NORMAN
Network of reference laboratories for monitoring and biomonitoring of emerging environmental pollutants

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The views expressed are purely those of the writer and may not under any circumstances be regarded as stating an official position of the European Commission

NORMAN Workshop, Menorca, 27-28 Nov 2006
NORMAN objectives:

• Creation of a network among European reference laboratories and related organisations dealing with emerging environmental pollutants for which Europe-wide data are lacking.

• The approach will foster:
  – exchange of data and information on emerging substances
  – validation and harmonisation of common measurement methods and monitoring tools to meet the demands of risk assessors and risk managers.

Emerging environmental pollutants

‘Substances that are not part of routine monitoring programmes but have been shown to occur in the environment and may be candidate for future regulations, depending on the results of research on their effects and their occurrence in the environment’
Public authorities & emerging risks

Emerging risks

Research programmes

Media

Public authorities/ regulatory bodies

Data on Exposure, fate & transport and effect are often lacking

Measurement methods are often at the research stage and not harmonised at EU level

Addressing these gaps is essential for conducting meaningful research

• That is, research that produces results that are:
  – comparable
  – repeatable
  – accepted by the scientific community
  – and on which reliable systems for risk identification, assessment and management can be based

• Need for fully validated, internationally agreed, procedures
  – for the determination of occurrence and effects of emerging substances
NORMAN has a role in this process

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Activities / services provided by the network:

- Information exchange and sharing
  - Workshops (4 events during the course of the project)
- Scientific observatory
  - Newsletter (5 issues during the course of the project)
  - NORMAN Contact Points to help info gathering
- Collection / evaluation of data
  - Database of experts / organisations and projects
  - Database of monitoring data
  - Database of mass spectra of unknown substances
EMPOMAP
MAP OF KNOWLEDGE - Emerging pollutants

• Three modules
  – Experts (S1-1)
  – Organisations (S1-2)
  – Projects (S1-3)

• Main goal
  – Help the identification of experts and stakeholders dealing with specific emerging substances in Europe

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Add new entry or Edit the database

Defect database:
- Experts
- Organisations
- Projects

...
PERSONAL EXPERTISE

**Primary field of work (please select ONE as appropriate):**
- Behaviour of emerging substances in environment (sources, transport, degradation, transformation)
- Bio-assays
- Biomarkers
- Biomonitors
- Database development
- Development/validation of analytical methods
- Emerging substances in air
- Emerging substances in biota
- Emerging substances in aquatic environment (water, suspended matters, sediments)
- Emerging substances in terrestrial environment (soil)
- Environmental risk assessment
- Health aspects related to emerging substances
- Identification of emerging substances by mass spectrometry techniques
- Legislation/networking
- Monitoring of emerging substances
- Quality assessment/quality control
- Quality standards/guideline values for emerging substances
- Technologies for removal of emerging substances
- Other (please specify):

**Additional fields of work (please select ALL that apply):**
- Behaviour of emerging substances in environment (sources, transport, degradation, transformation)
- Bio-assays
- Biomarkers

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Development, Testing & Implementation of the VALIDATION protocols

VALIDATION: Development of protocols

3 different validation scenarios V1, V2, V3

CASE: Test phase of protocols

Inter-laboratory studies C1, C2, C3
(matching the 3 validation protocols)

VALIDATION: Improvement & Implementation

New Work Item proposals at CEN for development of guidelines or CEN TR
Why validation protocols for emerging pollutants?

**Background:**
- Reliability and comparability of monitoring data on emerging pollutants (EP) is often limited.
- Methods for analysis of EP (or their effects) are often not fully validated, not harmonised or not suitable for all relevant matrices.

**Objectives:**
- Provide structured protocols for optimisation and validation of monitoring & bio-monitoring methods for EP.
- Accelerate the establishment of methods which are fit for purpose.
- Development of three validation protocols (3 levels of "validation maturity") addressing different monitoring needs.

**Validation Procedure & Protocols**

- **Research method, incomplete internal validation, probably not applicable for organism, compartment or matrices of interest**
  - Validation Protocol V1
- **Method applicable by research labs (complete internal validation)**
  - Validation Protocol V2
- **Method applicable by expert labs (transferable to another lab with sufficient expertise)**
  - Validation Protocol V3
- **Method applicable by routine labs (comprehensive external validation)**
Scope of the validation protocols

- Chemical methods
- Biological methods

Air | Soil & Sediment | Water | Marine systems | Biota

Protocols applicable to all types of monitoring & biomonitoring methods (chemical & biological) and environmental matrices.

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Final objective:

- Implementation of a self-sustainable network
What activities for a future permanent network?

Scientific watch
- Info sharing
  - Databases
  - Exchange with RTD projects
  - Newsletter

Expert group meetings

Interlaboratory studies - methods validation

Workshops / conferences
- Meetings
  - Training for routine labs

List of priority topics for research

For more information you can visit:
http://www.norman-network.net
Next NORMAN Workshop:
New tools for bio-monitoring of emerging pollutants

• Two-day workshop
• Autumn 2007, Amsterdam, Vrije Universiteit

• Bio-monitoring
  • Current state-of-the-art:
    • *In situ, in vitro, in vivo* bioassays, biomarkers
    • End-points
  • Discussion of methods, gaps, limitations and difficulties
  • Link between biological and chemical data (TIE/EDA)
  • Requirements and initiatives for validation and harmonisation at EU level

• Exchange of data
  • Up- and downloading of emerging pollutants data from Norman databases
    (working in small groups, ½ day): EMPOMAP and EMPODAT