Global NIP Update Webinar – “Activity Options for Action Plans on the Management and Elimination of PCBs and POP Pesticides”, 16. December 2025, 14:00 -16:30 CET, UTC+1

Action Plan Considerations for Management and Elimination of POP-Pesticides and Highly Hazardous Pesticides (Synergy with the Global Framework on Chemicals (GFC))

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37 POPs listed in the Stockholm Convention (2025)

Chemical	Pesticides	Industrial chemicals	Unintentional production	Annex
DDT	+			B
Aldrin, Dieldrin, Endrin, Mirex	+			A
Chlordane, Chlordecone, Toxaphene	+			A
Alpha-, Beta-, Gamma-HCH/Lindane	+		By-product of lindane	A
Dicofol, Endosulfan, Heptachlor,	+			A
Methoxychlor, PCP, Chlorpyrifos	+	+		A
Tetra-/pentaBDE (C-PentaBDE)		+		A
Hexa-/hepaBDE (C-OctaBDE)		+		A
Commercial DecaBDE		+		A
Hexabromobiphenyl (HBB)		+		A
Hexabromocyclododecane (HBCD)		+		A
PFOS, its salts and PFOSF	+	+		B
PFOA & PFHxS and related compd.				
Long-chain PFCAs		+		A
Short & Medium chain chlorinated paraffins; UV-328, Dechlorane Plus		+		A A
PCB, PeCBz, HCB, PCN, HCBD	+	+	+	A/C
PCDD, PCDF			+	C

From the initial 12 POPs **9 were pesticides**. Since 2009 additional **12 POP-Pesticides were listed 2009 to 2025**.

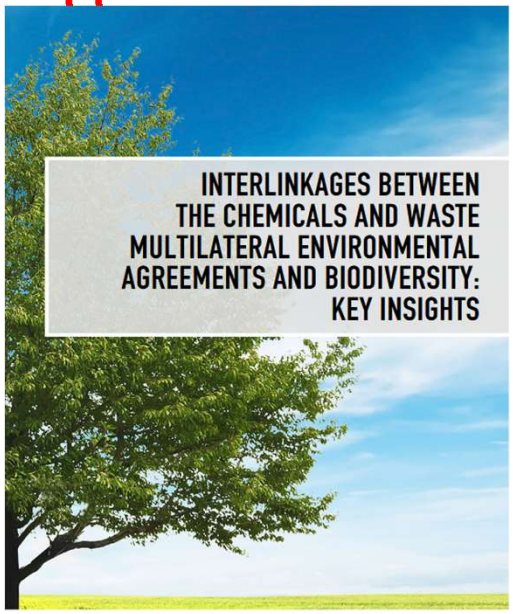
In May 2025 **Chlorpyrifos** was listed in Annex A with a wide range of exemptions (not in force yet).

POPs Review Committee: PBDD/PBDF an PXDD/PXDF

Impact of pesticides use on health and biodiversity

WHO estimated that nearly 3 million agricultural workers suffer from acute pesticide poisoning. Furthermore, they estimated that an additional 20,000 unintentional deaths and 735,000 cases of chronic illness occur as a result of pesticide exposure. **Most are not POPs but other HHPs**.
(Miller GT (2004) ISBN 9780495556879; Prüss-Ustün et al. Environmental Health 2011, 10:9).

Currently, **16.5% of vertebrate pollinators are threatened with global extinction**, with 30% for island species. **Pesticides, including POPs and HHPs, are one of the drivers for this decline and thus have adverse effects on agricultural yields & food supplies.**
(UNEP 2021 https://www.brsmeas.org/biodiversity-report/)



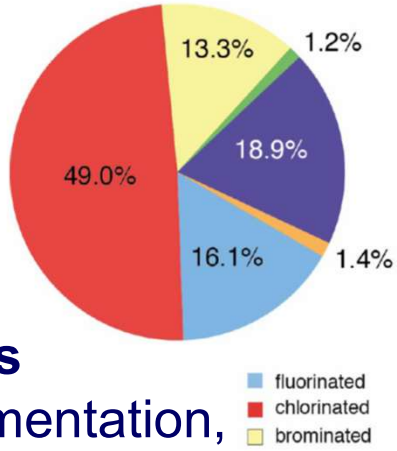
Integrated Approach of POPs Management – Stockholm Convention and GFC/SAICM Synergies

There are close links between POPs and GFC (former SAICM) "issues of concern":

- **Highly Hazardous Pesticides (HHPs)**
- **Perfluorinated and polyfluorinated (as precursors) alkylated substances (PFAS) and the transition to safer alternatives.**
- Chemicals in products
- Hazardous substance within the life cycle of electrical and electronic products.
- **Endocrine-disrupting chemicals**
- **Environmentally persistent pharmaceutical pollutants**
- Lead in paints
- Nanotechnology and manufactured nanomaterials

UN environment programme Global Framework on Chemicals

saicm



To **maximize resources through enhanced coherence and synergies** between multilateral environmental agreements (MEAs) and their implementation, **HHPs can be considered in the NIP including action plans.**

http://www.saicm.org/Implementation/EmergingPolicyIssues/tabid/5524/language/en-US/Default.aspx

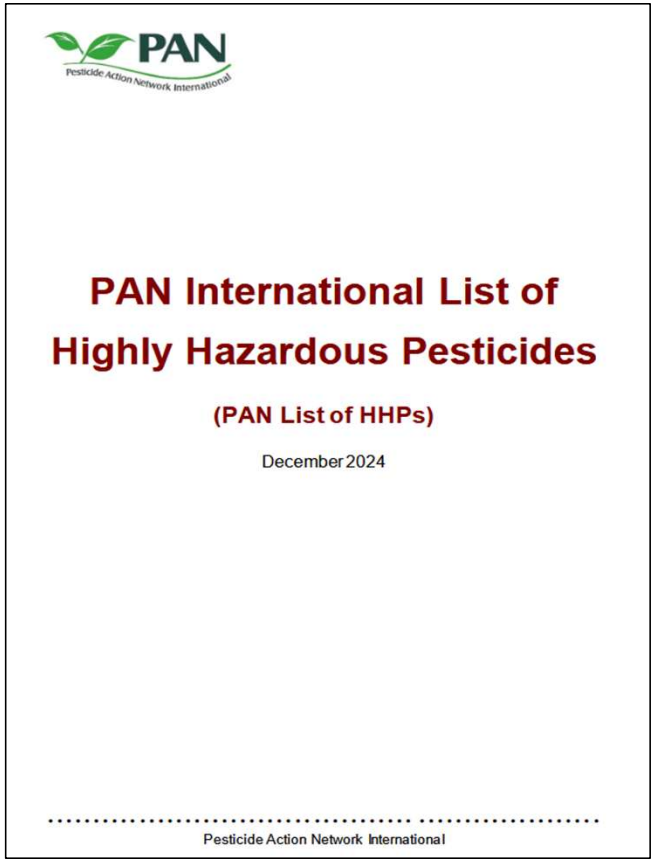
Compilation of Highly Hazardous Pesticides

The Pesticide Action Network (PAN) has **compiled a list of HHPs and is updating the list.**

- The **PAN HHP list is based only on classifications by recognised authorities. It is created by compiling information from International bodies (WHO/FAO), the European Union/ Commission, national agencies (USEPA, Japan), and the Pesticide Property Database**.
- The **PAN International List of HHPs provides a basis for action** to implement the progressive ban of highly hazardous pesticides and replace them with safer, agro-ecological and other appropriate non-chemical alternatives.

The hazard criteria are grouped into:

- acute toxicity
- long term (chronic) health effects
- environmental hazard criteria
- international regulations (global pesticide-related conventions)



https://pan-international.org/wp-content/uploads/PAN_HHP_List.pdf

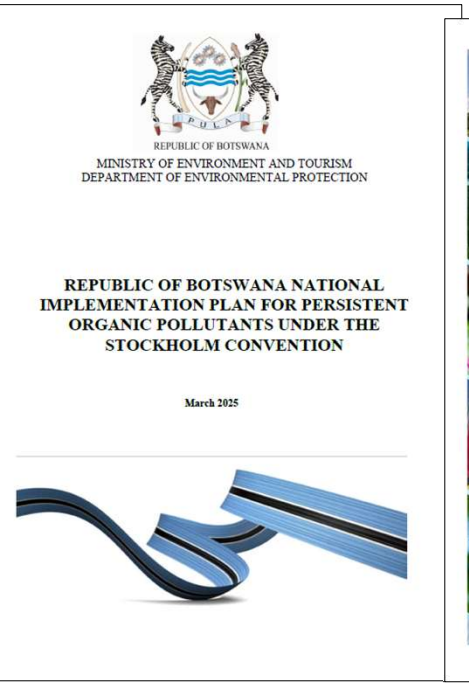
1. Regulatory framework for POP-Pesticides and HHPs (GFC)

