



The NORMAN Steering Committee



***Emerging pollutants in the environment:
10 years of NORMAN in support of
environmental policies and regulations***

NORMAN: the first 10 years

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Feb 2009

**Foundation
of the
NORMAN
Association**

Oct 2008

**End of the EU
project & first
presentation
of non-profit
NORMAN
Association**



June 2006
**Start of
activities –
1st workshop,
Stresa**



Sept 2005
**Kick-off
meeting**

2004
**EC call for
tender**




VII.1.2.1. Environmental analysis and monitoring of emerging environmental pollutants. There is a need to improve the European capabilities for large scale monitoring and bio-monitoring of environmental pollutants in the various matrixes (air, water, soil). The aim is to create a network among European reference laboratories and related organisations in dealing with emerging environmental pollutants for which Europe-wide data are lacking. The approach will foster co-operation and data transfer of environmental analysis and monitoring institutes and related regulatory bodies for validating common and standardised methods. Involvement of the new Member States for strengthening the European co-operation is requested. The involvement of standardisation organisations is required. (Topic for up-to-one Co-ordination Action)

**We started as a
consortium of
17 partners ...**

**We now have
70+ members !!!**



EMERGING SUBSTANCES WHY SHOULD WE BE CONCERNED?



UNESCO *"Building peace in the minds of men"*

United Nations Educational, Scientific and Cultural Organization


ABOUT US THEMES COUNTRIES PARTNERSHIPS

Home > All Events > Emerging Pollutants in Water and Wastewater: UNESCO-Sida Project Case-Studies

Emerging Pollutants in Water and Wastewater: UNESCO-Sida Project Case-Studies



New and Emerging Water Pollutants arising from Agriculture




JOINT RESEARCH CENTRE
The European Commission's science and knowledge service

European Commission > EU Science Hub > News > First Watch List for emerging water pollutants

About Us Research Knowledge Working With Us Procurement News & Events

First Watch List for emerging water pollutants



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Environmental Health - Toxic Substances Hydrology Program

Environmental Health

About
Our Contacts

CEC HOME METHODS DEVELOPMENT ENVIRONMENTAL OCCURRENCE SOURCE PATHWAYS TRANSPORT AND FATE ECOLOGICAL EFFECTS

Contaminants of Emerging Concern in the Environment

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Emerging substances : why should we be concerned?

In spite of major progress in the regulation of chemicals, there are still **chemicals** that may have **deleterious long-term effects** on ecosystems and/or human health

Influencing factors for **future emerging substances**:

- Population growth & an ageing population
- Climate change
- New materials, new technologies, circular economy...

Emerg



- Toxic Substances Hydrology Program
- About the Program
- Science Features
- News Releases
- Investigations**
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- Site Map
- Start with Science

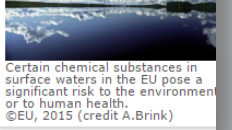
emerging contaminants or contaminants of emerging concern are commonly derived from municipal, agricultural, and industrial wastewater sources and pathways. These newly recognized contaminants represent a shift in traditional thinking as many are produced industrially yet are dispersed to the environment from domestic, commercial, and industrial uses.

The major goal of the Contaminants of Emerging Concern in the Environment Investigation is to provide information on these compounds for evaluation of their potential threat to environmental and human health. To accomplish this goal, the [research activities of this project](#) are to: (1) develop **analytical methods** to measure chemicals and microorganisms or their genes in a sediment, waste) down to trace levels, (2) determine the **environmental occurrence** of these compounds, (3) characterize the myriad of **sources and source pathways** that determine contaminant release to the environment, (4) quantify processes that determine their **transport and fate** through the environment, and (5) identify the **potential risks** to human health from exposure to these chemicals or microorganisms. Project research on contaminants of emerging concern is being conducted within these five areas. The following links provide more detailed information.



- Events
- JRC Newsletter
- Press centre
- Photos
- Videos

complete a first watch list which will provide high-quality information on the concentrations of emerging or little-known pollutants across the EU. The report, first published earlier this year, also describes the procedures and criteria used to identify and rank emerging pollutants with very different uses such as prescription drugs, personal care products, and chemicals used in agriculture and industry. The list was produced in support of European environmental legislation which aims to protect the quality of European waters.



