

Who will use background concentrations of pollutants in urban and industrial soils?

A survey of the intentions of regulators in seven European regions/countries

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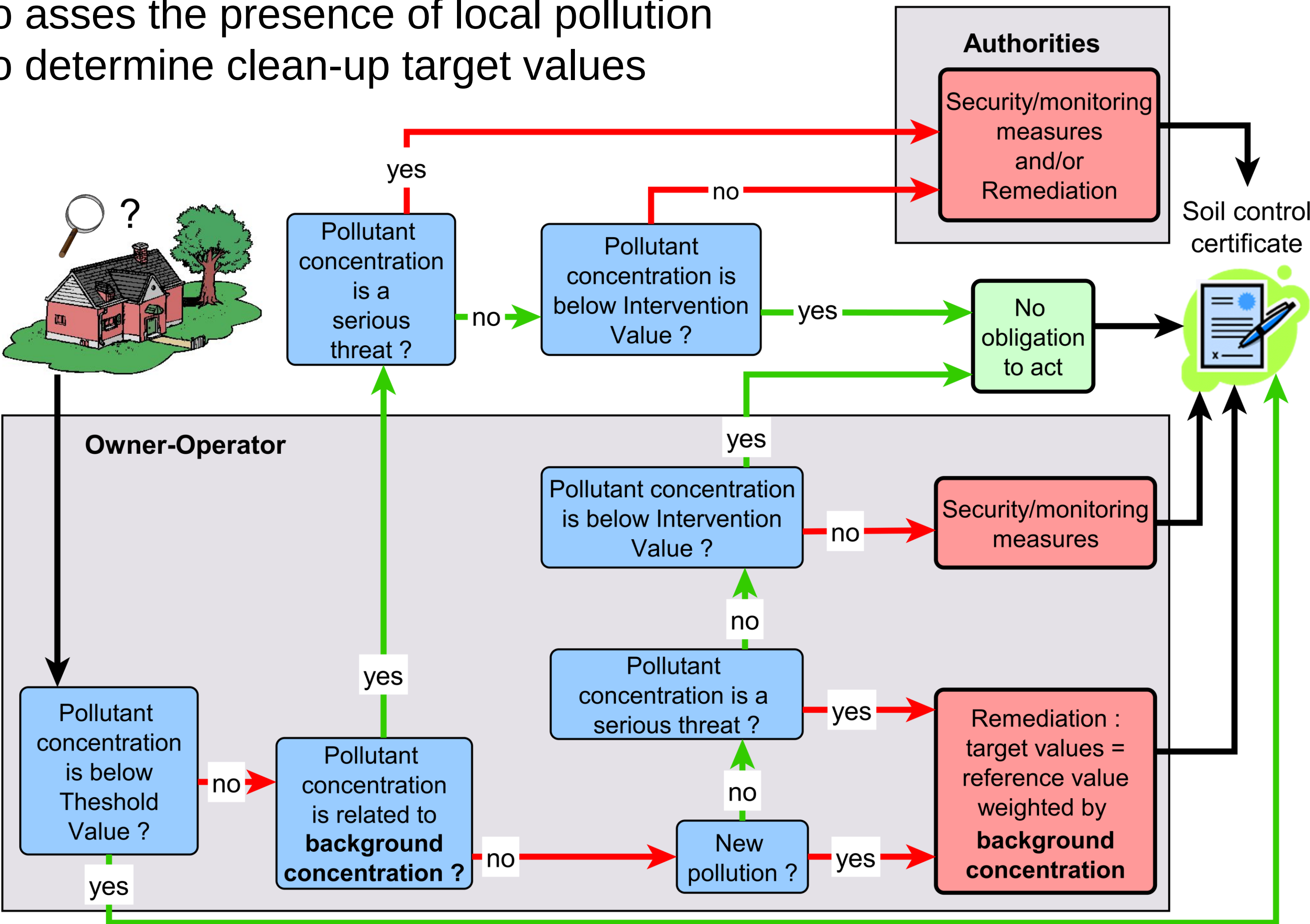
Objective : To compare the current regulations for soil pollutant background concentrations in Wallonia with those in other European regions regarding their **definitions**, **role**, **methods of determination** and specificities for **soils made of filling material**

Wallonia (BE)

Legal definition of soil background concentration : ambient concentration of a pollutant taking into account natural geological variations and widespread agricultural, industrial and/or urban influences

