

PLASTICS INNOVATION

Competence Center

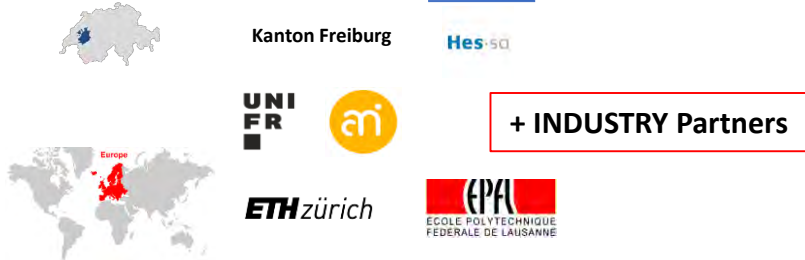
Passage du Cardinal 1
CH-1700 Fribourg
Switzerland
www.PICC.center

Future

Innovating Innovation: Solutions for Today



Haute école d'ingénierie et d'architecture Fribourg
Hochschule für Technik und Architektur Fribourg



A multi-disciplinary industrial R&I platform for innovative short and long term science and technology development.

The Plastics Perception



Blue Planet II

Nov 2017

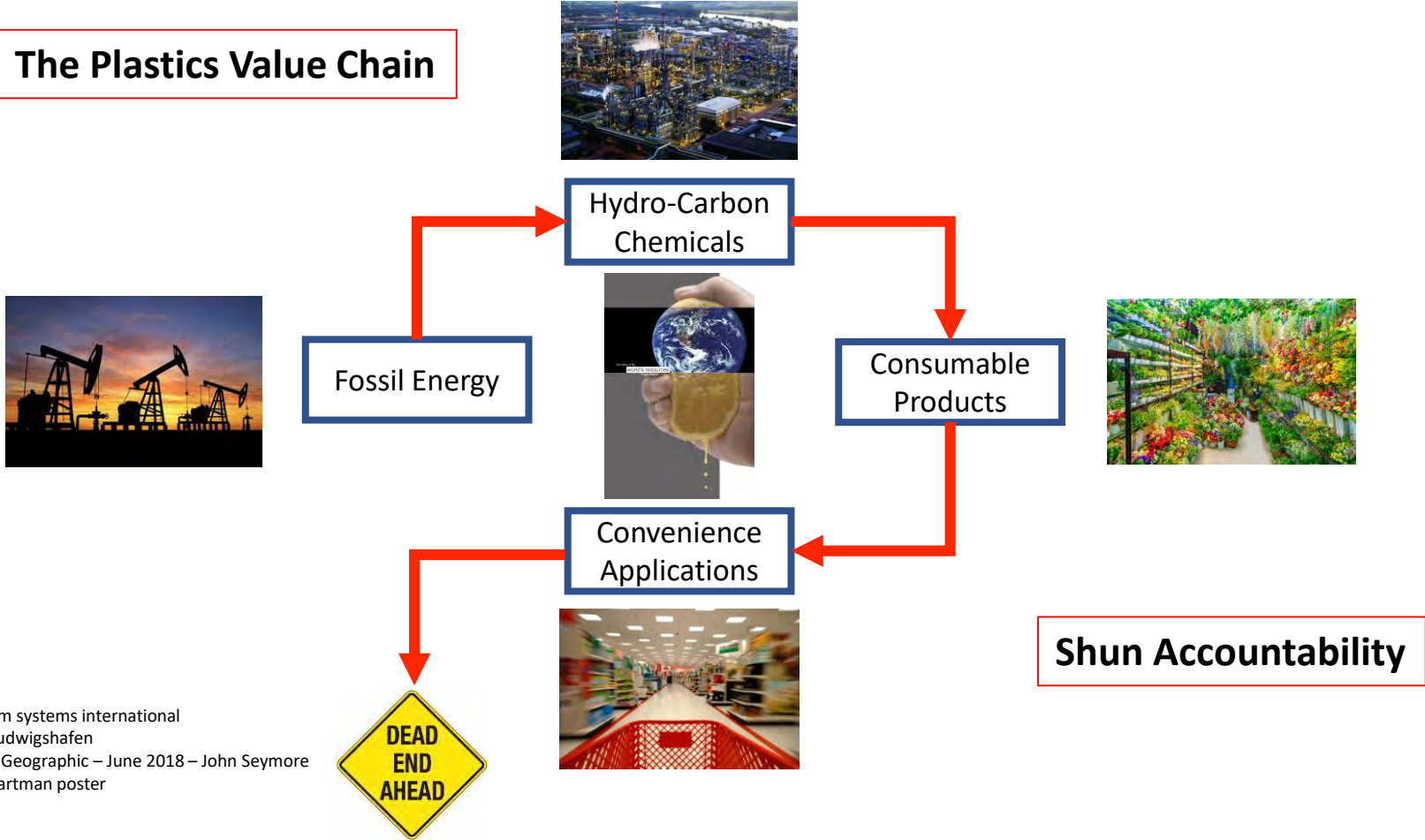
Planet or Plastics

National Geographic

June 2018

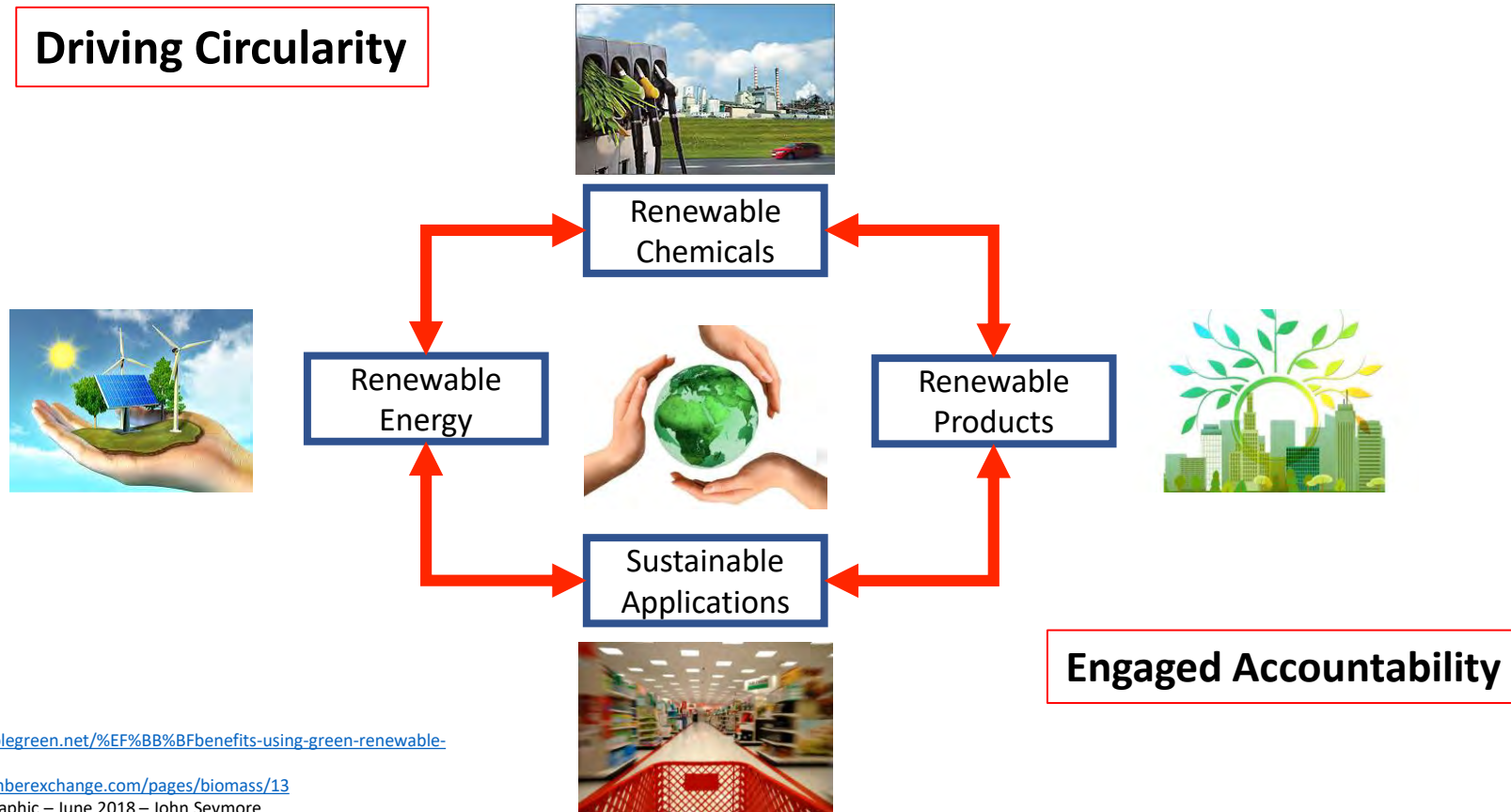


The Plastics Value Chain



Source:
Petroleum systems international
BASF – Ludwigshafen
