Integrated Contaminated Sites Management in Austria

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From Visions towards Policy/Science Integration and Practical Implementation

INTERSOL 2011, Lyon

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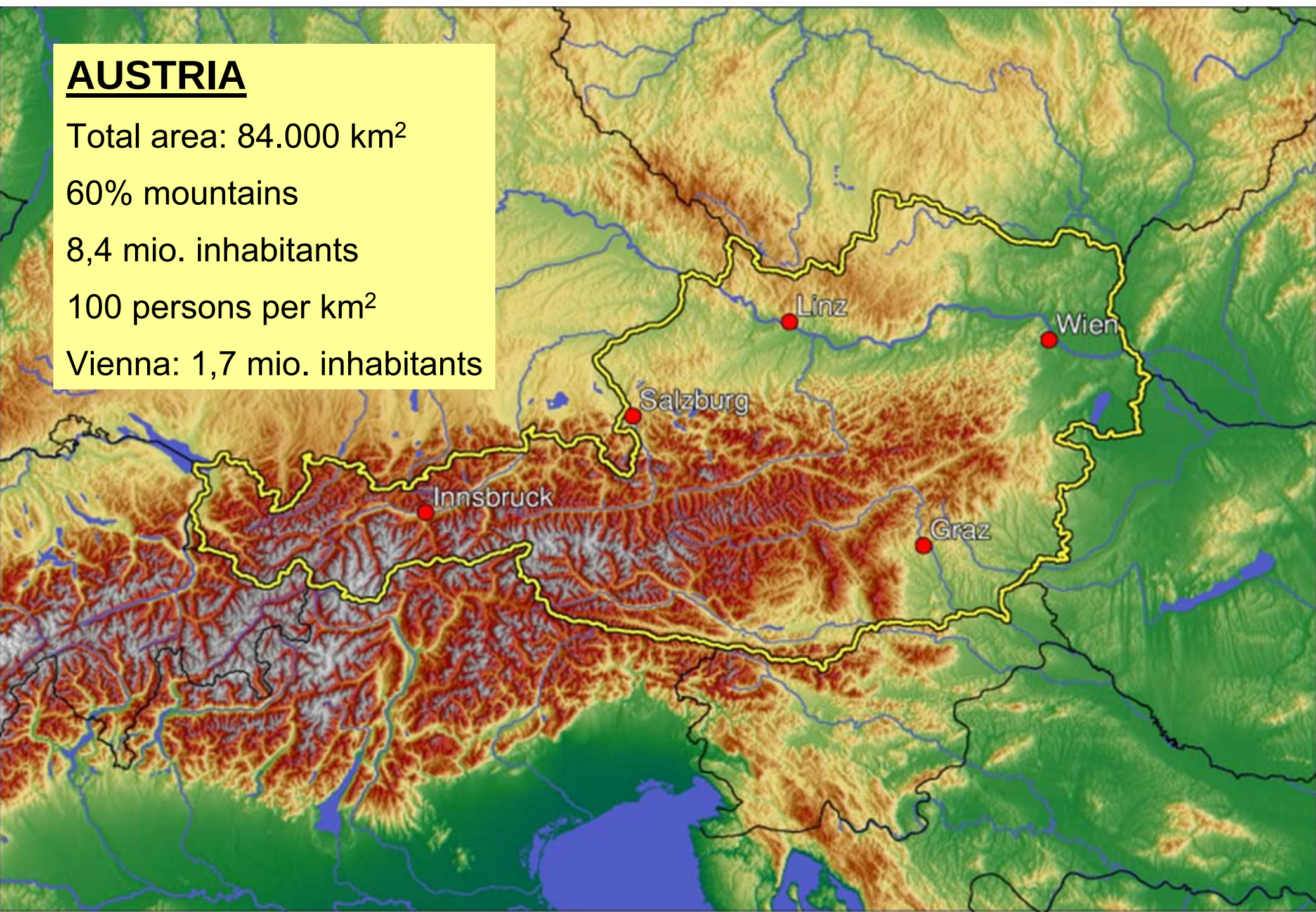
AUSTRIA
Total area: 84.000 km²
60% mountains
8,4 mio. inhabitants
100 persons per km²
Vienna: 1,7 mio. inhabitants
Linz
Wien
Salzburg
Innsbruck
Graz