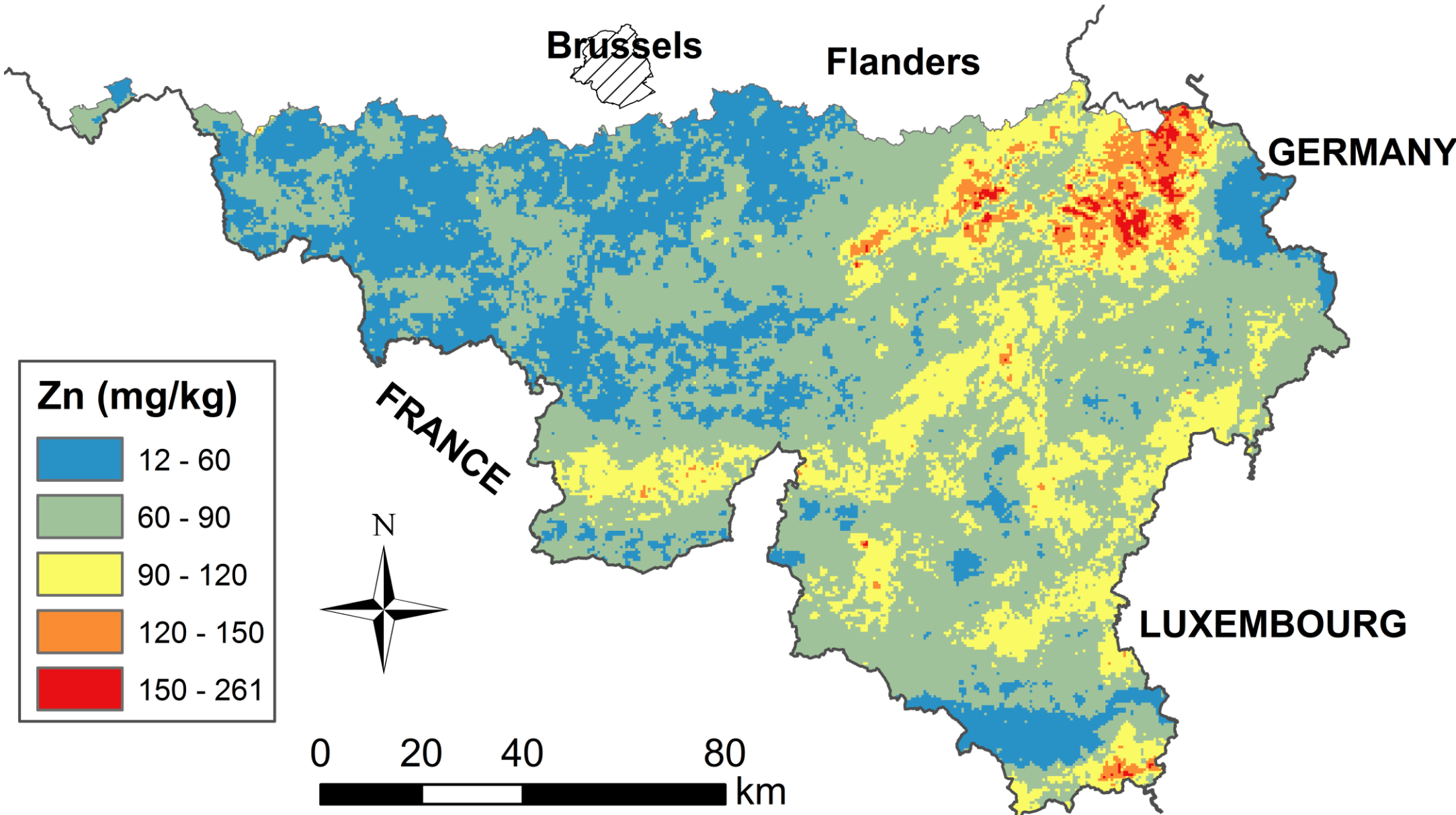
Role(s) of the background concentration in the regulation :

- to assess the presence of local pollution
- to determine clean-up target values



