

**Rebounds
discovered, and
now....**



product ecology
consultants

Mark Goedkoop

- The Rat-race
 - Delinking economic growth and environmental load
 - Why our capacity to damage the environment is limited
 - The most efficient way to spoil things
- Policy implication
 - Sector level
 - Product level (case)
- Redefining progress?
 - The Hummer dilemma
 - Are designers interested?

Why our capacity to destroy the environment is limited

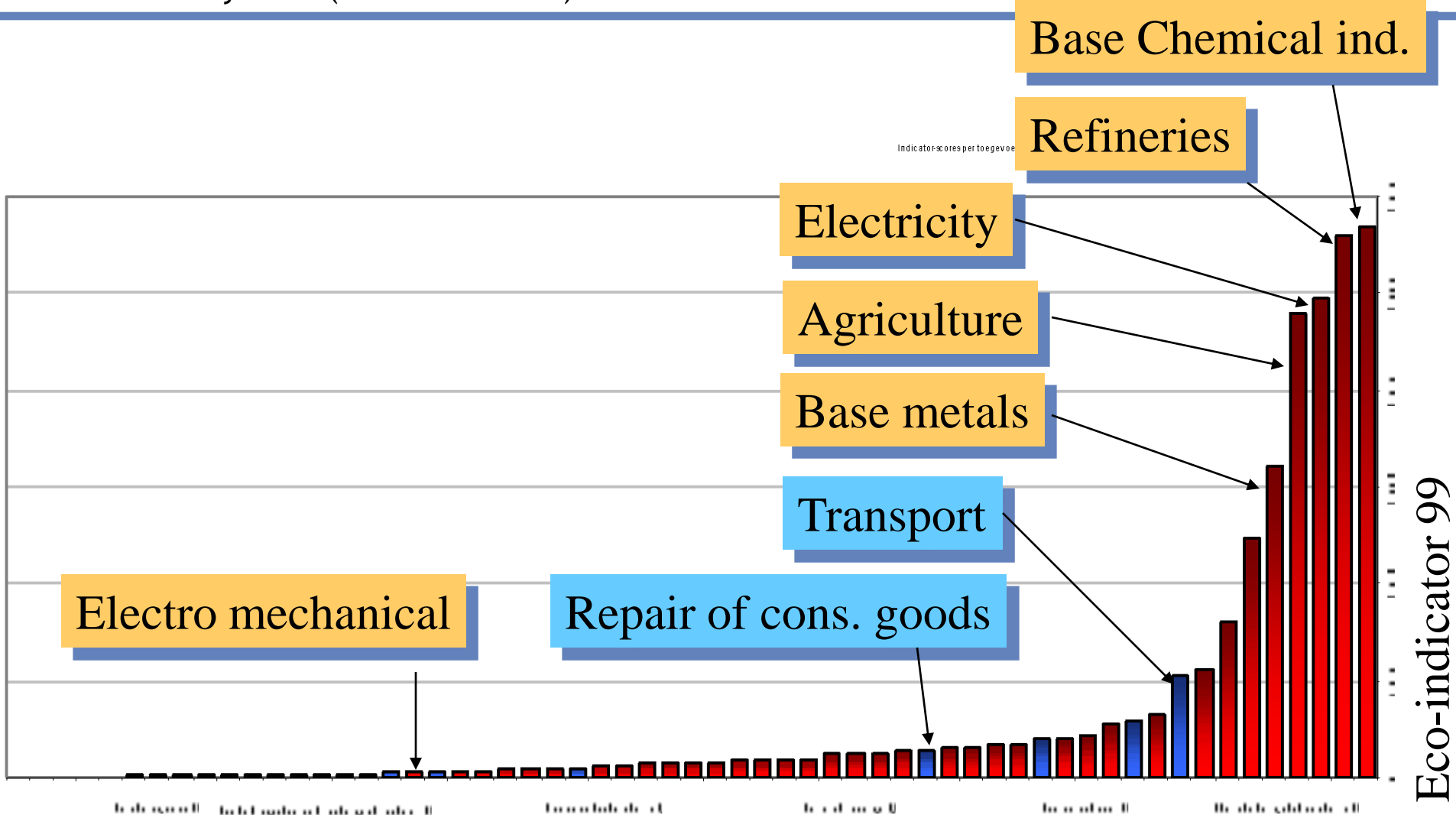


- We do not have enough money to purchase and enough energy and materials
 - Economic growth is limited to 3% (west) to 10% (Asia)
- We do not have enough time to use and destroy all these products
 - Population growth, especially the growth of middle class) sharply increases the destruction time available
- We do not have enough space to store or park more products and cars.
 - Cities grow on the expense of nature
- We cannot consume more calories
 - Many are switching to high meat diets

