gaps
2. **Resource Constraints:**
   - Limited financial and human resources for comprehensive data collection and management. (Relied on external funding for NIP review due to competing priorities)
3. **Limited Technical Capacity:**
   - Lack of specialized equipment and expertise for POPs monitoring and analysis.
4. **Awareness and Coordination Issues:**
   - Limited awareness among stakeholders and weak inter-agency coordination.
5. **Inadequate Infrastructure:**
   - Lack of laboratories and storage facilities for POPs samples and data.

Data Fragmentation as a Challenge in Botswana's NIP Review

1. Lack of Centralized Data Repository:

Data related to Persistent Organic Pollutants (POPs) in Botswana is often stored across multiple institutions, including government agencies, environmental organizations, research institutions, and industries. This decentralized storage makes it difficult to access, compare, and consolidate data efficiently.

2. Limited Data Sharing Mechanisms:

There is a lack of formal agreements or platforms for institutions to share POPs-related data. Without proper coordination, information remains siloed within specific organizations, reducing the effectiveness of the NIP review process.

3. Outdated or Incomplete Data Sets:

Since Botswana's first NIP was submitted in 2011, new POPs have been listed under the Stockholm Convention. However, historical data was incomplete and not updated regularly, it became challenging to assess the country's current status on POPs management and compliance.

4. Challenges in Inter-Agency Collaboration:

Different institutions have different mandates, priorities, and levels of technical capacity. Release of officers to undertake data collection, verification, and reporting, affected the overall efficiency of the NIP review process.

Lessons Learned and Best Practices in Improving Data Availability and Quality

Strengthening Institutional Frameworks:	Capacity Building:	Stakeholder Engagement:	Data Standardization:	Leveraging Technology:	Lack of Legislative framework for the management of POPs
Establishing dedicated units for POPs data management within relevant ministries. Current practice is that SC implementation is an added duty.	Training programs for technicians, researchers, and policymakers on POPs monitoring and data management.	Involvement of local communities (General Public), NGOs, and private sector in data collection and awareness campaigns.	Adopting standardized protocols for data collection, storage, and reporting (especially questionnaires.)	Using digital tools and platforms for data integration and sharing. E.g. Geographic Information Systems (GIS)ArcGIS, QGIS – For mapping and analyzing POPs contamination hotspots	The data collecting team did not have the legal backing to collect data from institutions, the team operated on the principle of self compliance by institutions.

Initiatives and Strategies to Enhance POPs Data Management in Botswana

National Implementation Plan (NIP):

- updating the NIP to align with the Stockholm Convention's requirements.

Partnerships and Collaboration:

- Collaborating with international organizations (e.g., UNEP, WHO) for technical and financial support. Establishment of PPP models, Regional colloborations.

Establishment of POPs Monitoring Programs:

- Developing national programs for regular monitoring of POPs in air, water, soil, and biota.

Public Awareness Campaigns:

- Educating the public on the dangers of POPs and the importance of data collection.

Policy and Legislative Reforms:

- Strengthening laws and regulations to support POPs management and data reporting.

Other Aspects of POPs Data in Botswana

Emerging POPs:

- Addressing new POPs listed under the Stockholm Convention.

Health and Environmental Impact Studies:

