

NICOLE

Network for Industrially Co-ordinated Sustainable Land Management in Europe



Best Practices on Sustainable Remediation of contaminated land

Bydgoszcz, May 10th 2017

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About myself



Content of this presentation:

- About Nicole
- Green Remediation
- Sustainable Remediation





NICOLE is

- A network in Europe, linking professionals from the industry, service providers and academics in the field of contaminated land management
- a leading organisation in the development and promotion of state-of-the-art solutions for contaminated land management



NICOLE's members

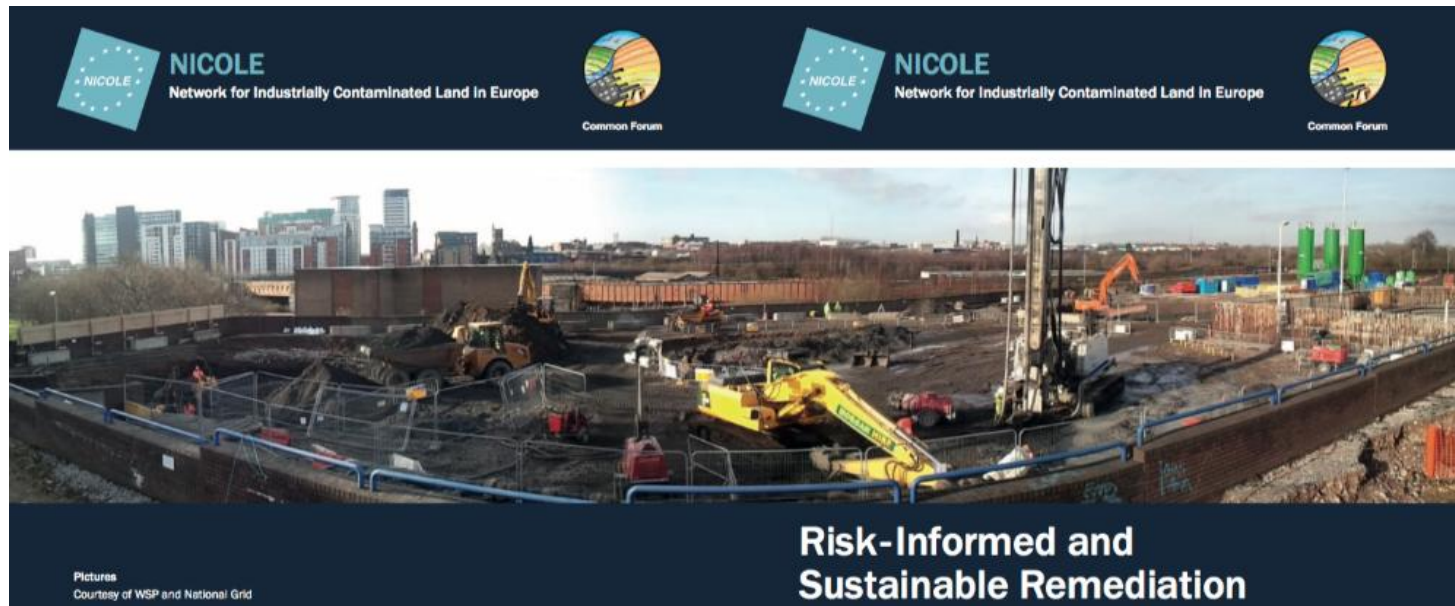
- 23 industrial companies
- 50 service providing / technology developing companies
- 32 academic members from universities and research organisations, other (funding organisations, other networks, governmental organisations)
- Total 105 (2015)

From Sweden, Poland, Germany, UK, France, Belgium, Spain, Greece, Ireland, Luxembourg, Norway, Czech Republic, Romania, Austria, Switzerland, USA, Finland, Bulgaria, Denmark, Netherlands, Italy



Nicole's Activities:

- **Two workshops per year** on all aspects of contaminated land management
- **Working Group meetings:** Sustainable Remediation, Emerging Contaminants, Regulatory Issues
- **Yearly Technology Award**
- Publications, (joint) position papers and reports



