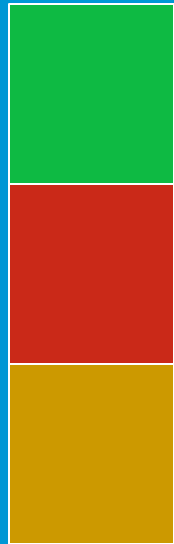




# 4 countries: differences, strengths & bottlenecks

Paris, November 16th 2010





Strengths

Weaknesses

Needs











**Social & economical aspects  
(WP4)**



**Remediation  
(WP3)**





**Characterization  
(WP2)**





**Inventory  
(WP1)**

Topics				
Remediation Objectives			Remediation goals defined functions to the use of site (instead of values)	
Success of remediation ?			Remediation goals often technically unworkable	How to manage weak concentrations after treatment ?
Certification	Accreditation structure			Under final progress





Topics				
Remediation Objectives			Levels / steps of a remediation with project objectives should be defined instead of values.	defined functions to the (instead of values)
Success of remediation ?				How to manage weak concentrations after treatment ?
Certification	Accreditation structure	Accreditation system for experts is crucial		Under final progress





Topics				
R&D projects			KORA	- ATTENA - Kinetics of Biodegradation
Use of innovative techniques on the field		<ul style="list-style-type: none"> <li>• Sector using VOH is small and little cost-intensive</li> <li>• Financial consequences</li> <li>• 'Play it safe'</li> </ul>	Several innovative techniques on the market	
MNA				Have a bad reputation: « wait and let go with »
Guidelines		<p>Codes of good practices for common techniques: large reference basis</p> <p>No flexibility: Barrier for innovation</p>	Several technical guides	Several technical guides





Topics				
R&D projects			Evaluation of R&D projectsc	- ATTENA - Kinetics of Biodegradation
Use of innovative techniques on the field		<ul style="list-style-type: none"> <li>• Sector using VOH is small and little cost-intensive</li> <li>• Financial consequences</li> <li>• ‘Play it safe’</li> </ul>	Experts have to improve acceptance for innovative techniques	
MNA		MNA-concepts should be considered implemented		
Guidelines		<p>Codes of good practices for common techniques: large reference basis</p> <p>No flexibility: Barrier for innovation</p>	Several technical guides	1 single guideline is needed





Topics				
Source remediation	<b>1 common point: Diffuse sources and large spread pollution unhandy to treat</b>			
Most used technique for sources				
Plume remediation				
Most used techniques for plume				

Topics				
Source remediation				<p>No fixed definition of a "source zone"</p> <p>Weak concentrations reached after treatment = "source zone"?</p>
Most used technique for sources				<p>Venting</p> <p>Excavation</p>
Plume remediation				<p>hydraulic barriers are regularly installed to control plume migration</p>
Most used techniques for plume				

Topics				
<p><b>Source remediation</b></p>	<p>Inefficient Pump &amp; Treat measures or invasive excavation solution can be improved or replaced through the use of in-situ remediation methods</p>			
<p><b>Most used technique for sources</b></p>				
<p><b>Plume remediation</b></p>				<p>hydraulic barriers are regularly installed to control plume migration</p>
<p><b>Most used techniques for plume</b></p>				

Topics				
Source remediation	<p>Combining decontamination techniques more efficient</p> <p>According to the "Treatment Train" philosophy, different remediation techniques should be applied successively.</p>			
Most used technique for sources				
Plume remediation				
Most used techniques for plume				

Topics				
Remediation in urban environment				<p>Remediation consequences on geotechnical behavior of soils?</p> <p>Metabolites behaviour in case of incomplete chemical degradation?</p>
Treatment monitoring / evaluation				Techniques as venting allow a precise mapping (needle every 5m)
Feedback		Open exchange of knowledge of and experiences with innovative techniques		

Topics				
Remediation in urban environment				Remediation consequences on geotechnical behavior of soils?
				Metabolites behaviour in case of incomplete chemical degradation?
Treatment monitoring / evaluation			independent technical assessment + regular audits.	Techniques as venting allow a precise mapping (needle every 5m)
Feedback		Open exchange of knowledge of and experiences with innovative techniques	Experts have to improve their knowledge improvements and perform these by routine	



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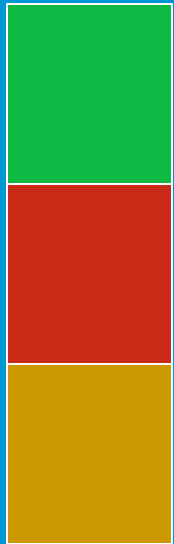


**Social & economical aspects  
(WP4)**

**Remediation  
(WP3)**

**Characterization  
(WP2)**





**Inventory  
(WP1)**








Strengths





Weaknesses

Needs

•Topics				
• Certification	•Accreditation structure	•Accreditation system for experts is crucial		•[Under final progress]
• Availability of codes of best practice and standard procedures	• [Exist but are outdated ]	• Barrier for innovation • <u>But</u> large reference basis	• Large reference basis	• Available • <u>But</u> single reference needed
•Spend more money on diagnosis	•Less intensive local, but on different & larger scale	•More intensive surveys = more efficient remediation projects	•More intensive surveys = more efficient remediation projects	
•Source characterization and conceptual site model		•Pay more attention to source characterization	•Pay more attention to source characterization	•No definition of a "source zone"

Topics				
<b>Innovative techniques</b>	Available but need for more cost-effective on larger scale	Not self-evident (experts are forced to 'play it safe')	Available	New portative characterisation tools needed
			Knowledge transfer from R&D to practice needed	
			Only partially known and accepted by experts and authorities	
<b>Area oriented approach</b>	Possible but need for optimal legislation		Investigation strategy to determine fluxes being adopted increasingly	
<b>Risk assessment</b>	Models available but to conservative			No official threshold

Topics				
<b>Models</b>	Available but need for validation on experience			Too deceptive (overestimation)
<b>Monitoring</b>	Innovative tools are tested and used			How to stop ? To optimize ? To control after buildings ?
<b>Urban background</b>	Deal with large scale urban areas			How to take it into account ?

Topics				
Vapor measurement in indoor air	[Need for a protocol]	[Need for a protocol]	[Need for a protocol]	[Protocol just written]
Representativeness of soil gas sampling				How ?
Soil surveys		Focus too much on delineation of contours	Focus too much on delineation of contours	
Groundwater surveys			3D image	

Thank you for your attention

Questions ?