

Companies & the Transition to Low Carbon Cities



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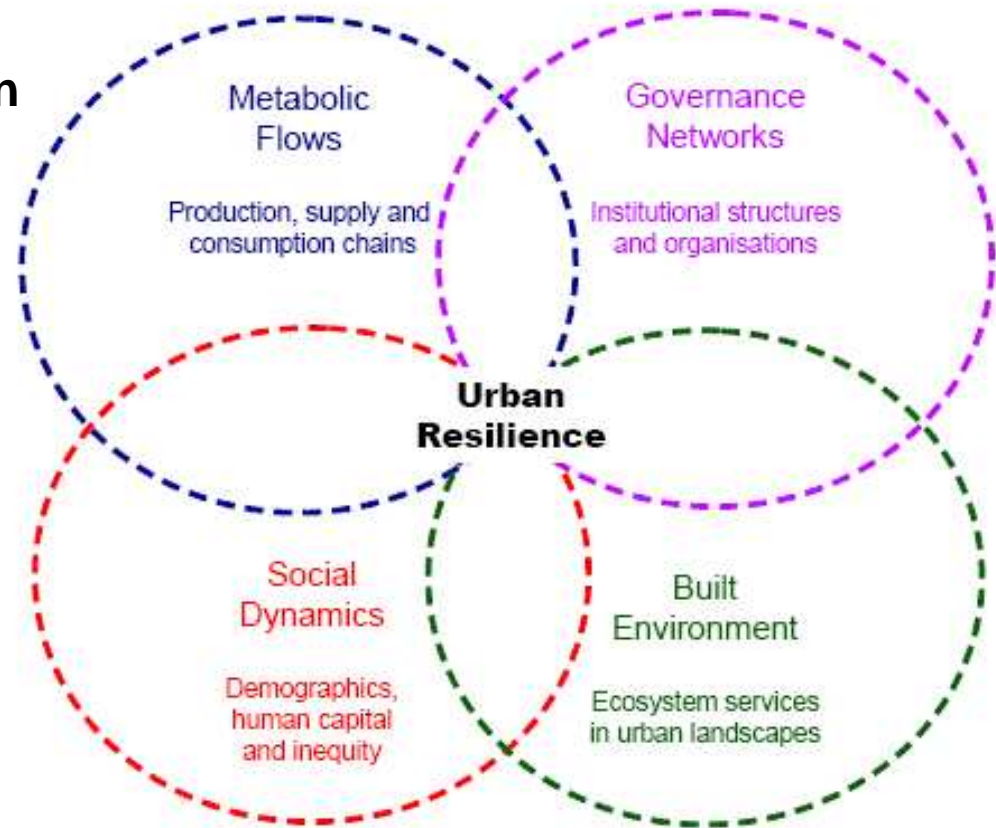
The Sustainable City?

- Cities cover < 1% of the earth's surface, but home to > 50% of global population (estimated to increase to 60% by 2030)
- Cities consume 75% of the world's energy; produce 80% of all GHG emissions
- Climate change will directly affect cities; some are more vulnerable than others
- Working locally and networked globally

