



THE WATER CHALLENGE EVERY DROP COUNTS



Green Week - Brussels, 22-25 May 2012

« Emerging » pollutants in water

Screening European waters
to anticipate priorities

What are “emerging” pollutants?

Compounds, released as a result of human activities and with poor or no information on occurrence and with concern regarding their effects on eco-systems.

They are generally not or only vaguely mentioned in environmental legislation.



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The challenge

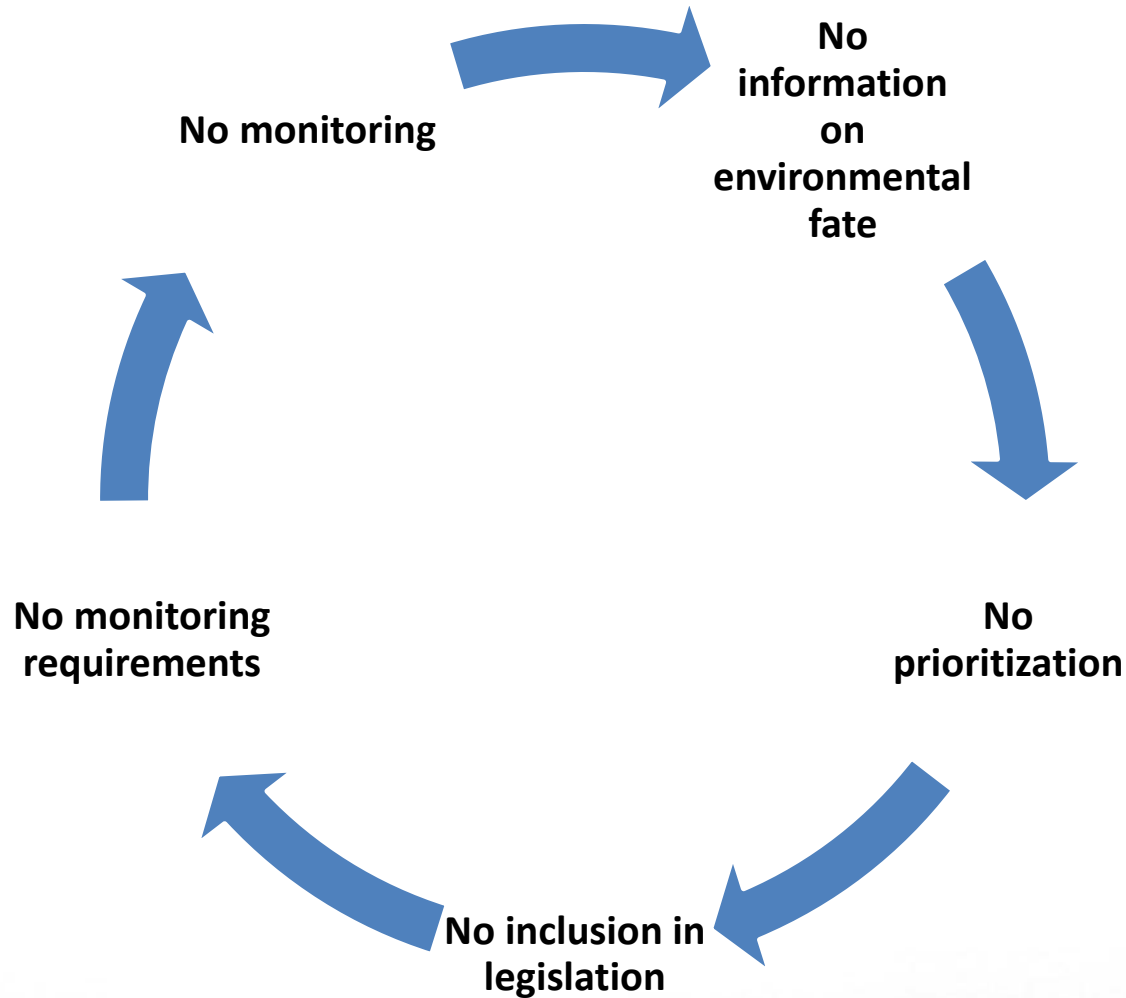
- Potential risks
- Many candidate compounds (thousands...)
- Difficult measurements
- High variability of occurrence
- Limited resources



