

# Inter-firm networks and glocalization in realizing a circular economy in the construction sector.

*A case study on the Dutch concrete industry*

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Cenk Batuhan Özaltun



Date: June 20, 2022

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Second supervisor: Dr. K.B.J. Van den Berghe

Board of Examiners: Dr. A.R. Thomas

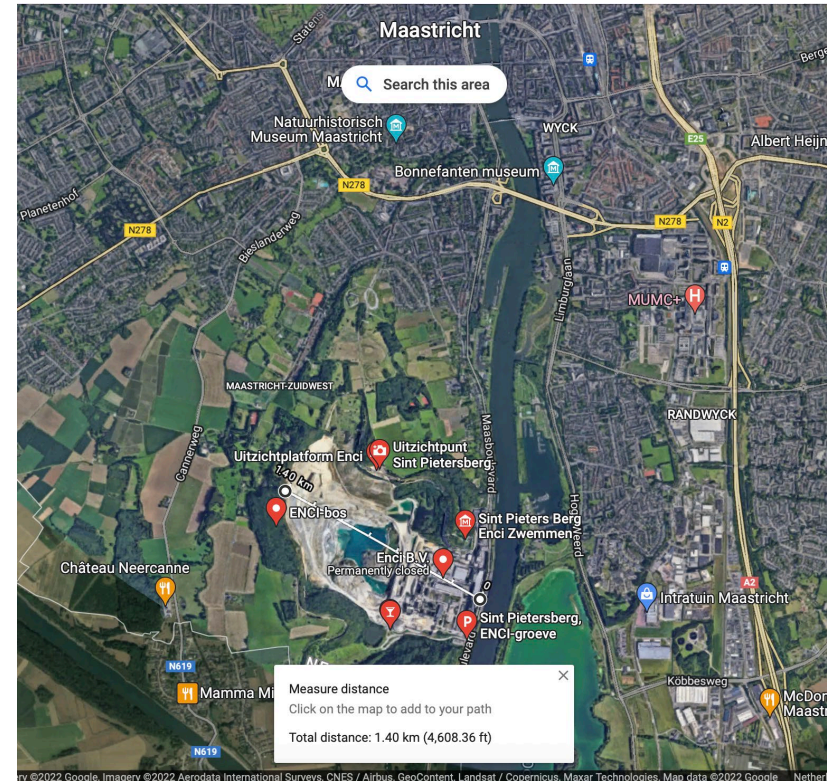
# Environmental issues

- Unsustainable waste processing



# Environmental issues

- Resource depletion



# Geopolitical issues

- High import dependency



# Geopolitical issues

- Sensitive infrastructure, global powers, war in Ukraine

## ***Suez Canal Blocked After Giant Container Ship Gets Stuck***

The ship, stretching more than 1,300 feet, ran aground and blocked one of the world's most vital shipping lanes, leaving more than 100 ships stuck at each end of the canal.

March, 2021

## **First chips, now magnesium: Carmakers grapple with the next supply crisis**

An energy crisis in China has dramatically cut magnesium production there. That has led to a supply crisis for aluminum-makers that depend on the metal. That in turn, has caused major worries for carmakers.

