INTERNATIONAL COMMITTEE ON CONTAMINATED LAND

QUESTIONNAIRE ABOUT LEGAL FRAMEWORK FOR SOIL/SITE CONTAMINATION MANAGEMENT

COUNTRY: AUSTRIA

CONTACT FOR FURTHER INFORMATION: (Name / Email address)

Harald Kasamas: harald.kasamas@lebensministerium.at

with support from

Dietmar Müller-Grabherr: dietmar.mueller@umweltbundesamt.at

Gernot Döberl: Gernot.Doeberl@umweltbundesamt.at

Martha Wepner-Banko: martha.wepner-banko@umweltbundesamt.at

OVERALL CONTEXT

1. Does your national policy have a specific definition of “contaminated site”, “contaminated soil”? If yes, please provide the definition.

   According to the Austrian Cleanup Law for Contaminated Sites (enacted 1989): “**historically contaminated sites** are old waste deposits and historical industrial sites, which - on the basis of a risk assessment - pose a serious risk to human health and the environment.

   The definition of “contaminated sites” addresses historic contamination (point sources) which occurred before 1989.

   No definition on “**contaminated soil”**.

2. Is Groundwater included in this definition?

   Contaminated groundwater can be part of a “contaminated site” (if site pollution occurred historically).

3. Does your policy on contaminated sites/land/soil include other definitions (i.e. brownfield, sediment)?

   No.

4. Which sources are you considering? Industrial operations? Transport? Urban contamination? Etc.

   Historical industrial activities and old waste deposits

LEGAL FRAMEWOK

5. Does your country have legislation with respect to contaminated land management?
    a. Whatever the situation is, please be precise if it's a specific or a common legislation, if integrated in a more general one (including prevention of emissions, soil protection, land planning, environment & health, etc.)

       Specific legislation on historical contaminated sites (Federal Cleanup Law for Contaminated Sites - ALSAG 1989)

    b. If there is no legislation, please be precise how you tackle the problem.
    c. What are the main policy objectives?

       Create a public fund for clean-up operations by a waste tax/levy. Identify, prioritise and remediate the most dangerous sites in the country. Stimulate voluntary initiatives. Ensure that government takes care about abandoned sites

    d. What are the foundational principles on which the national policy is based? (e.g., polluter pays, risk-based, fit-for-use, stand-still, transparency, …).

       Basically, "polluter pays" principle applies. Liability issues are covered under the Water Protection Act, Waste Management Act and regulations addressing commercial and industrial activities. If a responsible party can be identified, it is forced to clean-up. If a responsible party cannot be identified, an interested party can conduct voluntarily remediation activities for historical contamination. If neither of these parties is available, the Environment Ministry may take the initiative with respect to priority sites.

       In general, for "new" contamination comprehensive remediation should take place and contamination should be reduced to a level which is generally acceptable (neglible) and no more future liabilities are given. At "historical" contamination a flexible approach allowing for defining a site-specific "tolerable contamination" is given. Therefore the national funding program seeks to reduce contamination to an extent, which is necessary to prevent "serious risks for human health and the environment".

6. What is the Chain of Liability for the management of contaminated land?
    a. Polluter? Land owner? Last operator? Occupier?

       1./ polluter, 2./land owner, 3./ environment ministry

    b. Is there any difference between new and historic contamination?

       Not for the liability chain.

c. Can a responsible party pass on the liability to a purchaser? (under statutory law? Contractually?)

   No.

d. Do you separate the obligation to remediate soil pollution and the liability regarding the damage caused by soil pollution and the related remediation measures?

   Yes. Obligation to remediate contaminated sites (liability) is handled under administrative laws (e.g. Water Protection Act, Waste Management Act). Damages caused by contamination are a matter of Civil Law.

e. Are you facing specific situations (e.g. privatization of the industrial activities, war impacted areas, …) needing special programme?

   No special programme needed or implemented so far.

7. Are there any specifications at regional / local level?

   There are no major legislative specifications at regional level. However the provinces (Länder) hold administrative responsibilities: should identify potential polluted sites, should identify the polluter/responsible party, granting contracts and control site investigations; permit and control remediation work; set clean-up goals on site-specific level

8. Are there specifications for site closure?

   Not under the Contaminated Sites legislation (historic contamination). General requirements are defined in commerce and industry related regulations.