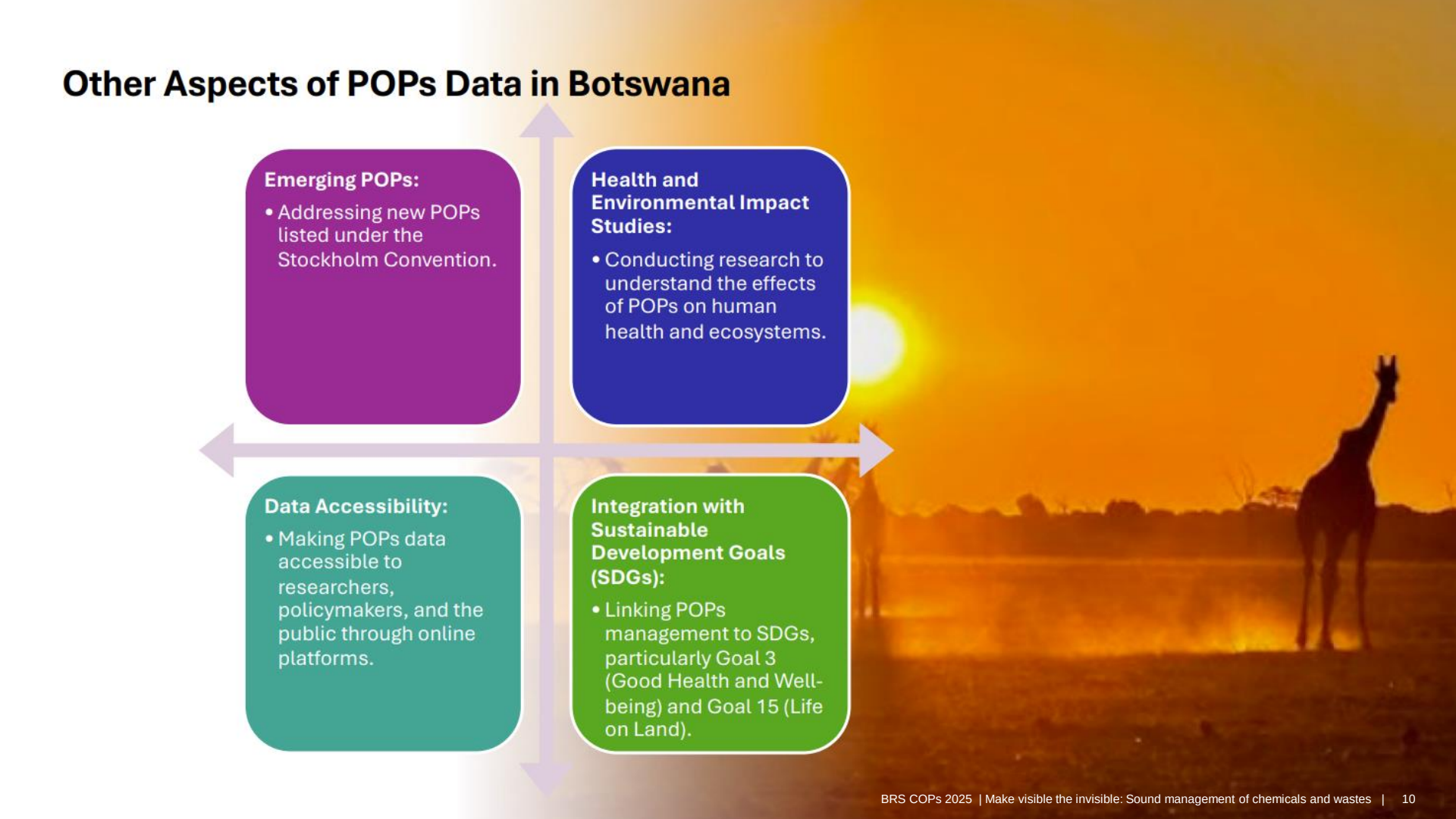
- Conducting research to understand the effects of POPs on human health and ecosystems.

Data Accessibility:

- Making POPs data accessible to researchers, policymakers, and the public through online platforms.

Integration with Sustainable Development Goals (SDGs):

- Linking POPs management to SDGs, particularly Goal 3 (Good Health and Well-being) and Goal 15 (Life on Land).



Conclusion and Way Forward

- **Key Takeaways**
  - Publicly available data can be used to conduct inventories
  - Addressing data challenges requires multi-sector collaboration
  - Strengthening policies and enforcement mechanisms is crucial
  - Leveraging technology and international partnerships can enhance data management
  - Botswana has made progress in addressing POPs but faces significant challenges in data management.
  - Lessons learned and best practices provide a roadmap for improvement.
  - Ongoing initiatives and strategies offer hope for enhanced POPs data management.

- **Call to Action**
  - Continue stakeholder engagement
  - Secure funding for improved monitoring and research
  - Implement capacity-building initiatives for better compliance
  - Strengthen collaboration, invest in capacity building, and prioritize POPs management in national policies.

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GFC: https://www.chemicalsframework.org/ FAO: www.fao.org

WHO www.who.int/

Climate Convention https://unfccc.int/ Biodiversity Convention: https://www.cbd.int/

OECD/IOMC: http://www.oecd.org/chemicalsafety/

Science:; https://www.ipcc.ch/; https://www.ipbes.net/; www.unep.org/oewg-spp-chemicals-waste-pollution

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