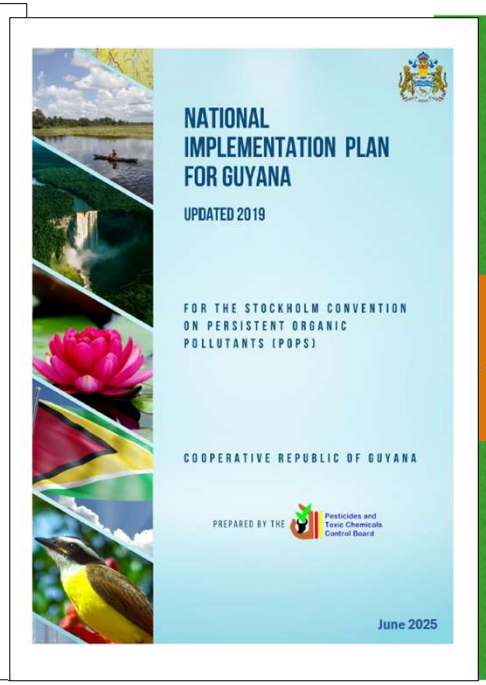
Objective: Development of an adequate legislative frame and policy for POP-Pesticides/HHPs.
Recommended activity options:

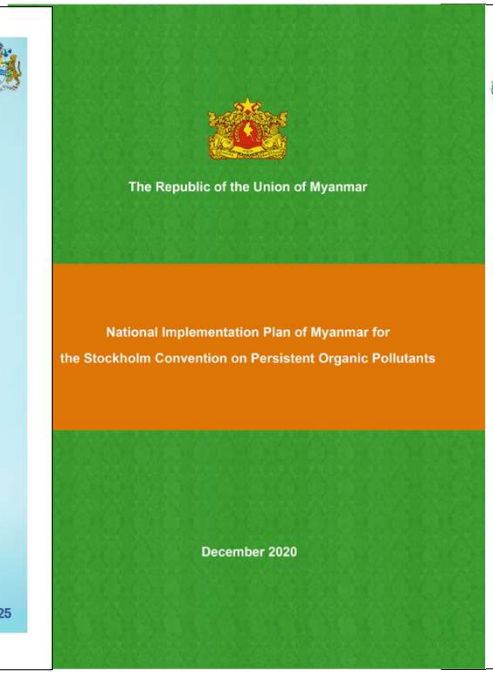
- Updating the existent regulations and restrict or ban all listed POP-Pesticides.
- Assessment of the need of exceptions and their possible listing (DDT, PCP, sulfluramid and **chlorpyrifos**) and related regulatory frame.
- Restriction and phase out of all Highly Hazardous Pesticides (Synergy with GFC Target A7).
- Establish regulatory frame for Globally Harmonized System of Classification and Labelling of Chemicals (GHS). **GFC Target B6**: "*By 2030, all Governments have implemented the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) in all relevant sectors as appropriate for their national circumstances*".
- Establish regulatory measures to combat illegal traffic of banned pesticides & counterfeit pesticides.
- Regulatory frame for good agricultural practice, Integrated Pest Management (IPM) & organic farming.
- Regulatory frame for wood treatment and for the management of treated waste wood (e.g. PCP, DDT, HCH/lindane, Endosulfan, Chlorpyrifos) were used in wood treatment; large stock in some countries).

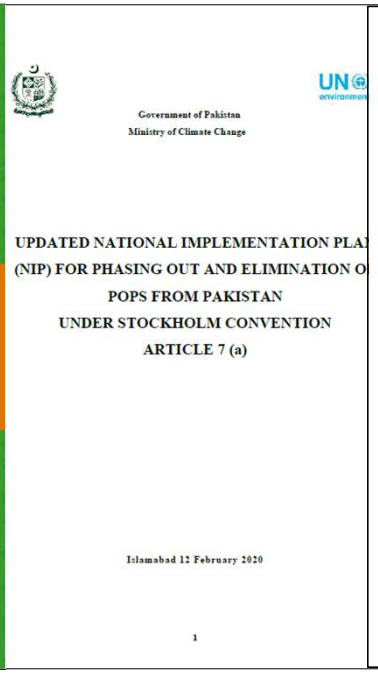
1. Regulatory framework for POP-Pesticides and HHPs (GFC)

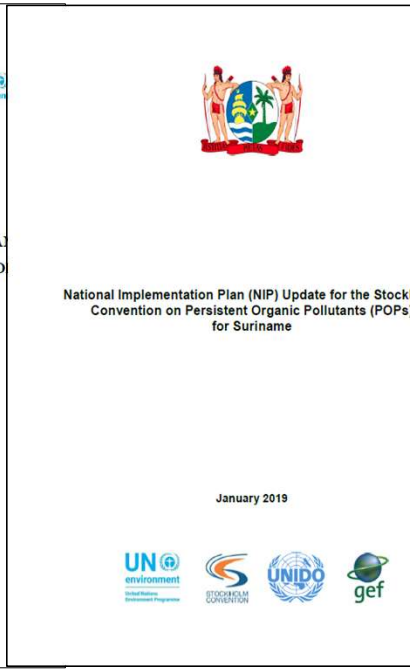
- **HHPs have been integrated into NIP action plans since several years in synergy with SAICM/GFC, e.g. NIPs of** Botswana, Guyana, Myanmar, Pakistan, and Suriname.
- HHPs have been included in the action plan together with POP-Pesticides, and some countries have included HHPs in the inventory/assessment of POP-Pesticides (e.g. Mauritius NIP 2025).
- This shows that integrating HHPs, into the common approach when updating the NIP is a straightforward way for low- and middle-income countries to achieve synergies.





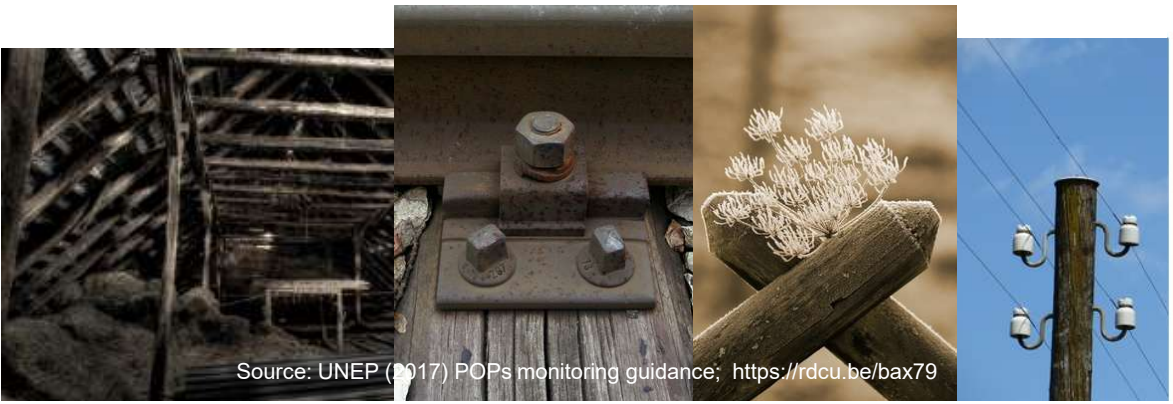




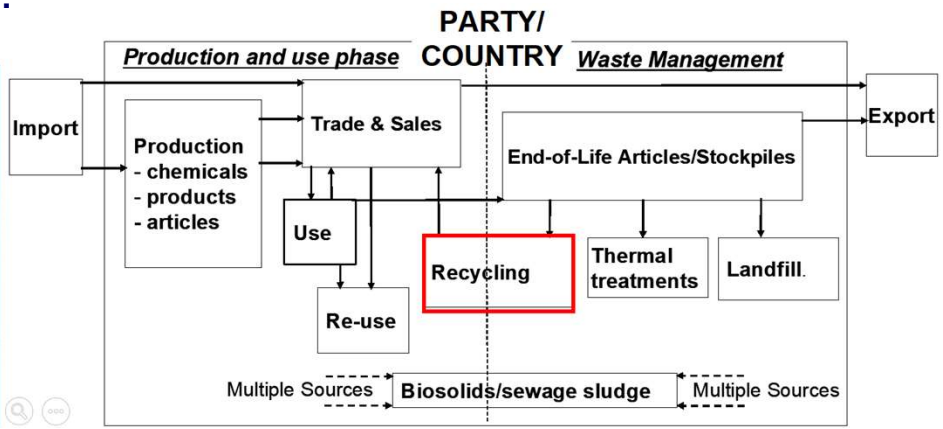


POP-Pestizides in waste wood – regulation and control

- Wood in construction is often treated with fungicides & insecticides including POPs (PCP, DDT, HCH/lindane, endosulfan, PCBs, PCNs) or chromated copper arsenate (CCA).
- This can result in human exposure in buildings containing treated wood.
- The **recycling of POPs containing waste wood** can result in **human exposure** when reused in **new furniture**, **garden architecture**, **playground** or in **animal bedding**. **Therefore some countries established waste wood regulations** (e.g. Austria, Finland, Germany, and UK).
- **The incineration of treated waste wood can result in releases of high levels of PCDD/F. If such wood is used for smoking** or **drying food or feed, this result in human exposure. Treated wood needs separation** and should also not be burnt in private stoves or in biomass incinerators when ashes are used in e.g. agriculture.



