Food packaging, health and the environment: What questions should we ask when looking for a way forward?

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Food Packaging Forum

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Route map

1. How did we get here?
   (On evolution paths and value chains)

2. Commonalities between the ocean plastic and food packaging debates
   (What is the problem?)

3. Room for convergence?
   (Key questions)

How did we get here?

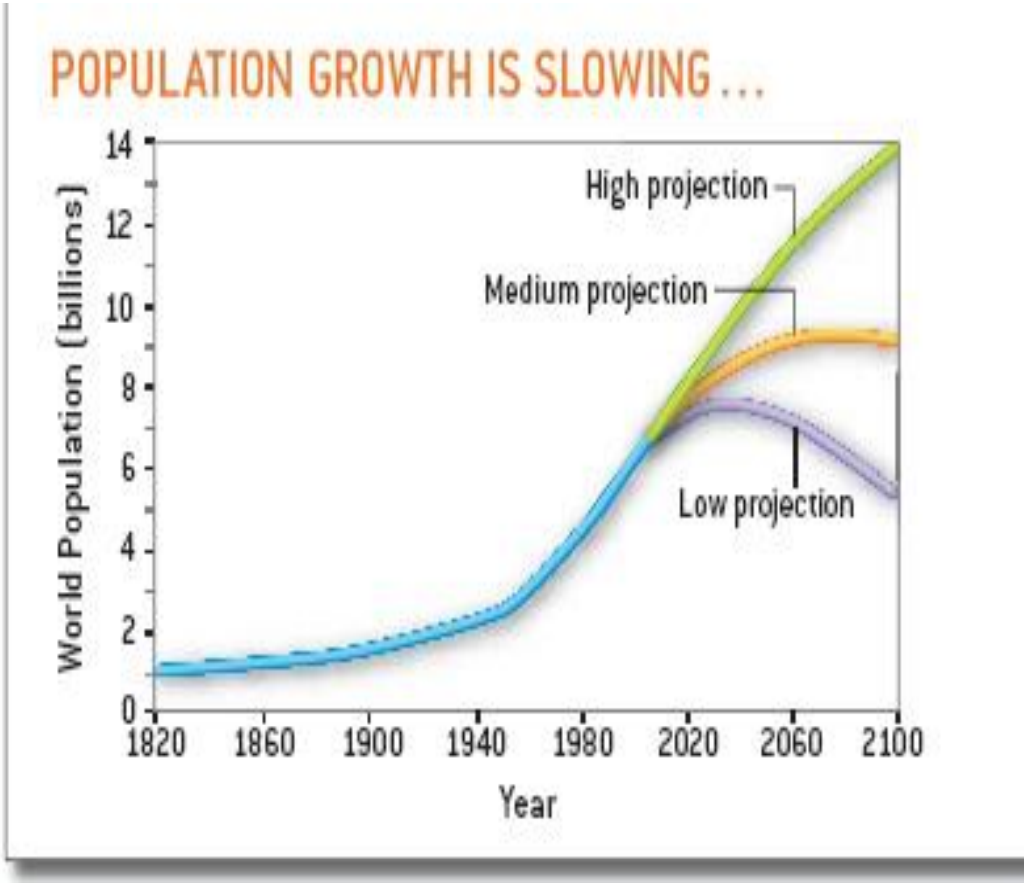
- Nothing happens… until something happens

How did we get here?
Demographic trend

Δ products: Food & Non-F

Δ transport distances

Δ preservation: F & Non-F



Foley (2010)

