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materials for a better life

It takes two or more to tango :

Opportunities and hurdles for applying innovative remediation technologies

Victor Dries and Lucia Buvé

Nicole Workshop 5-6 October 2006

Leuven

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Introduction

- Our presentation and subsequent discussion relate to large scale contamination of metals in soil and groundwater

- Unlike some organic substances, metals do not degrade

- Conventional technologies on such scale often very expensive, long-lasting and often harmfull for environment

- Risk can be reduced by acting on bio-available fraction

Example 1 : immobilisation of metals in soil

- Some substances are capable of immobilising metals in soil : zeolites, red mud, lime, cyclonic ashes, steel shots…
- Maatheide: additives allowed vegetation to grow again and to prevent further spreading
- Research to assess application in private gardens for vegetables
- Discussion :
  - Technical aspects
  - Financial aspects
  - Regulatory and legal aspects

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Example 2 : phyto-remediation or -management

- Plants can help remediation !!
- Technology mainly applicable for large area & diffuse contamination
- Phyto-extraction by hyperaccumulators
- Phyto-stabilisation : dredged material, ...
- Alternative crop with economic value
- Discussion :
  - Technical aspects
  - Financial aspects
  - Regulatory and legal aspects

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Example 3 : metal immobilisation in groundwater

- Conventional pump-and-treat : expensive and long-lasting
- Treatment of water difficult in low concentration range
- Production of sludge that needs disposal
- In-situ metal precipitation :
  - Inorganic route by adding precipitating substances
  - Bacteriological route : precipitation of sulphides
  - Combination of both routes
- Discussion :
  - Technical aspects
  - Financial aspects
  - Regulatory and legal aspects