Market analysis of recycled sands and aggregates in North-West Europe: drivers and barriers

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Project Interreg NWE SeRaMCo

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642384.

The study is performed in the framework of the project SeRaMCo

Secondary **Ra**w **M**aterials for **Co**ncrete Precast Products

(in progress: 2017 → 2020)

Objective

Increase the use of CDW as secondary raw materials for **cement** and **concrete precast products**

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Recycling construction and demolition waste accounts for 8% of the total generated aggregates in the EU

2.7 billion tonnes of aggregates generated in the EU28+EFTA in 2016 (UEPG, 2018)

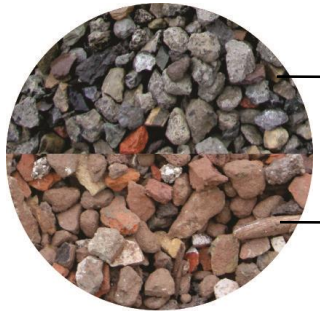
Natural origin

47.4% crushed rock

40.3% sand & gravel

Recycled origin

8% recycled (220 million tonnes)



Construction & demolition wastes (CDW)

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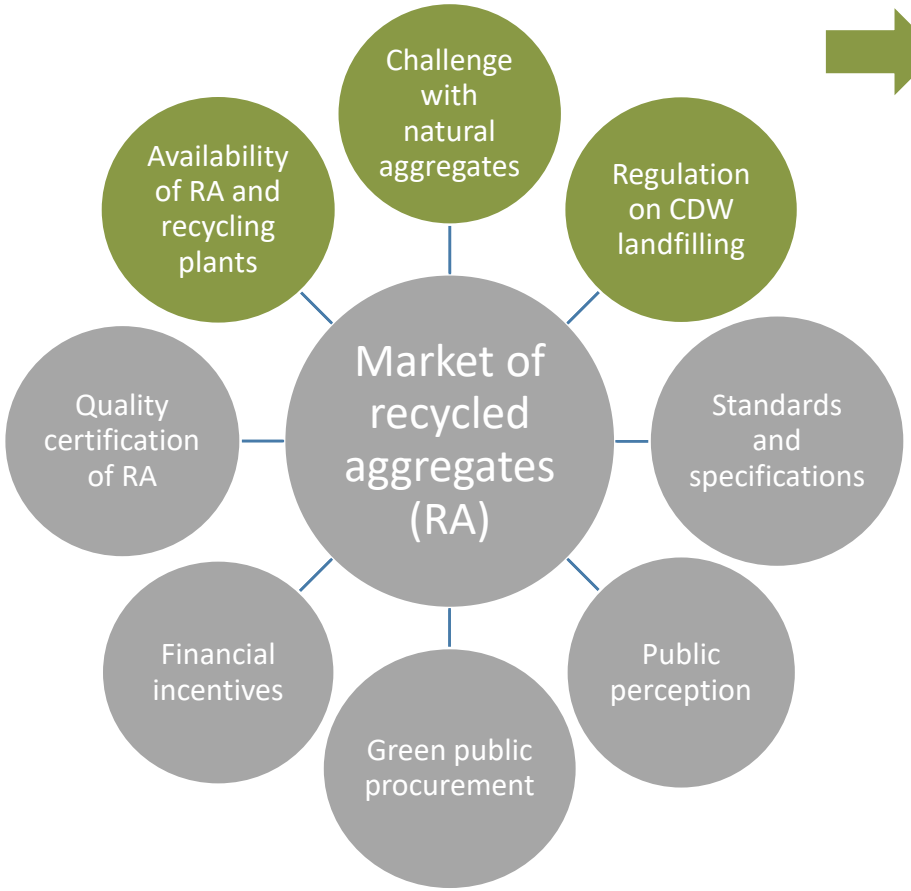
The market of recycled aggregates may be influenced by many parameters



Focused parameters in NWE

Difficulties:

- some national statistics are not available or not directly comparable
- market of RA is influenced by local and regional contexts

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Recycling and re-use of CDW is developed in NWE