How did we get here?
Socio-economic trends

Δ urban than rural

Δ women in the workforce

Δ commuting time per family

Δ divorce rate

Smaller families

International supply chains

Lacking certification

Need to minimise food waste

Unaddressed externalities

Inflation

How did we get here?
Global trend

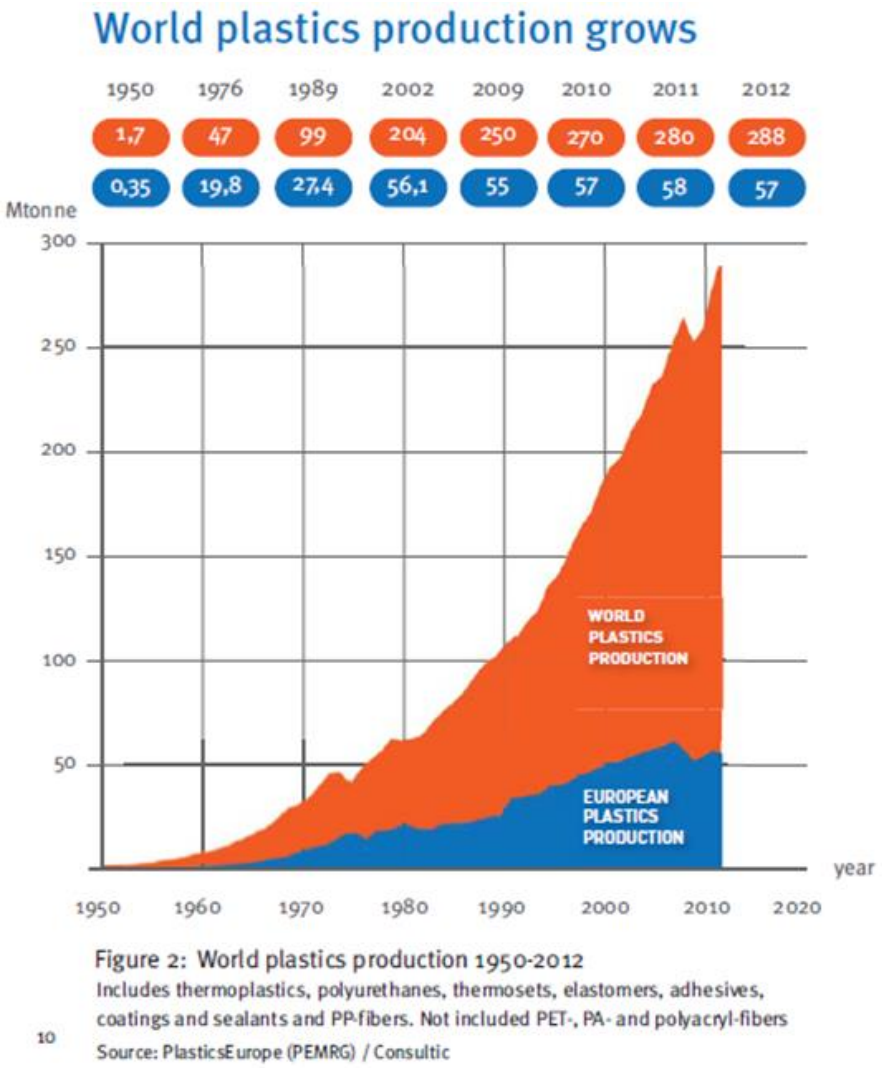


Figure 2: World plastics production 1950-2012
Includes thermoplastics, polyurethanes, thermosets, elastomers, adhesives, coatings and sealants and PP-fibers. Not included PET-, PA- and polyacryl-fibers
Source: PlasticsEurope (PEMRG) / Consultic

10

How did we get here?
Visible fate … something happens!

Engage…
Concern for species
Concern for environment & humans
Likely multipliers of civic norm

Disenfranchise…
Not mine – not mine
“We are fine”

How did we get here?
Commonalities

Race ahead of ourselves
Optimise for speed and volume
Either you get there faster or you are lunch