Source: UNEP (2017) POPs monitoring guidance; https://rdcu.be/bax79

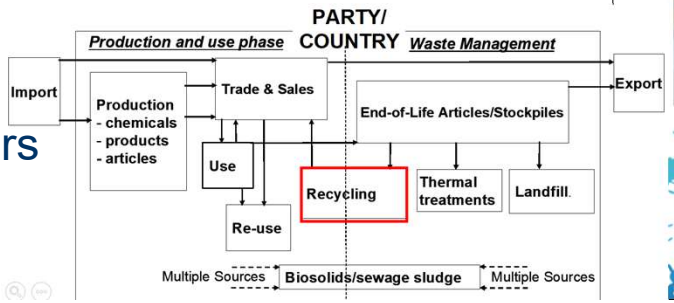


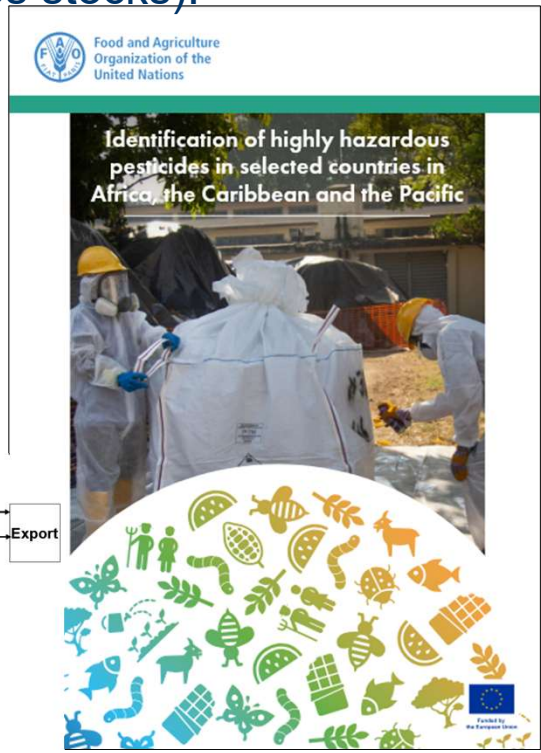
2. Update of the inventory for POP-Pesticides and HHPs

Objective: Updated and refined inventory of POP-Pesticides and HHPs.

Recommended activity options:

- Inventory of POP-Pesticides in current use (e.g. DDT, lindane, PCP, **chlorpyrifos**?).
- Update of **inventory of obsolete POP-Pesticides** (**overall obsolete pesticide stockpiles including empty containers**; avoiding reoccurrence of obsolete pesticides stocks).
- **Inventory of HHPs in current use** (use of PAN list or only WHO criteria).
- Inventory of PCP/POP-pesticide treated wood and wood treatment sites (link to Dioxins/UPOPs inventory).
- Inventory of former PCP use and treated materials (leather, textile, paper, and agriculture – links to Dioxin inventory).
- Assessment of pesticide container & agricultural plastic film management and reuse/recycling and associated risks.
- Assessment if fluorinated pesticide containers are used in the country and related PFOA inventory of release and contamination.





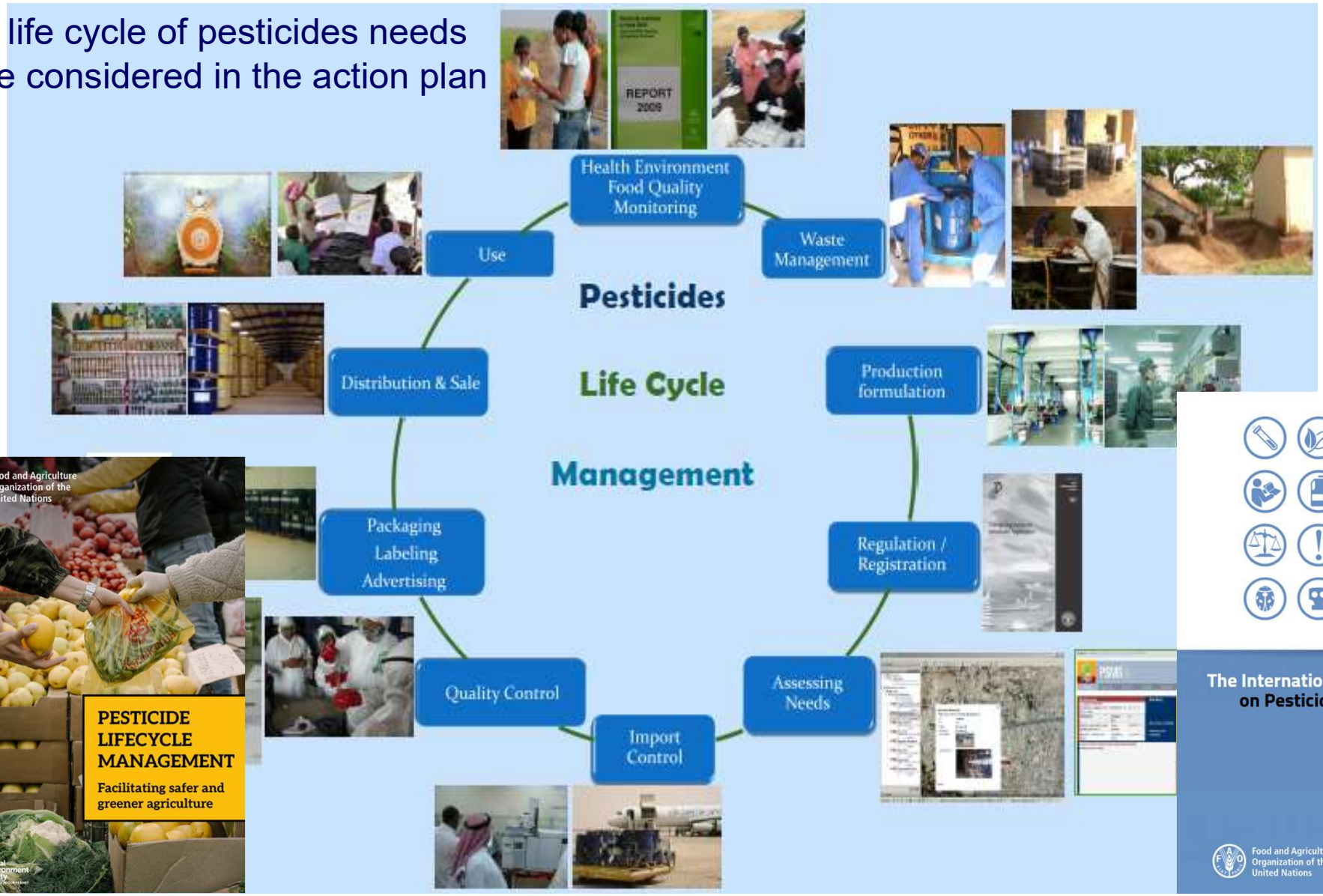
PFOA/PFAS contaminated fluorinated pesticide containers

Background for activity option: Assessment if fluorinated HDPE containers are used in the country (and related **PFOA releases**):

- USEPA testing showed **PFOA contamination from fluorinated high-density polyethylene (HDPE) pesticide containers** and similar plastics (i.e., fluorinated polyolefins). **PFOA in these containers resulted in PFOA contamination of the pesticides** (measured @250 ng/g).
- **By this unintentional produced PFOA and other PFAS are spread to agricultural areas with risk of transfer to food crops, vegetables, fruits and feed.**
- 03/2022 **USEPA provided information to stakeholders** (manufacturers, processors, distributors, users, and those that dispose of fluorinated high-density polyethylene (HDPE) containers and similar plastics (i.e., fluorinated polyolefins)) **about the potential of formation and migration of PFOA (and other PFAS) from these materials and containers.**
- 12/2023, **EPA issued orders to** a company directing it **not to unintentionally produce PFAS chemicals in the production of its fluorinated HDPE plastic containers**.
- 02/2024, **EPA released a method to detect 32 PFAS from the HDPE containers at 2 ppt.**

USEPA (2025) https://www.epa.gov/pesticides/pfas-packaging
Whitehead et al. (2023). ES&T Letters. 10(4), 350-355; **Vitale et al. (2022). Environmental Advances. 9,100309**.

The life cycle of pesticides needs to be considered in the action plan



The International Code of Conduct on Pesticide Management

Food and Agriculture Organization of the United Nations

World Health Organization

3. Life cycle management of POP-Pesticides (and HHPs) in products, stockpiles and waste

Objective: Sound Life Cycle Management of POP-Pesticides and HHPs (Handling, storage, transfer and disposal of POP-Pesticides/HHPs and related wastes).