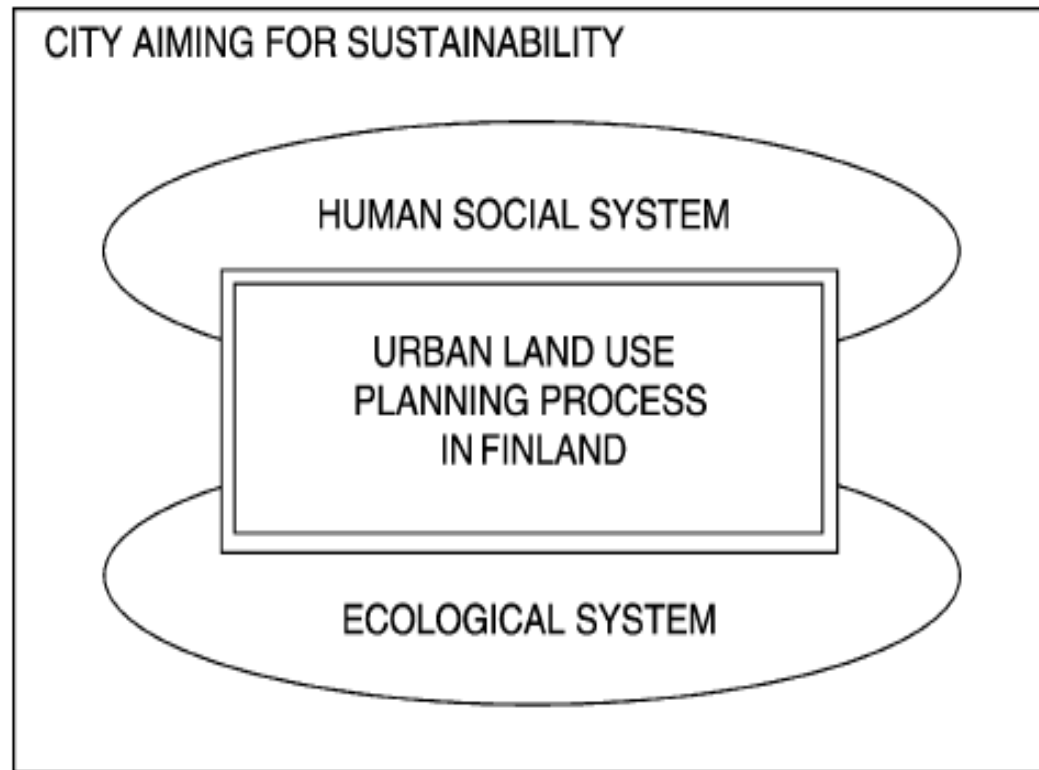
The Sustainable City

Urban resilience: the degree to which a city can tolerate change and manage threats such as climate change.

Can companies do more within the sustainable city system?

