# Sustainable chemistry 2015: The way forward

September 24th Berlin – Greenpeace perspective

# Detox campaign

After four years of campaigning, **32 global companies including Aldi, Adidas, H&M, Burberry or Zara** have begun to eliminate toxic chemicals from their supply chains as part of the Greenpeace´s Detox campaign. This is having a ripple effect across the global supply chain.

We use their support to drive policy change in countries where clothing manufacturing takes places and to drive investment in innovation.

# Toxic fashion

Up to **3.500 chemical substances** are used to turn raw materials into textiles. Approximately 10 percent of these are hazardous to human health or the environment. It takes around 7.000 litres of water to produce a single pair of jeans – most of which is tainted by chemicals during production and discharged into our waterways, mostly in production countries like China, Indonesia or Mexico. **The textile industry is the second largest polluter of fresh water worldwide.**

# Hotspot: chemical pollution – focus fashion sector

Greenpeace uses „punctual“ consumer information and creates awareness among consumers to drive other actors – big companies to make bigger changes.

Insights from our campaign

1. Supplier demand
2. Market demand for PFC-free alternatives

# “The Italian case”

The Detox campaign is affecting hundreds of suppliers, moving towards eliminating toxic chemicals and publishing their pollution data for public scrutiny. They now want to commit themselves. This shows tremendous foresight and retains business.

# “The Italian case”

In Sept 22, 2014, six of Italy´s biggest textile producers, responsible for the production of 70 million garments annually, commit to eliminating hazardous chemicals from their production.

Reference: [www.greenpeace.org/detox](www.greenpeace.org/detox) - the timeline of the campaign

Prato con Greenpeace contro gli abiti “tossici”. Industriali al lavoro per mettersi in regola e aderire alla campagna Detox. Le grandi firme hanno sposato il progetto. Noi lo faremo come distretto.

Il presidente degli industriali pratesi Andrea Cavicchi, Il tirreno April 15th 2015

Insights from our campaign

1. Supplier demand
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# Shift of investments – PFC-free solutions

Many brands have completely eliminated the use of PFCs in their supply chain, while a few others are working quickly to meet the fast approaching deadline for eliminating the substances from their products and production.

The phase-out has also triggered swift adoption of PFC-free solutions and promoted exchanges and explorations within and beyond the textile industry to move alternatives from the lab to the factories.

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# Potential Economic value


References: American Sustainable Business Council/Green Chemistry&Commerce council: Making the Business&Economic case for Safer Chemistry. April 24th, 2015: Advanced Textiles Source: Market research on waterproof, breathable textiles indicates future growth, January 26th 2015.

# Secure Future business

In April 2015 an US-report about the application of green chemistry was published to stress the idea that transitioning to sustainable chemistry has a business case, e.g. to open new markets or avoid „operating expenses for managing hazardous chemicals“. Their example in the **apparel sector is that companies like Adidas and Puma agreed to remove PFCs, do a full range investigation into the alternatives and develop sustainable alternatives where they do not already exist.**

The market for waterproof textiles is expected to be worth 1.73 billion dollars by 2020. „The global market has become technologically advanced as a result of plasma and silicon-based technologies“. Industry participants would focus on environmentally friendly products that are recyclable, PTFE-free and PFC-free.

# New Greenpeace Report

# Footprint in the snow

To search for clues about the extent that these chemicals are contaminating these pristine environments, Greenpeace undertook eight expeditions to remote mountainous areas on three continents. Snow, and in some places water samples, were taken at a total of 10 locations and analyzed for the presence of environmentally hazardous per and poly-fluorinated chemicals (PFCs).