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The need for information



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The need for information



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The need for Europe-wide monitoring datasets

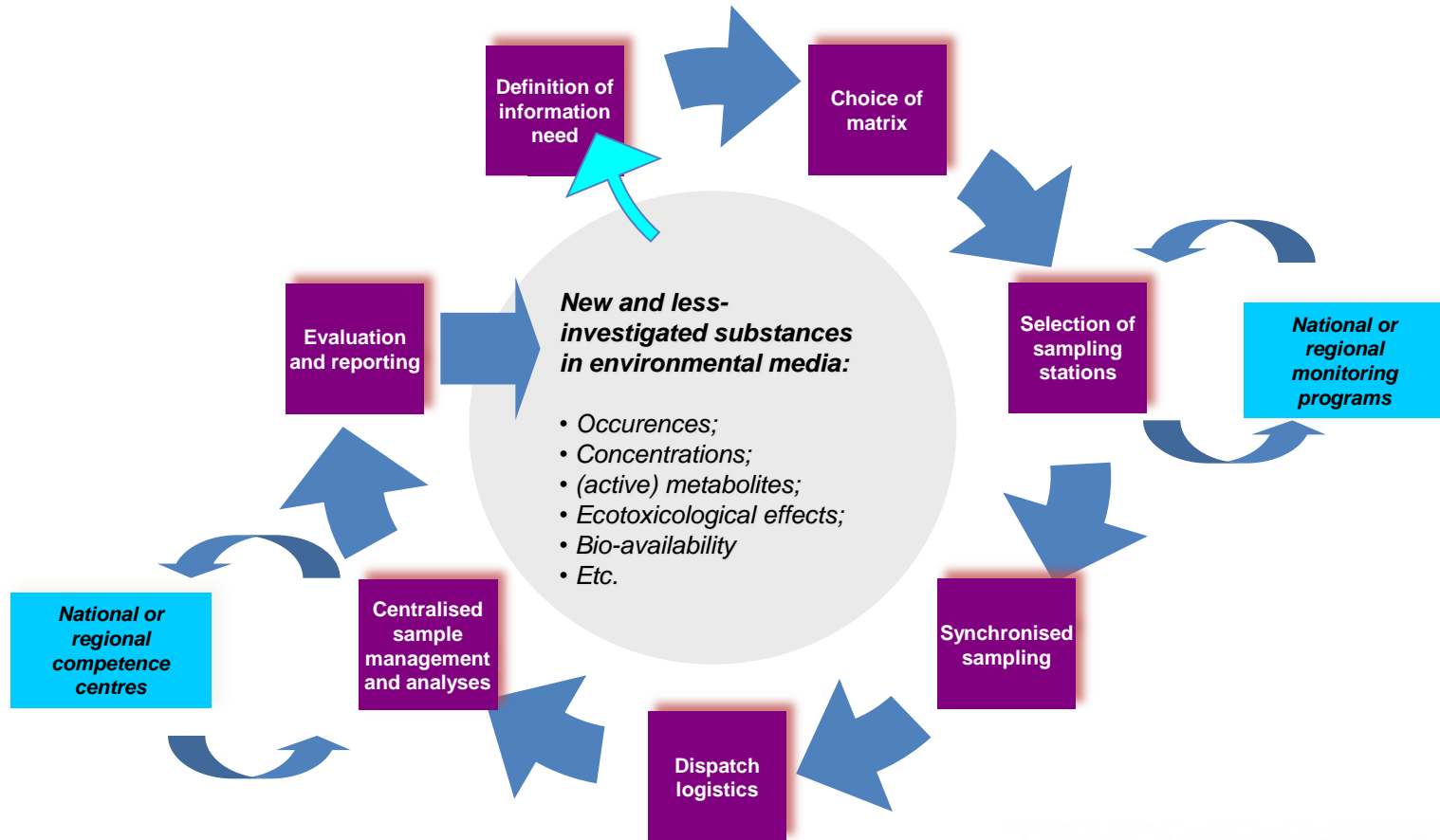
- Identification of concern through research triggers need for larger datasets
- Need of pilot monitoring for confirmation of possible risk
- Effective short term results provided by single laboratory approach
- Further activity.....



