

Session I - Forest products for a sustainable future!

After 30 Years in Wood Science

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After 30 years in wood science..what is a good career ?

- 140 peer-reviewed papers, 300 all together,
- H-Faktor: 41
- Worked in wood biology, wood quality, dendrochronology, wood-based composites, wood-plastic materials, polymers
- Five professorship appointments: Athens (USA), Boku (2 times), Göttingen (Germany), Linneaus (Sweden)
- 3.5 years: industry appointment (full)
- I am in my 3rd professorship: „*Natural Materials Technology*“
- Looks all great, doesn't it ?

After 30 years in wood science..what is a good career ?

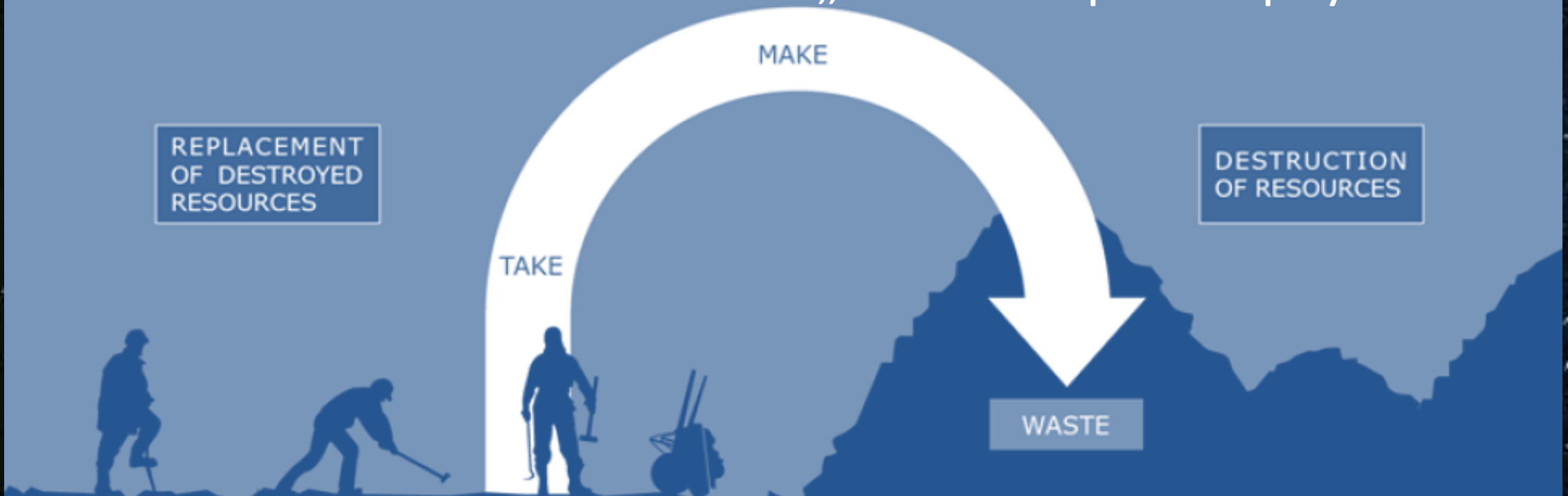
- Changing subject many times is not good – stick with one or two
- Changing places has disadvantages –move once only
- I was lacking continuity – there was always somebody slowing me down – or was it my problem? How to better handle that?
- Should I have gone to the US ? YES...I should have.
- My country held me back. Why? Because it is too beautiful !
- It is better to have a „kick-in-the-ass“ situation !
- I would do it all over again !

..what I think is the „sustainable future!“

- First: I dont like „sustainability“...in essence it is guilt management
- Second: I worked years on Wood-Plastic Composites and I know this was a wrong direction
- I learned that „less bad“ is not the solution
- Third: So, what is a „good“ material – how to design ?

„cradle to grave“ & Take-Make-Waste

The foundation of the „Less Bad“ philosophy !



A close-up photograph of three open oysters resting on a bed of crushed ice. The oysters are arranged diagonally across the frame. The shells are dark and rough, while the interiors are smooth and light-colored. The oyster in the foreground shows its internal structure, including the siphon and gills. The ice is white and translucent, with some pieces showing a blue tint.