Certain chemical substances in surface waters in the EU pose a significant risk to the environment or to human health. ©EU, 2015 (credit A.Brink)

NETWORK OF REFERENCE LABORATORIES, RESEARCH CENTERS AND RELATED ORGANISATIONS FOR MONITORING OF EMERGING ENVIRONMENTAL SUBSTANCES

MISSION:

- **EXCHANGE INFORMATION ON EMERGING SUBSTANCES**
- **IMPROVE DATA QUALITY**
- **PROMOTE SYNERGIES AMONG RESEARCH TEAMS AND MORE EFFICIENT TRANSFER OF RESEARCH FINDINGS TO POLICY-MAKERS**



NETWORK OF REFERENCE LABORATORIES, RESEARCH CENTERS AND RELATED ORGANISATIONS FOR MONITORING OF EMERGING ENVIRONMENTAL SUBSTANCES

Working Groups

1) Prioritisation

2) Bioassays

3) Effect-Directed Analysis

4) Engineered Nanoparticles

5) Wastewater reuse

6) Indoor environment


+ 2 Cross-WG: Passive sampling and NT screening





NORMAN

Network of reference laboratories, research centres and related organisations for monitoring of emerging environmental substances





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- » DATABASES
- » Topics and Activities
- » Workshops and Events
- » QA/QC Issues
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Success Stories

1. [NORMAN EMPODAT database used as a building block of the pan-European chemical database platform](#)
 In April 2013 NORMAN partnered up with the Integrated Platform for Chemical Monitoring (IPChem) currently being established by...
2. [Non-target screening techniques for environmental monitoring](#)
 It is increasingly recognised that the number of compounds measured today via target chemical analysis is not sufficient to provide...
3. [Passive sampling gets routine monitoring role on back of NORMAN efforts](#)
 The sustained efforts of the NORMAN Expert Group on passive sampling are finally bearing fruit. The discussions on the official inclusion of passive sampling in national monitoring schemes, kicked off in 2012 by Working Group E of the EC's DG Environment, lean heavily on the outcomes of the 2011 NORMAN interlaboratory study of passive sampling. The data generated by the twenty-nine labs – European, North American and Australian – involved in that study have since been systematically evaluated and been the subject of follow-up meetings of the NORMAN Expert Group. As a result of this world-leading move, long-awaited and cost-efficient integrated monitoring tools for a wide range of pollutants are now on the verge of practical application.

Read more about [Passive sampling - the future of pollutant monitoring in aquatic environment](#) and the [NORMAN Expert Group Meeting on Environmental quality standards and passive sampling in Brno, 3 - 4 July 2013](#) and [Expert Group meeting on Passive Sampling in Prague, 27 May 2009](#).

Read also about [\(Mini\)workshop on "Passive Sampling techniques for monitoring of contaminants in the aquatic environment" 27-28 November 2014](#)

DATA QUALITY AND HARMONISATION OF MONITORING METHODS

Common framework for validation of chemical and biological monitoring methods

Now adopted as CEN
Technical Specification:
CEN TS 16800:2015



5 Interlaboratory studies on priority research substances

Brominated
flame retardants (2008)

Non-steroidal
anti-inflammatory drugs (2008)

Perfluorinated compounds (2010)

Organophosphorous
flame retardants (2012)

Detection and quantification of
highly polar compounds
(On-going)

4 Interlaboratory studies for harmonisation of new techniques

Passive sampling for emerging
contaminants (2011)

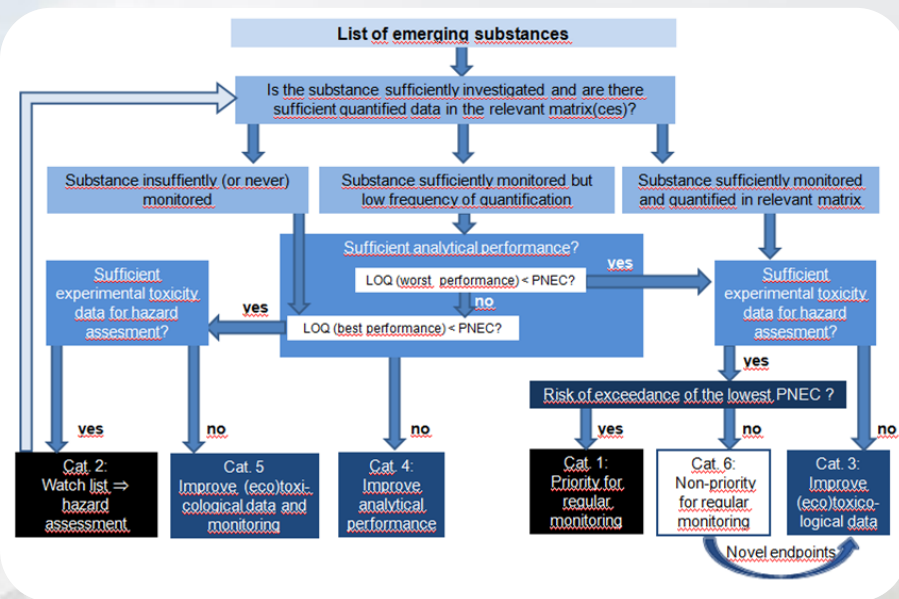
Non-target screening for water
monitoring purposes (2013)

