Perfluorinated Chemicals
Regulation at a Global Scale –
Which, When, Why & How?

- From a civil society’s perspective of view

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Helsinki Chemicals Forum,
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Production

Use

Disposal

Human Beings

Environment

Volatilization, wash off, direct use in the environment, etc.

Volatilization in WWTPs*, remains in effluents from WWTPs, use of sewage sludge as fertilizer, volatilization from landfills, etc.

Fugitive emissions, waste streams

Occupational exposure

Exposure via air, food and drinking water

Occupational and consumer exposure

OECD 2013 Synthesis paper on per- and polyfluorinated chemicals (PFCs)
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Human Beings

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- Volatilization, wash off, direct use in the environment, etc.
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Occupational and consumer exposure

Exposure via air, food and drinking water

- Occupational exposure
- Exposure via air, food and drinking water

Displacement & Replacement by other PFASs with increasing concern

- Long-range transportation of PFASs in the environment & transformation
- (Long-range) transportation of products containing PFASs

Including remote area and countries ceased/decreased/NEVER manufactured or used PFASs

OECD 2013 Synthesis paper on per- and polyfluorinated chemicals (PFCs)
Product testing (2015) – Outdoor Products
(n=40)

An Example of Global Transportation of Products containing PFASs
(n=40)

Total PFASs (90%)
Volatile PFASs (70%)
Other ionic PFASs (75%)
C9, C11-14 PFCAs (SVHCs) (25%)
PFOA (30%) (27.5%)
PFOS (5%) (2.5%)

PFAS-FREE outdoor products: not available?
Volatilization in WWTPs*, remains in effluents from WWTPs, use of sewage sludge as fertilizer, volatilization from landfills, etc.

Exposure via air, food and drinking water

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Displacement, NOT Replacement

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• (Long-range) transportation of products containing PFASs

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Occupational and consumer exposure

Occupational and consumer exposure

Human Beings

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PFASs in remote area (2015)
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1. Ubiquitous
2. Highest: Slovakia, Italy, Switzerland
3. SVHCs: sometimes dominant

- Slovakua
- Switzerland
- Chile
- Nordic
- Turkey
- Russia
- China

PFOS, PFOA, C9, C11-14 PFCAs, Other LC PFASs

(Unit: ng/L)
分布在世界各地的水源地，如印度的PFBA、瑞士的湖泊、俄罗斯的阿尔泰金山、中国的大雪山、智利的Torres del Paine。
Perfluorinated Chemicals as a GROUP MUST be URGENTLY regulated at a GLOBAL scale

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