November, 2021

## **Oorlog in Oekraïne trekt zware wissel op bouw- en infrasector**

Bouwend Nederland zet in op afspraken met opdrachtgevers

March, 2022

# Case study



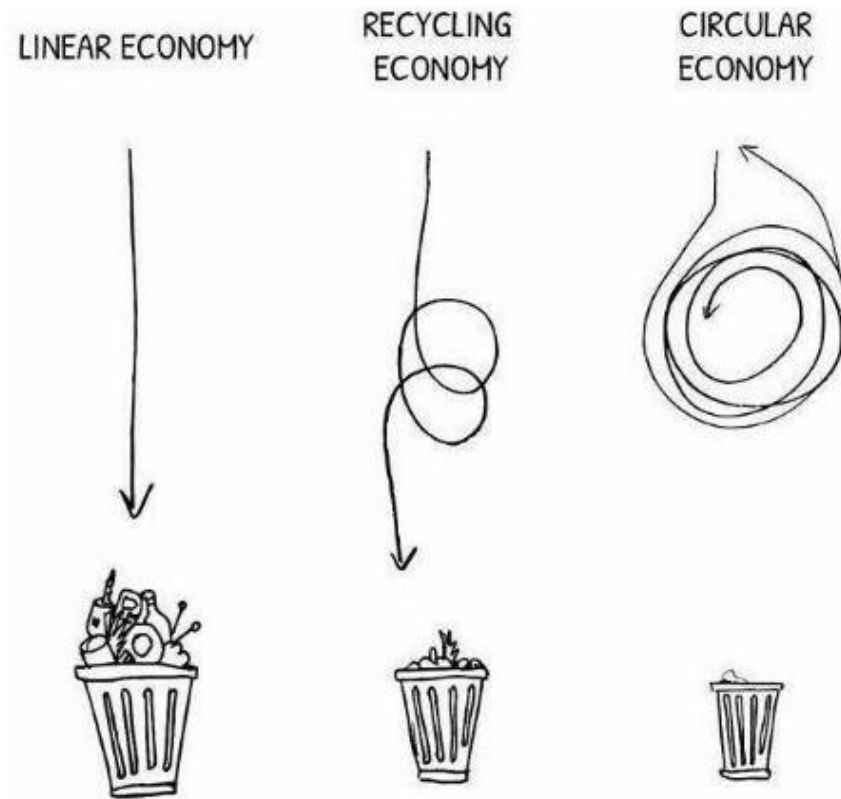
A screenshot of the Google Maps interface showing a route from TU Delft Faculty of Architecture & the Built Environment to Gemerek, Sivas, Turkey. The route is displayed in blue and passes through several European countries: Germany, Austria, Slovakia, Hungary, Serbia, Bulgaria, and Turkey. The route is labeled "via A1" and is estimated to take 36 hours and cover 3,612 km. The interface includes a search bar, a list of destinations, and various map controls. A grey SUV is shown on the map. The map also displays various landmarks and cities in the region.

Search results:  
TU Delft Faculty of Architecture & the Built Environment  
Gemerek, Sivas, Turkey

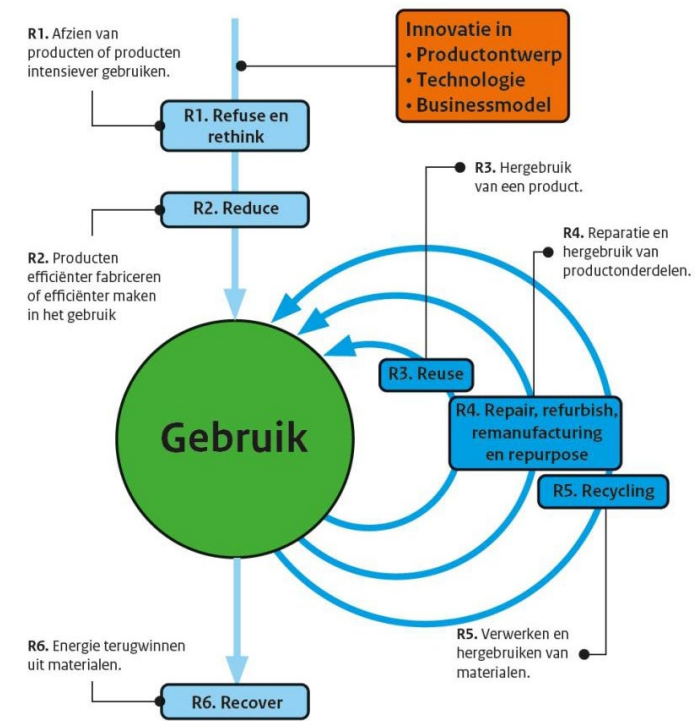
Route details:  
via A1 36 hr 3,612 km  
Fastest route now, avoids road closures  
⚠ This route has tolls.  
⚠ This route may cross country borders. Verify COVID-19 restrictions.  
⚠ Your destination is in a different time zone.

