

Tour de table

Belgium: state of the art of soil remediation



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Legislative framework for soil & groundwater remediation: a complex problem

- Jurisdiction for historical pollution
 - Who is responsible?
 - Who must pay?
- Technical
 - Site investigation & risk assessment
 - Remediation technology at acceptable costs
- General
 - In agreement with policy and legislation on air, water, waste, land use



Why a legislative framework for soil & groundwater remediation?

- Socio-economic rehabilitation of old industrial sites
- Improvement and preservation of environmental quality and human live
- Reduction of effects of land 'consumption'



As a result, we need

- Legislative framework in the different regions
- At the moment many efforts for homogenisation of efforts on risk assessment and remediation at European level
 - Future EU groundwater directive
 - Platforms: CARACAS, CLARINET, NICOLE, Common Forum
 - Harmonisation of risk assessment methods



Belgian situation

Flemish Region

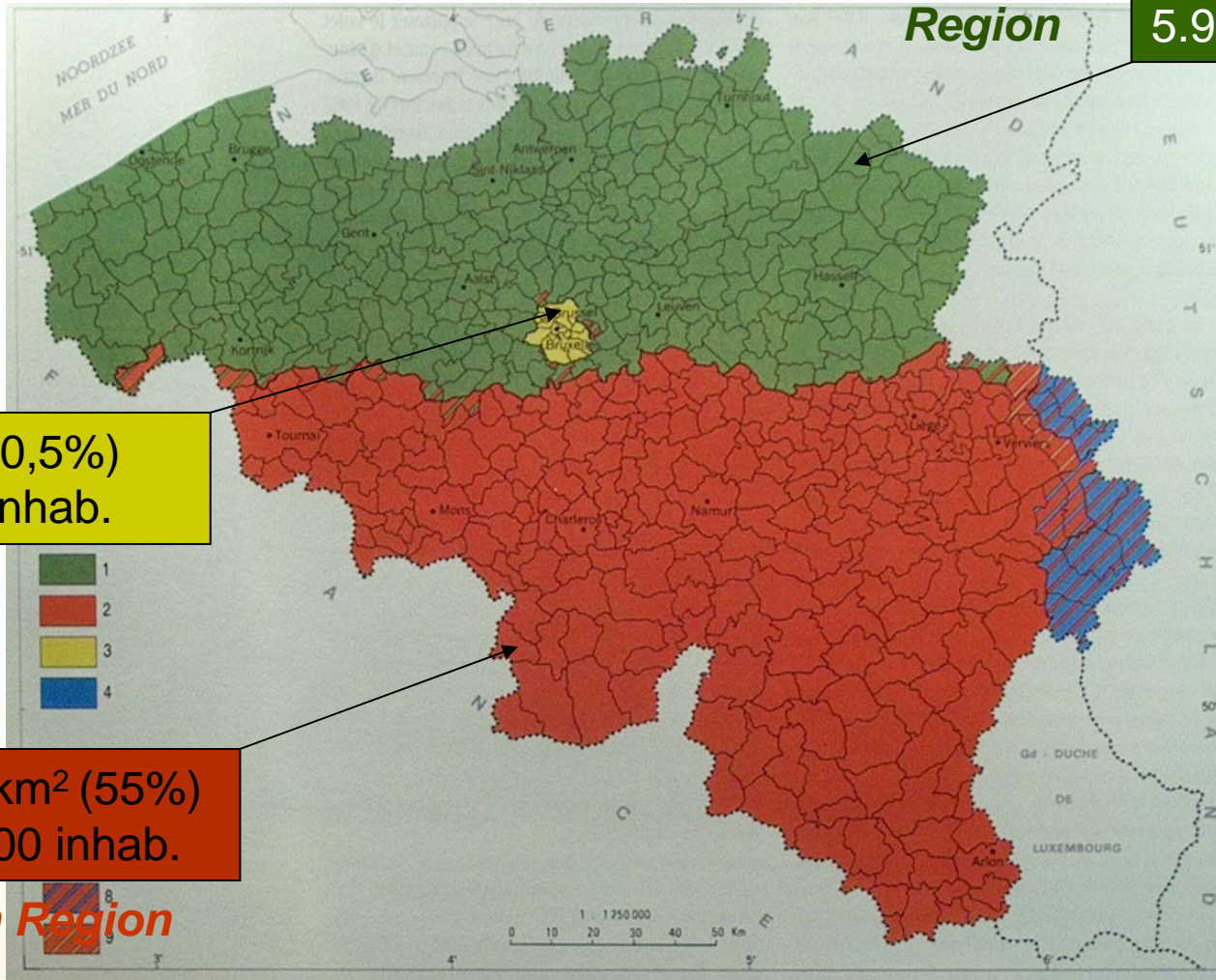
13.522 km² (44%)
5.940.000 inhab.