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EU wide campaigns

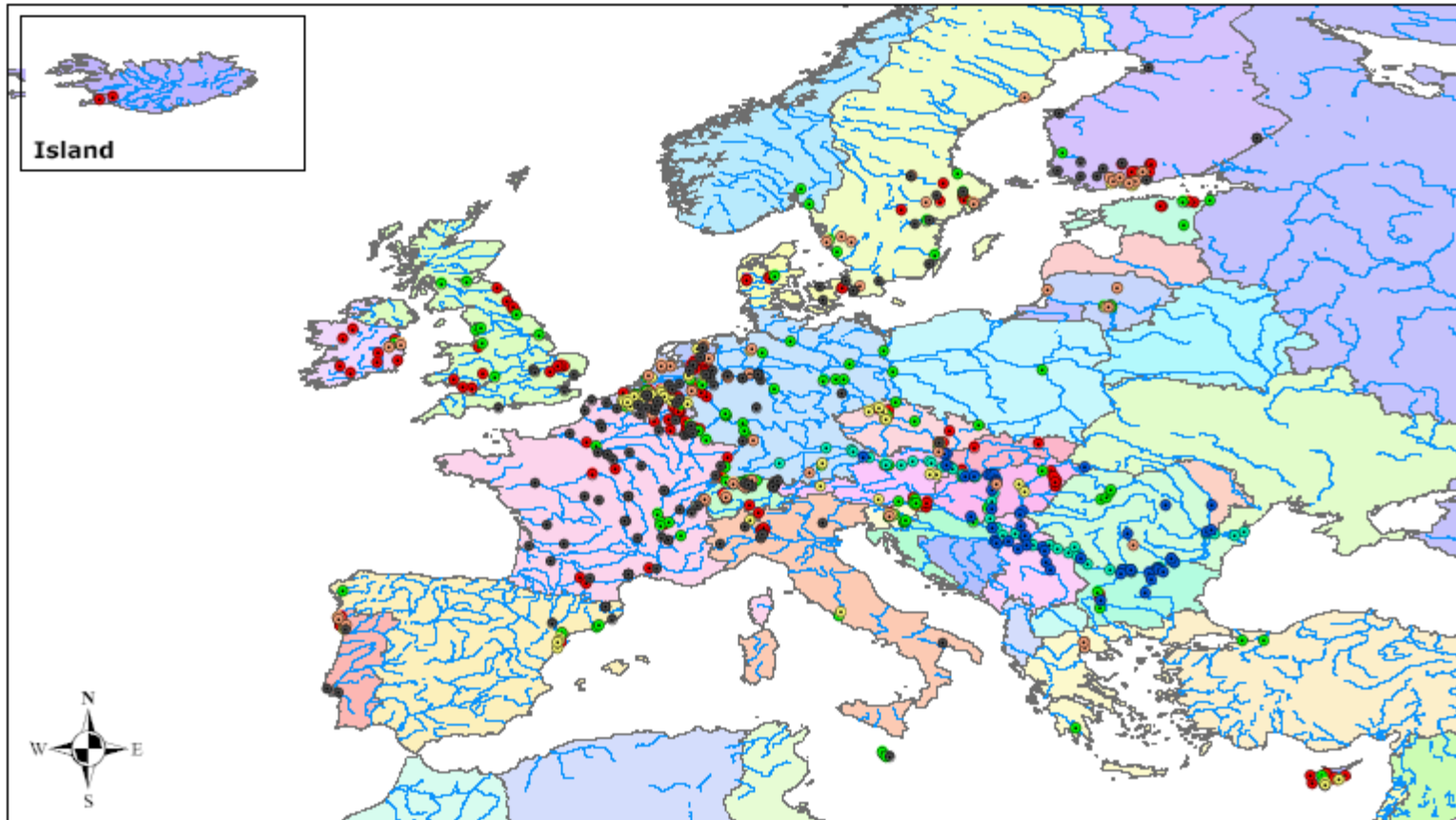


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FATE EU-Wide Monitoring - European map

(Status: April 2012)