At least 1500 pieces of plastic in an oyster!

...so lets eat oysters !

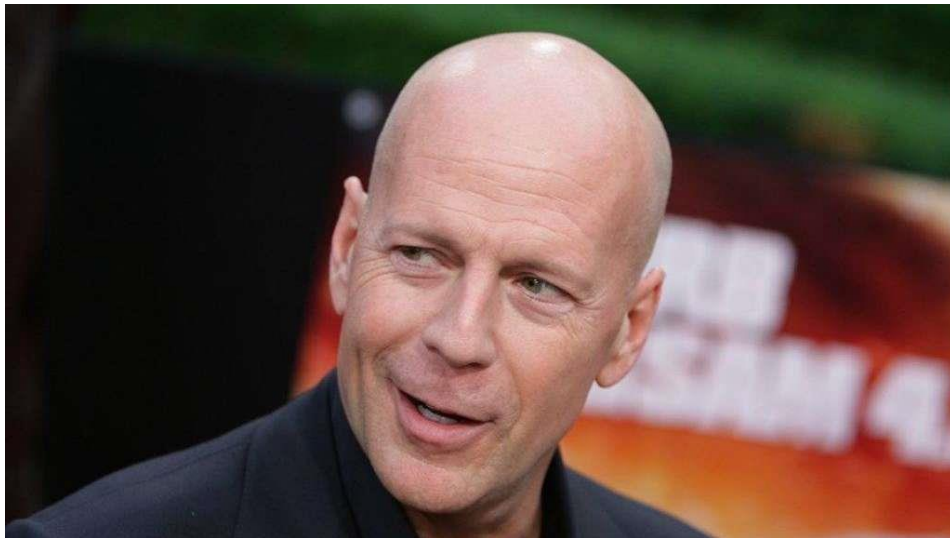
Sussarellu, R., Suquet, M., Thomas, Y., Lambert, C., Fabioux, C., Pernet, M. E. J., ... & Corporeau, C. (2016). Oyster reproduction is affected by exposure to polystyrene microplastics. *Proceedings of the National Academy of Sciences*, 113(9), 2430-2435.

Smaller CO2 bubbles in Champagne
So drink Champagne instead of Prosecco!
Minimizing your carbon footprint !





Women with short hair need less water compared to **women with long hair**. That's estimated 100 buckets of water by one woman in a year, or about **2000 litres of water by one woman in a year !**



5
DEC
2017

Save Water with Short Hair

posted in [Environment](#), [Water](#) by [ywwp](#)



Frankfurter Allgemeine

AUF DEN KOPF KOMMT ES AN

So sparen Sie Wasser beim Duschen

VON LUKAS WEBER - AKTUALISIERT AM 12.10.2015 - 15:33

Was für den Duschkopf recht ist, kann auch an der Wascharmatur nicht schlecht sein. Der alte Perlator in Form eines Siebs, der schon seit Ewigkeiten den Wasserstrahl freundlicher gestaltet, wurde weiterentwickelt, er arbeitet heute in Kaskadentechnik. Moderne Waschtischmischer funktionieren im Grunde wie die Brause durch gezieltes Beimischen von Luft.

Wassersparmodelle kommen mit 3 bis 5 Liter in der Minute aus, herkömmliche Mischarmaturen

Coatings, Pigments and PVC

LID:

- Aluminum
- Printing inks
- Top Coat
- Primer
- Sealing wax
- Binder
- Pigments
- Photoinitiators
- Additives