National Geographic – June 2018 – John Seymore
Triona Hartman poster

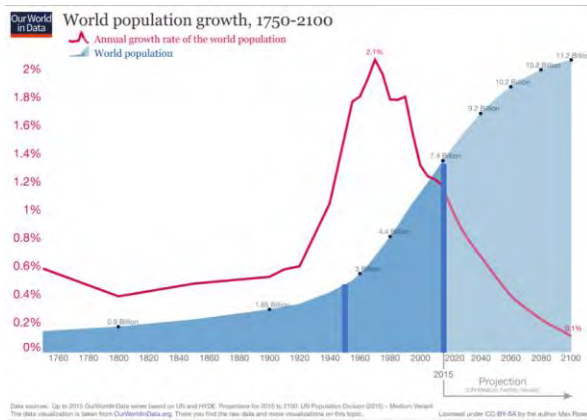
Driving Circularity



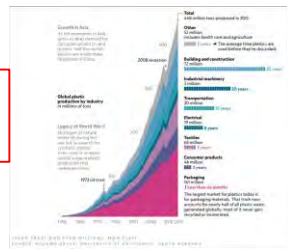
Source:
<http://renewablegreen.net/%EF%BB%BFbenefits-using-green-renewable-energy/>
<http://www.timberexchange.com/pages/biomass/13>
National Geographic – June 2018 – John Seymore