Recommended activity options:

- Assessment and improvement of pesticide production and formulation.
- Implementation of the Globally Harmonised System of Classification & Labelling of Chemicals (GHS; Target B6 Global Framework on Chemicals).
- Assessment an improvement of import (export) control of pesticides including registration.
- Assessment and improvement of POP-Pesticides and HHPs/general pesticide management.
- Establishment of proper storage of POPs/HHPs and other obsolete pesticide.
- Establishment of an empty container collecting and management system, with attention to control the reuse of empty pesticides containers and implementation of Extended Producer Responsibility.
- Assessing the country's capacity for environmentally sound disposal of obsolete POP-Pesticides/ HHP stockpiles and/or considering the export for environmental sound disposal.
- **Disposal of POP-Pesticides and other obsolete pesticides including containers.**

3. Life cycle management of POP-Pesticide and HHP-containing products, stockpiles and waste

Objective: Sound Life Cycle Management of POP-/HH-Pesticides (Handling, storage, transfer and disposal of POP-Pesticides and related wastes). **Recommended activity option:**

- **Establishing capacity to address emergencies and disasters relative to POP-Pesticides and HHPs** (poisoning, spillage, fires, contamination) **and establishing a poison center**.
  GFC Target A6 – "*By 2030, all countries have access to poison centres equipped with essential capabilities to prevent and respond to poisonings, as well as access to training in chemical risk prevention and clinical toxicology*".

African Federation for Emergency Medicine

African Journal of Emergency Medicine

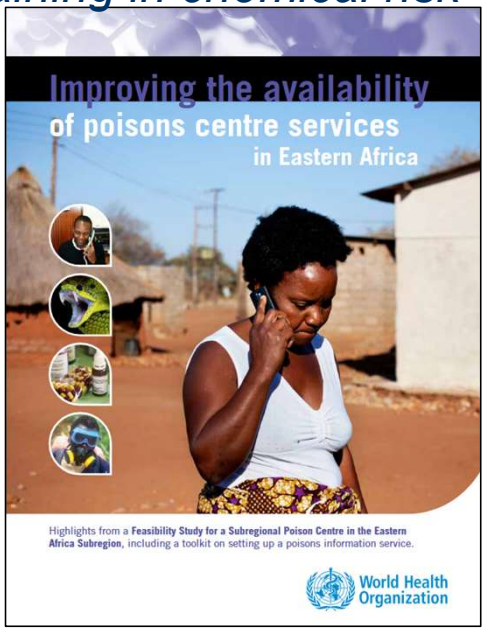
www.afjem.com
www.sciencedirect.com

ORIGINAL RESEARCH ARTICLES https://doi.org/10.1016/j.afjem.2015.09.005

A promising poison information centre model for Africa

Un modèle prometteur de Centre d'information antipoison pour l'Afrique

Carine Marks [a,*], Niel van Hoving [b], Nick Edwards [c], Christopher Kanema [d], David Kapindula [d], Tom Menge [e], Caesar Nyadedzor [f], Clare Roberts [g], Dexter Tagwireyi [h], Joanna Tempowski [i]



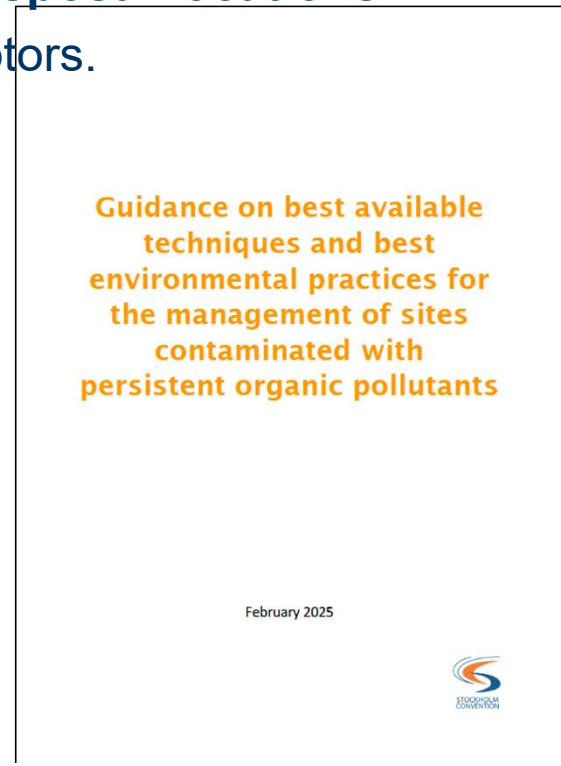
https://www.who.int/publications/i/item/improving-the-availability-of-poisons-centre-services-in-eastern-africa

4. Assessment, management, database of sites potentially contaminated with POP-Pesticides or HHPs

Objective: Identification and securing and potential remediation of POP-Pesticide/HHP contaminated sites.

Recommended activity options:

- **Identification of (former) POP-Pesticides/HHP use and storage/disposal locations.**
- Identify the contamination level of soil, ground water & potential receptors.
- **Securing and monitoring contaminated sites and possibly remediate contaminated sites.**
- **Develop a database and conceptual site models of potentially POP-Pesticide/HHP contaminated sites.**
- Prioritization of the sites (risks) for further assessment, securing and possibly remediation.



5. Awareness raising and education for relevant stakeholder groups on POP-Pesticides and HHPs

Objective: Education and awareness of stakeholders (policy makers, customs, farmers, NGOs and the public) on POPs and HHPs (GFC/SAICM synergy)

Recommended activity options:

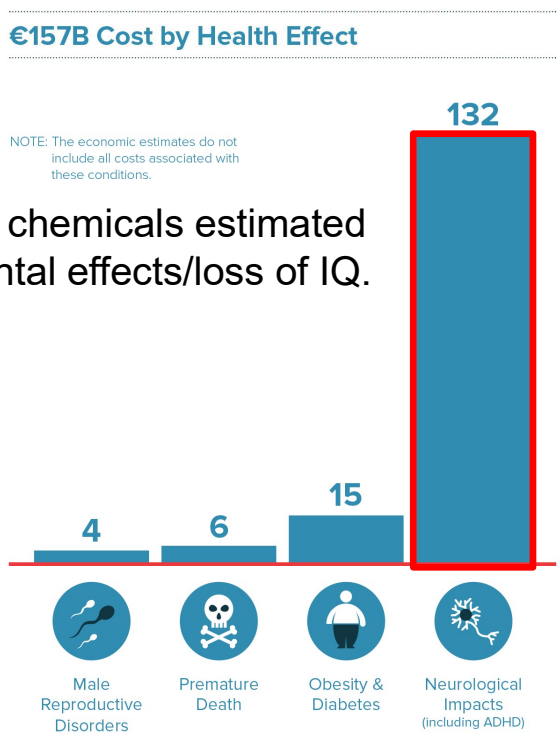
- **Education of policy makers on health hazards and health cost of POP-Pesticides and HHPs and the benefits of integrated pest management (IPM) and organic farming.**
- **Strengthen the inspection capacity for pesticides at customs** (**including counterfeit and illegal pesticides**).
- **Strengthen the inspection capacity of other competent authorities** (market survey, sales, storage, usage including counterfeit and illegal pesticides).
- **Capacity building of farmers** (especially also involved woman) on POP-Pesticides, HHPs, counterfeit pesticides and the use of IPM and organic farming.
- **Education of citizens** (considering gender) and NGOs on POP-Pesticides, HHPs, counterfeit pesticides and organic farming and organic products (SDG2, SDG3, SDG4, SDG5, SDG12).

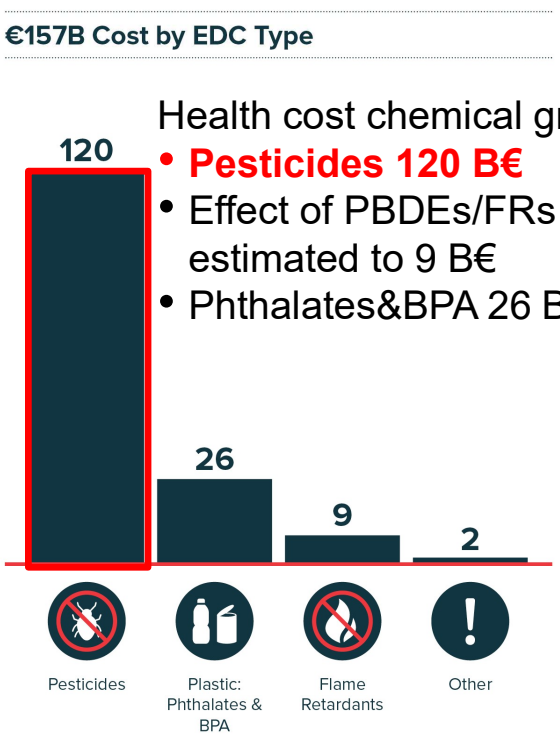
Education of policy makers & stakeholders on health hazards and health cost EDC

HEALTH EFFECTS FROM ENDOCRINE DISRUPTING CHEMICALS COST THE EU 157 BILLION EUROS EACH YEAR.

This is the tip of the iceberg: Costs may be as high as €270B.

- Highest cost of EDC chemicals estimated for neurodevelopmental effects/loss of IQ.