Narrow focus = narrow set of options
Not just plastic, not just packaging

Understandable: last 100 years is a blink in history of humanity

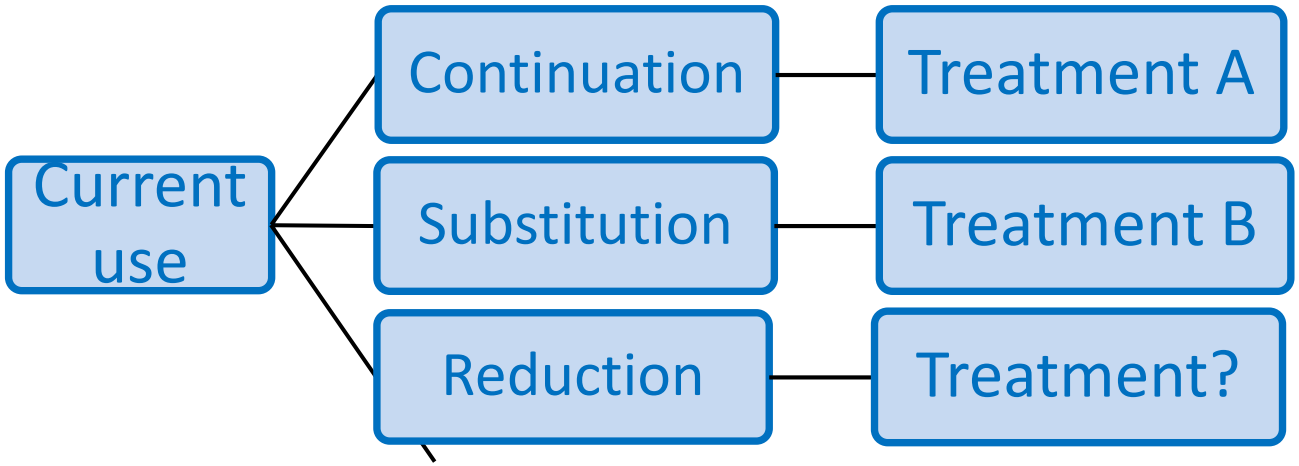
Convergence

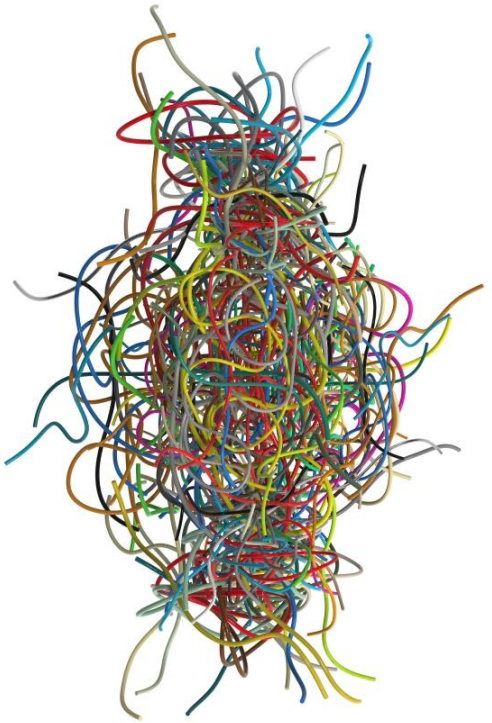
One problem?

- Dozens of functions or services
- Dozens of products per function
- 1000s of products on the market
- Formulations often unknown

Convergence

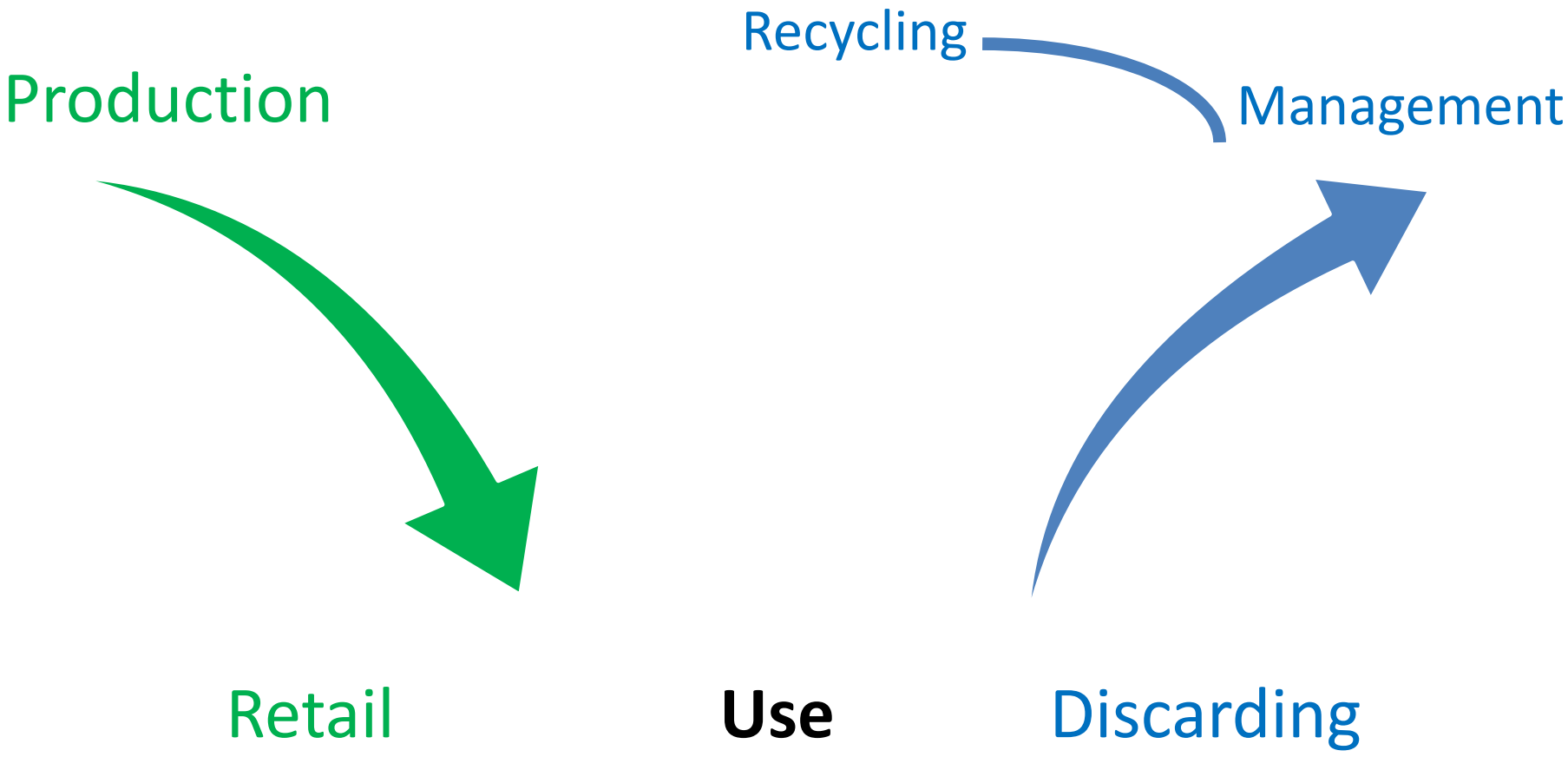
One solution?