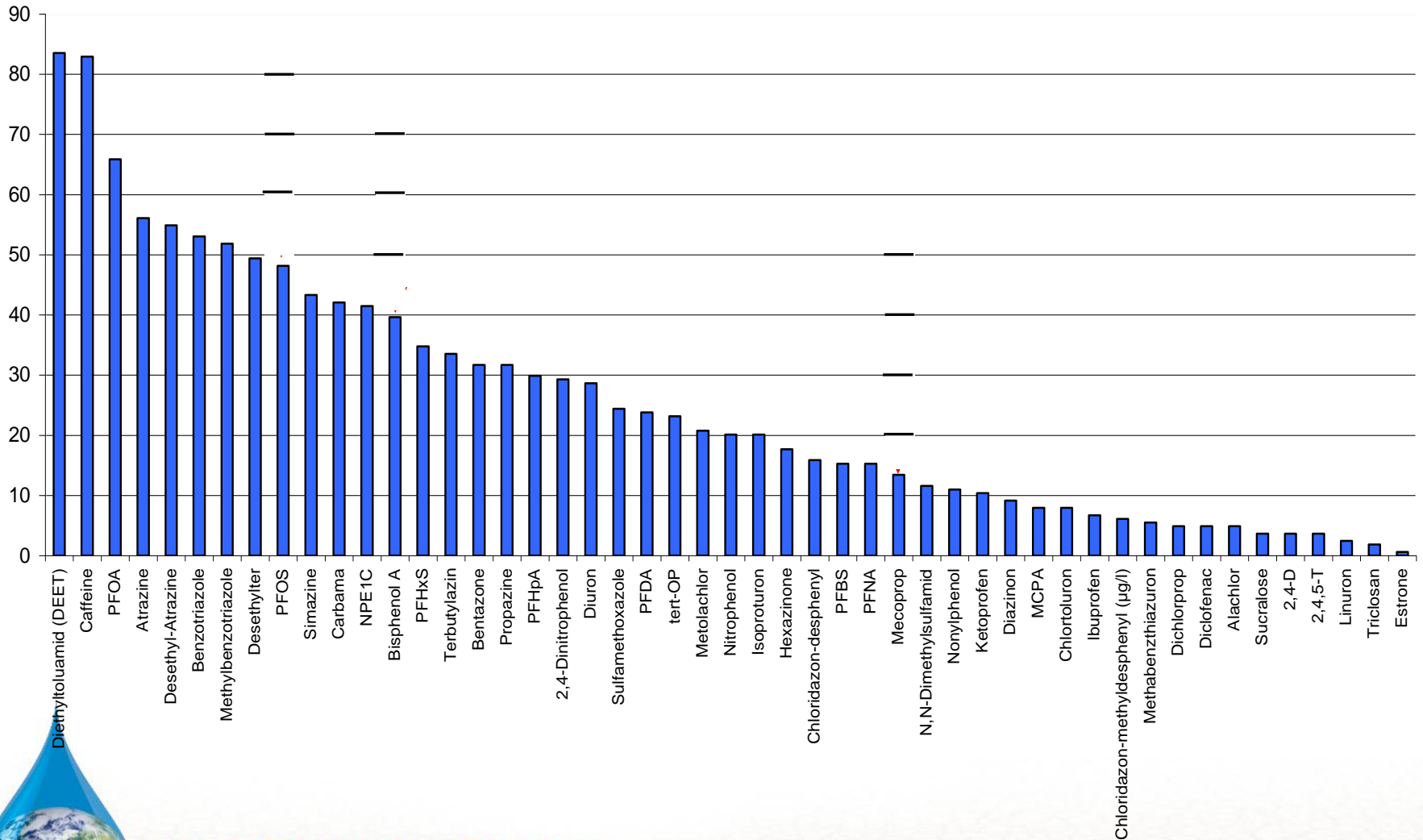


Legend

- | | | |
|------------------|---------------|-------------|
| JDS2-Danube | Groundwater | Compost |