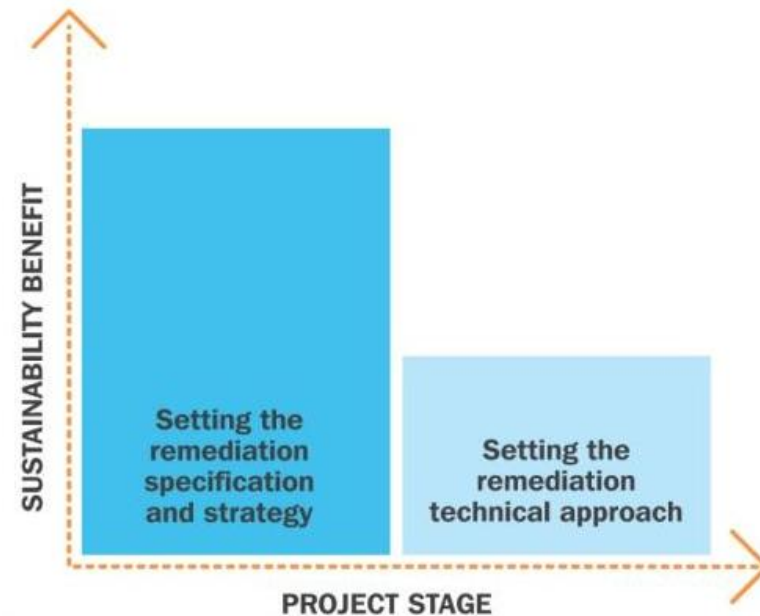
Joint Position Paper with Common Forum On Risk-Informed and Sustainable Remediation

Key points of the position paper:

1. Agree on the necessity for protecting population and the environment against contaminated media
2. SR involves the assessment of risks and benefits
3. More sustainable use of resources
4. Sustainability can not be quantified in absolute terms : stakeholder engagement is crucial
5. Integration of the elements of sustainability at the early beginning but also throughout the life of the project
6. Nicole's Road Map (2010) and the Claire (2010) document on SR are considered as Good Practice

Nicole's vision on SR:

- The earlier in the process the more sustainability gain
- Communication is the number one barrier and enabler
- Green remediation vs. Sustainable



Why green remediation?

- a Quick Win: You can start today
- More sustainable use of resources
- Unique Selling Point in Tendering

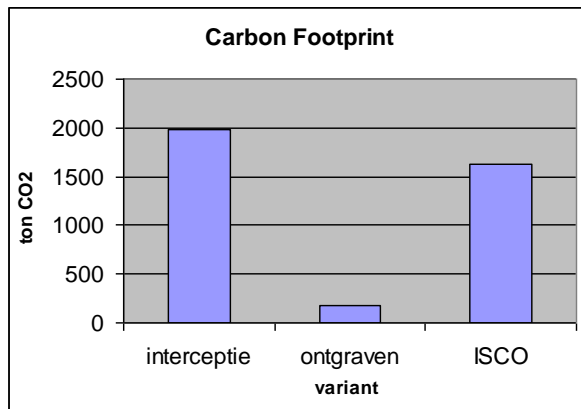
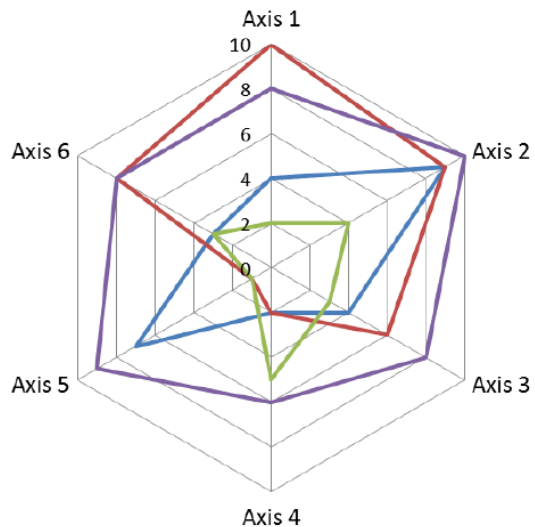


[Example SBNS-remediation Bilthoven](#)



Examples of green remediation

- Examples:



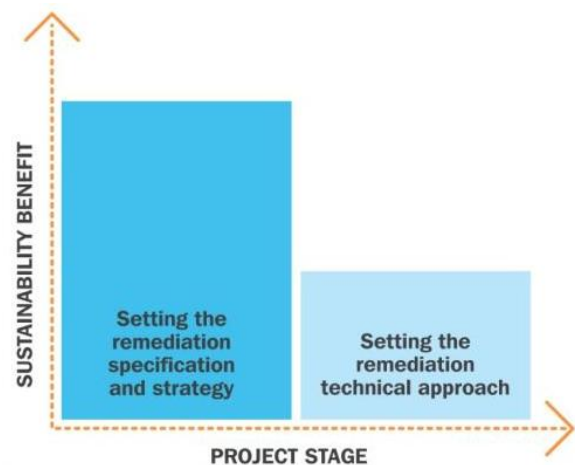
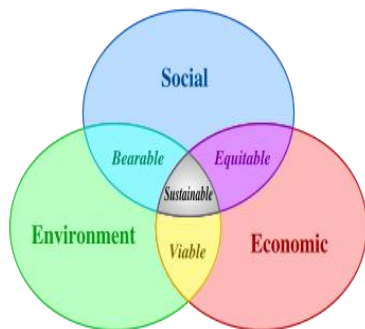
NICOLE does not prescribe Tools!
... but there is a lot available:

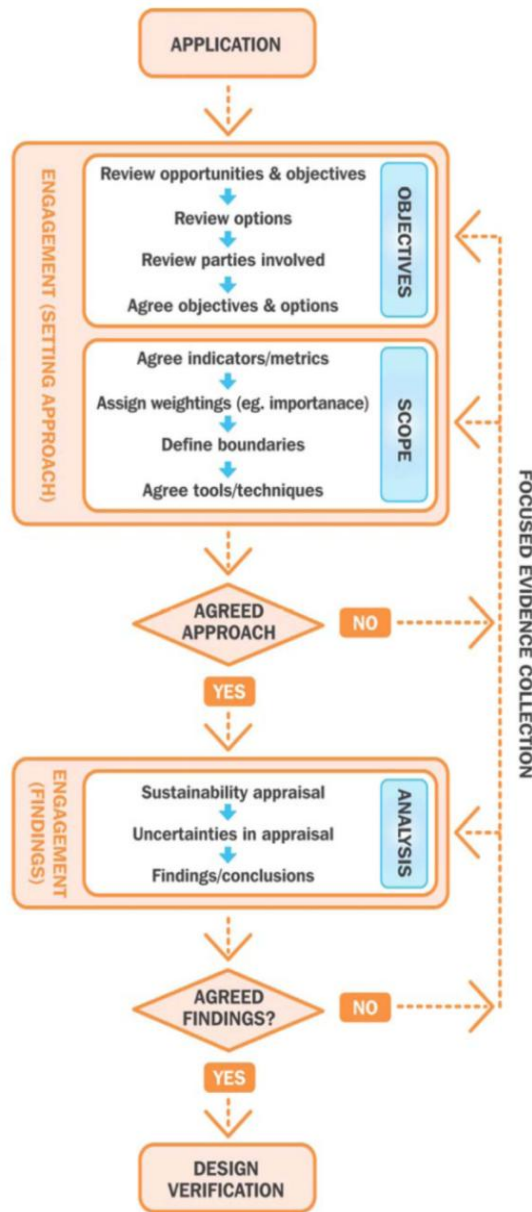
- Qualitative: narrative analysis or ranking
- Semi quantitative
 - Multi-criteria analysis, weightings and scores
 - Pairwise comparison (Weighing of benefits and burdens)
- Quantitative
 - Cost Benefit Analysis
 - Life Cycle Assessment
 - Etc.

Green Remediation is a good starting point, however:

- Considers only Environmental impact
- End of Pipe methodology

So we need and there is more...





The Road Map of Nicole:

1. Identify and review parties
2. Review objectives and starting points
3. Agree on conceptual site model (source-path-receptor linkage)
4. Explore options
5. Agree on sustainability indicators
6. Agree on tools/methodology e.g. Sustainability appraisal based on decisive benefits and burdens
7. Assign priorities or weightings
8. Technical detailing of options
9. Agree on findings (Justification rule)

How to use the roadmap for sustainable remediation of Brownfields?



A-site



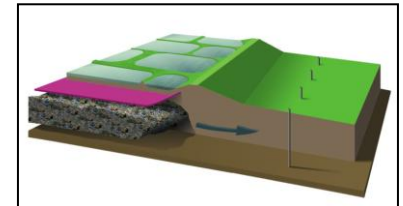
B-site



C-site



- Transformation of an inner-city brownfield to Town Hall and Public Area
- 80 % private financing, combining remediation with civil works
- Key-words: stakeholders, no after-care, fast

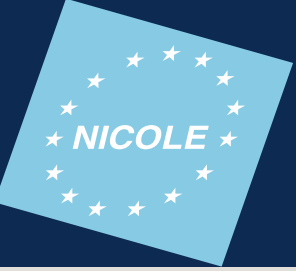


- Transformation of a landfill to public area
- Natural cap concept
 - take over function of the foil (long term)
 - simple and cost effective solution
- Key-words: stakeholders, public money, Risk Based Land Management, slow

When it comes to remediation of brownfields:

- Sustainable remediation First!
- Tools and Nicole's roadmap are effective for communication with stakeholders and decision making
- It often requires a long breath





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Thank you for your attention