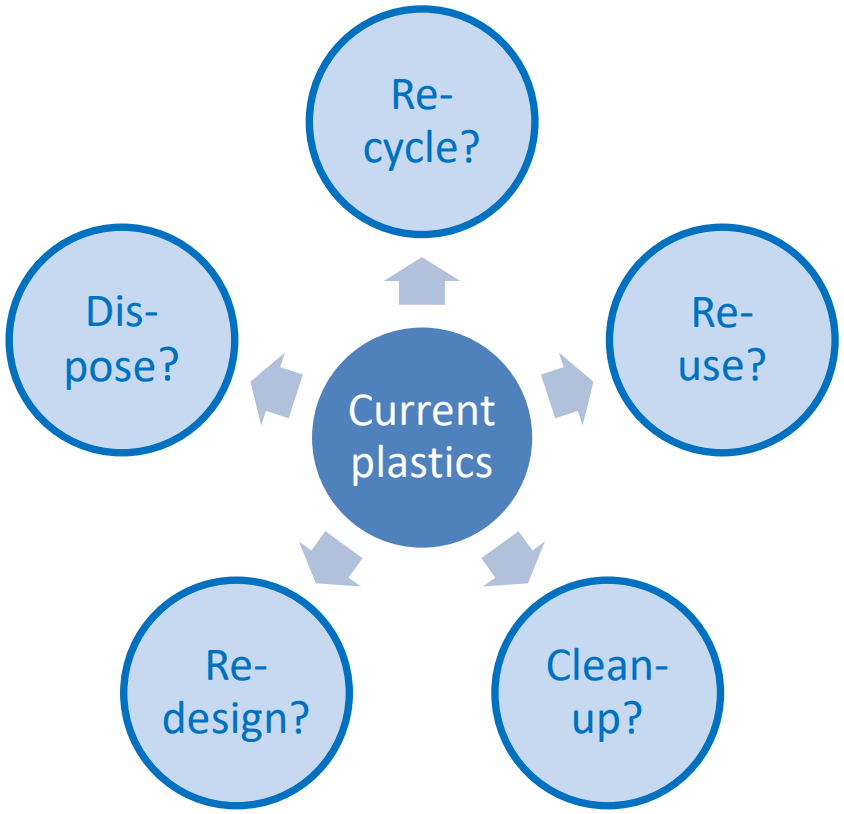
Convergence

Shared difficulty?



- Take – make (hard to reuse) – use superficially – dispose

Convergence
Where do we go from here?



- How might we further link material to sustained value?
- How might we coordinate supply chain stages?
- How might we increase material recovery?
- What are the externalities of inaction?

Different perspective

Just a vehicle, e.g. photocopier, online viewing - PSS

Positive note: already happening

#OneLess

Convergence on questions

Nothing happens until something happens; or
precautionary principle; or
proactive protection?

A	B	C
✓	✓	?

A	B
✓	✓

B	C
✓	?

A	C
✓	?

A	A
✓	✓

B	B
✓	✓

C	C
?	?

Parts of ecosystems affected

Not health-promoting

Value chain impacts are exponential

3 x 4 x 5 = 100 vs 2 x 4 x 5 = 40

Questions: Way forward

Within these constraints …

- Non-monotonic dose-response
- Difficulties with mixtures
- Difficult experimental designs

We must find out…

- When is enough evidence ‘enough’ to work on prevention?
- Can we simplify abundance of substances?
- Can we revisit functions?

Thank you

"More important than technologies is the way they are embedded into social systems"

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Questions: Way forward

Burden of proof & testing	Barriers to change	Ways forward
Substances (IAS!) Substitutes Mixtures In reaction with fats, etc.	Technical lock-in Regulation Lacking novel business models	Simplify Material & Substance? Revisit functions? Can substitutes reduce risk?

Single-point interventions

Degradable where?

Infrastructure

Feedstock provenance

Focus on End-of-Life

Water column?

Disturbance

Dissipative

Overall efficiency?