The cheapest way to spoil: Environmental load/value per sector

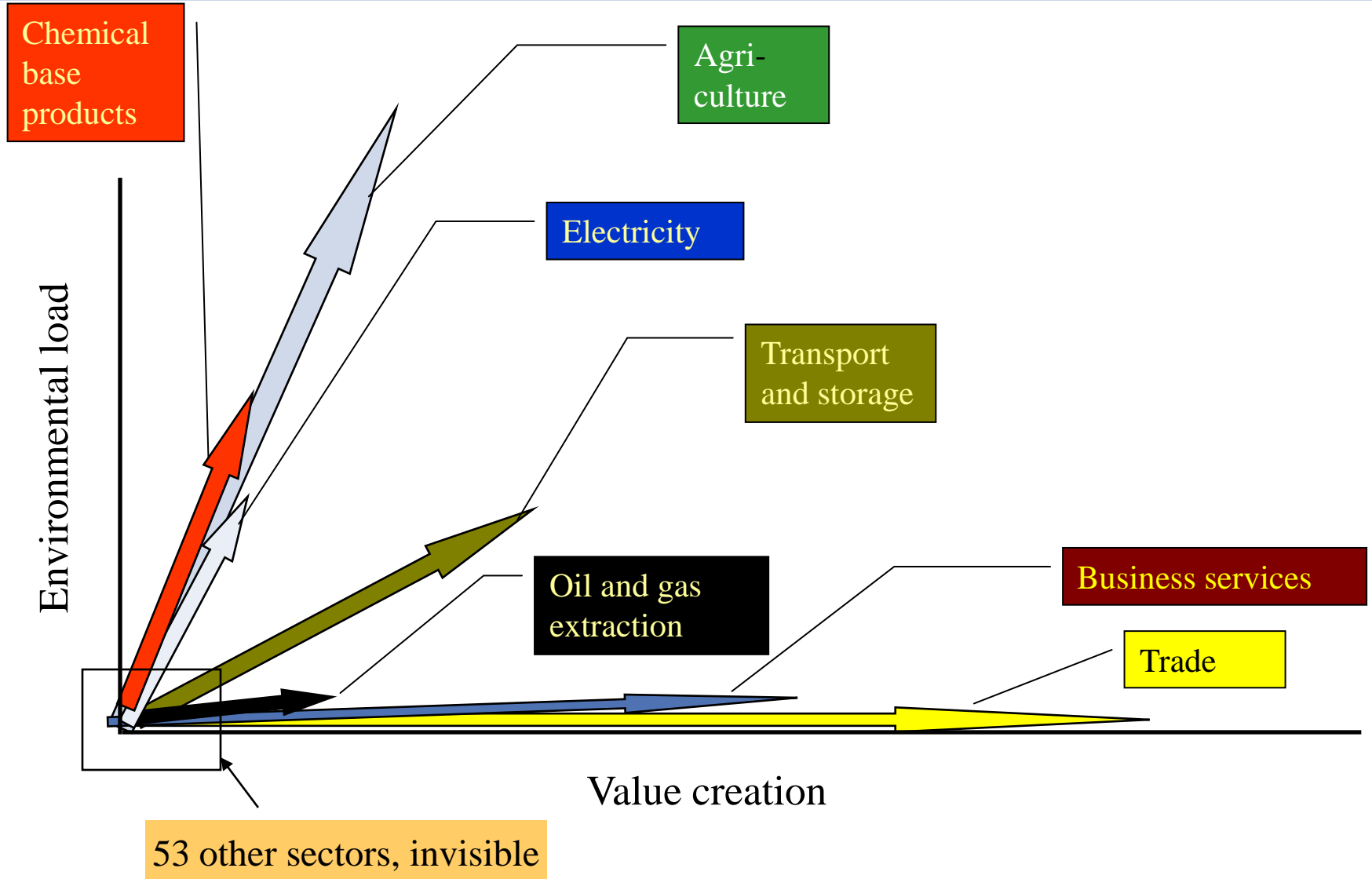


Dutch economy 1990 (studied in 1999)

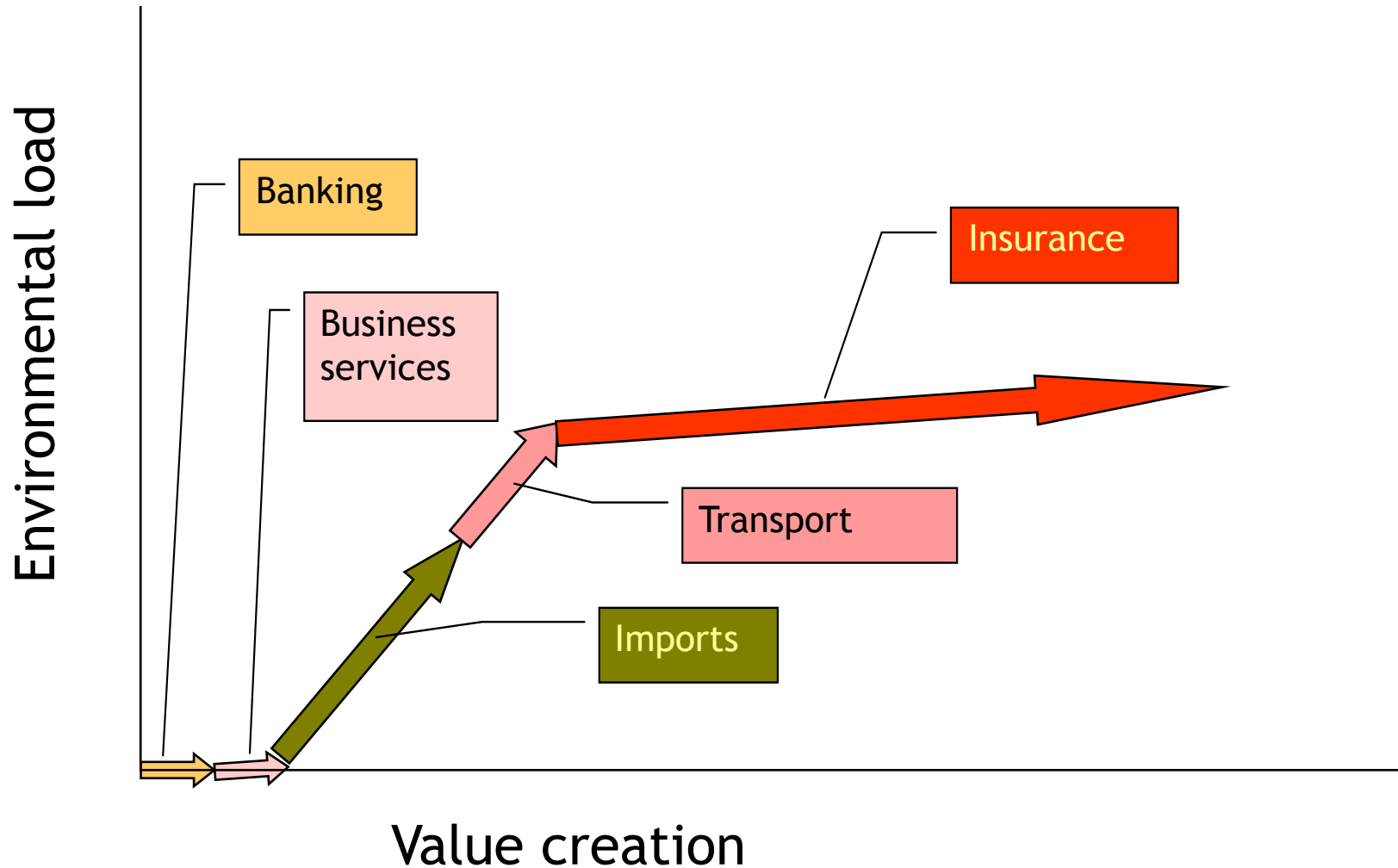


Cheap and expensive sectors

Dutch economy 1990 (studied in 1999)