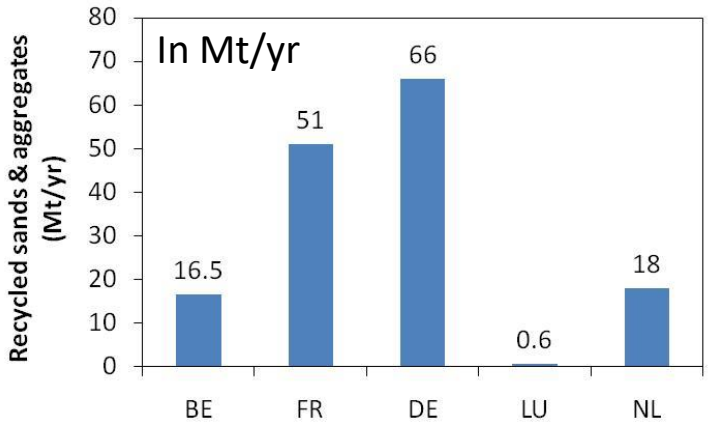
European Waste Framework Directive (2008/98/EC):

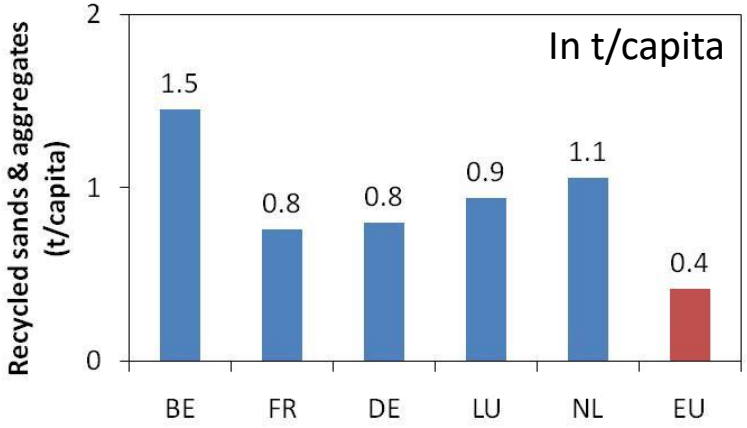
"A minimum of 70% of the generated non-hazardous CDW (excl. excavated soils and stones) must be re-used or recycled by 2020".

The objective is already reached by the investigated NWE countries

In 2016, NWE countries generated almost **60%** of the recycled aggregates produced by the EU-28 (UEPG, 2018)

In terms of production:





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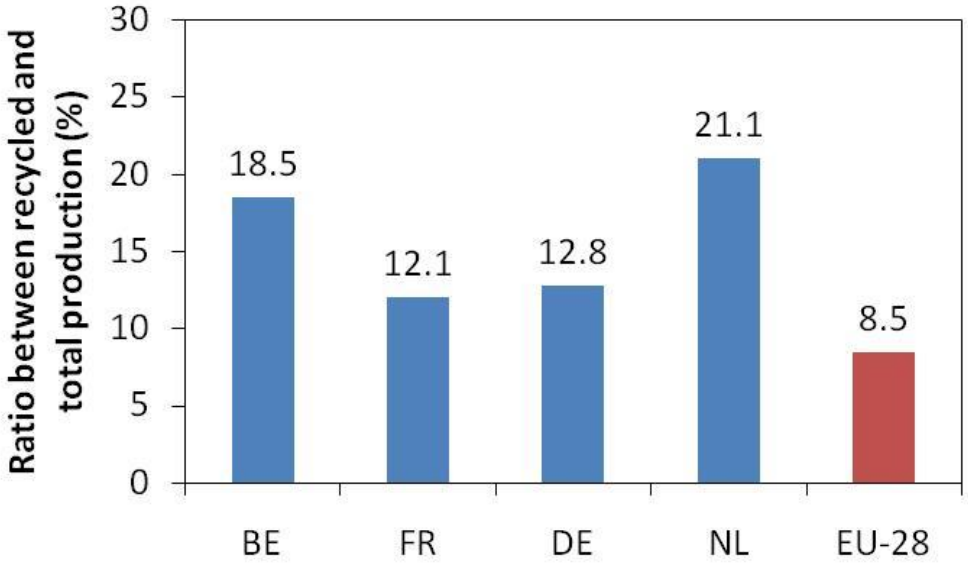
Challenge with primary raw materials