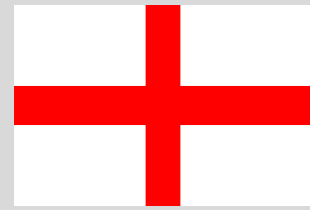
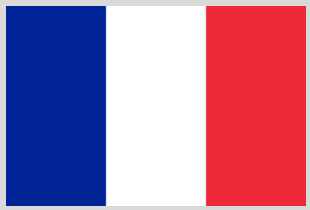
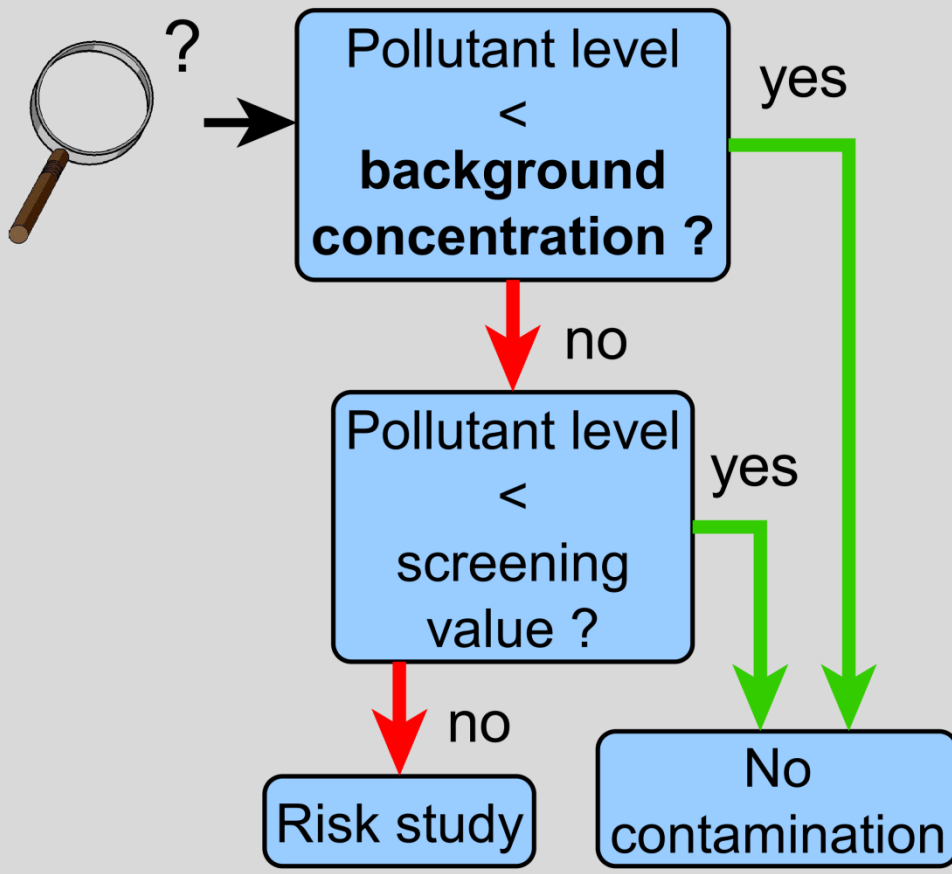
Method to determine background concentration :

based on the “best available data” acquired by the Administration : exhaustive regional **map** of background concentrations including urban and industrial sites



NB : The expert can propose a new background value to contest the value reported on the map, or if the map does not include a value for the study site, **in accordance with a set of guidelines**

Soils made of filling material : No specific rules

	England (UK)* 	France* 	Flanders (BE)** 	Luxembourg* 	Germany* 	Netherlands* 
Legal definition of background concentration	Concentration that includes natural and diffuse anthropic contributions	Concentration that includes natural geochemical background and anthropic contamination of the surroundings	Concentration found in soils unaffected by any human influence	Same as that for Wallonia	Concentration resulting from natural geological and pedological processes and including diffuse source inputs (ISO 19258:2011)	Concentration found in soils excepting soils possibly contaminated by line/point source
Role(s) in the regulation		Site remediation : Basis for the calculation of clean-up target values	Site remediation : Basis for the calculation of clean-up target values $= \frac{Bg + Ref}{2}$ Bg : background value Ref : a reference value	Same as Wallonia	Basis for the calculation of precautionary values (reuse of soil policy) and trigger values (exposition paths for risk study)	Used to draw soil quality map (reuse of soil policy)
Method to determine background concentration	1° Divide region into domains, specifically for each contaminant 2° Background value = upper 95% confidence limit of 95th percentile of the distribution of values of the corresponding domain	Case by case : → databases of measured values → analysis of samples taken around the site no guidelines	90th percentile of values measured in selected soils from whole region, weighted by : → clay % → organic matter %	Map (interpolation of values from soil contaminant database)	<i>Metals</i> : 90th percentile of the data of the corresponding soil group (soil type - soil use - parent material) <i>Organic pollutants</i> : Map (interpolation of measured values)	95th percentile of values measured in selected soils from whole country, weighted by : → clay % → organic matter %
Soils made of filling material	No specific rules	No specific rules	If >x% stone → waste regulation Else → soil regulation	No specific rules ; ongoing reflexion	Backfill soil material : metal concentration in filling material < precautionary values	Backfill soil material must be in accordance with soil quality map

*information collected at the meeting on the definition of background values in Louvain-la-Neuve - Belgium (April 22, 2013) : England : Louise Ander and Mark Cave (British Geological Survey); France : Hélène Roussel (ADEME : French Environment and Energy Management Agency); Luxembourg : Sophie Capus (Environment Administration, LU) and Christophe Hissler (Gabriel Lippmann Public Research Centre); Germany : Jens Utermann (Umweltbundesamt : Federal Environment Agency); Netherlands : Frank Lamé (Deltares Research Institute)
**information from personal communication : Flanders : Griet Van Gestel (OVAM)