Identifying emerging environmental risks

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Political background

EU 7th Environment Action Programme:

"improve our ability to understand and manage emerging environmental risks"
What are we doing on environmental risks

1. EU environmental policies and risks, and risk perception

2. Identifying emerging environmental risks (FORENV)
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Types of risk assessments

• Technical, economic, sociological and integrated approaches

• Targeted versus more holistic assessments (for instance: economic considerations in IAS).
Objectives to be reached

• Clear levels (legislation on air, noise, sewage sludge...)

• Setting quality objectives (water, marine, chemicals...)
# Some environmental policies and risks

<table>
<thead>
<tr>
<th>Legislative document</th>
<th>Threshold</th>
<th>Risk assessment/action needed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Birds and Habitats Directives</strong></td>
<td>If <em>any doubt</em>, an appropriate assessment should be undertaken.</td>
<td>Must take into consideration the characteristics and specific <em>environmental conditions of the site or project</em>.</td>
</tr>
<tr>
<td><strong>Invasive Alien Species Regulation</strong></td>
<td>Risk assessment <em>required</em></td>
<td><em>...including a thorough assessment of the</em> risk of introduction, establishment and spread</td>
</tr>
<tr>
<td><strong>REACH (chemicals)</strong></td>
<td>Chemical safety assessment <em>must be conducted</em> (2 thresholds, 1 and 10 tons)</td>
<td>Covers <em>human health, physiochemical, and environmental hazards</em>.</td>
</tr>
<tr>
<td><strong>Water Framework Directive</strong></td>
<td>In the context of <em>river basin management</em> plan</td>
<td>Substances shall be <em>prioritised</em> for action on the basis of risk</td>
</tr>
<tr>
<td><strong>Floods Directive</strong></td>
<td>For <em>each river basin district</em>, or unit of management</td>
<td>Maps of river basin district, description of past floods and potential consequences of future floods.</td>
</tr>
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<td><strong>EIA Directive</strong></td>
<td>If significant environmental effects can exist.</td>
<td>Projects to undergo an environment report and be subject to authorisation</td>
</tr>
<tr>
<td><strong>Waste Framework Directive</strong></td>
<td>Waste management must be carried out without any risk to the environment</td>
<td>Permit and register of establishments by MS</td>
</tr>
<tr>
<td><strong>Seveso III</strong></td>
<td>Thresholds in terms of quantities of dangerous substances present in an establishment</td>
<td>Competent authority identifies establishments</td>
</tr>
<tr>
<td><strong>Industrial Emissions Directive</strong></td>
<td>Environmental risk assessment to cover potential risks</td>
<td>Sets emission limit values</td>
</tr>
<tr>
<td><strong>Air Quality Directive</strong></td>
<td>Assess ambient air quality with respect to the pollutants</td>
<td>Sets limit values for a range of pollutants.</td>
</tr>
<tr>
<td><strong>Marine Strategy Framework Directive</strong></td>
<td>Initial assessment of their marine waters.</td>
<td>MS identify measures which need to be taken to achieve good status.</td>
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</table>
Environmental policies and risks

Environmental policies are often still reactive (late lessons...)

Lack of tools and methods that would facilitate a more pro-active approach based on an earlier identification of risks

Approach to risk very heterogeneous in environmental legislation

"Risk" is rarely defined by legislation (Seveso, Floods, Soil FWD, EIA)
The misperception of risks is common

Comparison lay/scientific assessment

- Air pollution
- Water pollution
- Chemicals in products
- Waste
- Urban problems
- Agricultural pollution
- Biodiversity loss
- Natural resource depletion
- Consumption habits
- Drinking water shortage
- Land take
- Soil degradation
- Noise pollution
- Invasive species
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FORENV

Cooperation in the context of the Environment Knowledge Community (EKC) to improve environmental knowledge and to create a joint foresight capacity.
WHY FORENV

• To identify and characterise emerging env issues
• To regularly channel early findings from scientific and lay knowledge to the EU institutions
• To enable EU policy makers and other stakeholders to exploit emerging opportunities and to manage emerging risks
WHAT IS FORENV

- Participatory and systematic
- Bings together existing EU practices
- Informs policy makers
OVERVIEW: THE 5 STEPS-PROCESS

STEP 1 - INFORMATION COLLECTION
- JRC horizon scanning
- RTD horizon scanning
- DG ENV text mining and STEP news alert
- Eionet FLIS horizon scanning

SECRETARIAT: collects approx 200 weak signals
- Signal not relevant in short term
- Signal not considered relevant for system
- Archive of weak signals detected but not considered relevant

STEP 2 - SENSE MAKING
- Secretariat: convenes workshop
- Sense making workshop with EKC Task Force and external experts
- Signal relevant and potentially important
- Selection of 10-15 priority issues

STEP 3 - CHARACTERISATION
- Secretariat: desk based research & consultation
- Issue requires further characterisation
- Risk and opportunities of selected issues

STEP 4 - VALIDATION
- Secretariat: liaises with SCHEER
- Issue validated by SCHEER
- SCHEER working group meeting to validate selected issues, risks and opportunities

STEP 5 - OUTPUTS/COMMUNICATION
- Secretariat: Prepares outputs
- Issue briefs for EKC DGs and other decision makers
- Annual report of all issues detected
Step 1: horizon scanning

Step 2: sense making

Step 3: Characterisation

Step 4: SCHEER peer reviews

Step 5: Communicated to policy makers
Text mining tools developed by the European Commission’s Joint Research Centre (JRC)

- Europe Media Monitor

News media
Scientific magazines
Social media (in the future)

Scientific literature
Patents
EU funded projects
Examples

Weak signals:

1. The growing potential of green hydrogen
2. Diverse landscape are more resilient and productive in the face of climate change
3. Three food delivery platforms sued for environmental damage
4. VR tech is revitalizing an urban corridor near you
5. Katara virtual reality city planning
6. Volunteers train AI to spot dangerous intersections
7. Startup pioneers human-centric urban travel
8. How green is online shopping?
Examples of Issues

1. Urban food production (DIY agriculture)
2. Airborn urban transport
3. Alternative new energy sources
4. New water technologies (purification/saving)
5. Urban development – light planning
6. Microbiological changes due to urbanisation
7. ...

Identified at an internal workshop
Science for Environment Policy
News alert and reports

Public risk perception and environmental policy

Integrating environmental risk assessment

Identifying emerging risks for environmental policies

Precautionary principle
To come:
1. The precautionary principle in environmental policies
2. FORENV: New technologies in the urban environment