Explore Gemerek:  
Restaurants Hotels Gas stations Parking Lots More

# Circular Economy (CE)



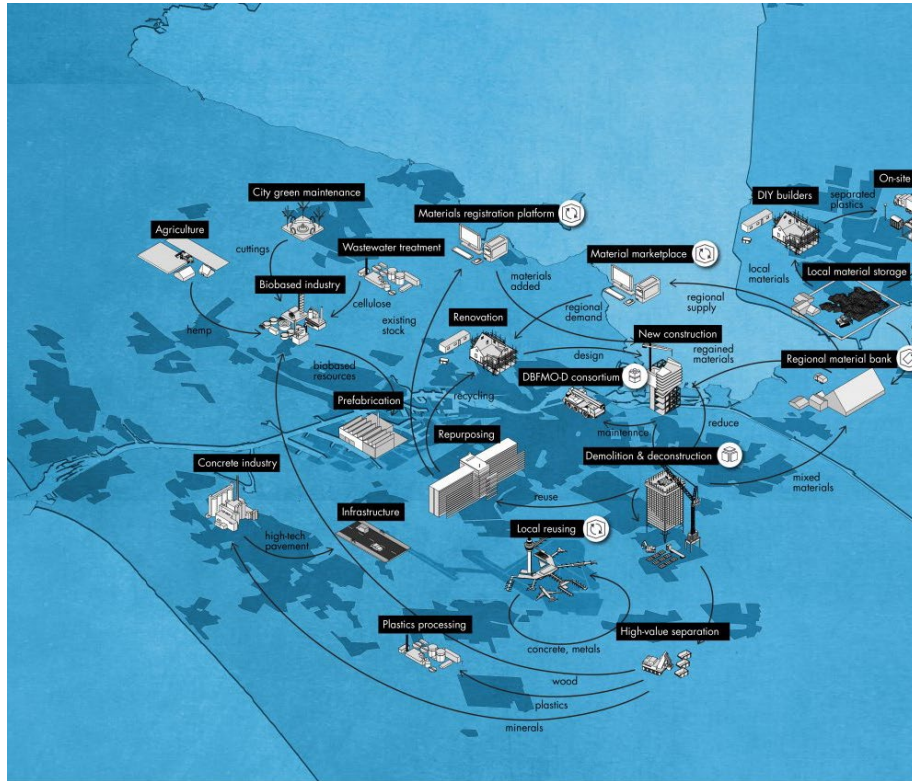
R-ladder met strategieën van circulariteit



Bron: PBL

# Localization

- Local jobs and economic incentives
- Inclusion, engagement and participation



- **Een efficiëntere economie:** doordat grondstoffen en producten zoveel mogelijk **lokaal** worden herwonnen, ontstaat er een nieuwe bedrijvigheid met minder verspilling. Dit levert nieuwe werkgelegenheid op in diverse sectoren, zoals in de reparatie- en verwerkingsbranche.



# Globalization

- Supply chains, business relationships and sales markets have been scaled up to a global level



# Research questions

“How do inter- firm networks deal with the paradox of glocalization in realizing a circular economy in the construction sector?”

1. What is glocalization and how does glocalization relate to the circular economy?
2. What are inter-firm networks in the circular economy?
3. What are the opportunities and problems of glocalization in realizing a circular economy in the construction sector?
4. How do inter-firm networks exploit the opportunities and address the problems of glocalization?
5. What are the practical implications for inter-firm networks of a glocalized circular economy?

# Institutional and regulatory arrangements

- Laws, regulations, policies, standards

- De transitie naar een circulaire economie is een gedeelde verantwoordelijkheid van de EU en de lidstaten. Bij het stellen van minimumeisen via productenbeleid en voor de consumptiefase heeft de EU een belangrijke rol. Denk daarbij aan het verlengen van de (PBL, 2021)

De gemeente inspireert, motiveert en voert de regie. Maar de verantwoordelijkheid van een gemeente houdt ergens op. Dit is logisch, omdat anders het Nederlandse en Europese beleid een lappendeken zouden worden van lokale wensen en eisen. Het zou voor fabrikanten onmogelijk worden om nog een product te maken dat overal kan worden verkocht. Waar we als lagere overheid geen mandaat hebben, zoeken we samenwerking met andere overheden om onze ambities te realiseren. Ook benut de gemeente Amsterdam haar invloed om circulair ondernemen bij haar deelnemingen te bevorderen. (Gemeente Amsterdam, 2020)



