



FOSTERING INDUSTRIAL SYMBIOSIS FOR A  
SUSTAINABLE RESOURCE INTENSIVE INDUSTRY ACROSS  
THE EXTENDED CONSTRUCTION VALUE CHAIN

# Symbiosis tool in the Flanders region

## Transition to Circular Economy

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# CE and Symbiosis: Vision 2050

- Flanders Circular (CE): ‘materials / resources in closed loops’
  - Repair, re-use, recycling products and parts
  - New business models on product use rather than consumption
- Scarcity → symbiosis: search for rest streams as resource
  - 2012-2015: pilot
    - Symbiosis work shops broad and for specific sectors (construction, food, chemistry)
  - From 2016
    - Electronic platform: database end-of-waste materials, exchange opportunities



# Symbiosis platform: activities

- Dating for residual material streams
  - linking demand and supply for 2 companies
    - Waste stream / byproduct as resource
    - Use recycled materials to replace primary resources
  - Learning from 'circular solutions' by companies
- Matching partners (companies)
  - Symbiosis workshops
    - Symbiosis opportunities in NISP-data base
  - Company visits (on site)
  - Exchanges with research institutions, ...



# Symbiosis platform: target groups



- Companies (process engineers, R&D, purchasing department,...)
- Environmental consultants
- Research and expertise centres
- Logistic enterprises
- Recycling companies
- Authorities (local and regional)
- ....



# Symbiosis: results 2012-2015

	Symbiosis	Symbiosis 2.0
Network organizations / persons	1018/ 1649	>1157 / 1690
Workshops	6	9
<b>Data base</b>		
-Organisations	187	327
- Resources (have/want)	1152 (652/530)	1959 (1051/908)
- Synergy ideas	323	545
Completed	2	13
- Joint innovation projects	0	5

# Symbiosis cases

- **Problem:** Use of back sides labels in insulation material
  - **Coupling:** Recycling - Distribution
  - **Saving:** 200 Tonnes at 80 euro/t = 16 k€
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- **Problem:** 25 ton rejected chocolate production.
  - **Coupling:** Production companies, used in animal fodder
  - **Saving:** 9 k€
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- **Extra value:** Reduced consumption imported resources (cacao),  
input residu for fermentation

- **Problem:** Development new type green roof, plant base
- **Materials input:** Poorly baked bricks
- **Saving:** 1000Tonnes at 150 €/t = **150 k€**
- **Added value: ++**
  - Less materials as aggregate in foundation of roads (downcycling)
  - No energy consumption production expanded clay granules
  - Trials in progress



# Symbiosis platform 3.0

- Platform (from 2016-2017): partnership
  - OVAM-VITO
    - VITO manages individual company data via NISP-data base, and workshops
    - OVAM: management of materials data, monitoring end-of-waste, of symbiosis/CE transition
  - Private: Interreg project matching financial input
  - Cases/pilot project [www.smartsymbiose.be](http://www.smartsymbiose.be)
- Challenges:
  - Symbiose: complex search, innovative experimental stage → public funding necessary short term;
  - Present data base: time consuming and complex, too little room for interaction on concrete demands among companies and with research centres





# Thank you for your attention



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