Health cost chemical groups

- **Pesticides 120 B€**
- Effect of PBDEs/FRs estimated to 9 B€
- Phthalates&BPA 26 B€

SOME EDC-RELATED HEALTH OUTCOMES NOT INCLUDED:

- Breast Cancer
- Prostate Cancer
- Immune Disorders
- Female Reproductive Disorders
- Liver Cancer
- Parkinson's Disease
- Osteoporosis
- Endometriosis
- Thyroid Disorders

SOME EDCs NOT INCLUDED:

- Atrazine
- 2, 4-D
- Styrene
- Triclosan
- Nonylphenol
- Polycyclic Aromatic Hydrocarbons
- Bisphenol S
- Cadmium
- Arsenic
- Ethylene glycol

NYU School of Medicine
NYU LANGONE MEDICAL CENTER

Endocrine Disrupting Chemicals (EDCs) interfere with hormone action to cause adverse health effects in people.

"THE TIP OF THE ICEBERG"

The data shown to the left are based on fewer than 5% of likely EDCs. Many EDC health conditions were not included in this study because key data are lacking. Other health outcomes will be the focus of future research.

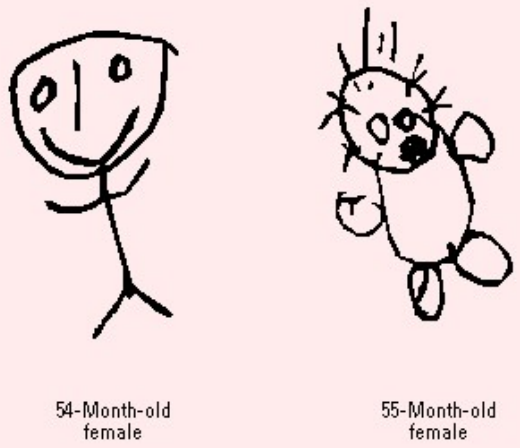
See Trasande et al. The Journal of Clinical Endocrinology & Metabolism
http://press.endocrine.org/edc

Trasande, et al. (2015). *J Clin Endocrinol Metab*, *100*(4), 1245–1255. https://doi.org/10.1210/jc.2014-4324
Norden (2014) Cost of inaction. TemaNord 2014:557

Study on impact of pesticides on child development

4 year old children (Mexico) low & high exposure to pesticides in the same area

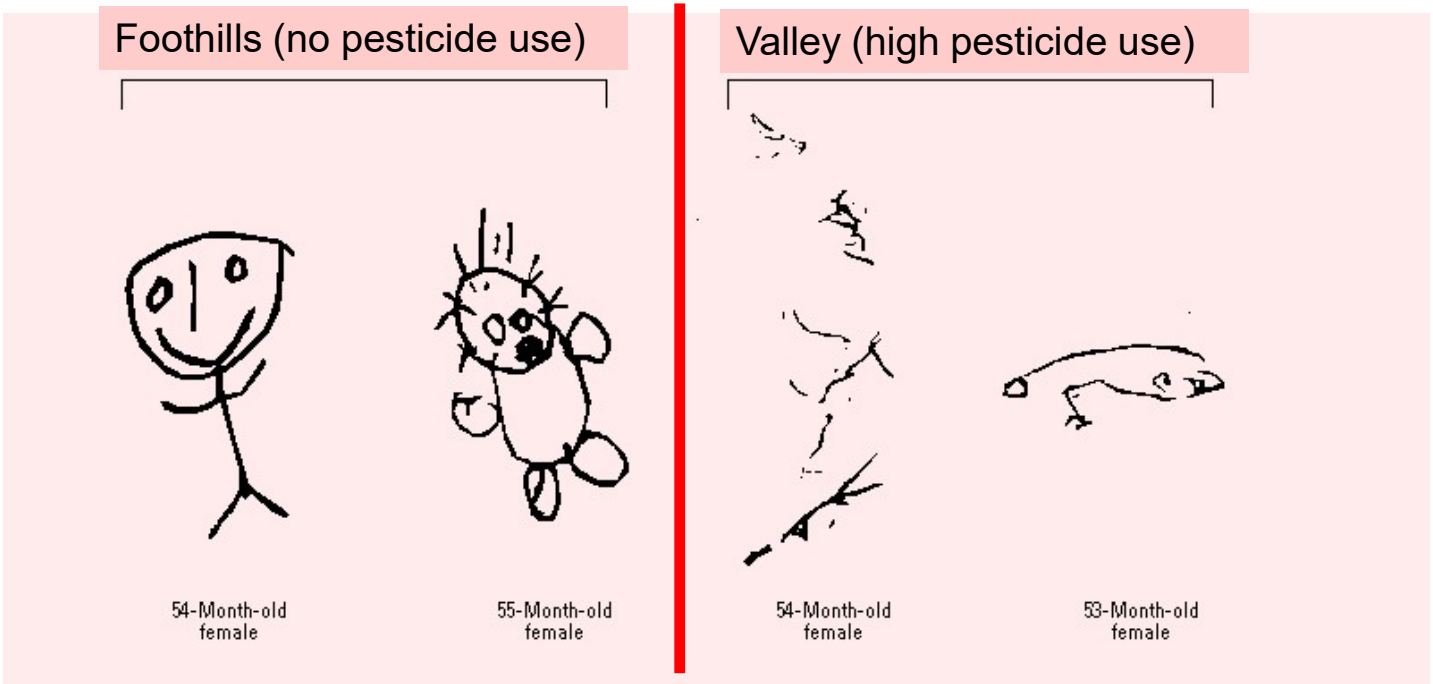
Foothills (no pesticide use)



Guillette et al. (1998) Environ. Health Perspect. 106 347–353 https://doi.org/10.1289/ehp.98106347

Study on impact of pesticides on child development

4 year old children (Mexico) low & high exposure to pesticides in the same community



Guillette et al. (1998) Environ. Health Perspect. 106 347–353 https://doi.org/10.1289/ehp.98106347

- On a global and long-term scale, chemical pollution can affect the hormonal and **intellectual development** of a large number of humans ⇒ Socio Economic.
- Project TENDR Targeting Environmental Neuro Developmental Risks http://projecttendr.com/

6. Assessment of alternatives to POP-Pesticides and HHPs

Objective: Assessment of POP-Pesticides & HHPs, and of the alternatives used and implementation of Integrated Pest Management (IPM) and organic farming.

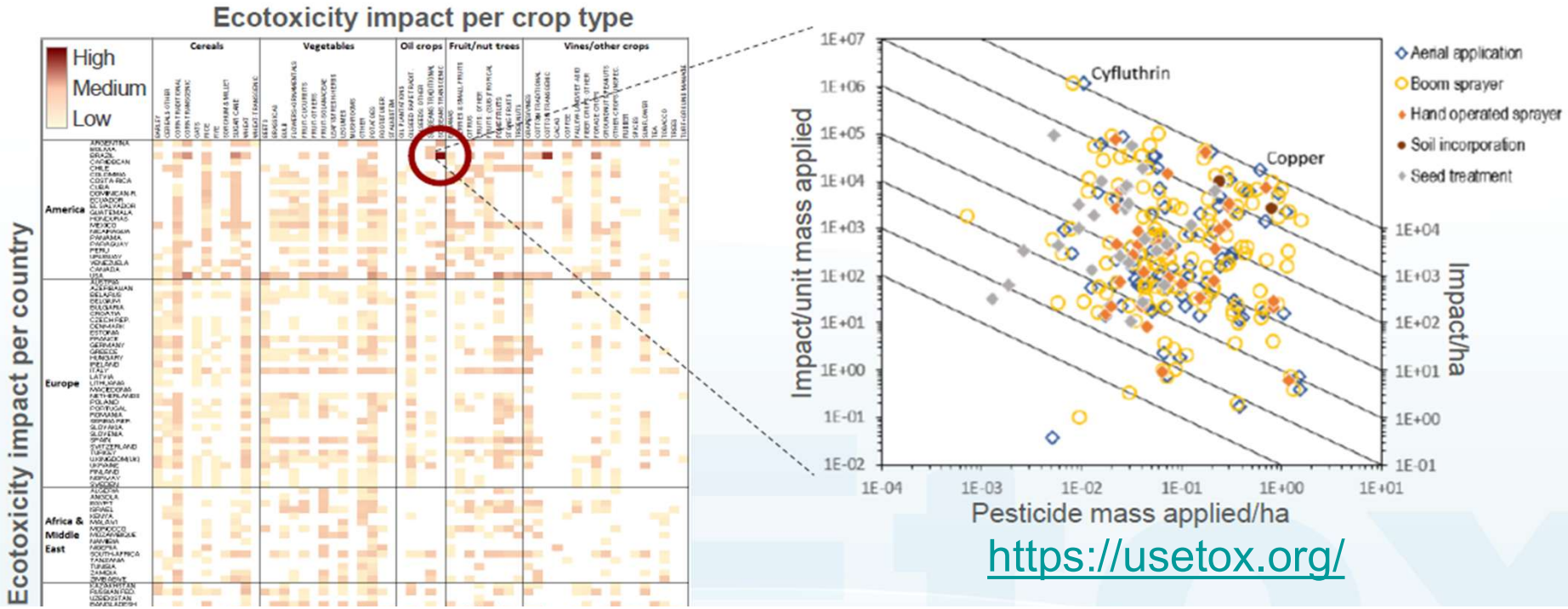
Recommended activity options:

- Compilation of information on alternatives to POP-Pesticides & HHPs (GFC Synergy) including a risk assessment for POP-Pesticides and HHPs, as well as their alternatives. This should be based on existing data, with new data generated where necessary. The compilation should also include on the **risks to humans, biota and ecosystem services**.
- Supporting implementation and research on IPM, including the use of alternatives as a measure for reducing POP-Pesticides/HHPs.
- **Education and capacity building on alternative assessment.**
- **Selection of the most sustainable alternatives - chemical & non-chemical solutions** – in different applications with a science based approach including calculation of the benefits of organic farming. (See e.g. Tuck et al. 2014, Land-use intensity and the effects of organic farming on biodiversity: a hierarchical meta-analysis. Journal of applied ecology. 51(3), 746-755. Mie et al. (2017). Human health implications of organic food and organic agriculture: a comprehensive review. Environmental health. 27;16, 111)

6. Assessment of alternatives to POP-Pesticides and HHPs
Substituting pesticides using USEtox

USEtox is a UNEP/SETAC scientific consensus model, endorsed by UNEP Life Cycle Initiative which **can be used for chemical alternatives assessment including pesticides.**

Example application of USEtox for cumulative pesticide impacts to identify candidates for substitution:

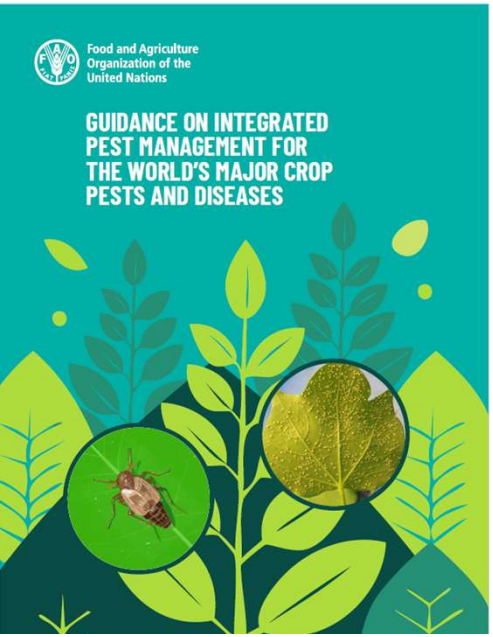


https://usetox.org/

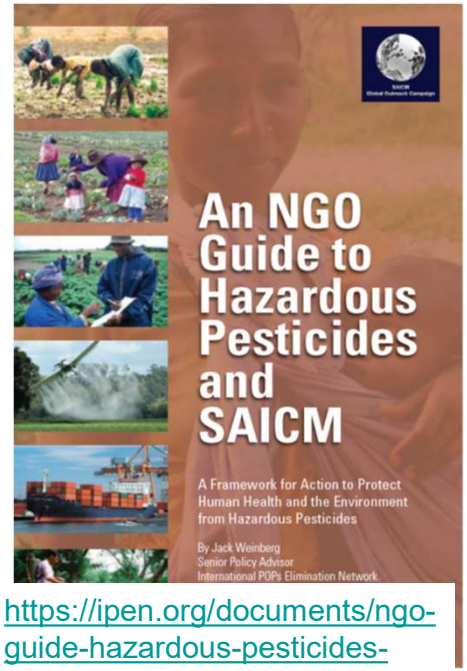
Fantke et al. (2011) *Environ. Sci. Technol.*, *45* (20), 8842-8849. https://doi.org/10.1021/es201989d
Steingrímsdóttir (2018) *J. Cleaner Prod.* **2018**, *192*, 306-315. https://doi.org/10.1016/j.jclepro.2018.04.266
Fantke & Mankong (2026) Insights from LCA to inform chemical substitution, alternatives assessment and safe & sustainable-by-design. ES&T

Alternatives to POPs & HHPs – Organic Farming and IPM

Guidance on alternative strategies for sustainable pest and vector management.



https://openknowledge.fao.org/items/c9304805-d858-433c-a137-a553b0846517



https://ipen.org/documents/ngo-guide-hazardous-pesticides-and-saicm

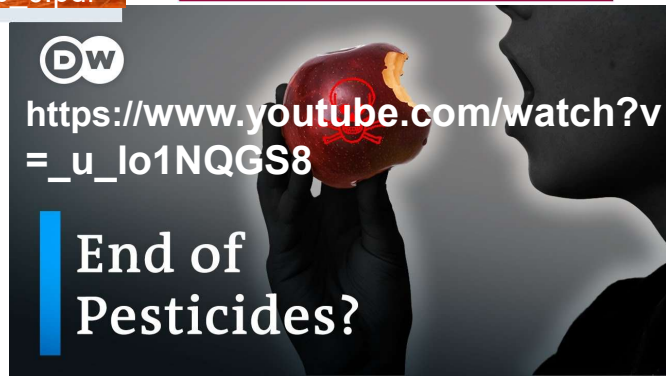
https://www.fibl.org/fileadmin/documents/shop/1141-organic-farming-principles.pdf

http://www.ifoam.bio/sites/default/files/organic3.0_v.2_web_0.pdf

https://www.fibl.org/en/shop-en/1797-organic-world-2025

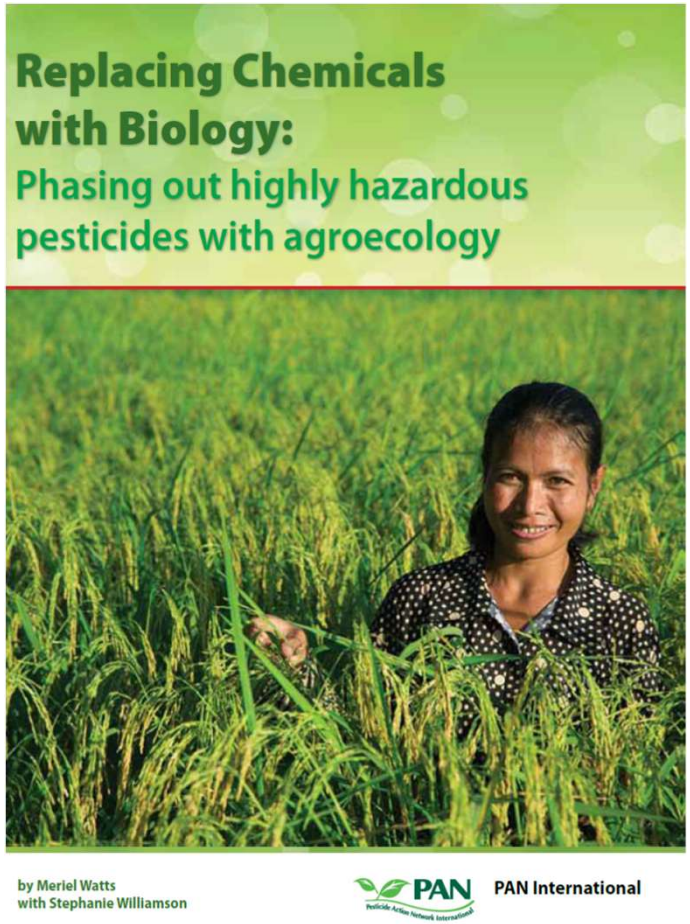
Training on IPM and alternatives to pesticides e.g. organic farming.

Youtube organic farming: https://www.youtube.com/watch?v=hWkYtZxpQUo
Integrated Pest Management: https://www.youtube.com/watch?v=7UlKUleJWeE
https://www.flashmoocs.unibe.ch/videos/western_corn_rootworm/index_eng.html



Alternatives to POPs & Highly Hazardous Pesticides

Guidance on agroecology for phasing out highly hazardous pesticides:



https://saicmknowledge.org/sites/default/files/resources/Replacing%20Chemicals%20with%20Biology.pdf

7. Analysis and monitoring of POP-Pesticides and HHPs

Objective: Established monitoring and analysis of POP-Pesticides, HHPs and major pesticides used (counterfeit pesticides, environment, food, exposure).

- Assessment of options for monitoring pesticides in the country and in the region (international collaboration or development of own capacity)
- Strengthening and developing laboratory capacity to analyze pesticides (including relevant POPs, HHPs and major used pesticides in the country).
- Decision what pesticides are measured in the country/national laboratories and what pesticides are monitored by regional/international cooperation.
- Establishing a pesticide monitoring program (food, (drinking)water, soils/contaminated sites).
- Monitoring occupational exposure and vulnerable population to POP-Pesticides and HHPs considering gender aggregation.