# Economic activities

- Investments, subsidies, loans, financial guidelines



**European Union**  
European Regional  
Development Fund



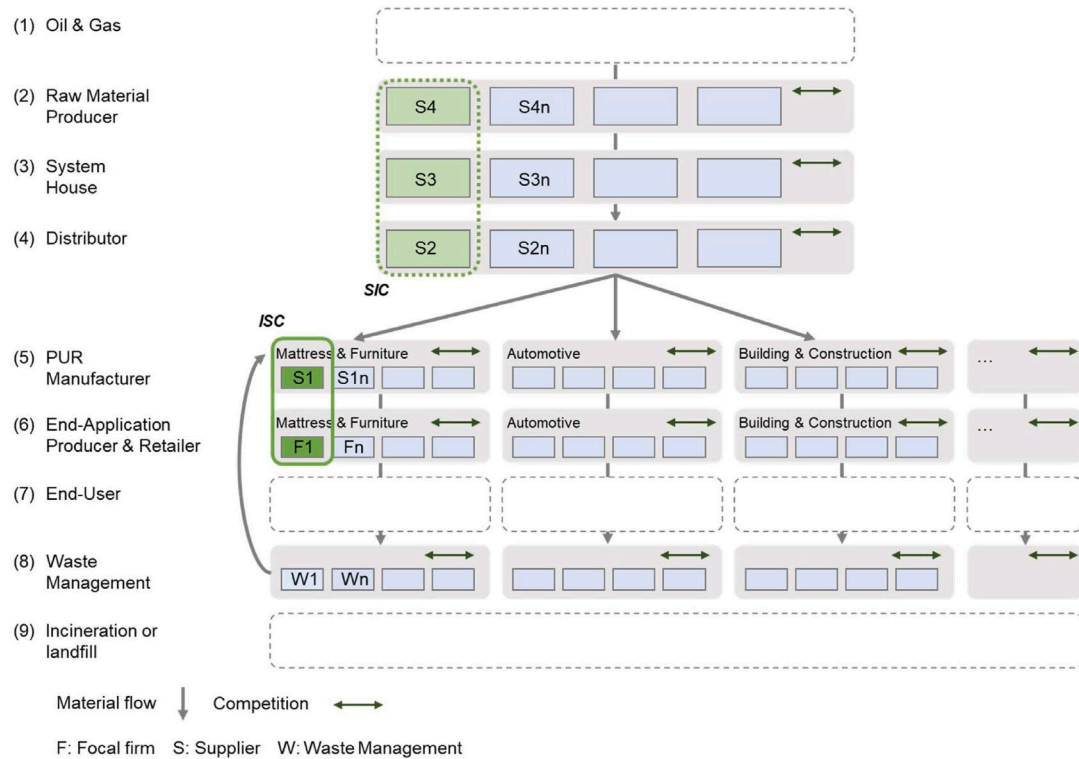
G4P4 **Kansen voor West II**



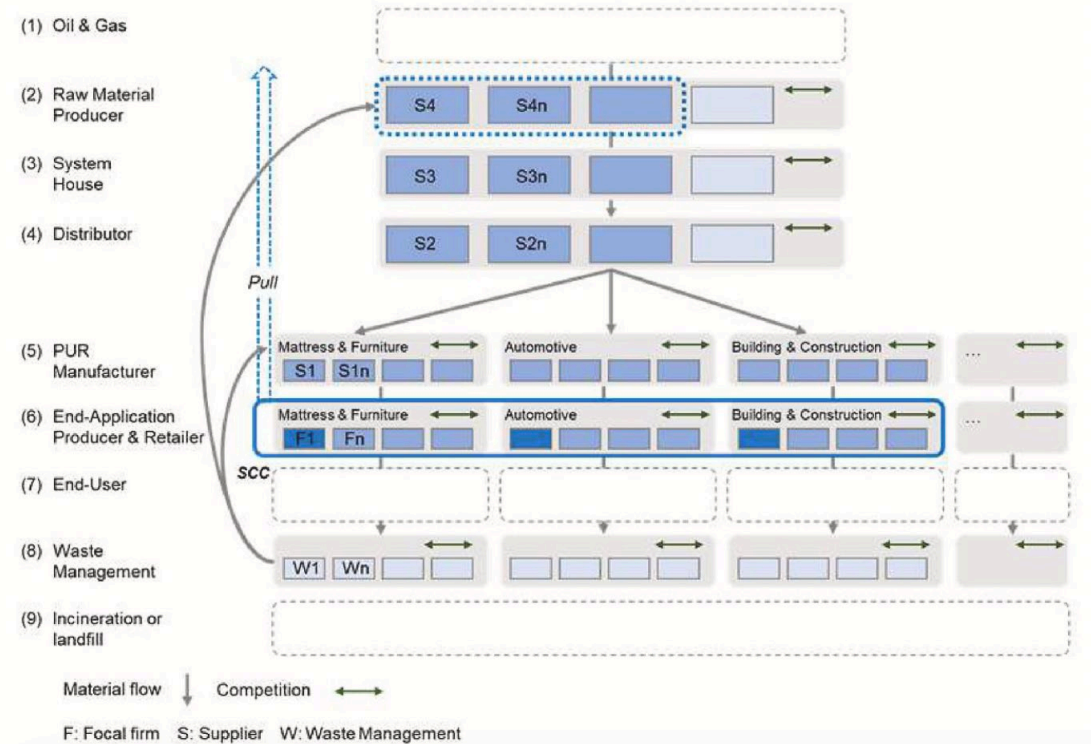
# Inter-firm networks

- Vertical and horizontal collaborations

## [1] Vertical

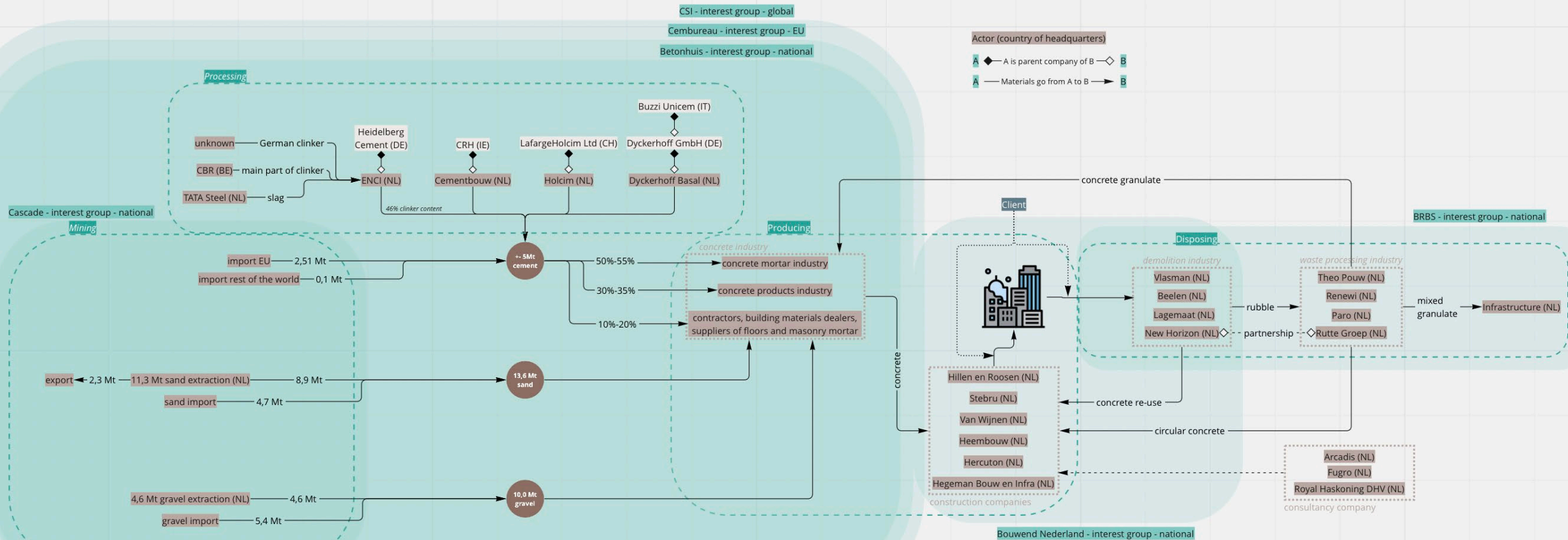