# Three continents- ten countries

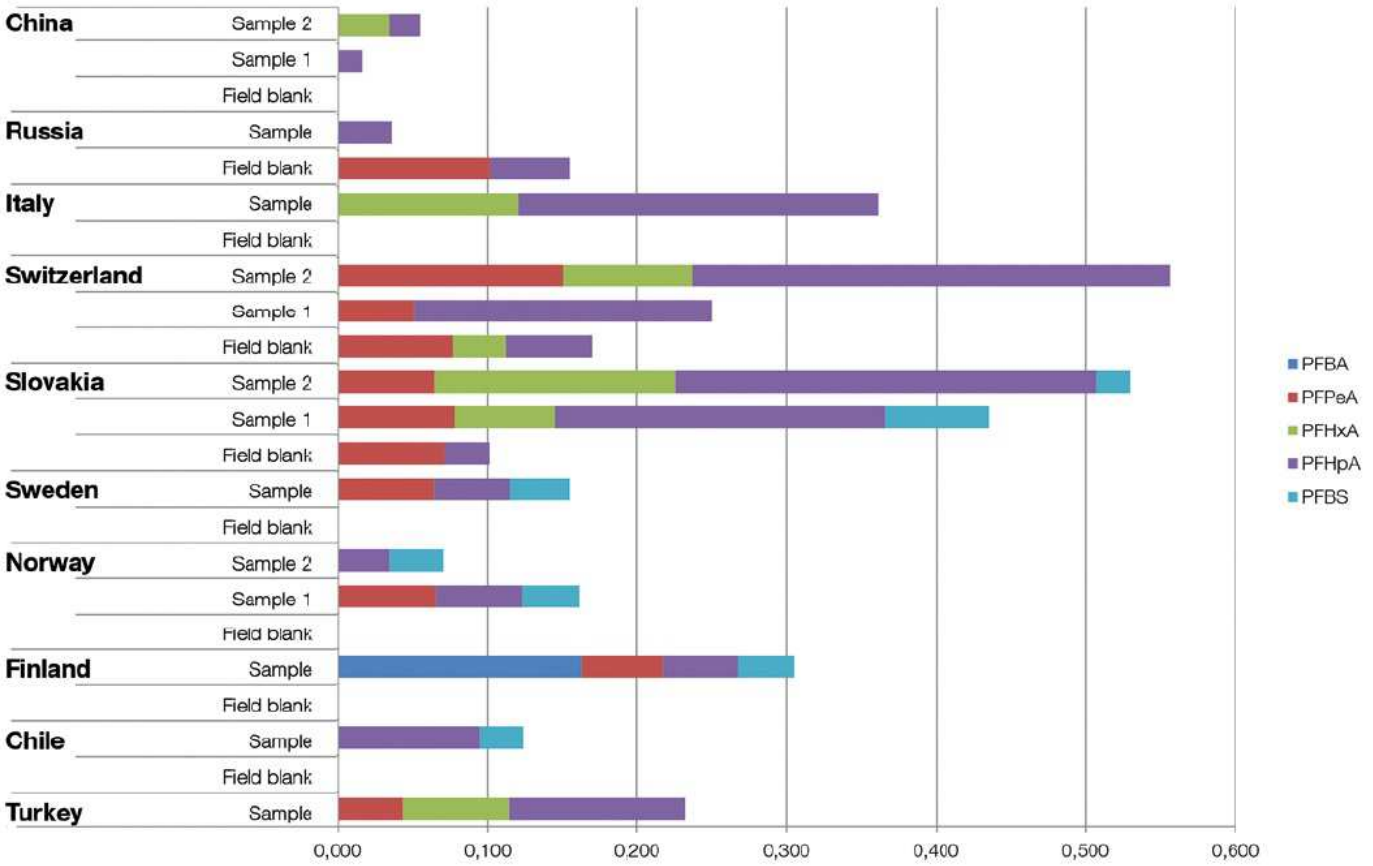
| Country | | Date of Expedition | Altitude Snow sample point | GPS Snow sample point | PFC evidence in snow | Altitude Water sample point | GPS Water sample point | PFC evidence in water |
|---|---|---|---|---|---|---|---|---|
| **China** | Haba Snow Mountain, Shangri-la county | 26./27.05.2015 | 5053 m | 27°19'38.16" 100°6'24.00" | yes | 5053 m | 27°20'57.19" 100°04'117.38" | no* |
| **Russia** | Altai Republic, Siberia | 08.06.2015 | 1778 m | 49°92'4450" 85°88'4698" | yes | 1778 m | 49°92'4450" 85°88'4698" | yes |
| **Italy** | Lake of Pilato, Monti Sibillini, Umbria | 28.05.2015 | 1943 m | 42°49'33" 13°15'56" | yes | 1943 m | 42°49'33" 13°15'56" | yes |
| **Switzerland** | Macun Lakes, Swiss National Park | 19.06.2015 | 2641 m | 46°43'717" 10°07'549" | yes | 2636 m | 46°43'729" 10°07'546" | yes |