Stra

Strategic Motivation: Sustainable Plastic Materials

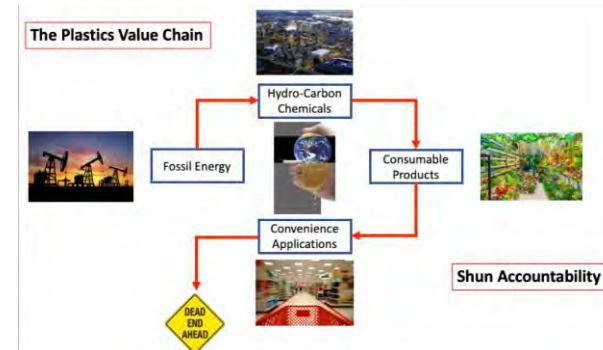


Global Plastics Volume Growth

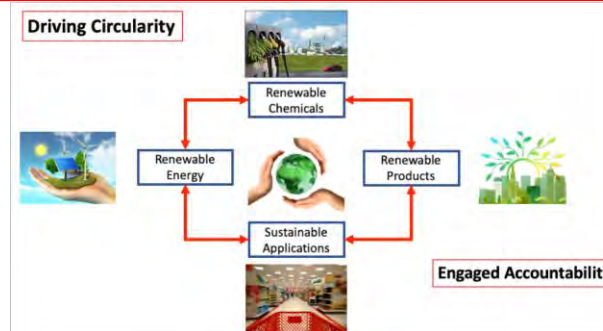


Plastics represent 4-6% of non-renewable fossil energy

RJK 2019



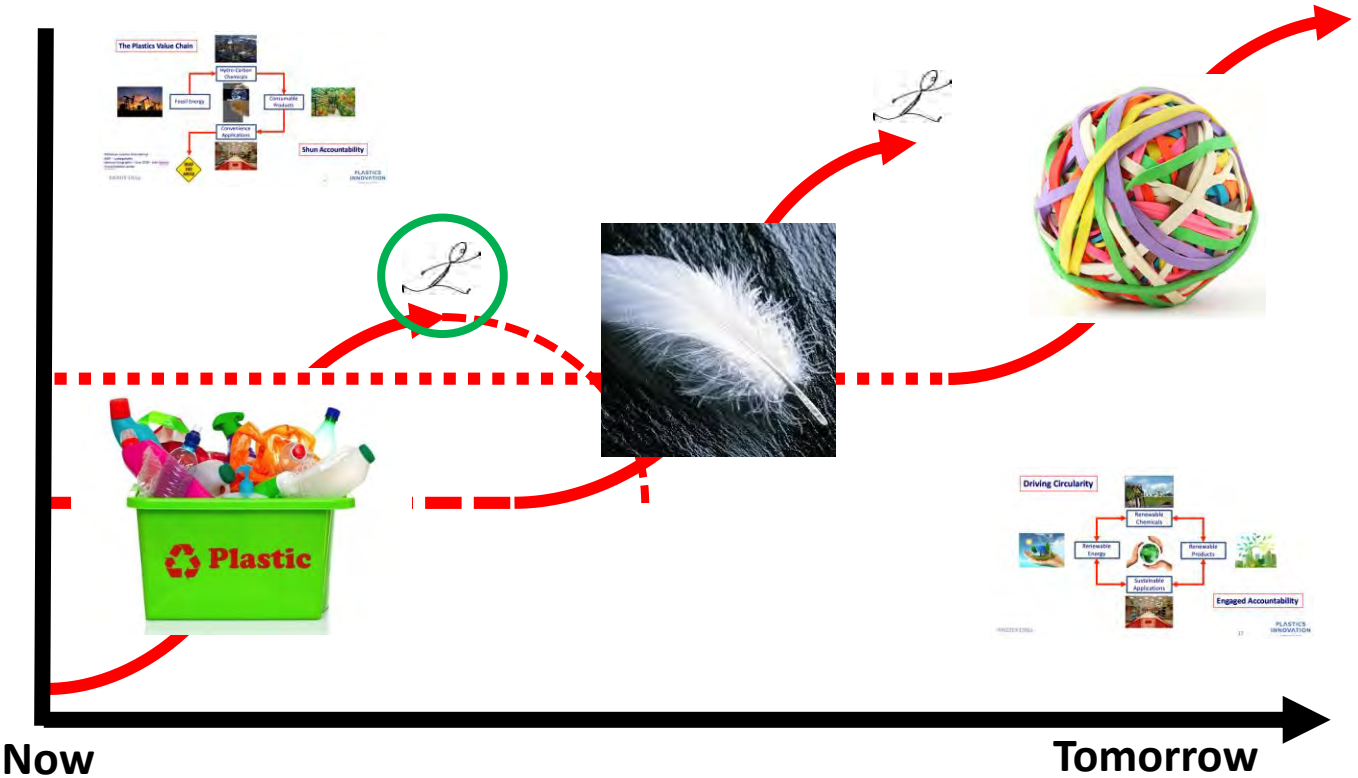
The World moves Towards a Renewable & Circular Plastics Industry



5

Solutions

The Future is Now



Act 1



Would you sort your rubbish in 7 different bags?



<https://www.bbc.com/news/av/business-47880558/would-you-sort-your-rubbish-into-seven-different-bags>. Douglas Shaw for BBC business

City of Eskilstuna – Sweden

Municipal waste: 50% recycled – now!

0% Landfill

50% Energy recovery (but CO₂ ☹)

