

**Organization for Security and Co-operation in Europe  
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**Conference Services**

**Fifteenth OSCE Economic and Environmental Forum - Part 2:  
“Key challenges to ensure environmental security and sustainable development in  
the OSCE area: Land degradation, soil contamination and water management”  
Prague, 21 - 23 May 2007**

**Session V  
Land degradation and soil contamination**

Please find attached the presentation by Mr. Robert Raschman, Managing Director,  
Dekonta Company, Czech Republic.

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**Remediation of Contaminated Sites - Experience from East European, Balkan and Former Soviet Union Countries**

Robert Raschman, Managing Director

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**DEKONTA - Environmental services**

- Hazardous waste treatment and disposal
- Remediation of contaminated sites
- Emergency response services
- Environmental consulting




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**DEKONTA - Offices**

- **Czech Republic** - Prague, Ústí nad Labem, Ostrava, Brno etc.
- **Hungary** - Budapest
- **Poland** - Warsaw
- **Romania** - Ploiesti
- **Russia** - Moscow
- **Serbia** - Belgrade
- **Slovakia** - Bratislava
- **Turkey** - Istanbul

**DEKONTA - Projects**


Albania, Armenia, Azerbaijan, Bosnia and Herzegovina, Georgia, Macedonia, Moldova, Philippines, Ukraine, Vietnam etc.



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**Conclusions from Previous Meetings**



- Land degradation and soil contamination is no longer a matter of academic studies - it is a security concern;
- Soil degradation and contamination is a challenge that is aggravated by lack of cooperation, non-integrated approaches, and insufficient knowledge dissemination - the OSCE can play a role in filling these gaps;
- Could the OSCE play an active role in contributing in the set-up of regional cooperation mechanisms to combat land degradation and soil contamination?
- Should the OSCE continue or even enhance its work on "melange" projects?
- How could OCSE assist in setting up legal frameworks for the mining industry?



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**Petrohemija Pancevo – Serbia (1)**

- Petrochemical plant bombed in 1999 - EDC storage tank hit
- 2 100 t of EDC spilled

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**Petrohemija Pancevo – Serbia (2)**

- Local risks: Contamination of municipal groundwater sources
- Transboundary risks: Contamination of Danube river




### Petrohemija Pancevo – Serbia (3)

- 2000 - Site investigation (DEKONTA), subsequently Risk Assessment Study (Swiss Agency for Development and Cooperation)
- 2002 - Design and installation of urgent remediation system (Czech Government)
- 2003 - Installation and operation of full-scale remediation system (UNEP / UNOPS)



### Petrohemija Pancevo – Serbia (4)

Learned experience:

- Urgent action is often a crucial aspect of successful remediation. Application of simple technology may be very effective if applied in time and properly.
- Cooperation of various donors is necessary (not their competition).
- In developing countries, some problems might be caused by the fact that there does not exist any applicable legislation and local authorities have very limited experience regarding site remediation activities.

### Soil Bioremediation in Azerbaijan (1)

- World Bank financed project to demonstrate possibility of biotechnological treatment of soils and sediments contaminated in consequence of long-term operation of crude-oil extraction activities (since 1910) .



### Soil Bioremediation in Azerbaijan (2)

- Realization: 2002 - 2003
- Contaminated surface: approx. 100 km<sup>2</sup>
- Successful treatment of 3000 tons of contaminated soil




### Soil Bioremediation in Azerbaijan (3)

Learned experience:

- Systematic approach to contamination problems at a national level is necessary (register of contaminated sites, screening evaluation, detailed investigation of hotspots, risk assessment, feasibility study, detailed remediation design, identification of financial sources, site remediation).
- In countries, where the infrastructure for disposal of waste generated during site remediation activities (incinerators, controlled landfills etc.) is not available, utilization of alternative disposal techniques (e.g. waste incineration in cement kilns) or remediation methods (e.g. in situ stabilization, on site bioremediation) should be considered.

### Feasibility Study – Lojane Mine (1)

- Environment and Security Initiative (UNDP, UNEP, OSCE and NATO), "Reducing Environment and Security Risks from Mining in South-Eastern Europe"
- Project goal: To decrease trans-boundary environmental and safety risk posed by former mining and mineral processing operations.



### Feasibility Study – Lojane Mine (2)



### Feasibility Study – Lojane Mine (3)

Learned experience:

- Implementation of high-tech remediation approaches, standards and methods may not be always the most beneficial solution. Application of less expensive but technically sufficient alternatives should be considered.
- Collection of reliable contamination data and verification of proposed remediation techniques in pilot-scale (or at least laboratory scale) conditions is very important for preparation of an effective remediation design.
- Complex approach to remediation of former mining sites is necessary as these sites are usually extensive and affected not only by mining but also other activities carried out there in the past (mineral processing, smelting, transportation etc.). The most significant environmental problems should be identified at the mining site and solved in preference.

### Conclusions – Recommendations (1)

Re: Land degradation and soil contamination is no longer a matter of academic studies - it is a security concern.

- Unfortunately still elaboration of "academic" studies is a subject of many contamination-related tenders and programs financed by international organizations in developing countries. It is suggested that OSCE plays active role in concentration of available financial sources on elaboration of useful studies (with well defined outputs) and realization of remediation projects.

### Conclusions – Recommendations (2)

Re: Soil degradation and contamination is a challenge that is aggravated by lack of cooperation, non-integrated approaches, and insufficient knowledge dissemination - the OSCE can play a role in filling these gaps.

- Co-ordination of existing activities focusing on land contamination problems would be very beneficial. Elaboration of registers of contaminated sites in particular member countries and identification of hotspots is suggested as the first step. Subsequently - based on these registers - the OSCE may identify contamination problems with trans-boundary consequences (sources of potential conflicts) and focus on their solution.

### Conclusions – Recommendations (3)

Re: Could the OSCE play an active role in contributing in the set-up of regional cooperation mechanisms to combat land degradation and soil contamination?

- As far as knowledge dissemination is concerned, the problem is not availability of such information (there are a lot of free internet sources providing comprehensive information on evaluation and remediation of contaminated sites) but probably understanding of such information.
- Elaboration of an essential methodological guideline providing introduction to site contamination problems and methodology of their solution might be considered by OSCE.

### Conclusions – Recommendations (4)

Re: Should the OSCE continue or even enhance its work on "melange" projects?  
How could OCSE assist in setting up legal frameworks for the mining industry?

- Real environmental and public health risks issuing from existing contamination (regardless of the origin of the contamination - melange, mining or other) should be the crucial criterion for selection of problematic sites for prior remediation. The risks should be specified based on elaborated Risk Assessment Studies.