161 km² (0,5%)
964.000 inhab.

*Capital
Brussels*

16.844 km² (55%)
3.250.000 inhab.

Walloon Region



Flemish region

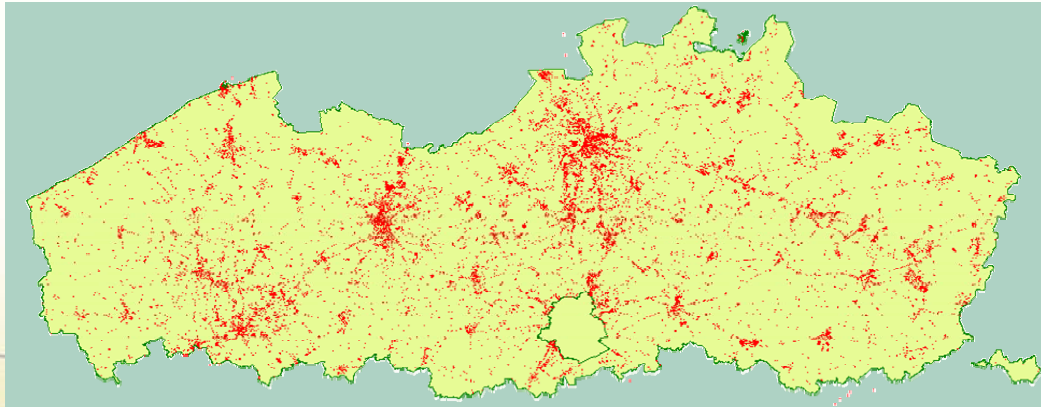
- 22 February 1995: Flemish soil remediation decree
- 5 March 1996: Execution of the VLAREBO



Flemish region

1. Identification of contaminated sites
 1. List of high risk activities
 2. Registration of contaminated sites
 3. Community inventory of sites and activities with high risk

➡ > 100,000 potential contaminated sites



Flemish region

2. Remediation studies

- Stopping of site at high risk activity
- Polluting activities (class A, B, C)
repetitive control (every 5, 10, 20 years)
- Stopping of high risk activity