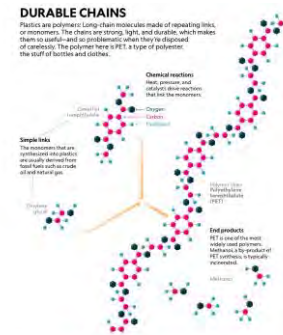
Recycling



Source Picture: indiamart.com



12x





<https://www.yprl.vic.gov.au/blogs/post/beware-the-reading-rut/>

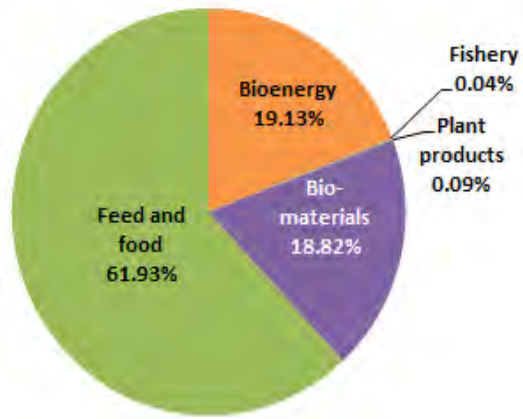
Act 2



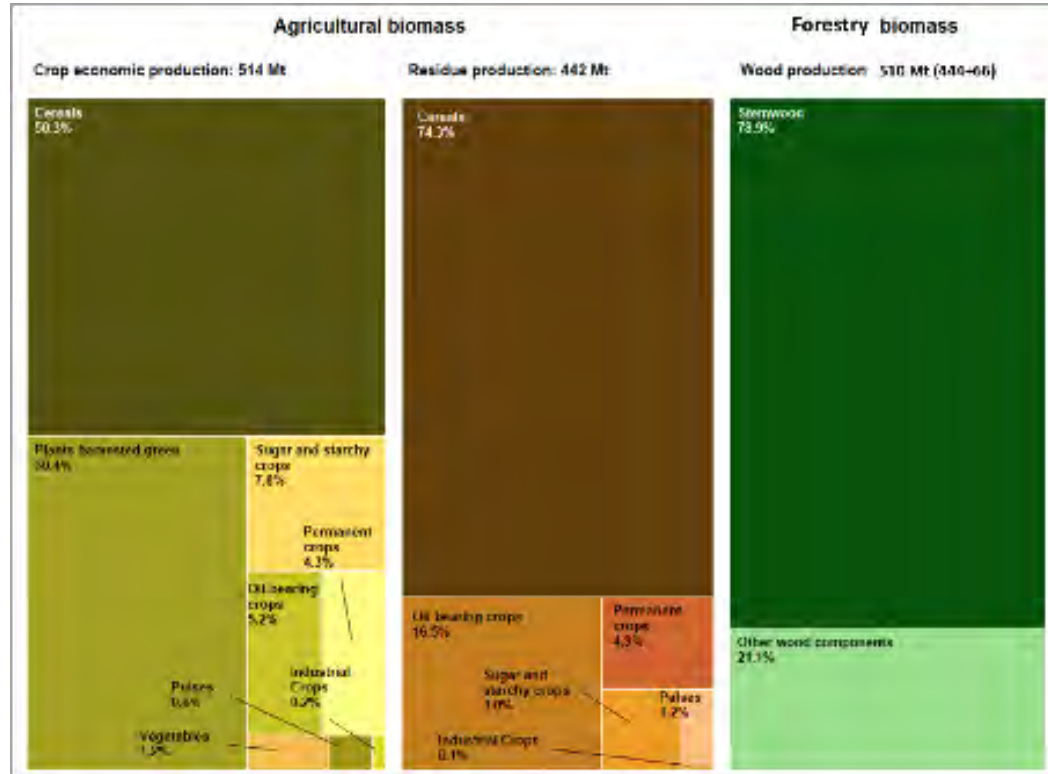
Packaging in Nature



**(Dry) Biomass
EU 28 – Annual Production
1,466 Million Tons**

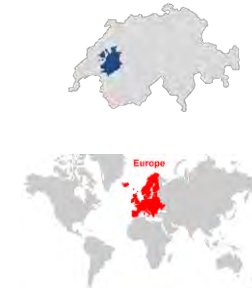


Actual use 805 Million Tons !



Biomass production, supply, uses and flows in the European Union - EUR 28993 EN – 2018 (2013 estimates) <https://ec.europa.eu/jrc>