How it all started …

End of the 80‘s …

- public awareness: „Fischer Deponie“
- approx. 800.000 m³ mixed waste
- Threatens one of Europe‘s largest aquifer and Vienna‘s future DW resource
- Cleanup costs → 140 Mio. €
- How to finance remediation?
- Political response → Cleanup Act 1989

The Austrian Approach (ALSAG 1989)

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Levy on waste treatment

INCOME 1990-2010

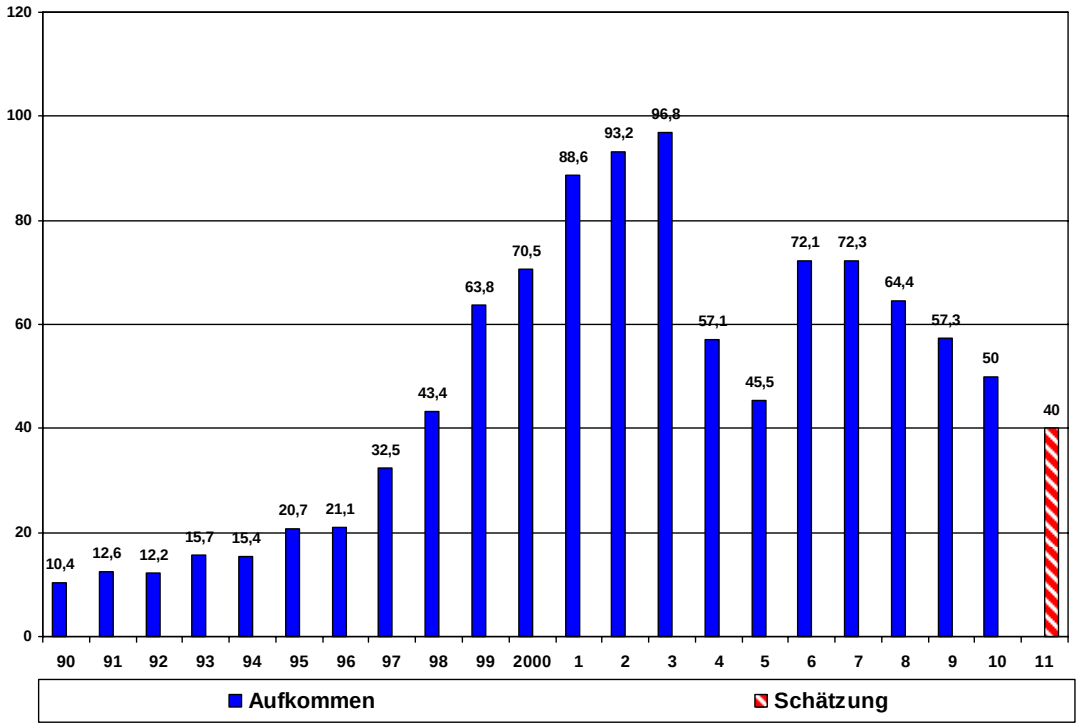
1.050 mio €

Annual average

67 mio. €/year

ANNUAL INCOME

1990 – 2010 (2011)



How are the funds used?