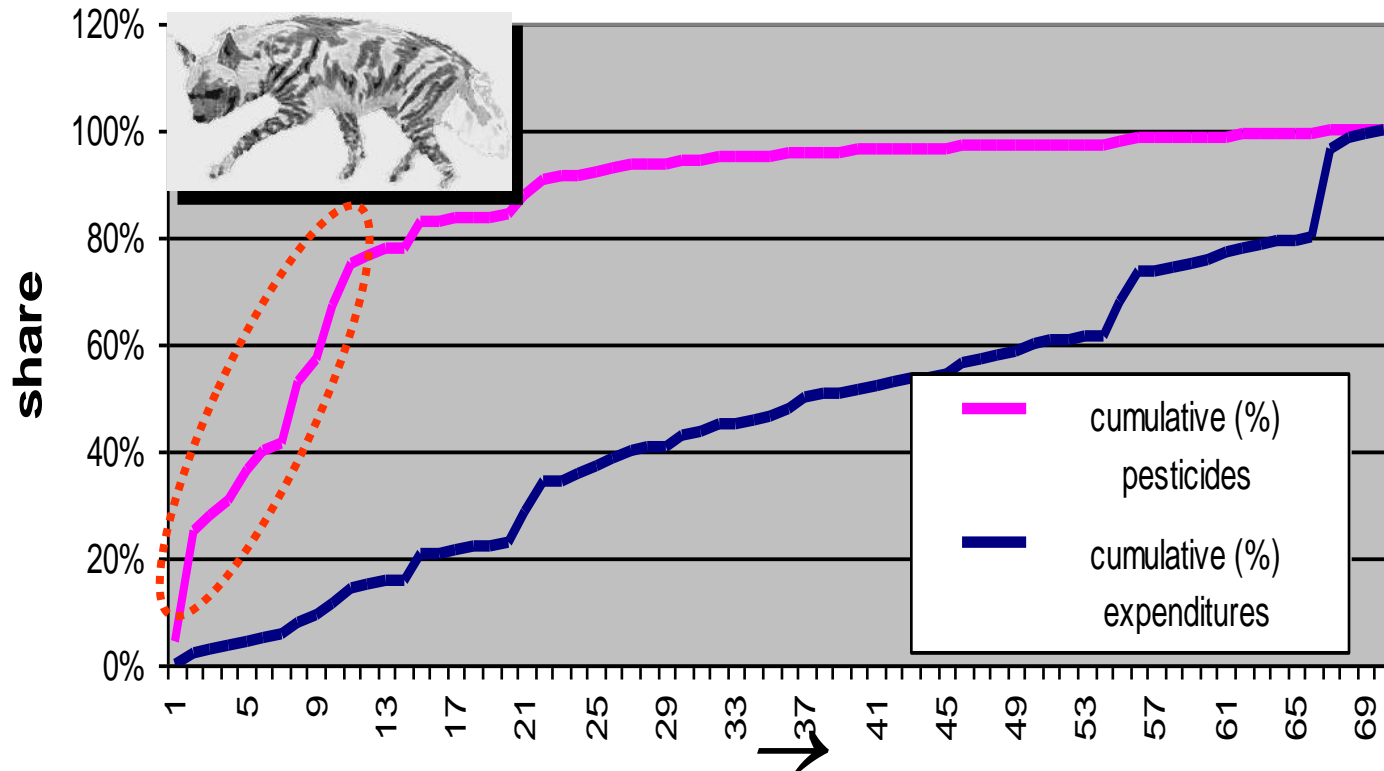


But sectors do not exist in isolation



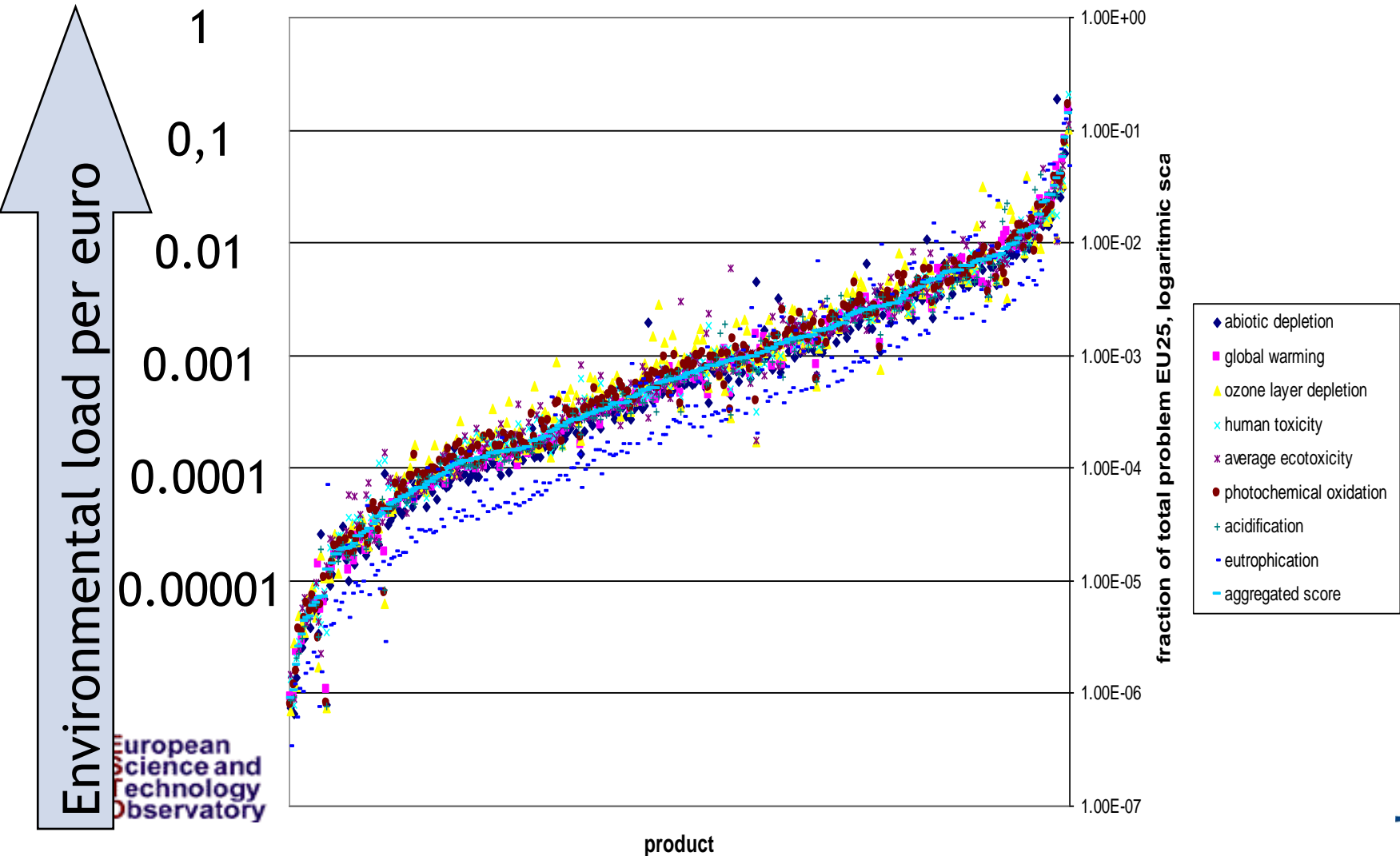
Environmental load versus value creation