Battery of bioassays for water
quality assessment (2015)

Non-target screening of dust
(On-going)

IDENTIFYING EMERGING SUBSTANCES OF PRIORITY CONCERN

- An **innovative**, widely accepted **approach** for EU prioritisation of emerging substances
- **Methodology** that addresses **data gaps**
- Already **applied** in various EU countries
- **Watch list recommendations** to the EU Commission in 2014
- NORMAN contributes to the EU Commission **WGs for WFD PS review**

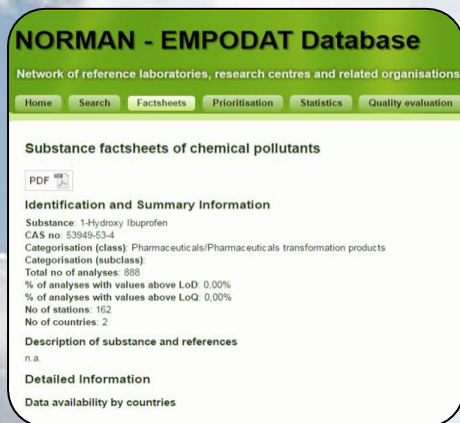


INFORMATION AND DATA EXCHANGE

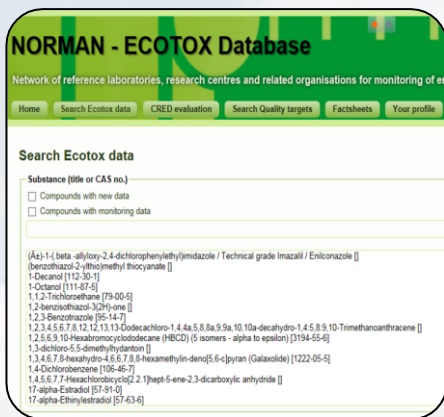
EMPODAT Chemical database

EMPODAT Ecotox module

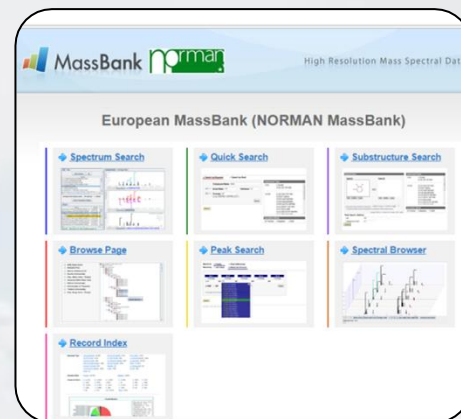
NORMAN Spectra MassBank



A database of more than 9 million geo-referenced monitoring data on emerging substances



A platform for systematic collection and evaluation of ecotoxicity studies for harmonised derivation of environmental quality standards



An open-access database of mass spectra for more than 1,000 environmental contaminants

INNOVATIVE TOOLS FOR MONITORING AND RISK ASSESSMENT

NORMAN anticipates the need for new tools and organises the activities in a constructive way

Example: non-target analysis

- **First discussions at the Stresa workshop in 2009**
- Setting-up of a **Working Group**
- Creation of **NORMAN MassBank**
- Launch of first **Intercomparison Studies**
- **Workshops** to exchange method knowledge
- **NormaNews** for retrospective analysis of suspects, exchange of list of “suspects”, digital freezing of mass spectra of environmental samples

NORMAN : AN EXCHANGE PLATFORM FOR SCIENTISTS AND DECISION-MAKERS



Scientific watch on emerging substances
 5 Newsletters + 5 issues of the NORMAN Bulletin



Workshops and Expert Group meetings
 more than 30 international events since 2006



Position papers

- Toxicity profiling (bioassays)
- EDA Guidance
- Passive sampling



SCIENCE-POLICY INTERFACE: CONNECTING WORLDS



Science

Understanding the world

- Reliable analytical tools
- Potential effects
- Concepts/models
- Research results
- Uncertainty evaluation