3. Responsible

- User of the site
- Land owner



Flemish situation

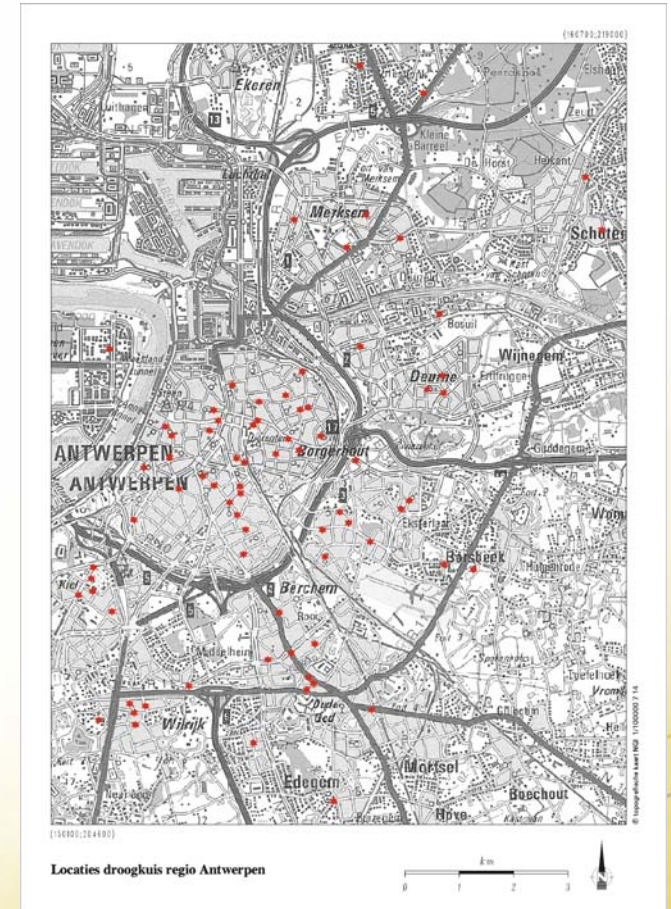
4. New and old pollution

- New pollution (after 1995)
 - Immediate need for remediation in case of trespassing the Soil Remediation Criteria
 - SRC are based on:
 - Nature
 - Agriculture
 - Residencial
 - Recreation
 - Industry
- Old pollution (before 1995)
 - Need for remediation in case of
 - Risks
 - Ecological
 - Human exposure
 - Risk of spreading
 - Designation of the site by the Flemish government to OVAM
 - Brownfields



Flemish region: remediation study

- Identification of contaminated site
- Preliminary investigation
- Descriptive examination
- Soil Remediation plan
- Financial guarantee
- Remediation activities and monitoring
- Final evaluation



Flemish region: 10 years later

- Decree on entire site → 'megasite'
- Government: site-specific resolution
- Shorten of procedure
- Sectoral approach: gasoline stations, dry cleaners,...
- From *ex situ* to on site remediation

Study	Estimated #	Executed #	%
Preliminary investigation	76,200	25,000	33
Descriptive examination	23,000	5,840	25
Soil remediation plan	11,000	2,103	19
Soil remediation	11,000	1,224	11
Final declaration	11,000	273	2



Capital of Brussels

- 13 May 2004: Ordonnance on contaminated sites based on:
 - Need for (construction) sites
 - Combination of very old contaminations and new contaminations
 - High degree of economic rotation
- 9 December 2004: execution



Capital of Brussels

- 9 December 2004:
 - List of risk activities
 - Standards at which a risk evaluation study must be started
 - Method for risk evaluation
 - Criteria for assimilation of old soil investigations
 - Changes concerning decree on gasoline stations (BOFAS)
- 20 January 2005:
 - Circular concerning execution
 - Vademecum concerning content of projects and reports



Capital of Brussels

1. Based on removal of risks for
 - Human health
 - Environment
2. No difference between historical and new pollution
3. Inventory of high risk activities (> 6000 sites)
4. At stopping of activity or any change of activity