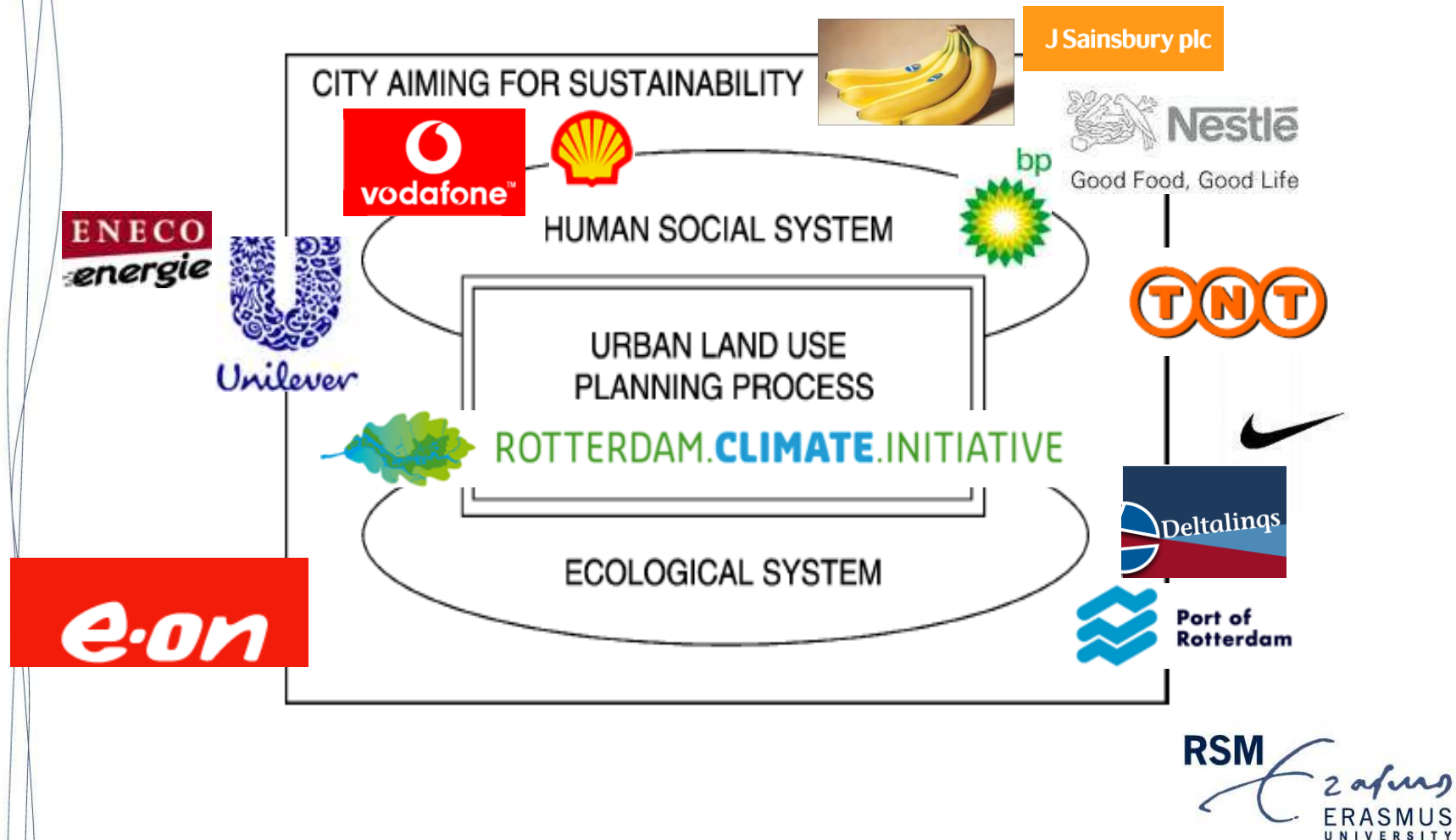


Typical Land Use Planning Process In Cities



Source: Yli-Pelkonen & Niemelä 2005

Integrating companies into urban planning models

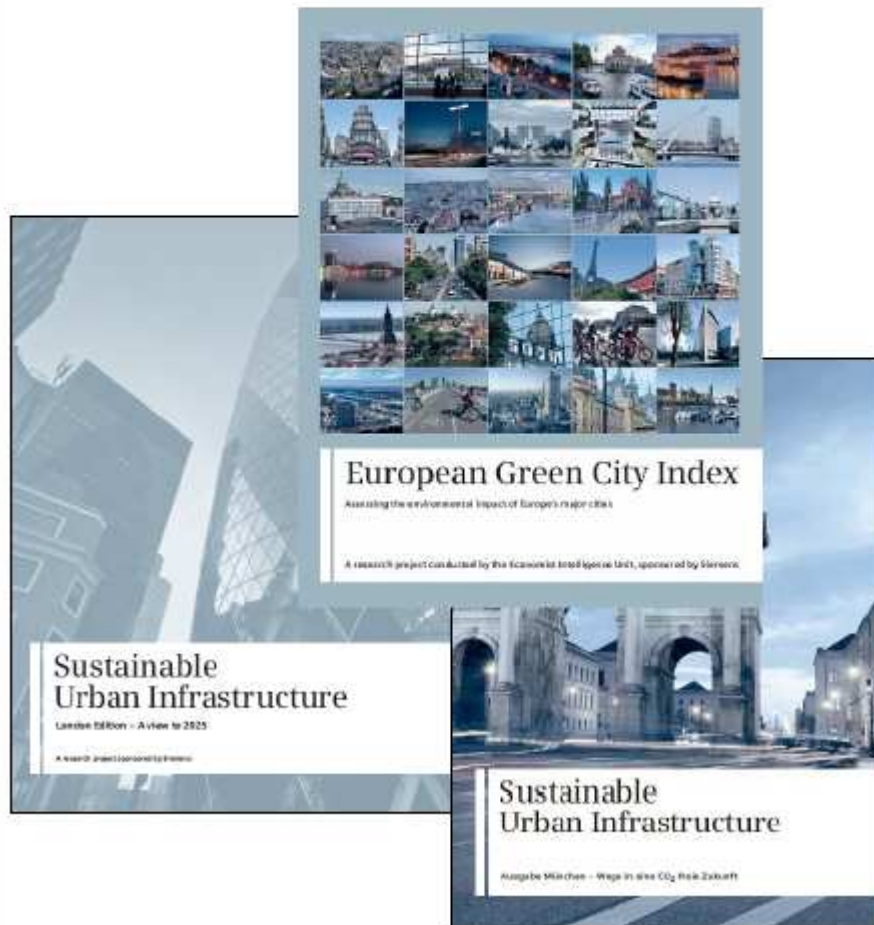


Why should a company care about a city's CO2 footprint?

- **Cities:** where most products & services are consumed (local brand imprint)
- **Cities:** where HQs are located
- **Cities:** where corporate stakeholders live and work (employees, investors, customers)
- **Cities:** key contributors of CO2
- **Cities:** vulnerable to climate change
- **Cities:** actively dealing with climate change (business opportunities)

Siemens Research Series “Sustainable Urban Infrastructure”: A Contribution to the Debate

Research on sustainable urban infrastructures



Approach

- **Research undertaken by independent partners**
e.g. McKinsey & Company, The Economist Intelligence Unit, Wuppertal Institute for Climate, Environment and Energy in cooperation with Siemens
- **Evaluation fields**
 - **Cities’ most pressing infrastructure needs**
 - **Pathways to higher levels of urban sustainability**
 - **Technologies needed for increased resource efficiency**
 - **Economic implications**



Connected Cities

Urban EcoMap

7 pilots:

1. Smart Transportation Pricing in Seoul;
2. Urban EcoMap in San Francisco and Amsterdam
3. The Connected Bus in San Francisco;
4. Personal Travel Assistant in Seoul and Amsterdam;
5. Smart UrbanEnergy for Schools in Lisbon;
6. UrbanEnergy Management in Madrid;
7. Smart Work Centers in Almere and Amsterdam.