| JDS2-Tributaries | Effluents | Main Rivers |
| Surface water | Sewage sludge | |

Surface Water

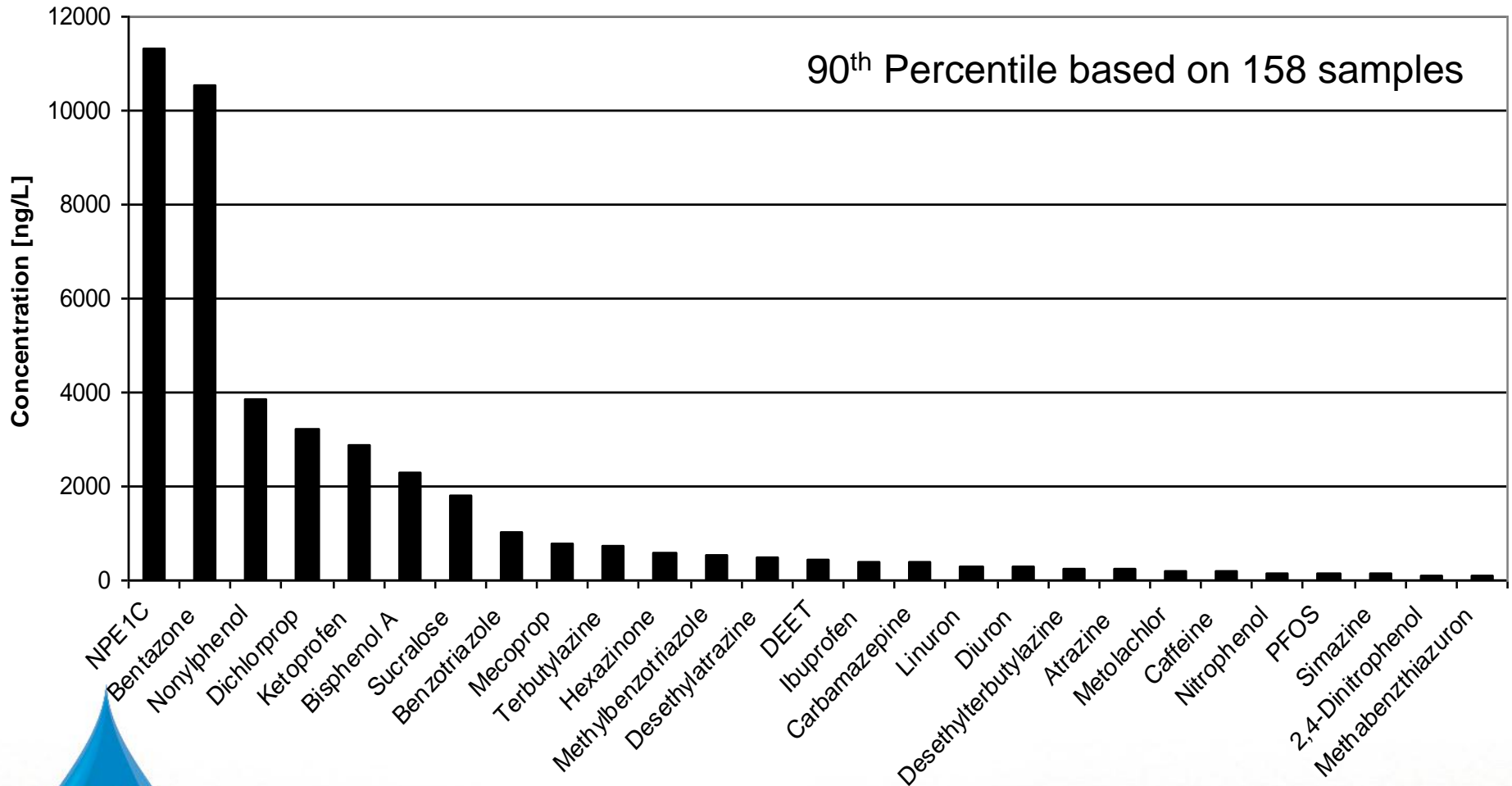
Frequency of positive detection [%]