pesticides



70 product groups , decreasing impact/euro

Ranking of product groups in the EU EIPRO study (2005)



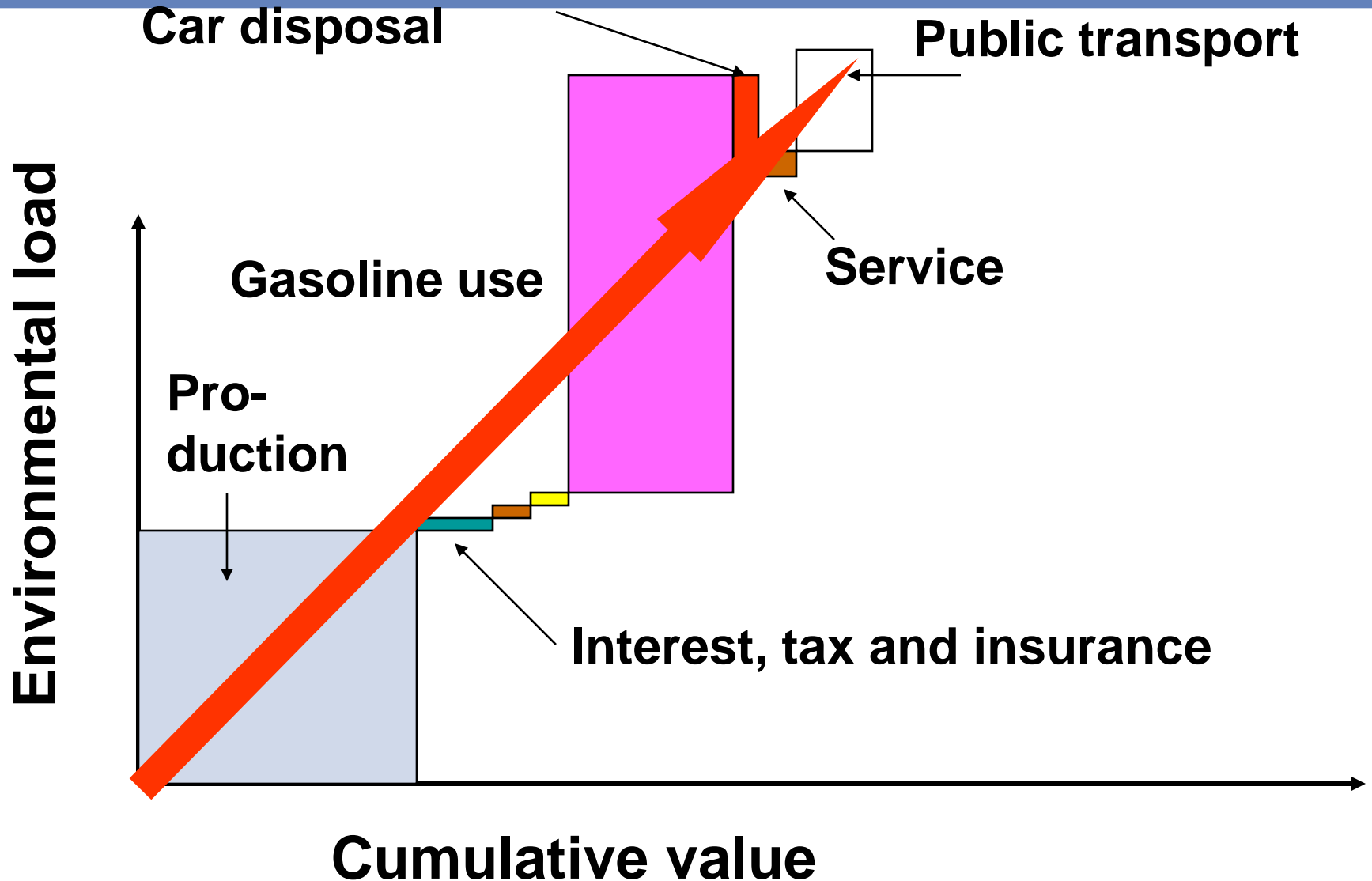
Now, compare car driving and Car sharing