Chicken Feather Feedstock



Est. ~12.500 Tons

Est. ~50 million Tons



Biomedical & Pharmaceuticals



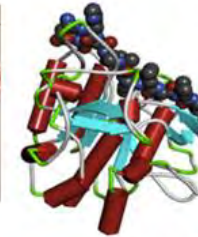
Biofuel



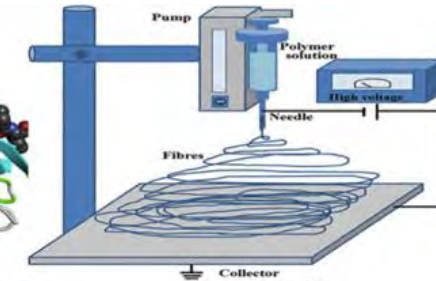
Cosmetics



Bioplastics

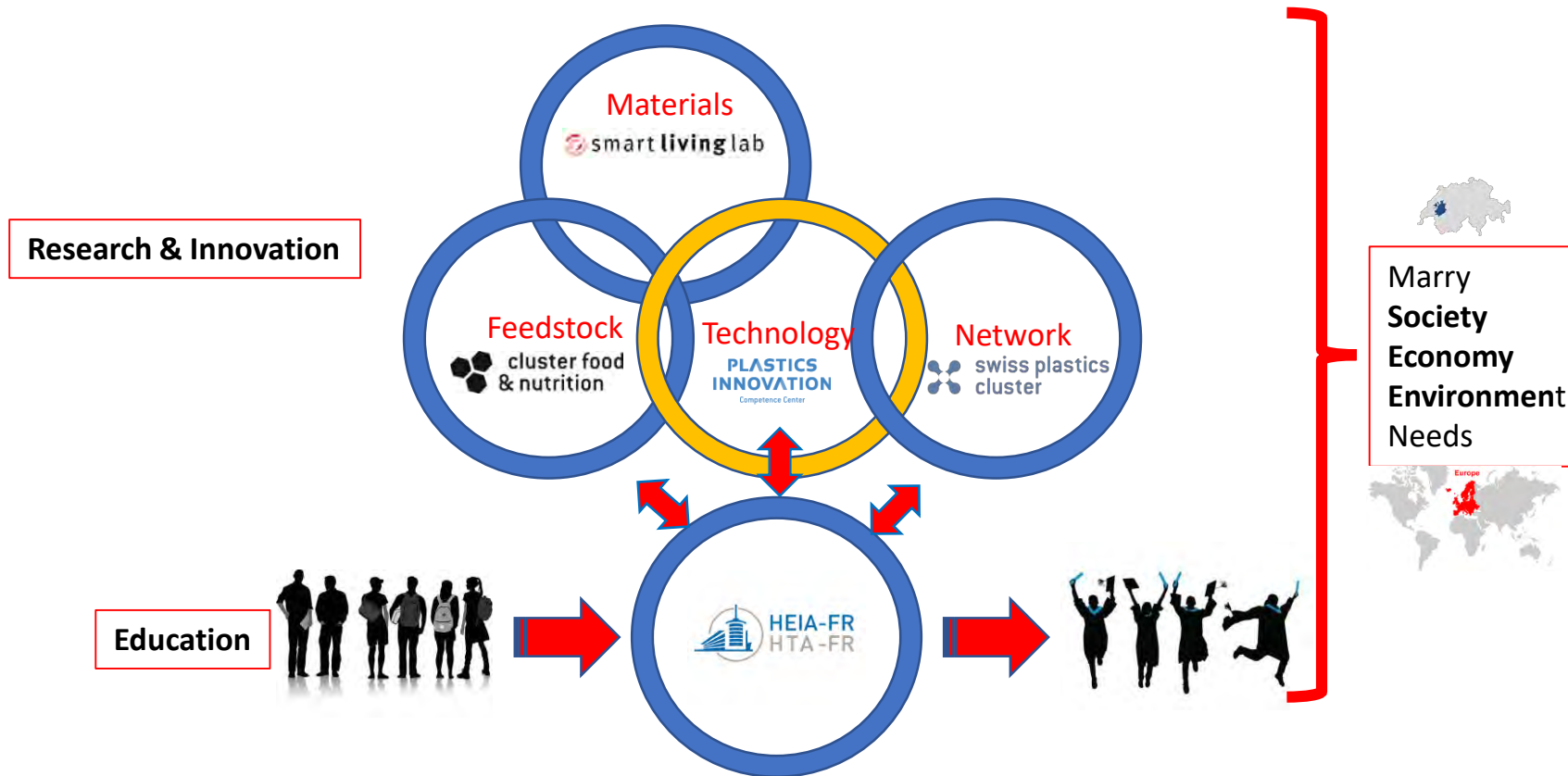


Keratinase



Biofibre

Innovation Plateau Fribourg





Together



<https://medium.com/@gabrielinnoctrackerfeller/the-impossible-is-possible-at-tia-a07d1c58b1e4>

PLASTICS INNOVATION

Competence Center

Passage du Cardinal 1
CH-1700 Fribourg
Switzerland
www.PICC.center

Thank You

Target What happens to plastic in the sea?