9. Is there any legal requirement to conduct investigation for potential contamination in the sale of the property?

   No. It is a matter of Civil Law.

10. Does your national policy have any kind of inventories/registers? If yes, please be precise regarding which sites are registered, how the data are collected and if the databases are public.

    - Register about sites where potentially polluting activities (before 1989!) have taken place → old waste dumps and industrial/commercial installations. Data collected by systematic surveys all over the country (public registers). Information available on request.
    - Register of Suspected Contaminated Sites (SCS) → reviewing the available site-specific data, sites with a certain probability of serious risk are listed in this SCS-register. These sites are in need for site-specific assessment. Data are collected with questionnaires filled by regional authorities. SCS-database is publically on the web.

- Register of contaminated sites (CS) → Sites where site-specific risk assessment has been performed and a serious risk to human health and the environment is proven. These sites are in need for remediation activities and are eligible to receive public funding. Contaminated sites are designated in a specific decree to the Contaminated Sites Act and are therefore public (also on the web).

11. What are the strong, weak points and the major bottlenecks with respect to the current regulations in your country?

- **Strong points:**
  - Funding system to enable assessment and remediation of the most risky sites in the country. From waste tax, not from federal budget.
  - Incentive driven. Weak waste management performance pays more for the Contamination Sites Fund.
  - Systematic identification of potential problem sites, country-wide uniform and site-specific risk assessment of high quality.
  - Public money is directed to solve the most serious problems.
- **Weak points:**
  - Remediation goals of historic contamination are often set on a conservative basis (ref. to precautionary legislation of Water Protection Act or Waste Management Act) → major amendment is under discussion.
- **Bottlenecks:**
  - As the quality of Waste Management performance improves, less money is available for Contaminated Sites funding programme. New ideas for taxation of polluting activities have to be identified.
  - Very limited human resources to ensure the targeted progress.

TECHNICAL ISSUES RELATED TO THE LEGAL FRAMEWORK

12. Are there site investigation requirements?

Site-specific investigation programmes within the legal framework are worked out by the Austrian Environment Agency. Furthermore, investigation projects initiated by third parties are reviewed by EAA.

Austrian Standards (see references) and guidance documents published by EAA and the Austrian Association on CLM define the State-of-the art regarding risk assessment of historically contaminated sites. In particular the guidance documents provide a general understanding of site investigation requirements as well as specific information regarding investigation technologies.

13. Are Risk Assessment & Management the main tools?

    Yes

14. Are there specific technical approaches used?
    a. For Human Health (HH), Ecosystems, Groundwater (GW), Surface waters (SW), other targets (i.e. buildings, infrastructures, …please be precise).

       Yes. Technical guidance for human health risk assessment, groundwater contamination assessment, leachate evaluation methods and decision support tools to identify the most sustainable remediation technologies have been worked out and published by the Austrian Environment Agency et. al. recently (see references).

    b. On a site by site specific approach, or by derivation of guideline values? If possible, please detail your answer.

       Both. The new Standards (will) provide use-related guideline values and the technical guidance publications will enable site specific adaptations.

    c. Do you take into consideration others sources of pollution in the risk assessment?

       No.

15. If the national policy uses guideline values, please be precise in describing the following points:
    a. Reasons for derivation of generic values

       Provide indication/support for practitioners at a specific site. Deviations in site-specific application should be explained. Decision-making in each case should be transparent.

    b. Objectives / levels of implementation (investigation, risk assessment, remediation)

       Objective: Guidance for practitioners. Any deviations from generic values should be explained the practitioners taking site-specific circumstances into account.

       Guideline values are in use for all three levels mentioned.

    c. Priority substances
       - Volatile Chlorinated Hydrocarbons
       - Mineral oils
       - Polycyclic Hydrocarbons
       - Metals
       - Landfill gas (e.g. methan)

d. Protocols of derivation (including acceptable risk levels used).

There are no standardized protocols or guidelines for derivation in use but aiming at transparency the indicated Austrian standards provide information on principles and citations of sources considered for the expert discussion and judgement.

16. What are the drivers for remediation?
    a. To what level is clean-up required? (i.e. acceptable risk, land use values, …)

    By existing legislation - in particular the Water Act (1959) and the Waste Management Act (1990) – clean-up levels are in principle required towards negligible contamination/risks. However, a revision of the CLM Act should allow clean-up requirements at site-specific level and allow for land-use related values as well as a tolerance for limited contamination of groundwater at historically (!) contaminated sites.

    b. Does your national policy use cost-benefits analysis for the choice of the remedial solution?