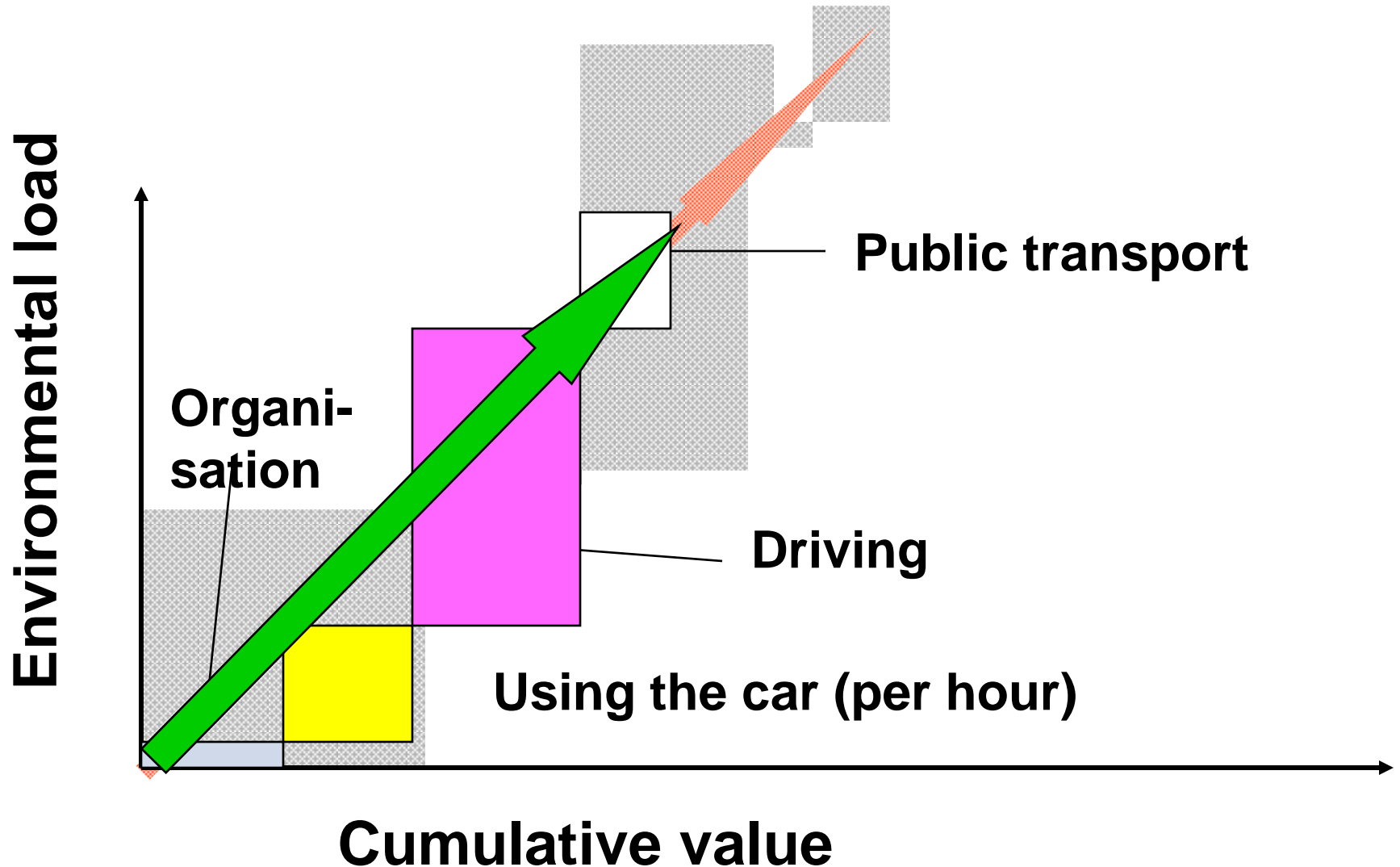
- Functional unit:
- Per km there is no significant difference.
- But joining the system will change behaviour:
 - Some drive more
 - Some will drive less