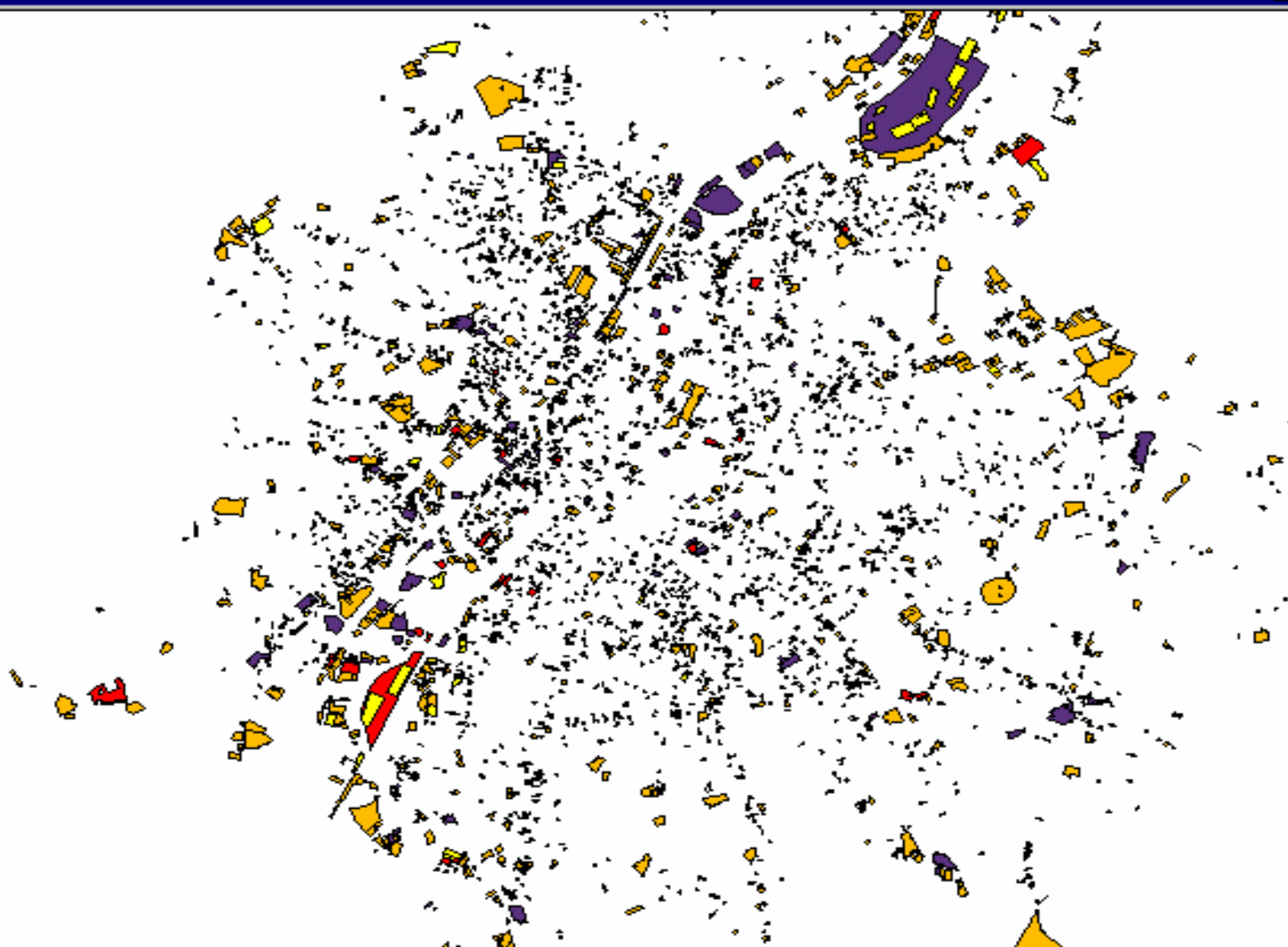


Scale 1: 100,000

143.03
169.53

Bestemmingsplan

- Sites
 - prioriteit 1
 - prioriteit 2
 - prioriteit 3
 - overige
- Gemeentegrenzen
- Percelen
- Waterwinning
- Oppervlaktewater
- Kanaal
- Bestemming
 - bijzonder
 - industrie
 - recreatie
 - woon



Capital of Brussels: Procedure

- Soil contamination
- Preliminary investigation
- Risk assessment
- Soil Remediation



Capital of Brussels: Conclusions

- Based on risks
- No soil certificates
- No solution for re-use of soils
- Historical pollution must not be paid by one generaton