- Improvement of the inventory by monitoring approach where knowledge gaps have been identified.
- Development of knowledge, capacity, tools and indicators to (better) assess the risks and socio-economic impact of POP-Pesticides and HHPs (see e.g. USEtox).

7. Analysis and monitoring of POP-Pesticides and HHP

Objective: Established monitoring and analysis of POP-Pesticides, HHPs and major pesticides used (counterfeit pesticides, food, exposure, environment). Assessment of options for monitoring in the region (international collaboration or development of own capacity).

Best practice of developing monitoring capacity for illegal/counterfeit pesticides in Poland

Official control of plant protection products in Poland: detection of illegal products

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Environ Sci Pollut Res **25**, 31906–31916 (2018). https://doi.org/10.1007/s11356-018-1739-2

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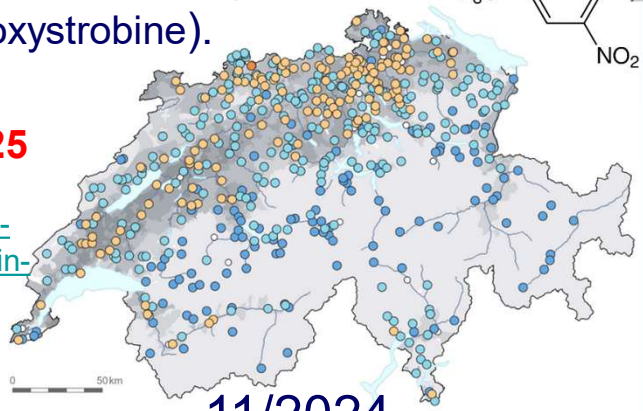
GFC PFAS issue of concern: PFAS-Pesticides as precursors of TFA

- **Many pesticides contain CF3 group(s)** which can alter properties such as stability and lipophilicity, and increase bioavailability (Abula et al., 2020). **If the CF3 group is linked to another carbon (C-CF3), trifluoro acetic acid (TFA) can be formed as a transformation product** in biological and chemical processes. E.g. acri nathrin, benfluralin, bifenthrin, cyflufenamid, diflufenican, fluazifop-p- butyl, fluazinam, flufenacet, fluopicolide, flurtamone, isoxaflutole, metaflumizone, oxyflurfen, tau-fluvalinate, penoxsulam, picolinafen, tembotrione, trifloxystrobine).

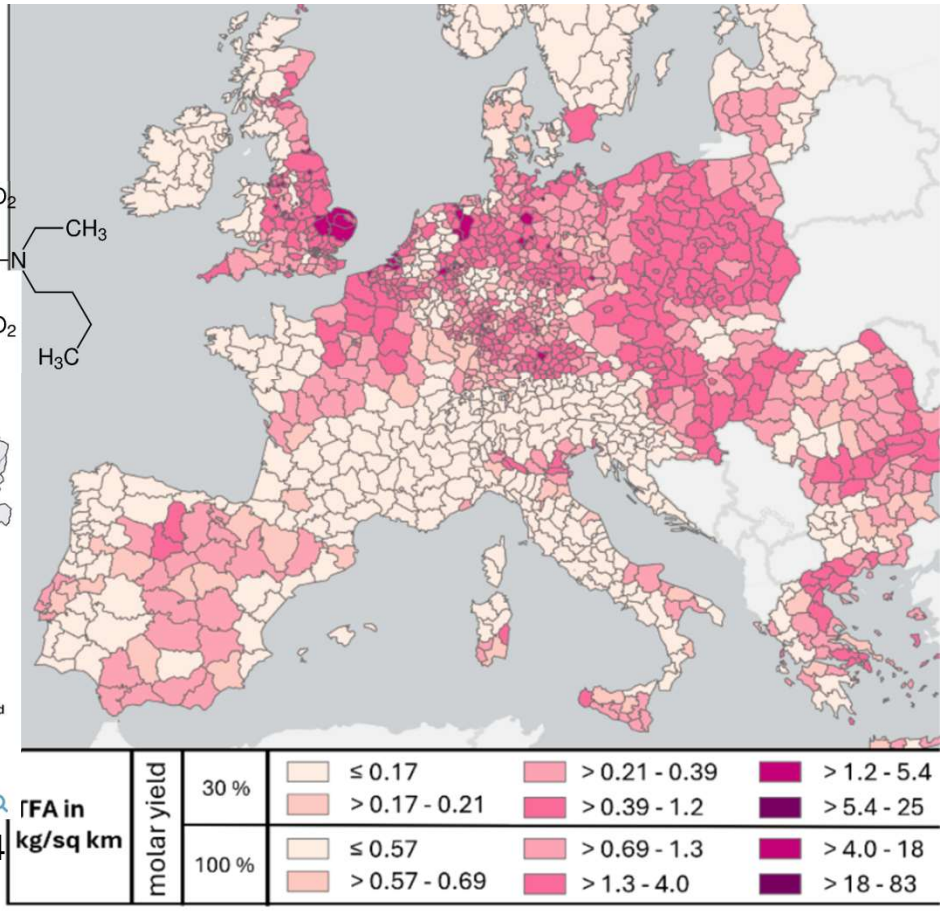
Denmark banned >30 TFA generating pesticides in 2025
https://rgo.dk/en/Summary-of-the-conference-on-pesticides-pfas-and-the-protection-of-the-aquatic-environment-in-the-eu/



11/2024

https://www.bafu.admin.ch/bafu/de/home/themen/wasser/grundwasser/grundwasser-qualitaet/tfa-im-grundwasser.html

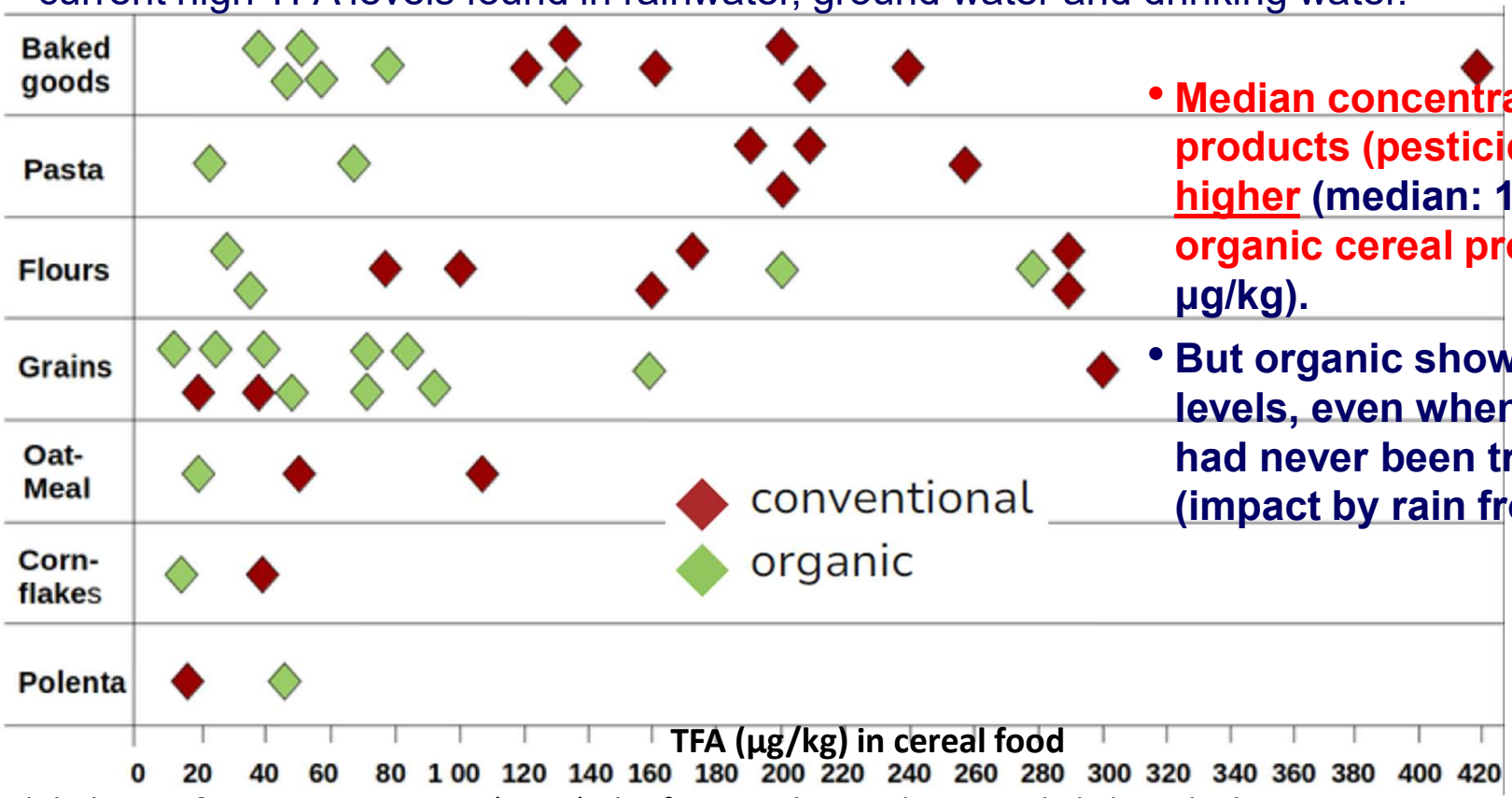
Total TFA formation potential from pesticides 18 C-CF3-containing pesticides sold in each NUTS Level 3 region of the EU between 2011–2017 assuming a molar TFA yield of 30 % and 100 % (Udias et al. 2023).