What members did before introduction of car-sharing



What members did when they joined the car sharing system

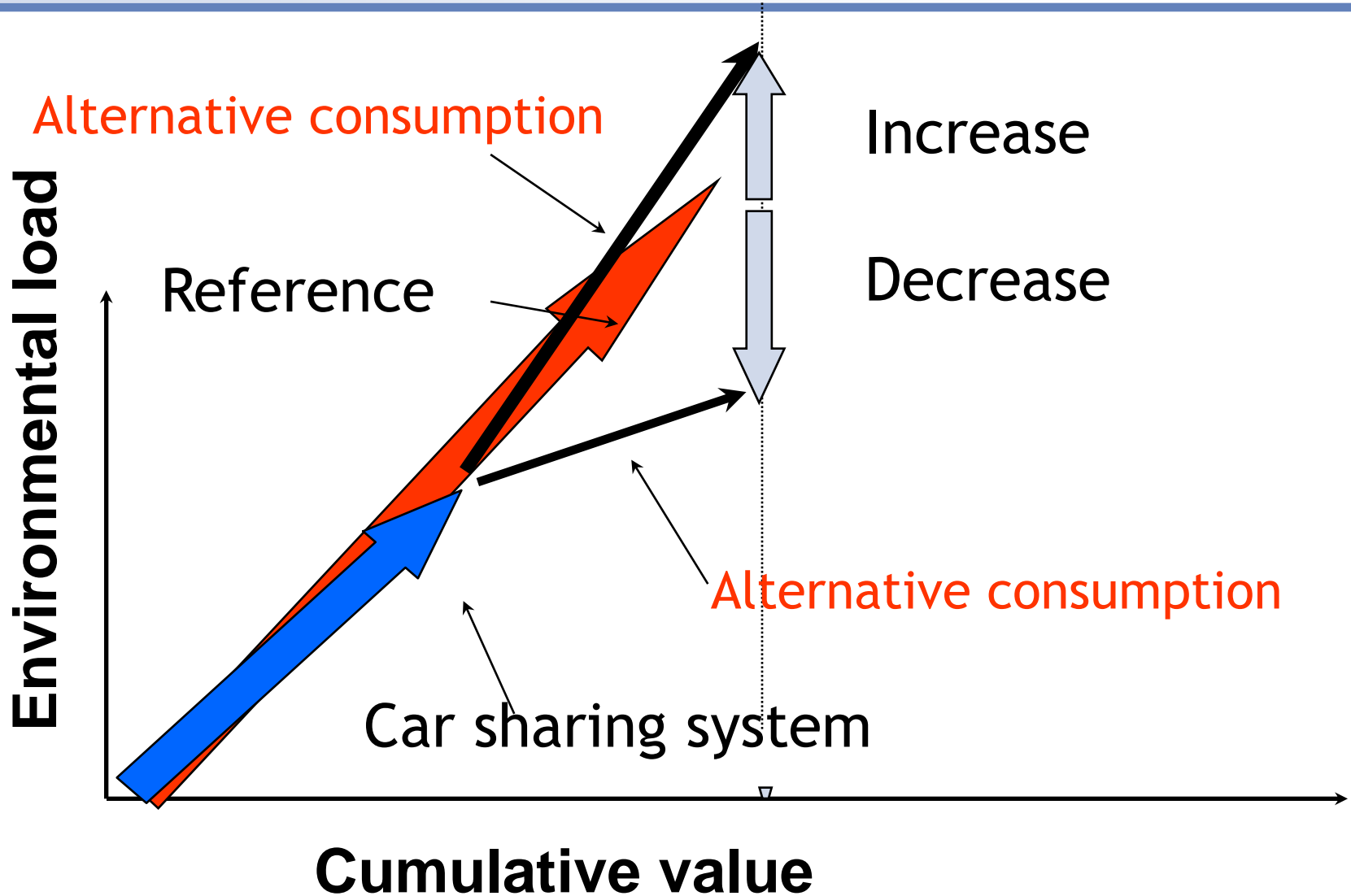


So is car sharing better?



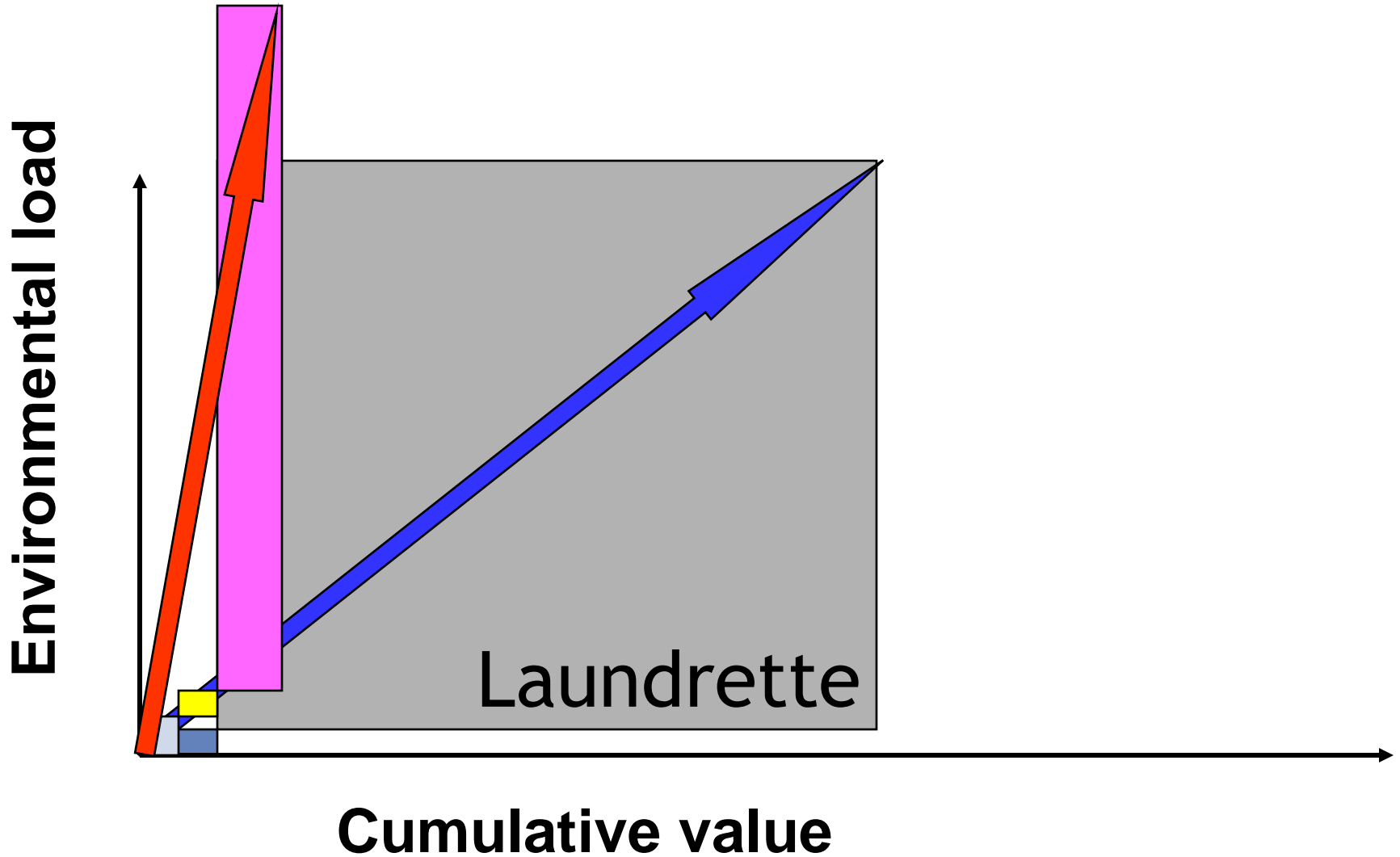
- Users of the system, will not change the ratio between value and load
- The key is what they will do with the disposable income
- We need to know the alternative consumption