Walloon region

- 1 April 2004: soil decree with SRC and experts
- Not yet under execution



*Brownfield site Carcoke
in Tertre*

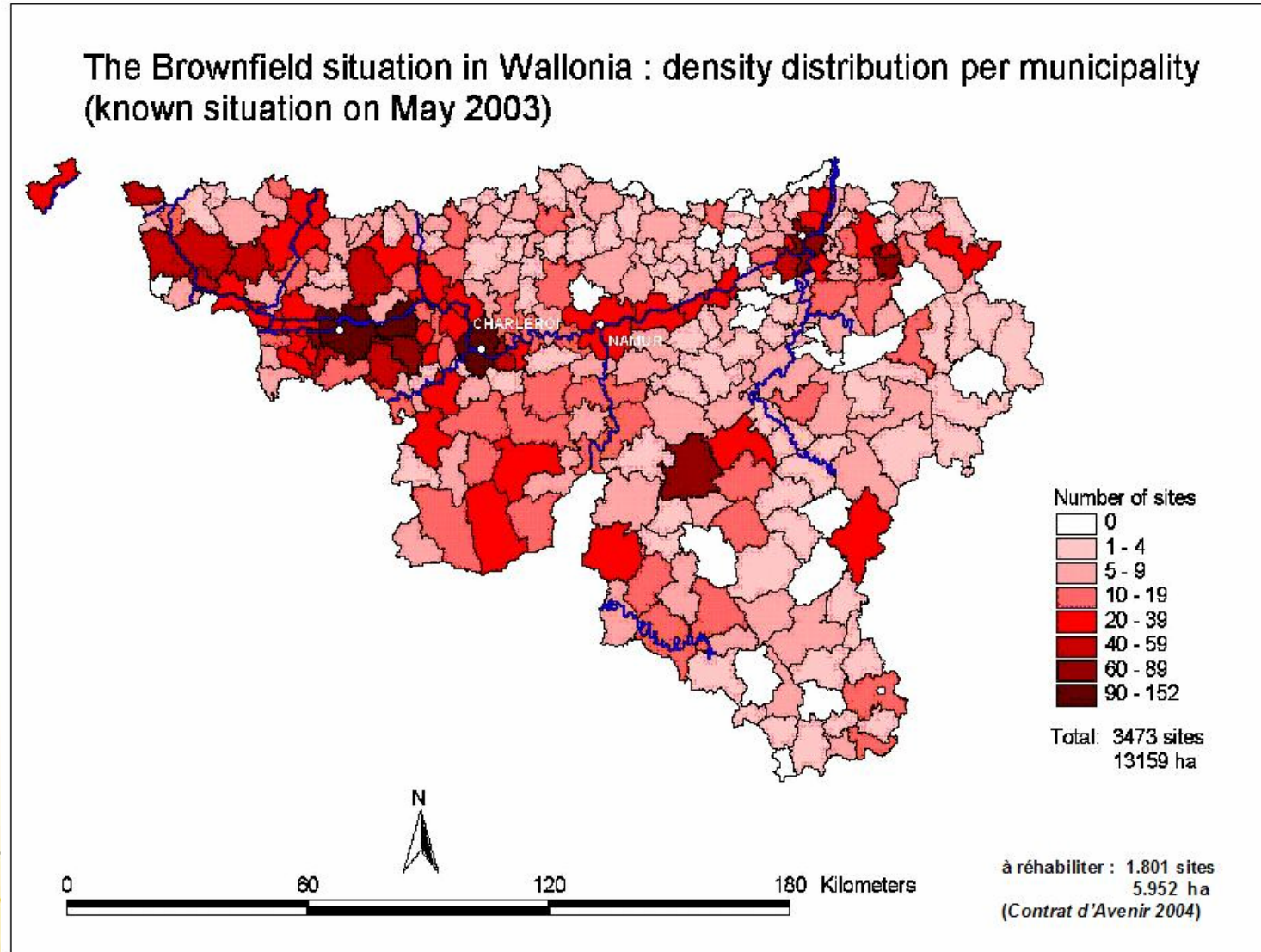


Walloon region

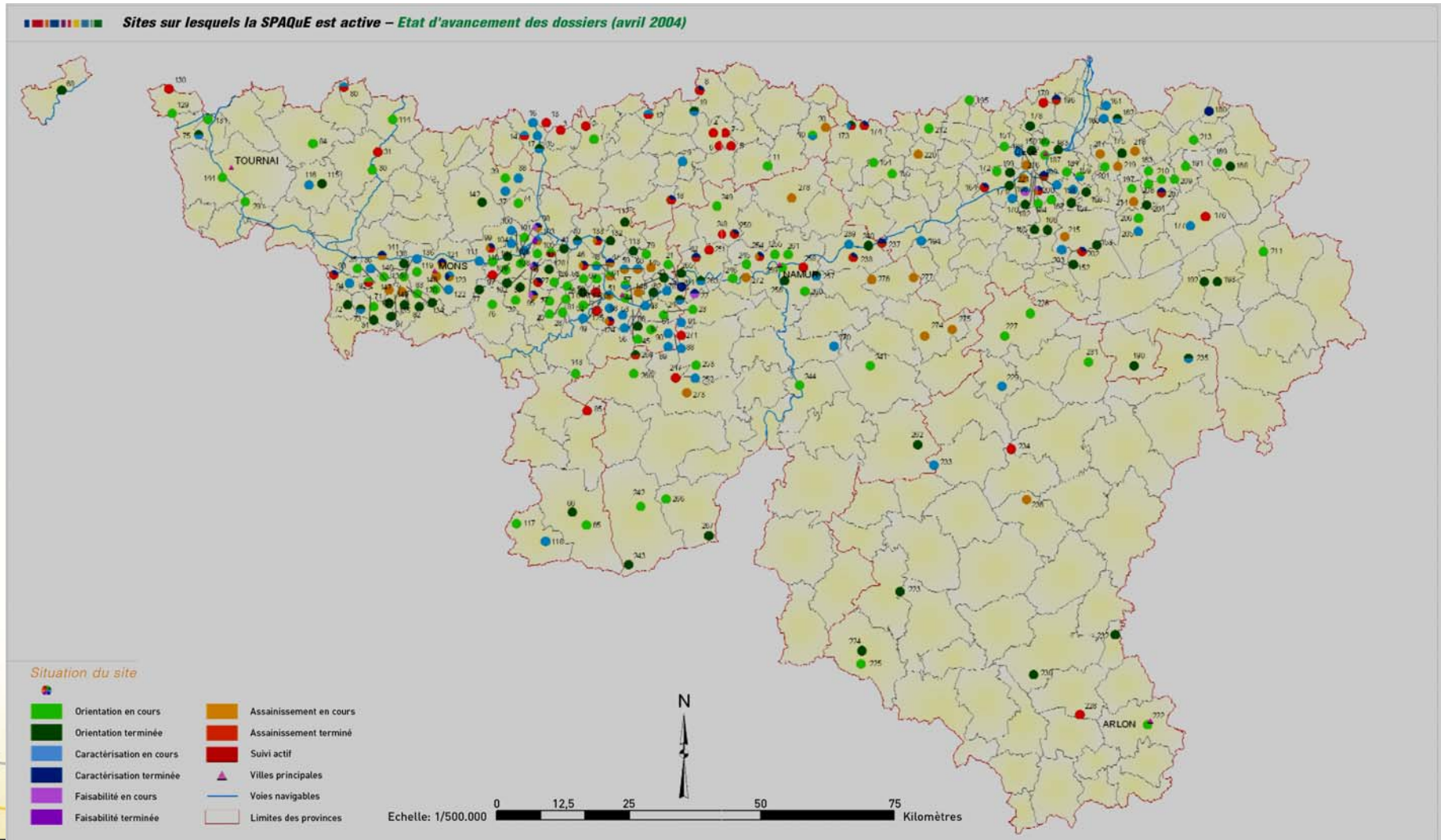
- Objectives
 - Accelerate the redevelopment of large contaminated sites
 - Needs for space
 - Green image
 - Needs for soil investigation and screening
 - Needs for treatment procedures
 - Needs for prioritisation
 - Improvement of environmental quality
 - Deliver garancy to new land owners



Walloon region: many brownfields due to old industrial activities



Walloon region: sites under investigation



Walloon region:

- Site to be rehabilitated:
 - Risk for the environment
 - Risk to human health
 - Possibility of re-utilisation
 - Structural role of the site
- Sectoral approach