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federal
FUNDS

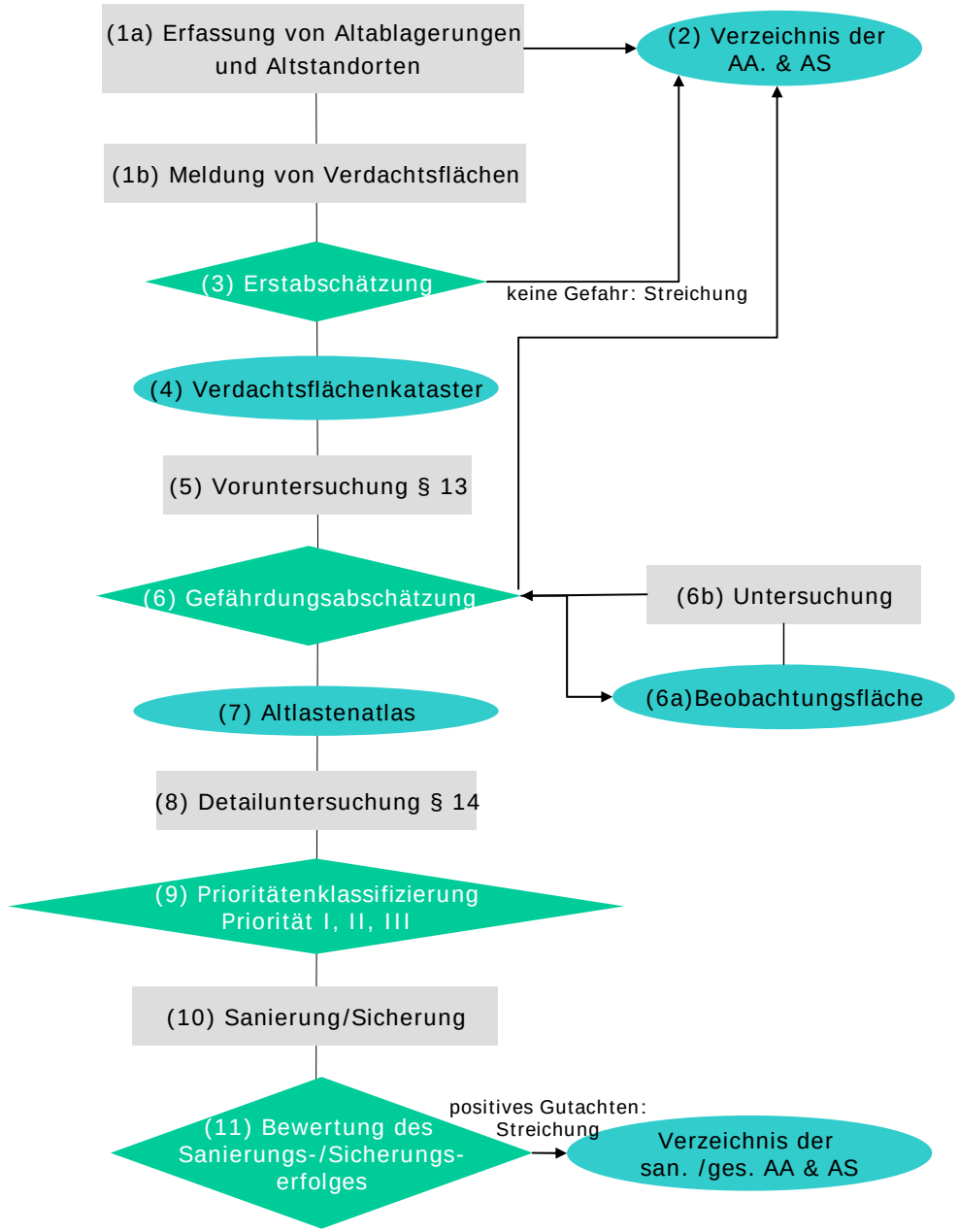
15% used for inventory, risk assessment and prioritisation of CS

85% used to fund cleanup operations at high-risk sites

ensures country-wide uniform procedure

Tiered approach:

- Identification
- Preliminary assessment
- Risk Assessment
- Prioritization
- Remediation



What have we achieved so far?

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- 58.000 suspected sites identified through systematic identification (surveys)
- 500 investigations & risk assessments performed
- 255 priority sites identified

  (main reason: threat to groundwater/drinking water!)
- 200 sites remediated or in progress of remediation

(Datenbasis 1.1.2010)