In 2016, NWE countries generated almost **40%** of the natural sands & aggregates produced by the EU-28 (UEPG, 2018)



Percentage of recycled sands and aggregates compared to the total production

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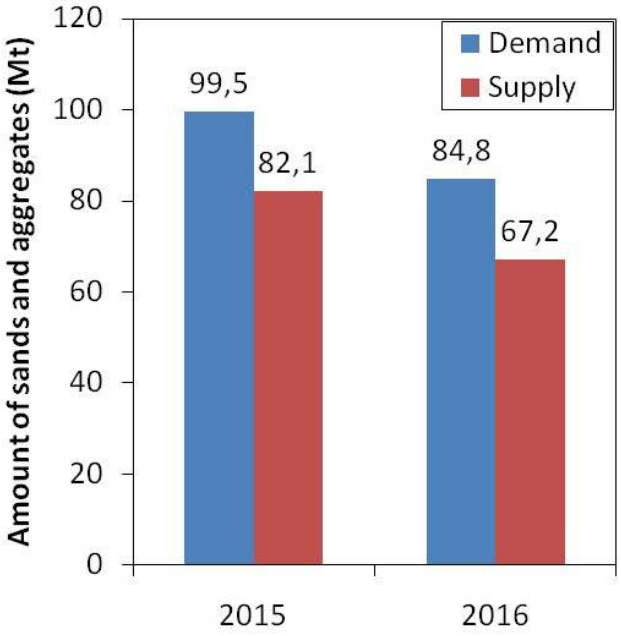
Favourable market context for recycled aggregates in the Netherlands

Demand vs supply for sands and aggregates:

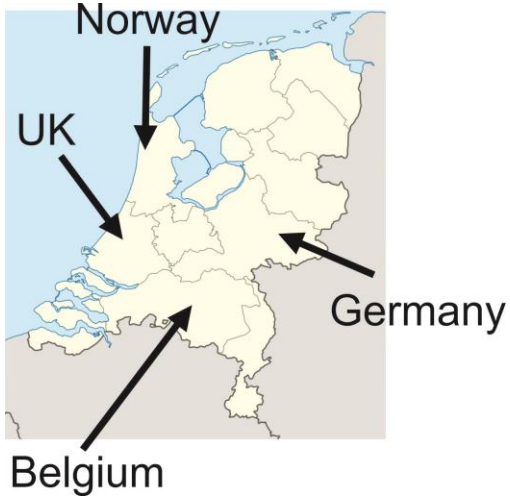


Demand higher than supply

Imports represent 20% of the demand in sands and aggregates

Lack for coarse aggregates

70% (10-11 Mt) are imported every year



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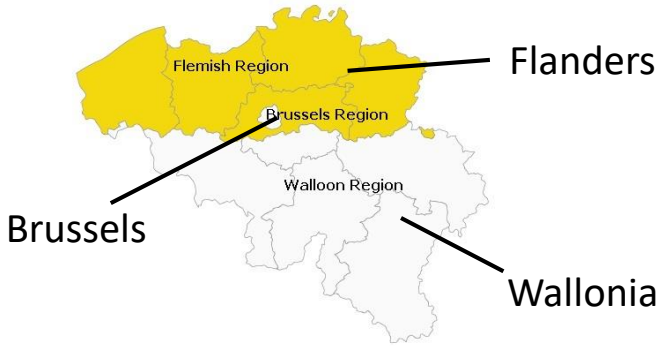
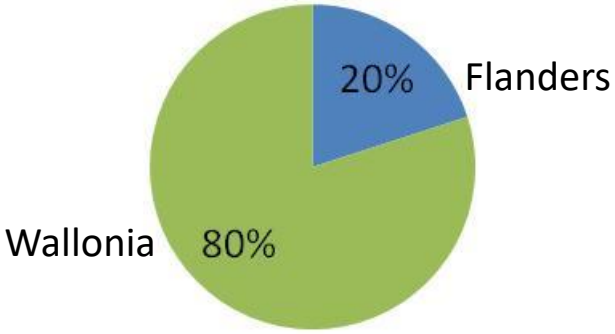
Regional disparities in Belgium