DAIMLER

- Daimler starts mobility concept for the city: car2go



PHILIPS



The international
city.people.light award 2009

For sustainable and livable cities

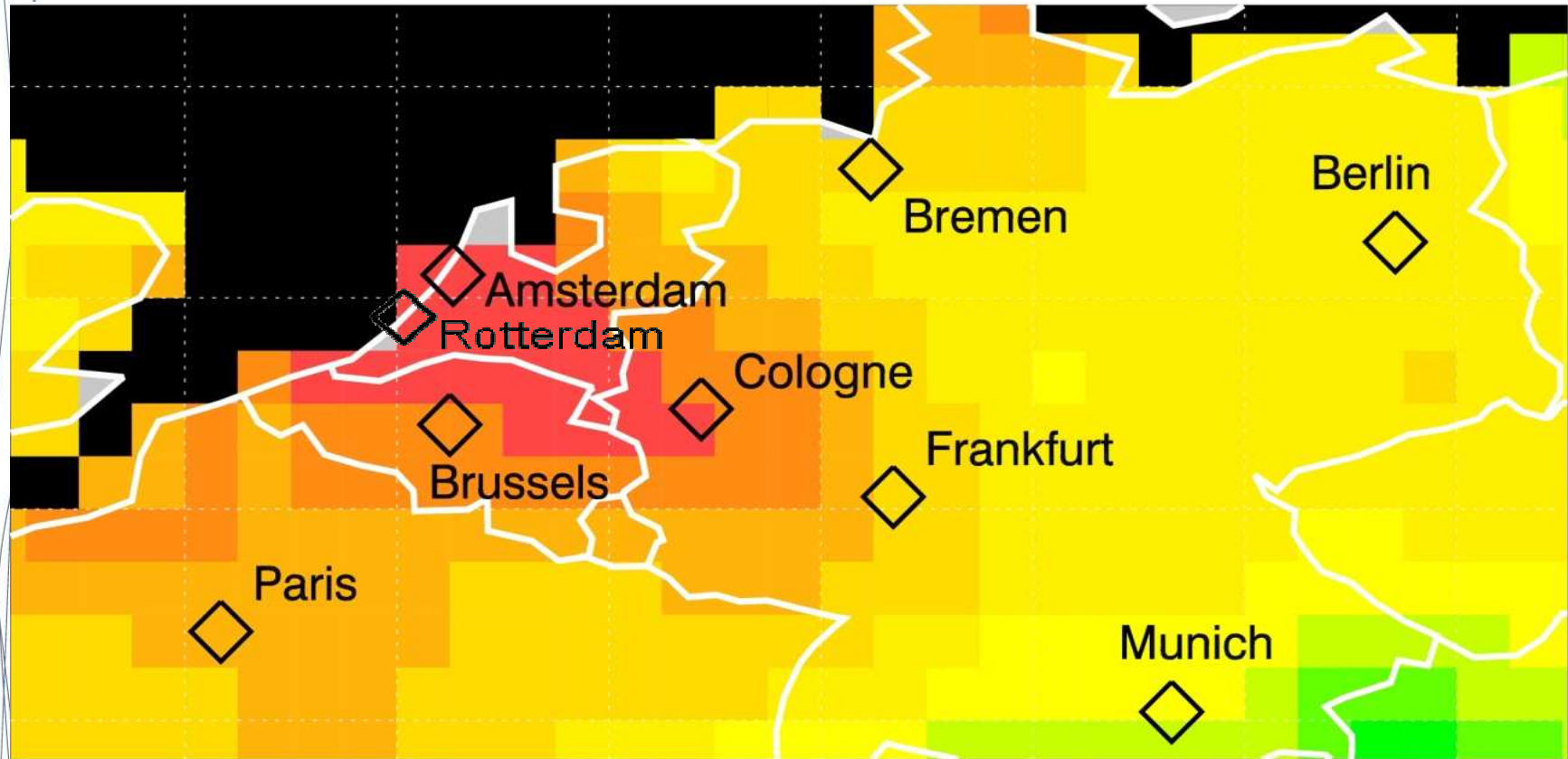
Case Study: Logistics/Delivery



- Launch of Electric Vehicles in Rotterdam in partnership with Rotterdam Climate Initiative



CO₂ in Rotterdam area



Number of CO₂ molecules per million air molecules



IUP, Univ. Bremen
DLR ESA

ERASMUS
UNIVERSITY

“Snapshot” on Rotterdam



- ▶ Co2 emissions
- ▶ Crill (small particles)
- ▶ Water
- ▶ Invasive species; homogenization of species; endangered species
- ▶ Decreasing biodiversity
- ▶ Decreasing green space
- ▶ Lack of ecological policy plan

The Company



- Global transportation and logistics company: annual revenue in 2008 > €10 billion
 - Two divisions: Express and Regular Mail Delivery
- In 2004, poor environmental record; now listed by DJSI
- CEO is strong supporter of reducing CO2
- Operational vehicles responsible for 23% of emissions
 - Greening the fleet is part of corporate policy
- CEO on advisory board of the Rotterdam Climate Initiative
- Pilot project: Launch of 2 EV's in Rotterdam in cooperation with RCI