255 Contaminated Sites identified

Quelle: http://www.umweltbundesamt.at/umweltschutz/altlasten/

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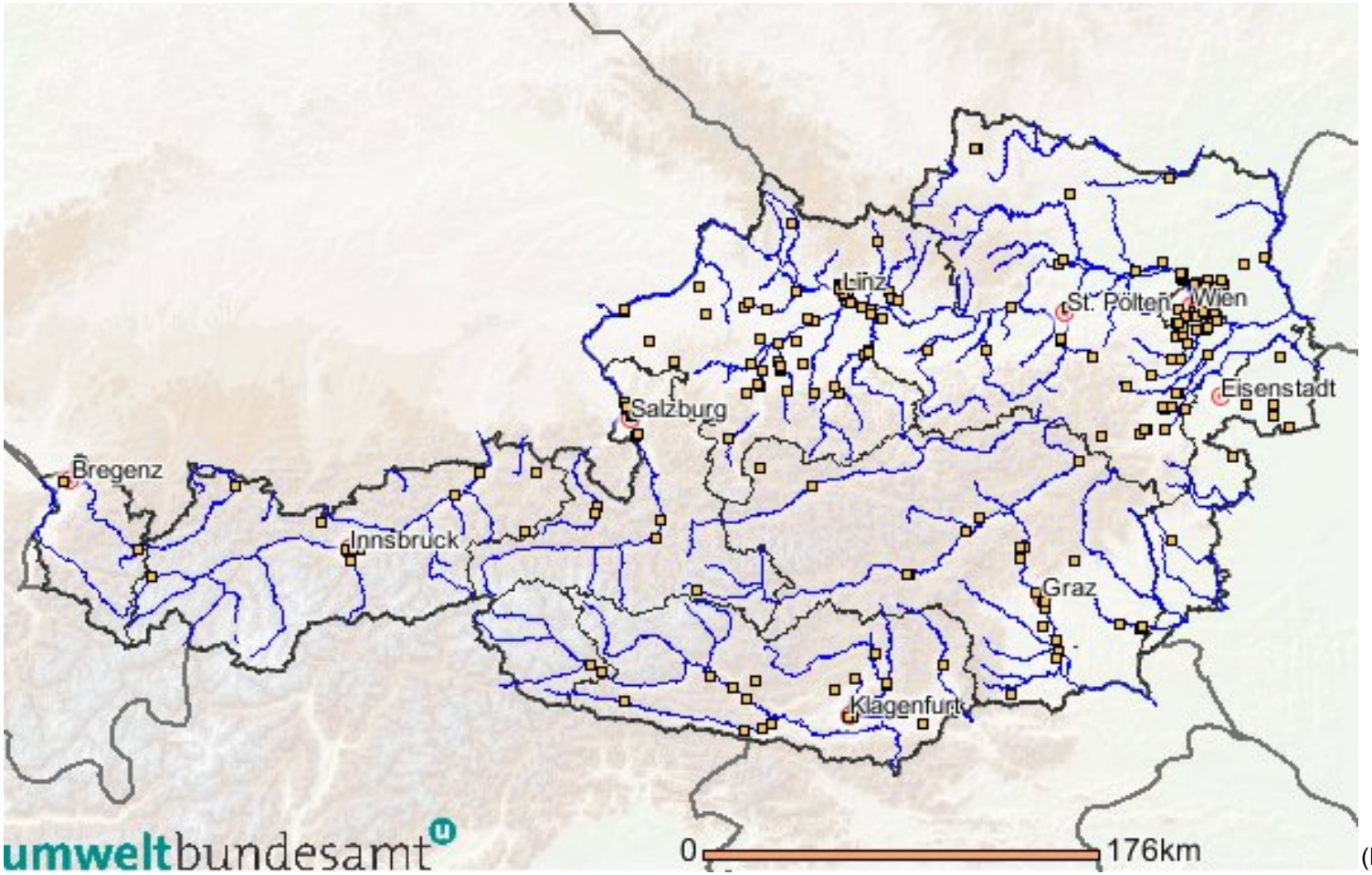

(Datenbasis 1.1.2010)

Effects on the Environment

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- 46 Mio. m³ groundwater quality improved
  (corresponds to annual water consumption of 1 mio. inhabitants)
- 246 t of solvents removed from groundwater
- 10 Mio. t of contaminated soil treated
- 145 ha of remediated properties returned into economic cycle
- Reduction of greenhousgases from 3,4 Mio. t CO_2-equivalents (1990) to 0,7 Mio. t CO_2-equivalents (2005)

(Datenbasis 1990-2006)

What is still to do?