    YES. To be precise: for selecting optimised remediation solutions we use a newly developed **modified cost-effectiveness analysis** which follows sustainability principles (see references!)

17. What are the main remediation strategies or treatment techniques used in your countries (including Natural Attenuation)?

    a. Distribution of techniques?

    Commonly used remediation technologies are excavation, pump-and-treat, soil vapour extraction, containment and capping systems (controllable/repairable).

    So far, Natural Attenuation (NA) is not accepted as a remediation technique. However, it is commonly acknowledged that NA can have a certain role in mitigating the effects of contamination plume. But these effects should always be controlled – **monitoring** is the essential part of NA and therefore we only discuss the term **MNA** (!) mainly as a supplement to other remediation options.

    b. Evolution in time?

    Evolution towards the acceptance of innovative technologies is very slow. A certain increase in the application of innovative remediation techniques seems only possible if public financial support is available to mitigate the risk of failure in to enable acceptance for applying innovative remediation techniques.

c. Acceptance of innovative treatment techniques?

We work on this item since quite some time. Since 2008, a non-governmental multi-disciplinary/multi-stakeholder platform works intensively on the task: How can we stimulate the use of innovative remediation technologies? Success: first applications of alternative technologies in site remediation are taking place because we .

18. Are you considering sustainability in the national approach?
    a. If yes, how? In particular, how the three pillars of sustainability are considered and balanced.

Yes. We have developed a goal-oriented sustainability assessment method to support decision making in contaminated site management. The method is based on the principles of a cost–effectiveness analysis.

Within the federal funding system for site remediation of historical contamination sustainability indicators are used as part of the criteria within obligatory option appraisals to compare remediation alternatives.

The agreed general objectives and indicators (indicator categories) are:

(i) **"Environmental Objective"**: maximizing environmental benefits (total weight: 60 %; distributed to 2 general goals represented by a total of 8 indicators)

(a) *primary environmental effects* – indicator categories: effects on source, effects on receptor, remediation period

(b) *secondary environmental effects* – indicator categories: accompanying local environmental improvements; climate protection; energy demand; waste generation; use of natural resources; local ecosystem effects

(ii) **"Local Development Objective"**: Improving the framing conditions for local development (total weight: 20; distributed to 3 general goals represented by a total of 5 indicators)

(a) *site development* – indicator categories: public interest; private interest

(b) *property value* - indicator: increase in property value

(c) *decrease in land consumption* – indicator categories: potential redevelopment area; likely redevelopment area

(iii) **"Project Stability Objective"**: Maximizing sustainability aspects additional to costs, environmental and local development (total weight: 20%; distributed to 3 general goals represented by a total of 8 indicators)

(a) local impacts

(b) duration of permanent measures

(c) technological suitability and safety aspects

Goals and indicators/indicator categories as well as the weightings have been developed in a consensus-based procedure involving representatives of stakeholder groups in remediation. In contrast specific criteria to measure the indicators (effectiveness) are suggested but not obligatory but allow for specifications by the planer in accordance with the site-specific situation and with local stakeholders.

b. If no, explain the reasons and the future challenges.

19. How does your country bridge the CLM approach with:
    a. Land planning programmes?

       Land planning is under the responsibility of provinces and municipalities. Any risk assessment performed by EAA is also conveyed to the respective province and provides a section specifying factual issues regarding land use and possible land use restrictions.

    b. Public health programmes (aggregation of impacts on surrounding populations)

       Our policy on CLM is driven by environmental protection (protect human health and the environment).

FINANCIAL ISSUES

20. What are the specific practices with respect to “Orphan sites”?

- The government is responsible to remediate orphan, high priority sites. For this duty, it has established a company for the project management which is 100% owned by the government. Remediation costs are financed through the Contaminated Sites funding system.
- If there is an interested party (land developer) it could take remedial action with financial support from the public funding system.

21. Do you have an idea of the annual budget allocated to Soil Contamination Management?

    Annual public budget by CLM funding programme is approx. 60-70 mio. EURO on an average over the past 20 years.

    No statistical data is available on projects implemented by private and industrial parties.

    a. How is it divided between public, private and others?