Production of **natural** sands & aggregates

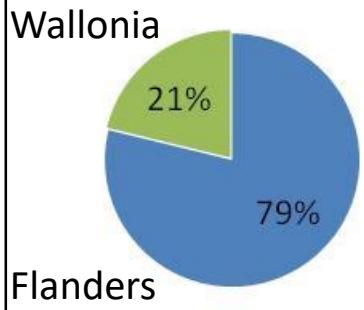
70-75 million tonnes/year



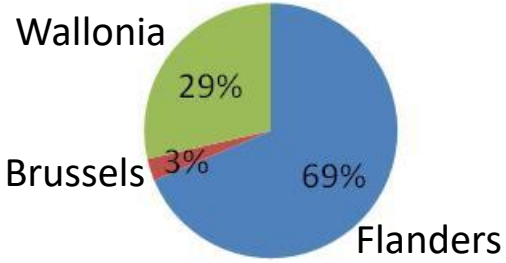
Production of **recycled** sands & aggregates

16.5 million tonnes/yr from ~350 recycling plants

Production

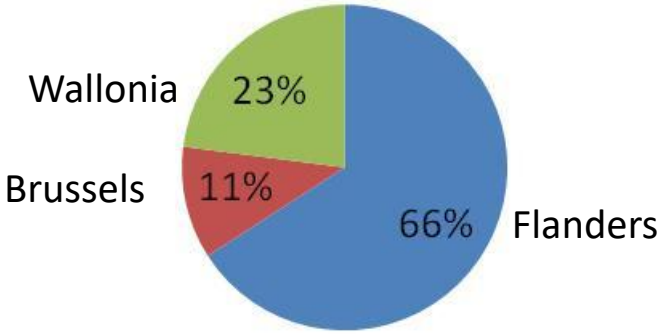


Recycling plants

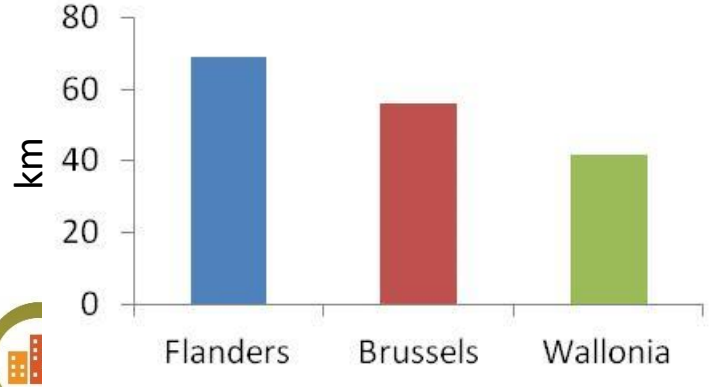


Consumption of sands & aggregates

100 million tonnes/year



Mean distance from quarries



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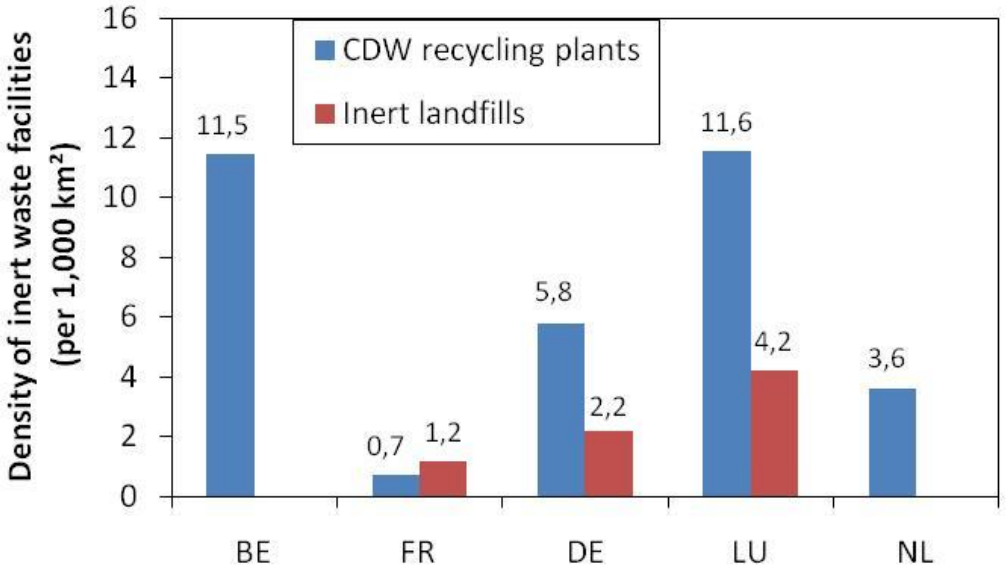
Inert waste landfilling: availability and legislation

- **NL** and **BE**: ban for inert waste landfilling
- **DE** and **LU**: < 5% (high landfilling taxes, many recycling plants available)
- **FR**: ~15-20% (more inert landfills than fixed recycling facilities)