| **Slovakia** | Žabia Bielovodská dolina, High Tatras, Carpathian Mountains | 26.05.2015 | 1722 m | 49°11'73.2" 20°05'560" | yes | 1700 m | 49°11'73.2" 20°05'560" | yes |
| **Sweden** | Kiruna, Övre Soppero | 02.06.2015 | 511 m | 68°15'30.6" 22°01'55.9" | yes | N/A | Keine Probe | not sampled** |
| **Norway** | Skibotridalen, Troms fylke | 03.06.2015 | 616 m | 69°11'54.5" 20°32'01.0" | yes | N/A | Keine Probe | not sampled** |
| **Finland** | Kilpisjärvi, Enontekiö | 04.06.2015 | 742 m | 69°04'17.8" 20°41'28.5" | yes | N/A | Keine Probe | not sampled** |
| **Chile** | Torres del Paine Nationalpark, Patagonia | 10.06.2015 | 900 m | -50°94'2886" -72°95'0042" | yes | 900 m | -50°94'2882" -72°95'0424" | yes |
| **Turkey** | Rize-Çamlıhemşin and Erzurum Moryayla-Yedigöller, Kaçkar-Mountains | 13.06.2015 | 3100 bis 3120 m | 40°45'27" 40°50'29" | yes, but no field blank | 2980 m | 40°45'60" 40°50'40" | yes, but no field blank |