       Estimation: 70% public, rest private

    b. What are the main financial / funding systems in place in your country? (e.g. Financial guarantees, insurance, public – private partnerships, special foundation, industrial consortium, enforcement, …).

       Waste tax:

- Landfilling of waste:

  € 8.00/t on excavated soil, inert waste as well as construction and demolition waste landfills

  € 18.00/t on inorganic residual waste landfills

  € 26.00/t on mass waste landfills

- Incineration of waste, production of fuel products from waste, feeding a blast furnace with waste:

  € 7.00/t

- Storage of waste for disposal (> 1 year), for recovery (> 3 years) and landfilling with waste (incl. backfill)

  € 8.00/t for mineral waste (up to the quality of construction and demolition waste)

  € 87.00/t for all other waste

- Export of waste for the above-referenced activities.

c. Between the different steps of management (investigation, remediation, monitoring…)?

15% for investigation and monitoring (100% funded)

85% for remediation

ORGANISATIONAL ISSUES

22. How are stakeholders and in particular communities involved in the approach?

Stakeholders, communities and other private parties can express their concerns within the legal procedures according to Water Protection Act or the Waste Management Act (needed for authority approval of the planned remediation activities).

23. Is there a specific approach for:
    a. Brownfields? No.
    b. Megasites? No.
    c. Widespread pollutions? No.
    d. Reuse of excavated soils? (e.g., in relation to their quality)
    Not within the contaminated site management regime but covered by waste management regulations.

24. Does your national policy include any accreditation system for consultants or service providers? If yes, please provide some details.

    Not for consultants; for laboratories a general accreditation system but not specific to environmental analysis exists.

25. Do you have any training / capacity building programme, any management accountability and performance measurement-?

    Yes. EAA and the Austrian Association on CLM provide training / capacity building courses and workshops for practitioners.

26. How is the necessary inter-governmental coordination for CLM organized? (e.g. with Health Protection Department, with the public site owners, with state or local public sector environmental organizations, with special interest advocacy groups,)

    Environment Ministry coordinates the CLM legislation and its implementation. Ministry of Finance collects the waste tax and transfers this budget to the Env. Ministry. EAA performs country-wide site-specific risk assessment. Env. Ministry covers the expenses for site investigations with the waste tax budget (15%). The other 75% are transferred to a trust bank, which manages the funding programme.

CRUCIAL DEVELOPMENTS IN THE FUTURE

Are there any additional issues to be further developed in the following months/years whatever they are (Research and Development needs, organisational issues, …)?

A major revision of the legal and technical basis is planned.

Unofficially or officially, do you see any opportunities for collaboration in the coming months or years that may improve overall coordination among international organizations? (e.g., conferences, workshops, international (technical or policy) initiatives, growing alliances (e.g., in support of redevelopment /reuse of contaminated lands, etc.).

The current infrastructure of international collaboration (EU: Common Forum, NICOLE, EU-projects and - internationally - ICCL) is perfect. Maybe collaboration between World Bank and certain countries from Common Forum or ICCL may be useful to focus on environmental problems faced by less developed countries.

REFERENCES

Please give most important references (documents, website, projects, and case studies) that could be relevant for explaining your national approach

- ÖNORM S 2085: Contaminated sites — Course of actions for investigation, assessment and rehabilitation of waste deposits and industrial sites
- ÖNORM S 2087: Identification and investigation of potentially contaminated sites

- ÖNORM S 2088-1 Contaminated sites - part 1: Risk assessment concerning the pollution of groundwater
- ÖNORM S 2088-2: Contaminated sites –part 2: Risk assessment concerning the pollution of soil
- ÖNORM S 2088-3 Contaminated sites - part 3: Risk assessment concerning the pollution of air
- Assessment of pollutant transfers by leaching; Wimmer, B., Döberl, G.; EAA, Vienna, 2011
- Exposure Assessment and Risk Analysis at contaminated sites: Reichenauer T.G. et al. EAA, Vienna 2011
- Modified cost-effectiveness-analysis for contaminated site remediation; Ortmann, M. et al.; EAA, Vienna 2011
- various registers of Potentially Polluted Sites and Identified Contaminated Sites can be found on the website of the Environment Agency Austria (in English): http://www.umweltbundesamt.at/en/umweltschutz/altlasten/statistik/

  Registered and public available are:

  - register on potentially contaminated sites
  - register on proven contaminated sites incl. priority setting (which also includes the status “remediated”)