The cost for 1 tonne of aggregates may double every 30 km by road



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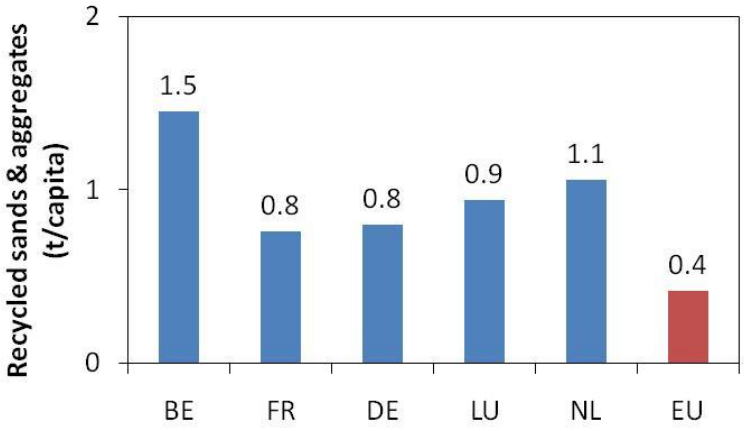
Conclusions

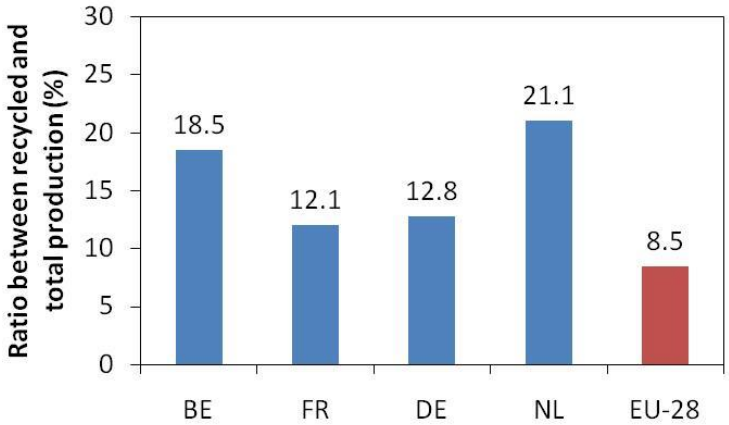
Based on a **quantitative analysis**:

Investigated **NWE countries possess an extensive network of CDW treatment** facilities despite the abundance of primary raw materials

Countries where **the market of recycled sands and aggregates seems the most suitable are the Netherlands and Belgium** (mainly Flanders) characterized by:

- lack of available local natural rocky materials
- favourable legislation
- developed network of recycling facilities





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Thank you for your attention

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