## [2-C] Horizontal – SCC-Pull (inter-industrial)



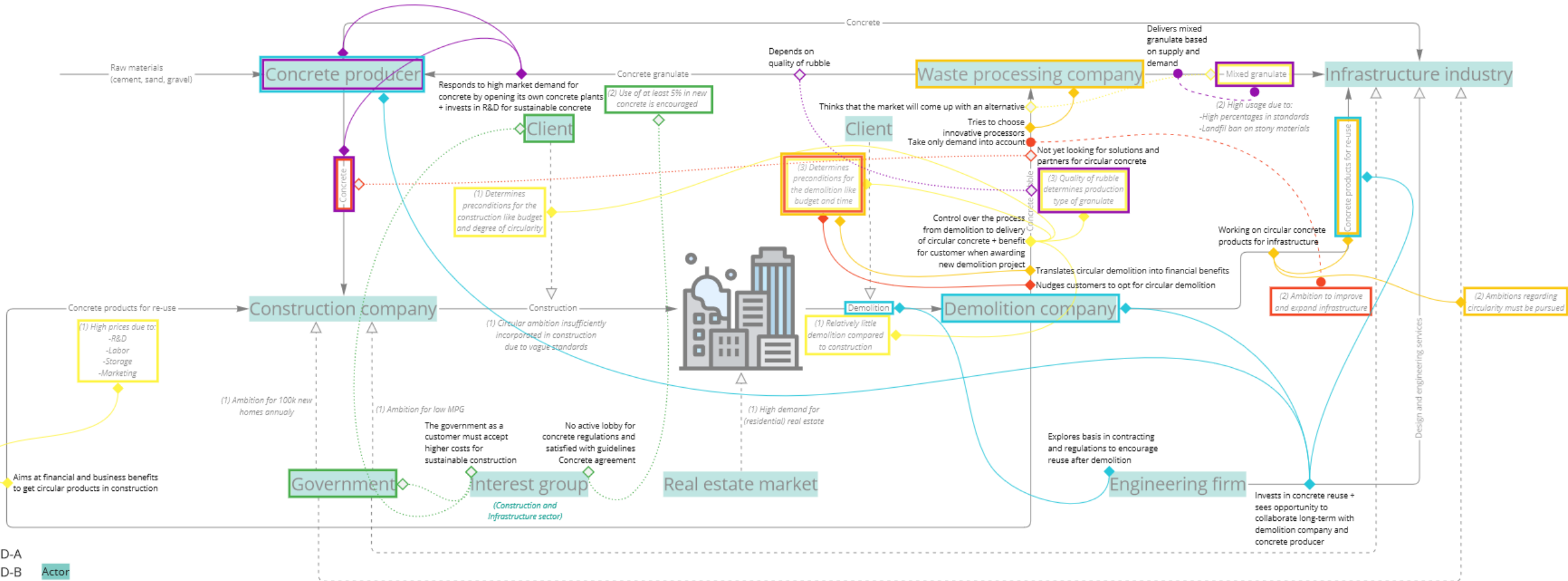
# Methods

- Mapping
- In-depth semi-structured interviews



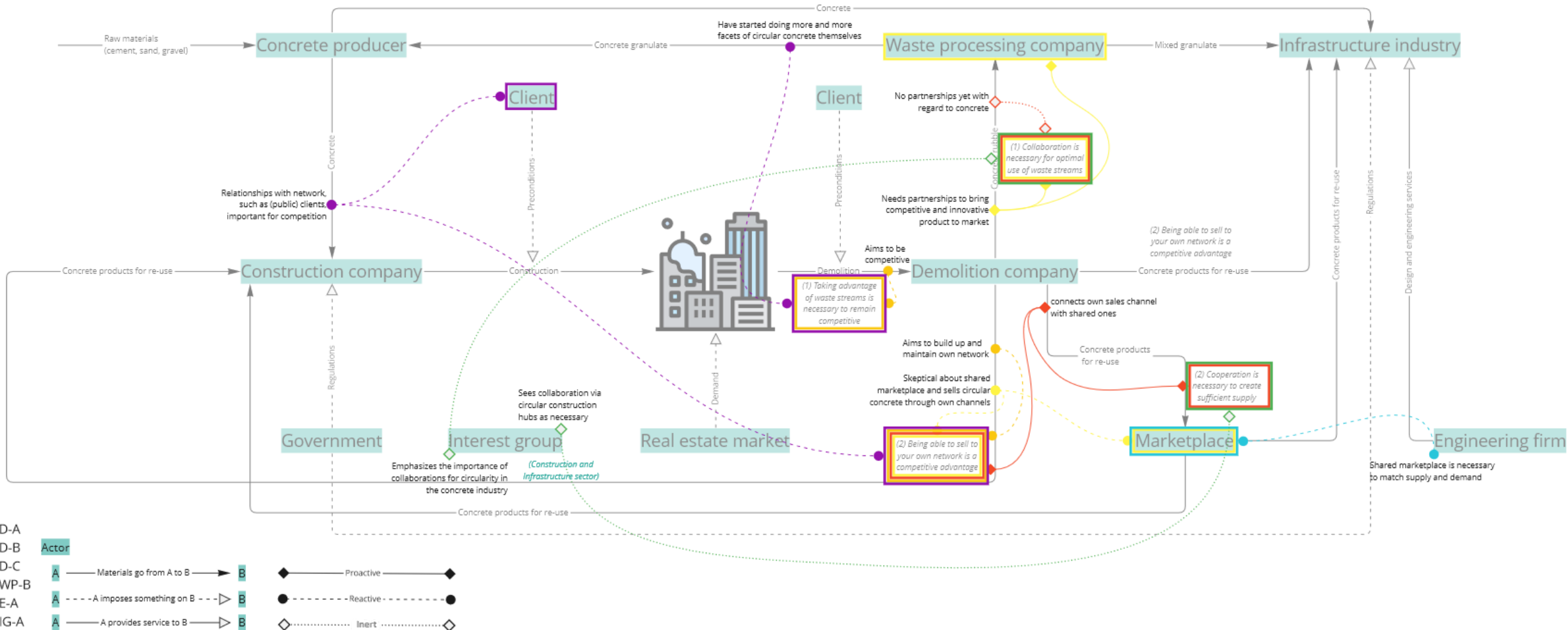
# Findings

- Paradox of growth



# Findings

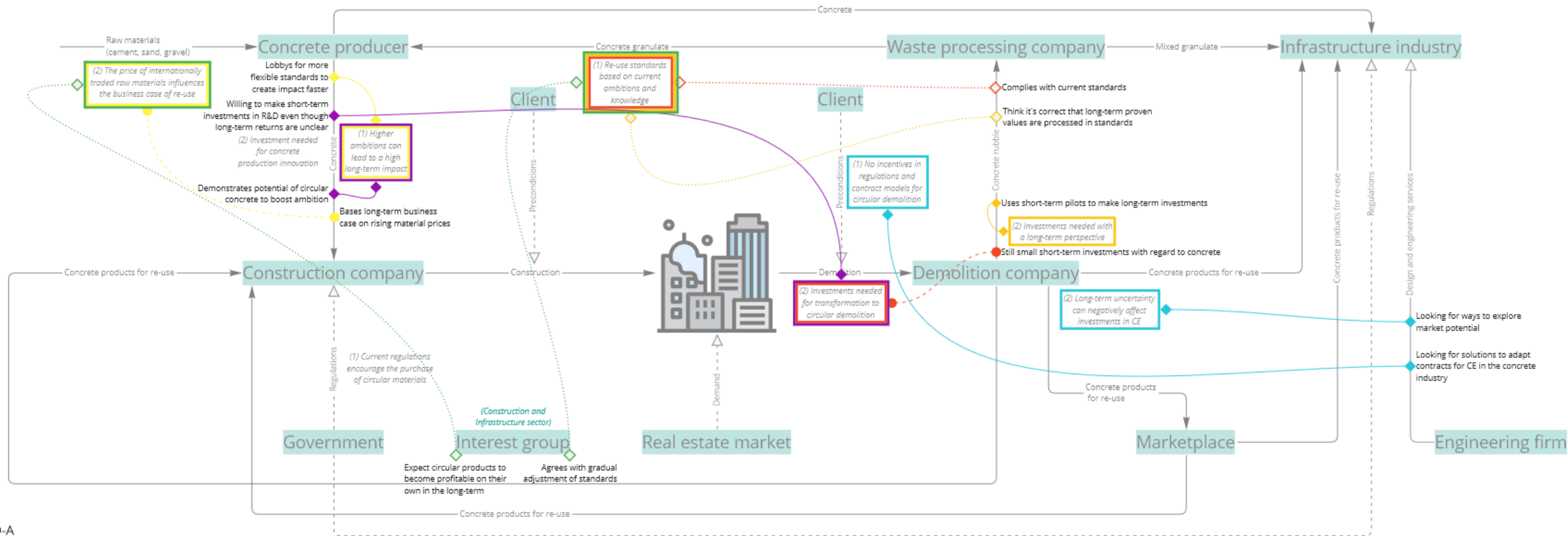
- Paradox of co-opetition





# Findings

- Paradox of long-term/short-term



# Discussion

- Why is this relevant?

When making policy, governments must take more account of the inter-firm networks as a whole, for example by stimulating the supply of circular products in addition to the demand.

The lack of coordination between parties in the waste sector can ultimately hinder the implementation of policies or financial incentives that could benefit the entire sector

Clients can have a huge impact on the ability of companies in the waste sector to experiment and innovate. This research is also a call to action to clients of construction and demolition to look for innovative solutions to work towards a CE.

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