* PFC concentrations in the reference sample (field blank) were higher than in the sample
** No remote lake in that area

Greenpeace e.V. (2015). Footprints in the snow- Hazardous PFCs in remote locations around the globe. http://detox-outdoor.org/assets/uploads/Report%20RAE/RAE_report_08_2015_english_final.pdf

# Short chain PFCs in snow - Results

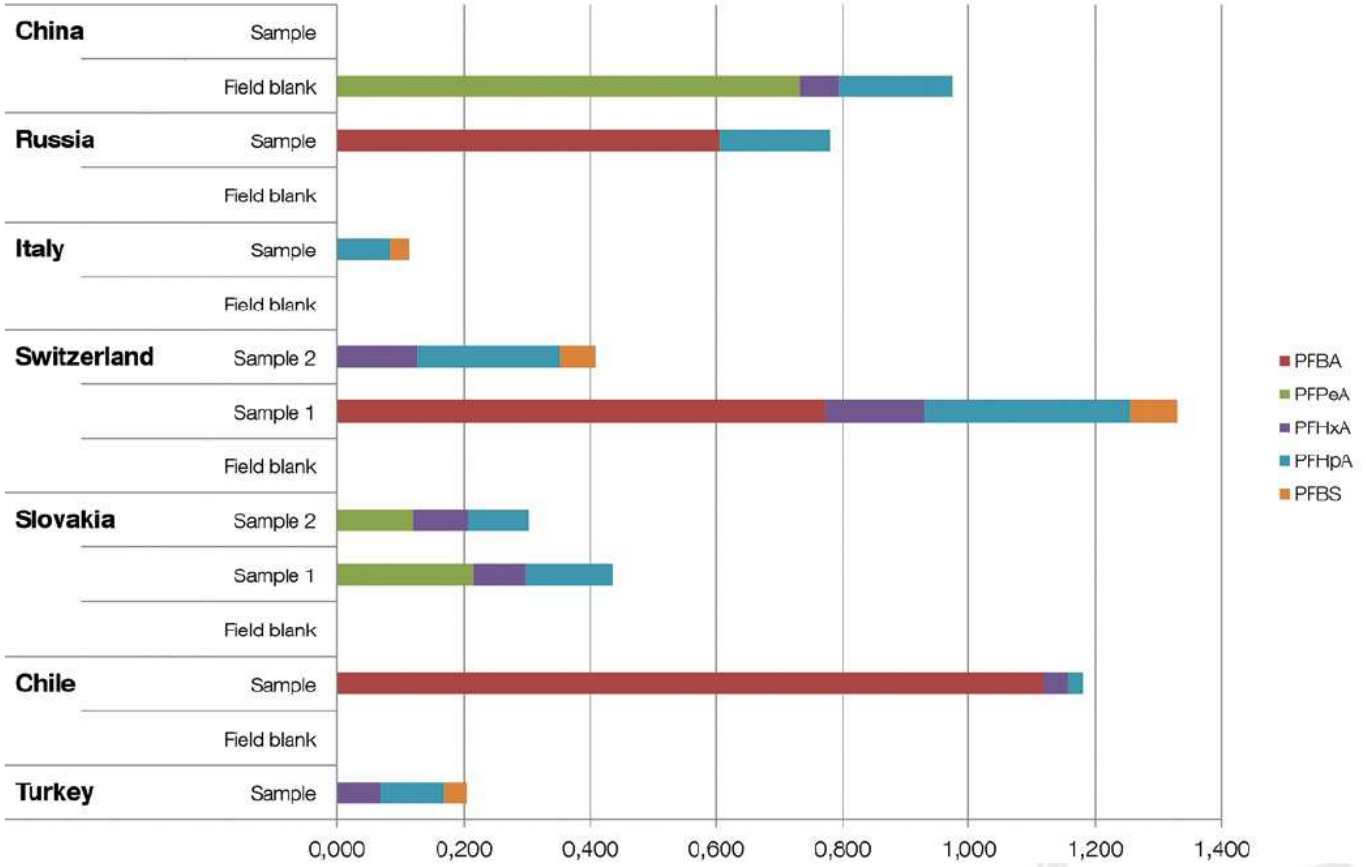
**Figure 2** Short chain PFCs in snow (ng/l)




Greenpeace e.V. (2015). Footprints in the snow- Hazardous PFCs in remote locations around the globe. http://detox-outdoor.org/assets/uploads/Report%20RAE/RAE_report_08_2015_english_final.pdf

# Short chain PFCs in water - Results

**Figure 4** short chain PFCs in water (ng/l)




Greenpeace e.V. (2015). Footprints in the snow- Hazardous PFCs in remote locations around the globe. http://detox-outdoor.org/assets/uploads/Report%20RAE/RAE_report_08_2015_english_final.pdf

# Footprint in the snow

Traces of PFCs were found in snow samples from all sites that the Greenpeace teams visited. They are present in the snow that fell last winter, as well as in water from mountain lakes where these substances have accumulated over several years. Amongst the PFCs detected, samples from all sites contained the lesser known so-called **short chain PFCs –** increasingly used by many brands as an escape route not to phase out ALL PFCs.
In view of the hazardous properties of many PFCs, including the potential for volatile substitutes to transform into persistent PFCs, it is no longer enough to only phase out and regulate a small number of individual substances such as PFOA and PFOS. Greenpeace calls on brands and policy makers to fully implement the **Precautionary Principle** by phasing out and restricting the entire group of PFCs.

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# Conclusions


1. Detox committed suppliers see a competitive advantage by quickly attracting more orders from leading brands.
2. Detox pushes investment in sustainable chemistry which makes impacts at a global level.

# Thank you!

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