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Groundwater



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Waste Water Treatment Plant Effluents

- Final reporting in progress
- 91 WWTP effluents analyzed
- 168 organic chemicals and 20 trace elements
- 134 out of 168 target compounds were detected



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Chemical Analytical Screening Methods for analysis of large pollutant numbers

- qualitative and quantitative assessment
- large number of organic chemical substances
- single analytical procedure
- new sophisticated methodologies



You know what you are looking for? Or not?

Target screening – Non-target screening

Current situation:

- Chemical Analytical Screening methods are in use
- Few laboratories use high resolution mass spectrometric techniques
- Target screening prevails over non-target screening methods
- Target compound lists range from < 20 to 950 compounds
- There is need for harmonisation by information exchange and collaborative field tests



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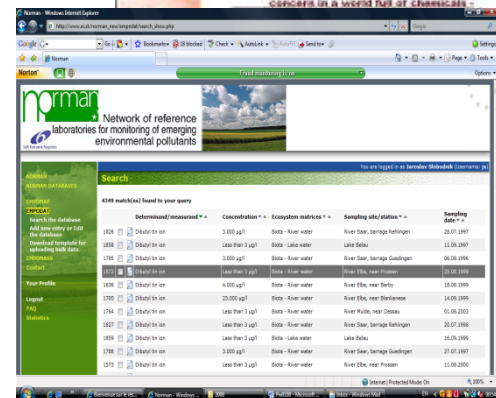
NORMAN - Network of reference laboratories for the analysis of emerging pollutants

Network of > 50 EU leading Environmental Institutions

- Mission:**
- Exchange information and improve data quality
 - Promote synergies among research teams

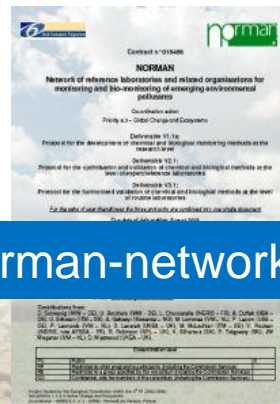
Some achievements:

- **Working Groups:** WG1) Prioritisation of EPs, WG2) Bioassays, WG3) Effect-directed analysis
- **Databases:** EMPODAT: Occurrence and (eco)toxicity data; NORMAN MassBank : Mass spectra =>> identification of unknowns
- **NORMAN Protocol for methods' validation** - under negotiation at CEN =>> future CEN TS
- **10 thematic international workshops**
- **Bulletin publication**



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<http://www.norman-network.net>



Some conclusions

- Not every detected substance is a threat
- Information on toxicological data and effects is missing
- Information exchange on compounds and methods is needed
- Methodological innovation is needed



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24 May 2012