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- Identification of PPS: Σ ca. 80.000 (ca. 72% identified)
- Contaminated Sites: Σ ca. 2.500 (12% identified, 9% remediated)
- additional funds needed: ca. 5-6 billion € (→ RBLM strategy)

(10 billion € → precaution principle)

(Datenbasis 2010)

Experiences

- only few ‘high risk’ sites, but many +/- contam. sites predicted
  → *speed up the process!*
- total clean-ups are neither technically nor economically feasible
  → *move from precautionary to risk-based remediation goals!*
- available budget to stimulate clean-up operations decreases
  → *ensure sufficient income!*
- legal uncertainties hinder redevelopment of contam. sites
  → *encourage reuse!*

→ revision of our system is needed

TOWARDS AN INTEGRATED CONTAMINATED SITES MANAGEMENT

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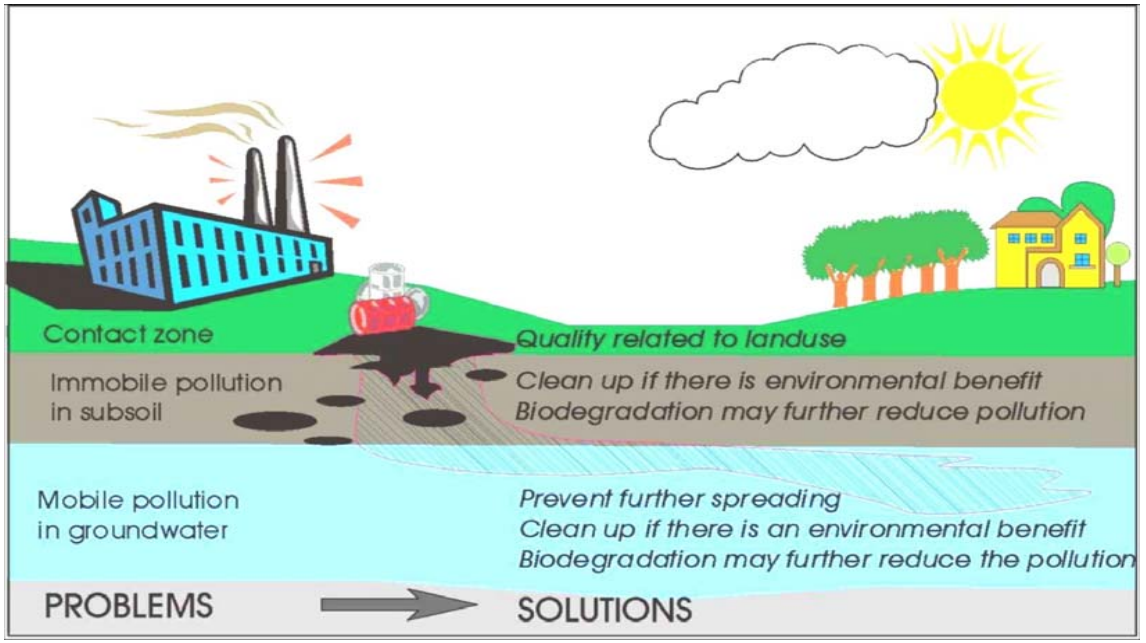

Reference: EU-CLARINET Conceptual Model

Reference: Austrian Mission Statement 2009

Mission Statement

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Principle 1

The inventory of historically contaminated sites shall be completed within one generation (2025)

Principle 2

Measures (decontamination, containment, monitoring, use restrictions) at seriously contaminated sites shall be completed within two generations (2050)

Mission Statement

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Principle 3

Risk Assessments have to be based on site specific and land use related conditions.

Principle 4

Measures should take site specific and land use related conditions into account. Risks for human health or the environment must be adequately managed.

Mission Statement

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Principle 5

Remediation measures (decontamination, containment) need to be sustainable with lasting effects to enhance the environmental status of a site.

Principle 6

Framing conditions for reusing and integrating contaminated sites back into economic cycle shall be improved.

Policy/Science Integration

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Project: „Contaminated Sites Management 2010“

New approaches to assess and manage contaminated sites

OBJECTIVES:

- **enhancing integration of risk assessment and remediation towards a management process**
- **increasing efficiency of remediation considering financial und ecological aspects**

Duration: 3 years (started 2008)