NORMAN

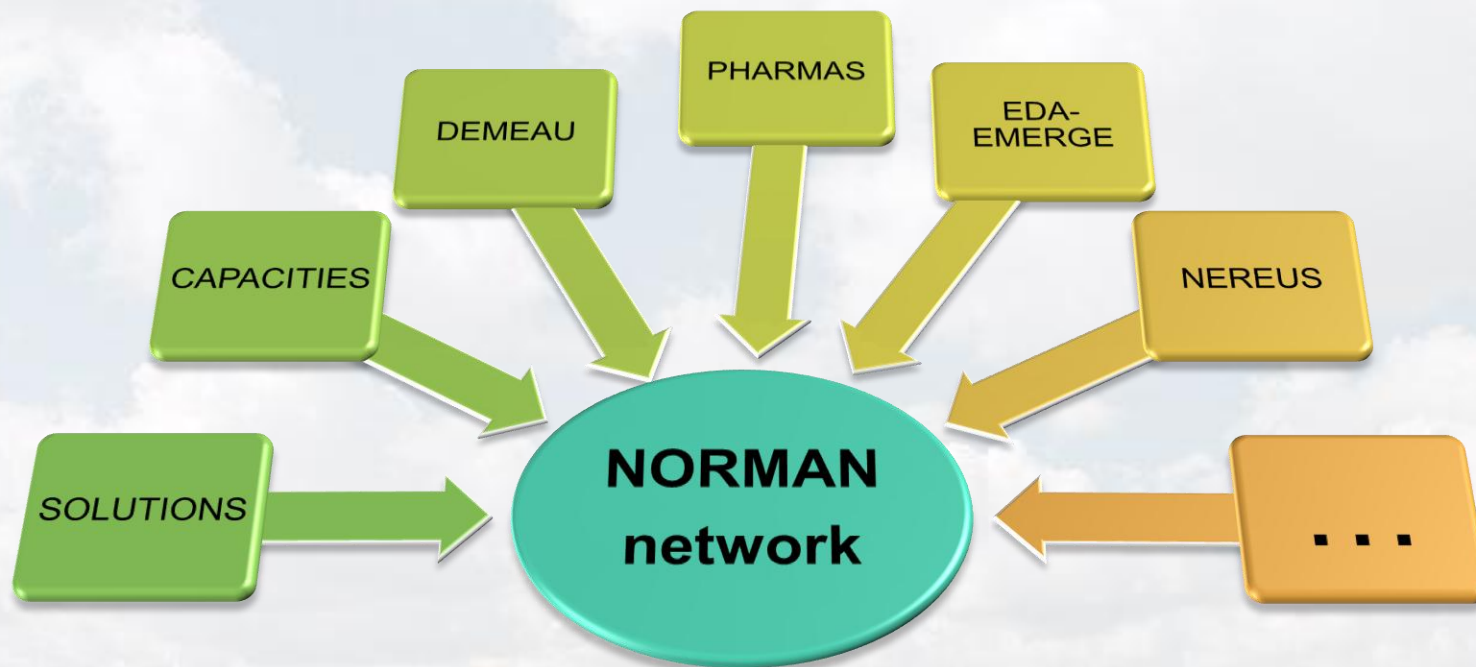
Prioritisation
Databases
Workshops
Validation & QA/QC
Harmonisation
EC WGs participant

Policy

Managing the world

- Risks (no risks)
- Responsibility
- Use of data
- Regulation
- Planning

NORMAN: AN EXCHANGE PLATFORM TO INCREASE SYNERGIES IN RESEARCH



NORMAN interacts as efficiently as possible with ALL research projects dealing with emerging contaminants (national and international initiatives): increased visibility of the results and faster implementation in policies

PAPER ACCEPTED FOR PUBLICATION *STOTEN* JOURNAL (ELSEVIER)

10 Recommendations for the review of the WFD

“TOWARDS THE REVIEW OF THE EUROPEAN UNION WATER FRAMEWORK DIRECTIVE: RECOMMENDATIONS FOR MORE EFFICIENT ASSESSMENT AND MANAGEMENT OF CHEMICAL CONTAMINATION IN EUROPEAN SURFACE WATER RESOURCES”



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CHALLENGES FOR THE *NEXT 10 YEARS*

- Improving the **quality of the data**, reducing uncertainty
- Encouraging **data sharing** (EU and national projects) and harmonisation of data reporting formats
- Improving the use of **monitoring data for risk assessment** in the different regulatory frameworks
- **Better understanding** of the complexity of our environment
- **Better communication** and use of the results from scientific research

We have come this far thanks to the efforts of all our members, for which I am very grateful



I invite you to continue this progress by engaging in fruitful discussions at this workshop and beyond