Overall impact depends on alternative consumption

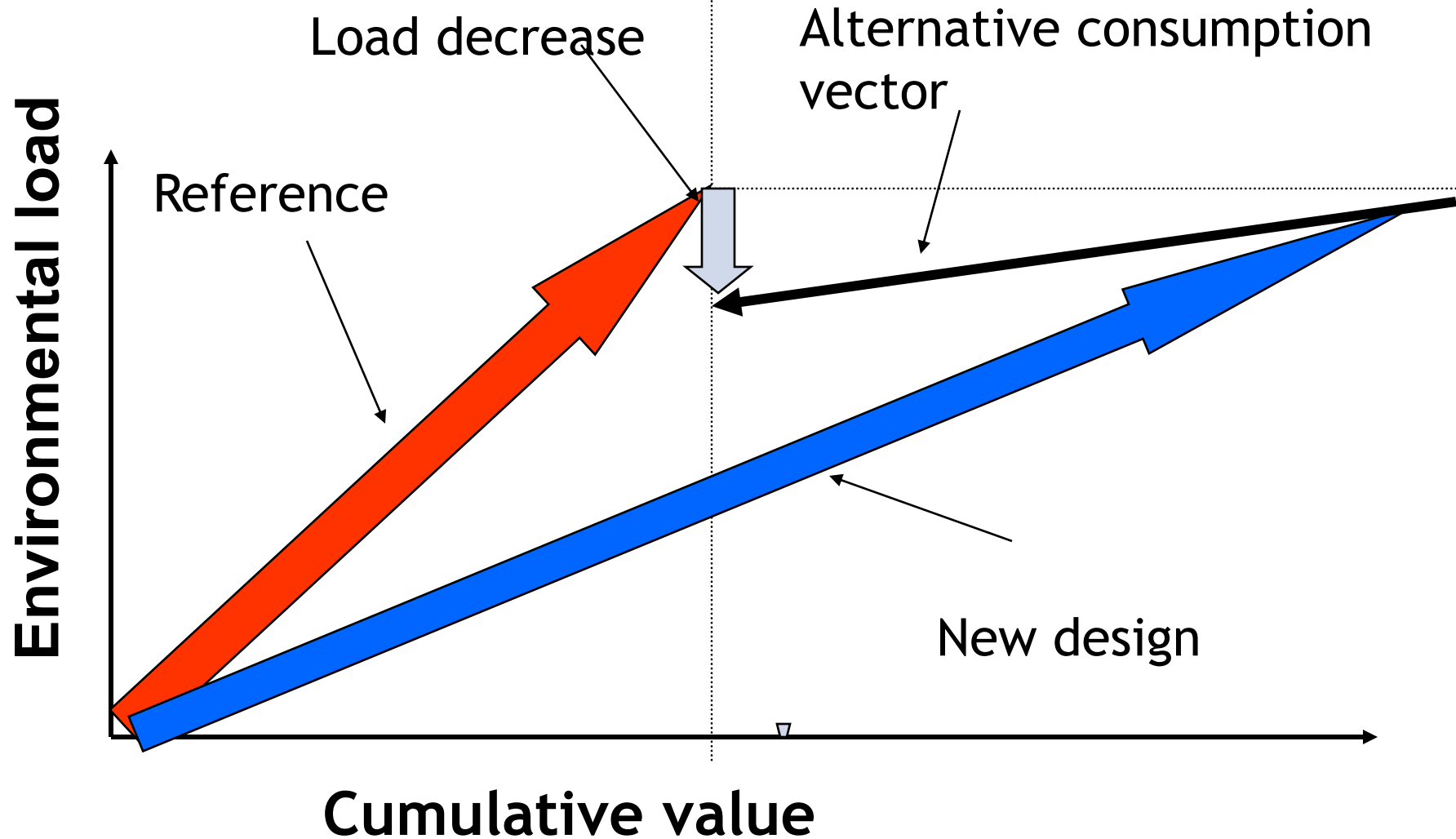


Private washing,

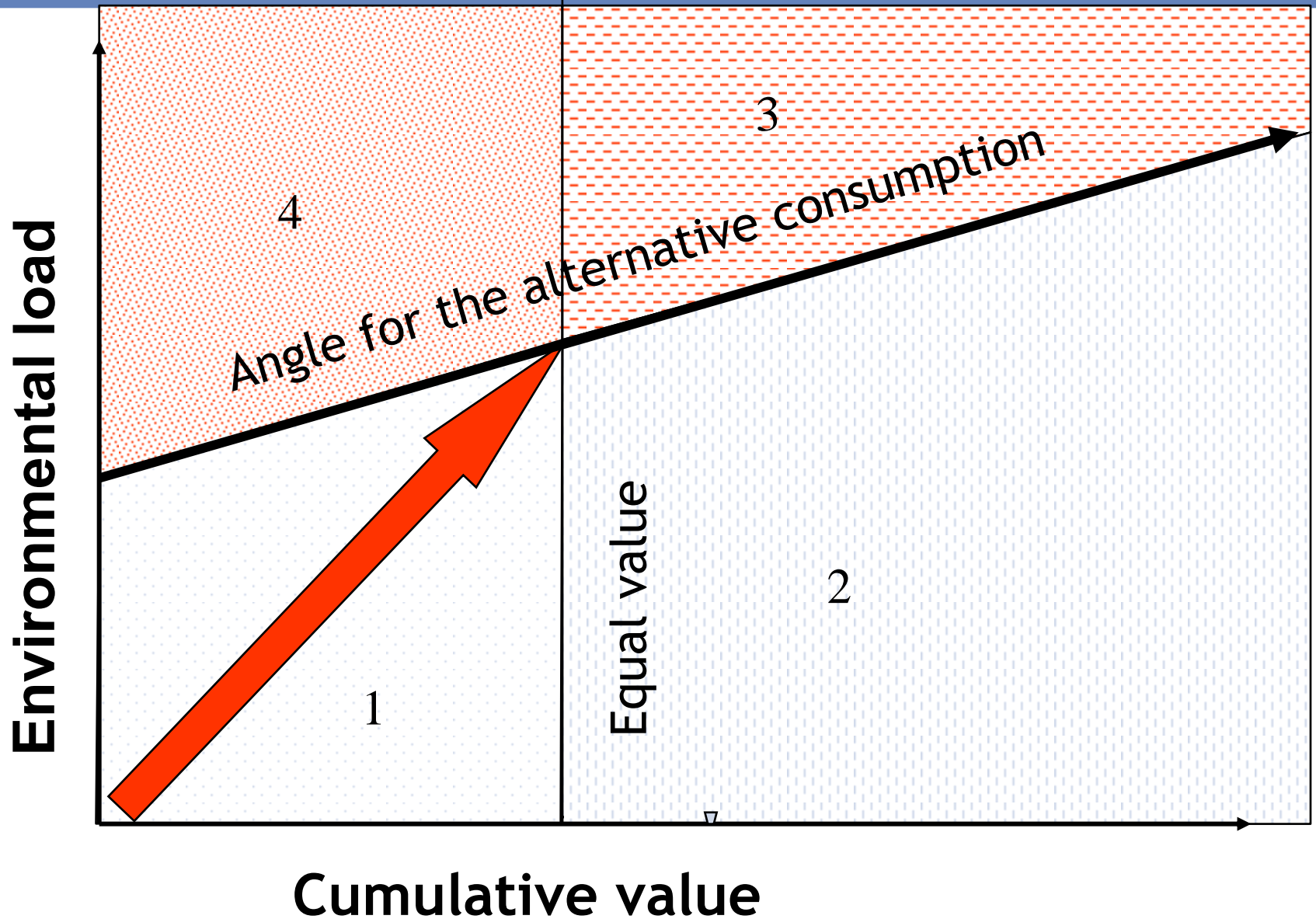
3kg/charge, 50% drier, 1,5 times more



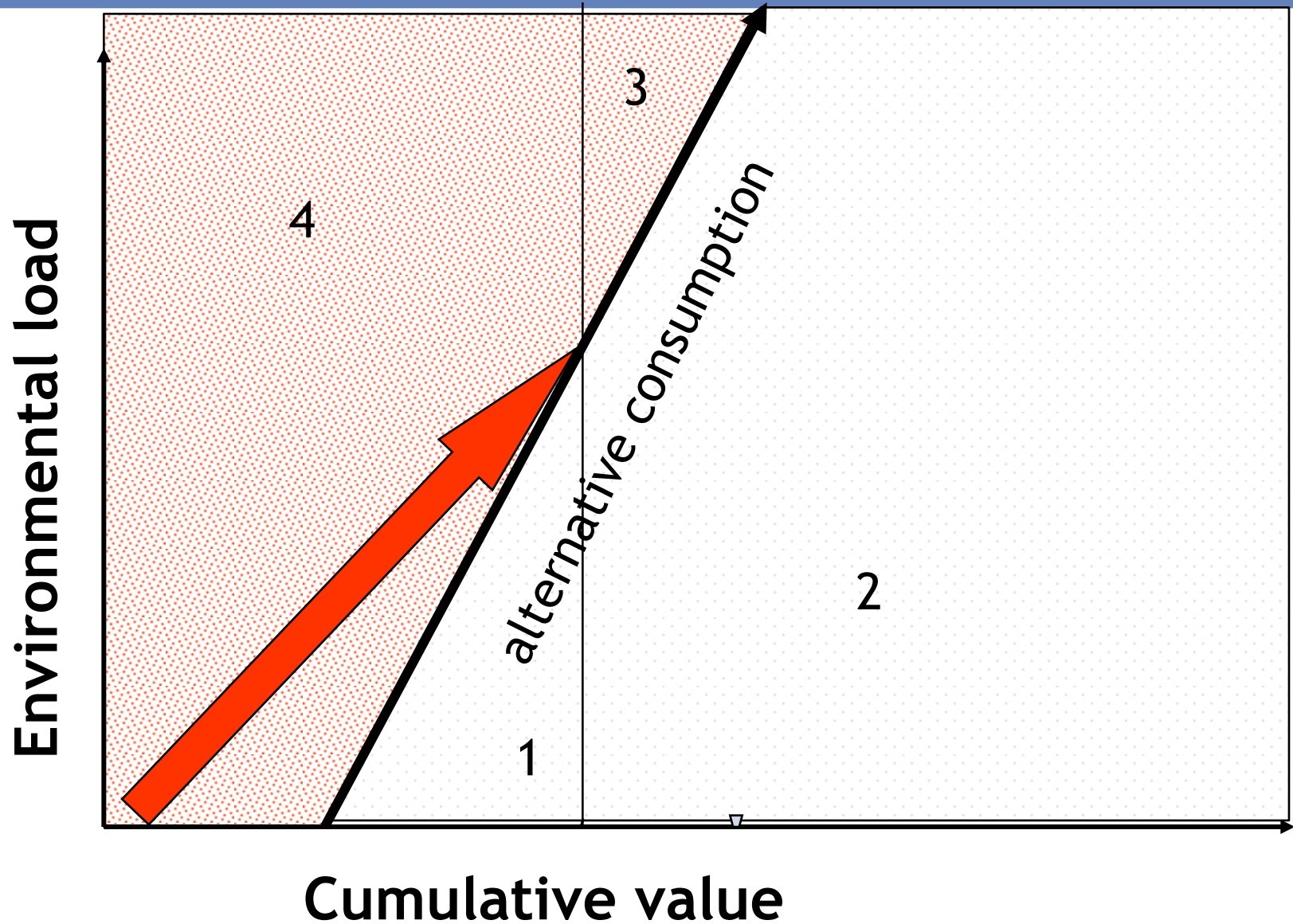
Products with more value, and same load are better



Products with a vector in 1 and 2 are preferred



Products with a vector in 1 and 2 are preferred



Some implications



- Lower environmental load per unit of value
 - Designers: add features, or improve product to give more value without increasing environmental load
 - Governments: add taxes, give incentives
 - Corporations: business units that pollute, but that do not add much, will become a liability
- Lower environmental load per unit of time
 - Designers: make “slow” attractive
 - Planners: reduce speed of transport
 - Corporations: design for couch potatoes
- Lower environmental load per unit of space
 - Difficult, but do not design ultra compact products.....

Dilemma's: what is the scope



- An SUV can cost 10 times more than a compact, and pollutes only 3 times as much, so is it better?
- Introducing ultra compacts (SMART) will get more cars on the same parking area: hence more cars
- Better Public transport, creates more demand
- Still we need these, but without good policies they are not the solution
- Design needs to be connected to policy and planning, so even a broad functional unit cannot solve our issue

For who are we doing this?



- Policy makers are moving into product development issues
- Marketing departments, often like the “add value” part of the reasoning
- Corporations are seeking the “licence to operate”
- Investors, may understand the liabilities

- However, very little interest has been shown over the last 10 years

Discussion