Project Structure

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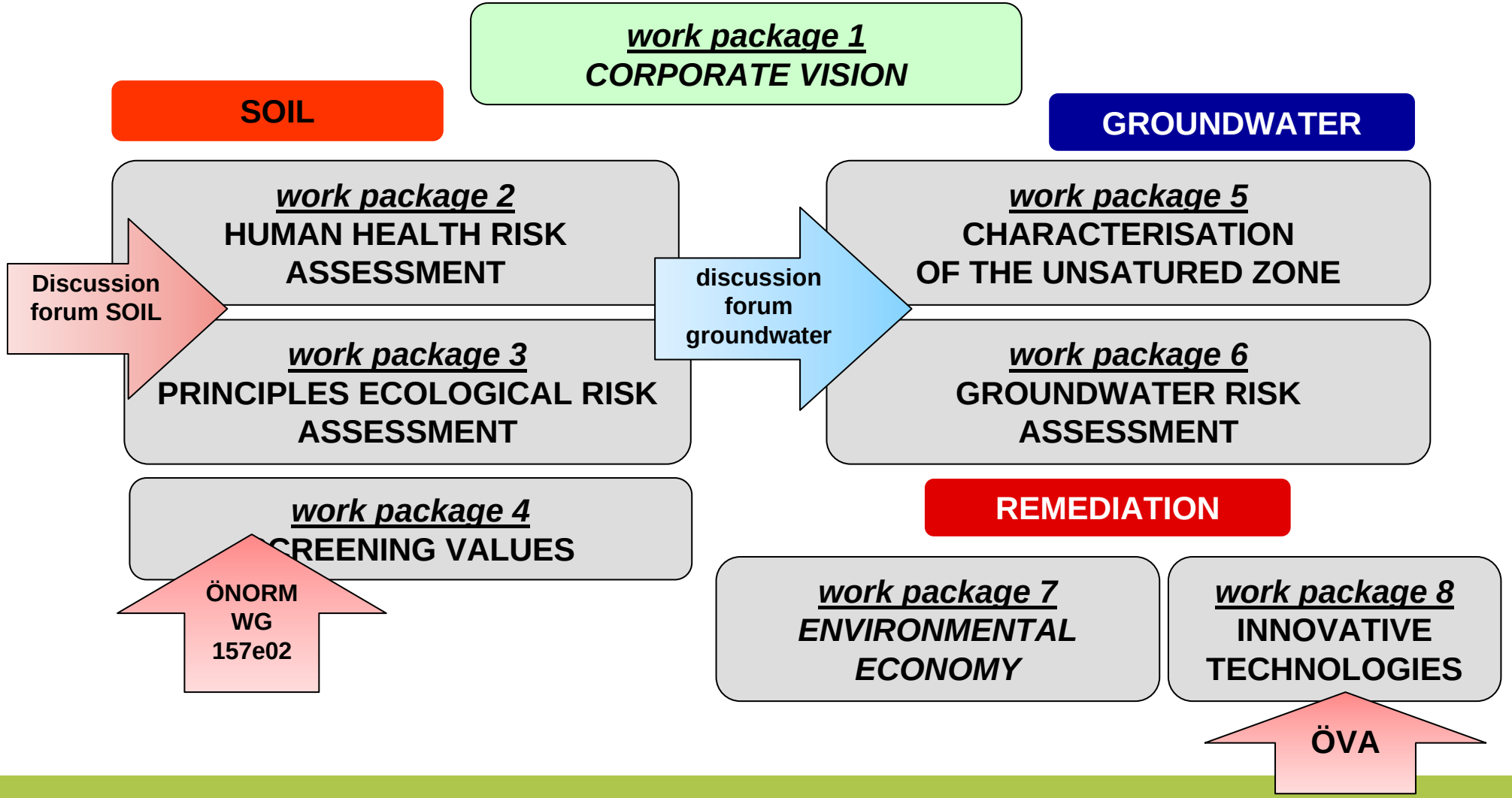

Towards Practical Implementation

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- Technical Guidelines for Human Health Risk Assessment
- Risk-based Screening Values for Soil
- Report on Ecological Risk Assessment
- Guidelines for Characterisation of the Unsaturated Zone
- Guidelines for Groundwater Risk Assessment
- Report on Environmental Economics of Remediation Projects
- Platform on Sustainable Remediation Technologies

  (Workshops, Bulletins, RTD Recommendations)

Revision of Austrian′s CLM System

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Focus of ALSAG 2011 and related ordinances:

- implement a new financial model
- towards risk-based site management:
    - rest contamination/rest risks can be accepted
    - risk-based guideline values have to be developped
    - site specific and landuse related criteria have to be defined
- stimulate application of innovative insitu remediation
- stimulate reuse and redevelopment of contam. land

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MERCI

DE VOTRE ATTENTION

Photo kindly provided by OVAM/Flanders