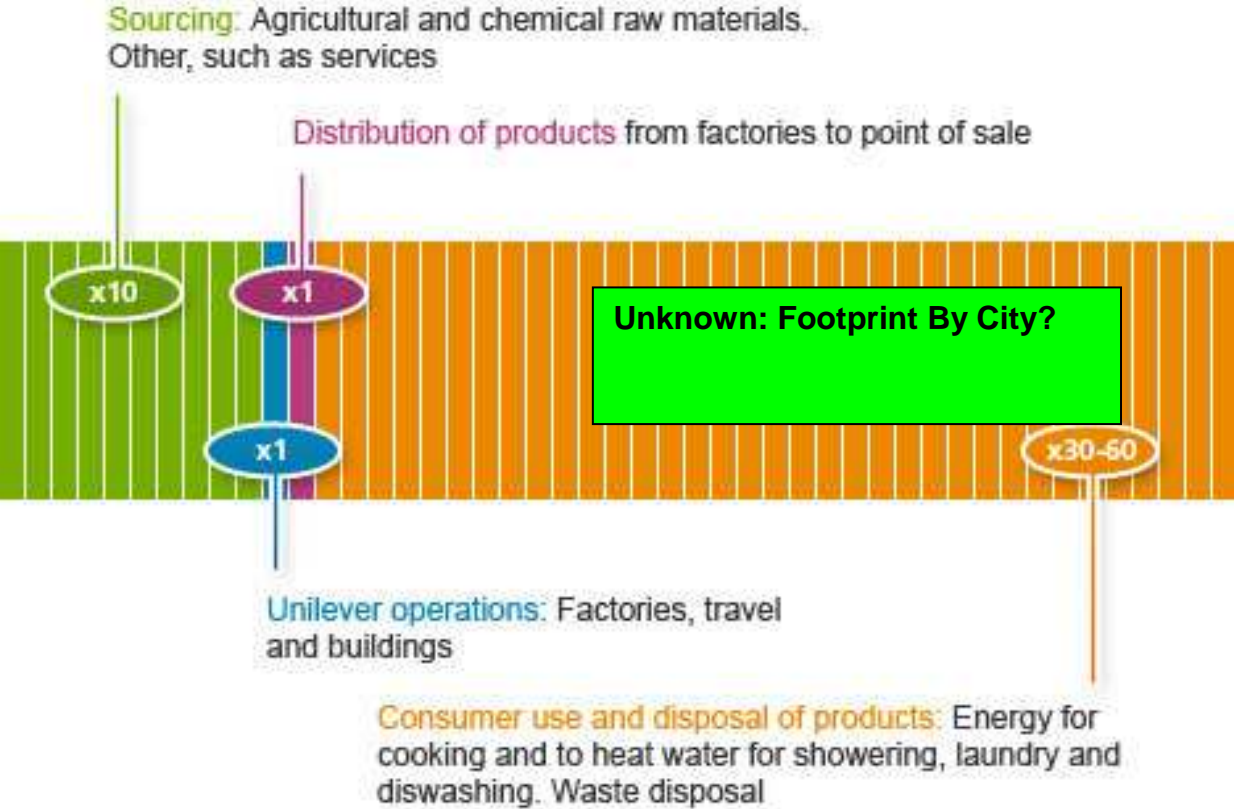
Findings

1. City emissions were important at launch, but financial business case **for the company** became critical
2. Company made decisions in isolation
3. Company didn't know the built environment of the city as it related to the EV
 - Didn't take a life cycle approach
4. Information flow and coordinated action between all players was severely limited
 - between different divisions within company
 - between company, RCI & municipality
5. Pilot success was limited

The Need for Bridging Institutions

- Bridging processes *connect actors/ organizations across levels and scales*
 - enhance knowledge and capacity to deal with change
- The city network as a *learning organization*
- Crucial but *major governance challenges*
 - Power issues: resistance to change (esp. middle management)
 - Lack of city-level incentives for companies
 - Communication silos
 - Lack of formal / informal info channels
 - Lack of corporate reporting at city level

Future Research: Unilever's Carbon Footprint



Beyond our direct emissions, our wider value chain shows greenhouse gas emissions at every stage of the value chain – including the sourcing, distribution, consumption and disposal of our products.