Walloon region: integrated vision

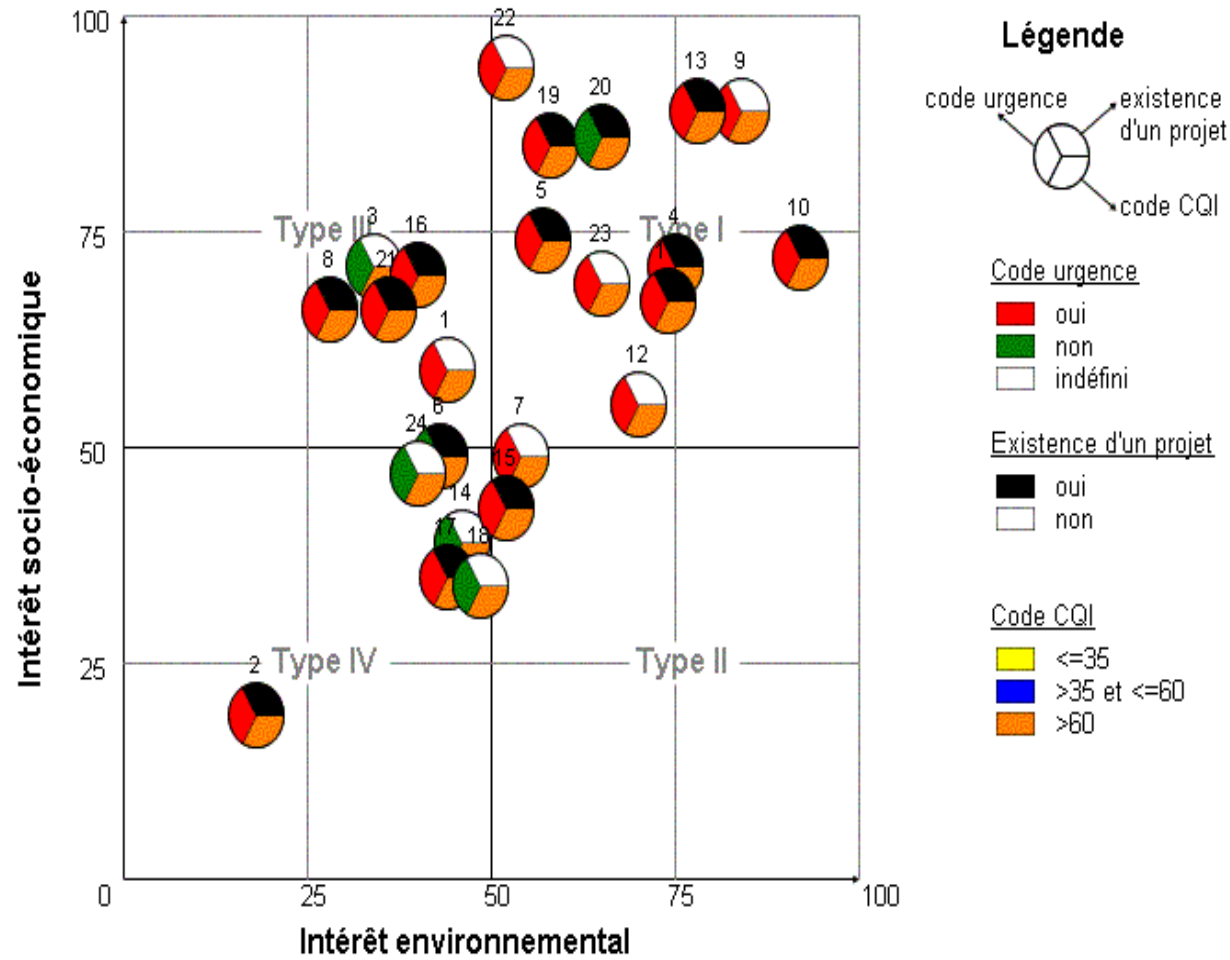


Figure : Diagramme final AUDITSOL

Walloon region:

- New pollution: after 1/01/2003
- Historical pollution: before 1/01/2003
- High risk contaminated sites
- Need for information and monitoring
- Inventory of contaminated sites
- Voluntary decision ↔ decision of the competent authority



Walloon region: remediation study

- Identification of contaminated site
- Orientation study
- Characterisation study
- Remediation project
- Remediation activities and monitoring
- Final evaluation



With thanks to:

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<http://www.ibgebim.be>



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<http://www.spaquet.be>