Udias 2023 Sci. Data 10, 869. https://doi.org/10.1038/s41597-023-02753-4
Joerss et al. (2024) Environment International 193, 109061

Food for thought: High TFA levels in cereal products (Bread, Noodles...)

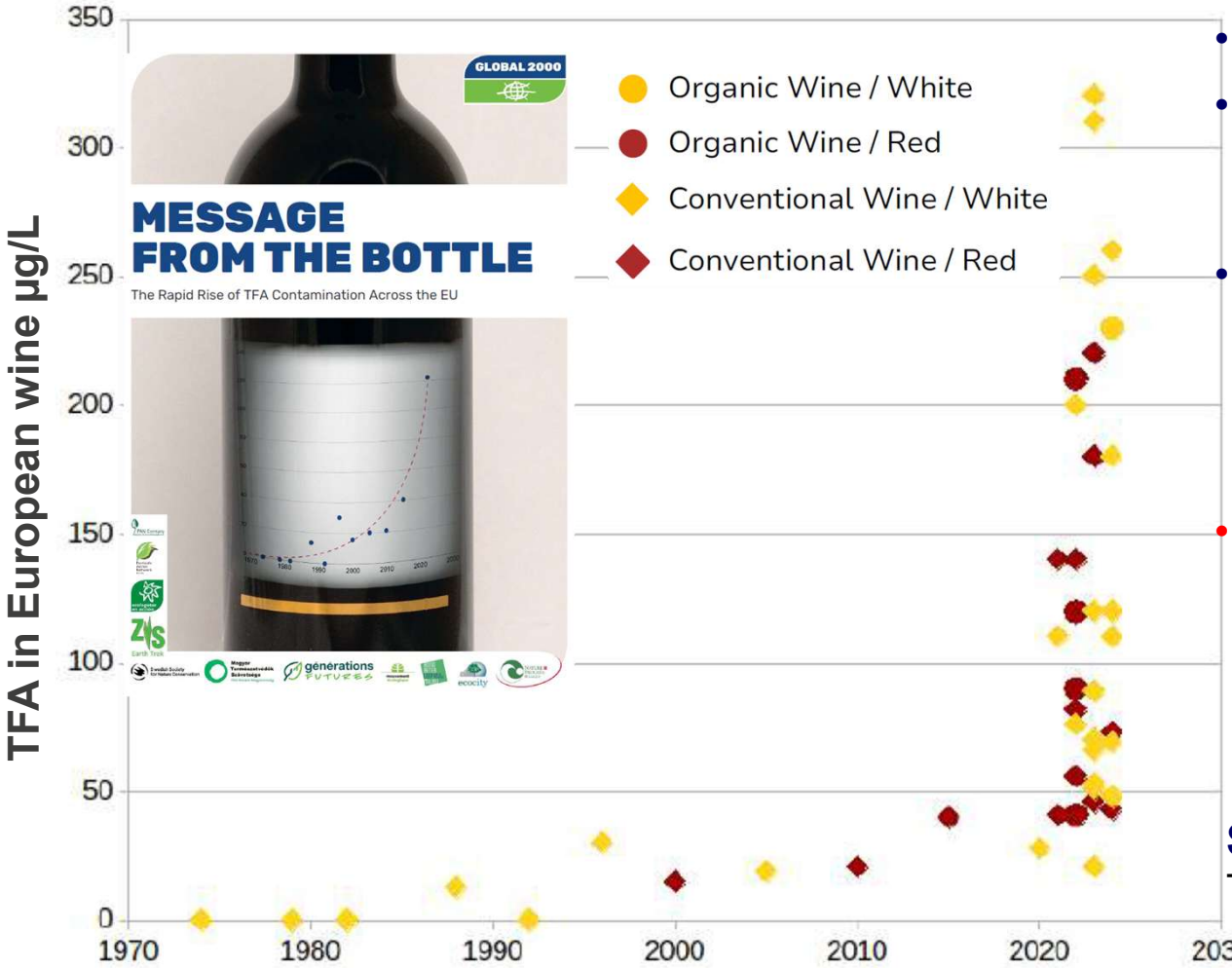
- **All 48 analysed cereal products contained TFA. Concentrations ranged from 13 µg/kg (organic rye) to 420 µg/kg (conventional butter biscuits). This is approx. two orders of magnitude higher** than the current high TFA levels found in rainwater, ground water and drinking water.



- **Median concentration of conventional products (pesticide use), was 3.5 times higher (median: 165 µg/kg) compared to organic cereal products (median: 47 µg/kg).**
- **But organic shows also significant TFA levels, even when produced on land that had never been treated with pesticides (impact by rain from F-gas degradation).**

Global 2000 & AK Upper Austria (2025) The forever chemicals in our daily bread. The worrying raise of TFA in cereal products.
https://www.pan-europe.info/resources/reports/2025/06/forever-chemical-TFA-our-daily-bread

Food for thought: High levels of TFA in fruits, vegetable, Wine & beer



- A recent study monitored TFA in EU wines.
- No detectable levels could be found in old wines harvested before 1988 (the vintages 1974, 1979, & 1918) or in 1992.
- TFA contamination rose sharply after 2020 and continued to rise thereafter, reaching an **average of 122 µg/L** (arithmetic mean of **39 wines** from **vintages 2021 to 2024**).
- **With the acceptable daily intake (ADI) derived by RIVM (The Netherlands) in 2023 (0.32 µg/kg day) then one glass of wine would reach ADI!!!**

See also: Freeling et al. (2025) Environ. Sci. Technol https://doi.org/10.1021/acs.est.5c10868

Global 2000 (2025) Message from the Bottle – The Rapid Rise of TFA Contamination Across the EU
https://www.pan-europe.info/press-releases/2025/04/study-reveals-alarming-surge-forever-chemical-tfa-european-wine

Thank you for your attention ! Questions?

More Information https://www.pops.int/Implementation/NationalImplementationPlans/Guidance/tabid/7730/Default.aspx

Basel Convention: www.basel.int

Rotterdam Convention: www.pic.int

Stockholm Convention: http://chm.pops.int/

Montreal Protocol/Vienna Convention: http://ozone.unep.org

FAO: www.fao.org **WHO** www.who.int/ **GFC** https://www.chemicalsframework.org/

Alternatives https://www.subsportplus.eu/subsportplus/EN/Home/Home_node.html

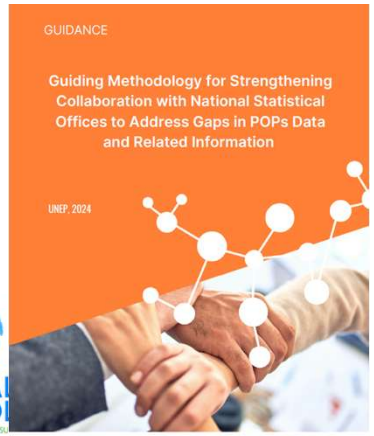
OECD/IOMC: http://www.oecd.org/chemicalsafety/

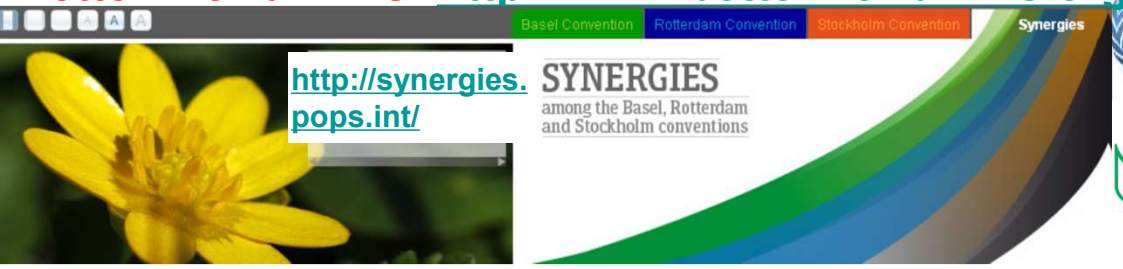
Science: www.ipcp.ch; http://greensciencepolicy.org/; www.unep.org/oewg-spp-chemicals-waste-pollution

Industry: http://www.suschem.org/; https://icca-chem.org/; https://cefic.org/

NGO: www.ipen.org; www.ciel.org/; www.ban.org; www.chemsec.org; www.wecf.org;

Better-world-links: http://www.betterworldlinks.org/





United Nations Framework Convention on Climate Change

Convention on Biological Diversity

MINAMATA CONVENTION ON MERCURY

gef

UN environment programme

GREEN GROWTH Knowledge Partnership