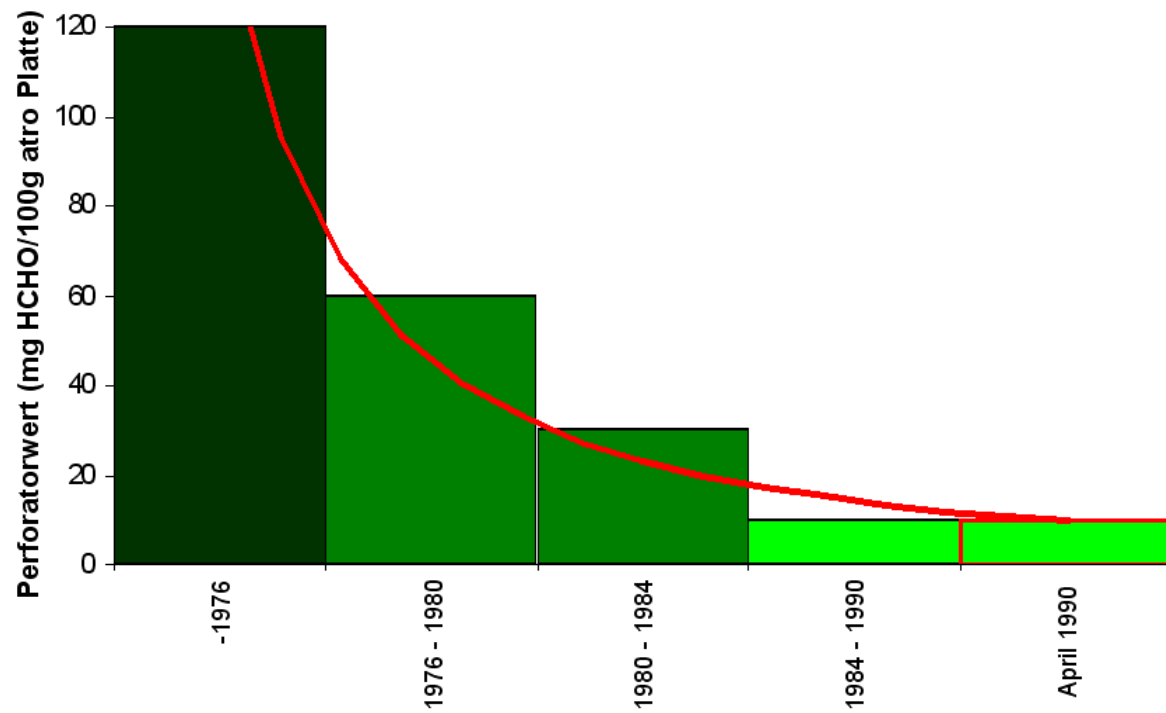
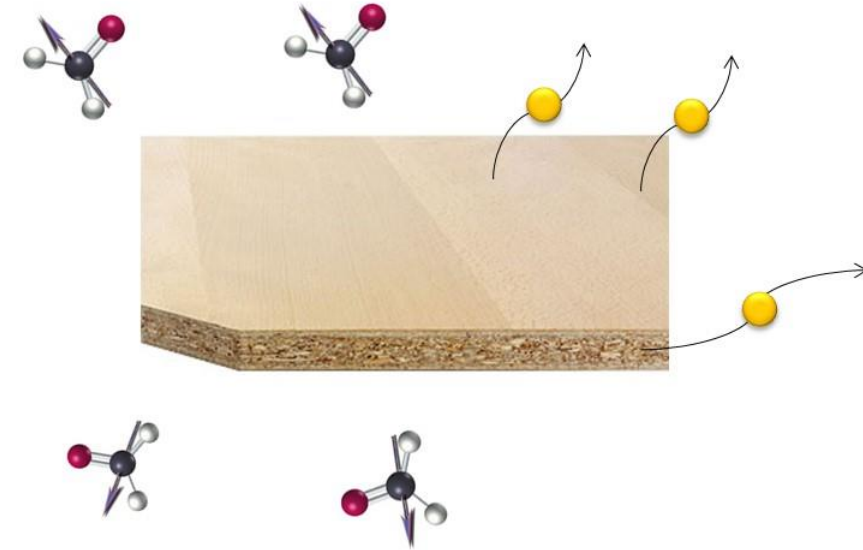
CUP:

- Plastics
- Additives
- Pigments
- Filler
- Label
- Printing inks

More than 600 different chemicals used for one noodle cup!

Date, K., Ohno, K., Azuma, Y., Hirano, S., Kobayashi, K., Sakurai, T., ... & Yamada, T. (2002). Endocrine-disrupting effects of styrene oligomers that migrated from polystyrene containers into food. *Food and Chemical Toxicology*, 40(1), 65-75.

Formaldehyde emissions from furniture





Wood Plastic Composites (WPC)



Benefits of WPC

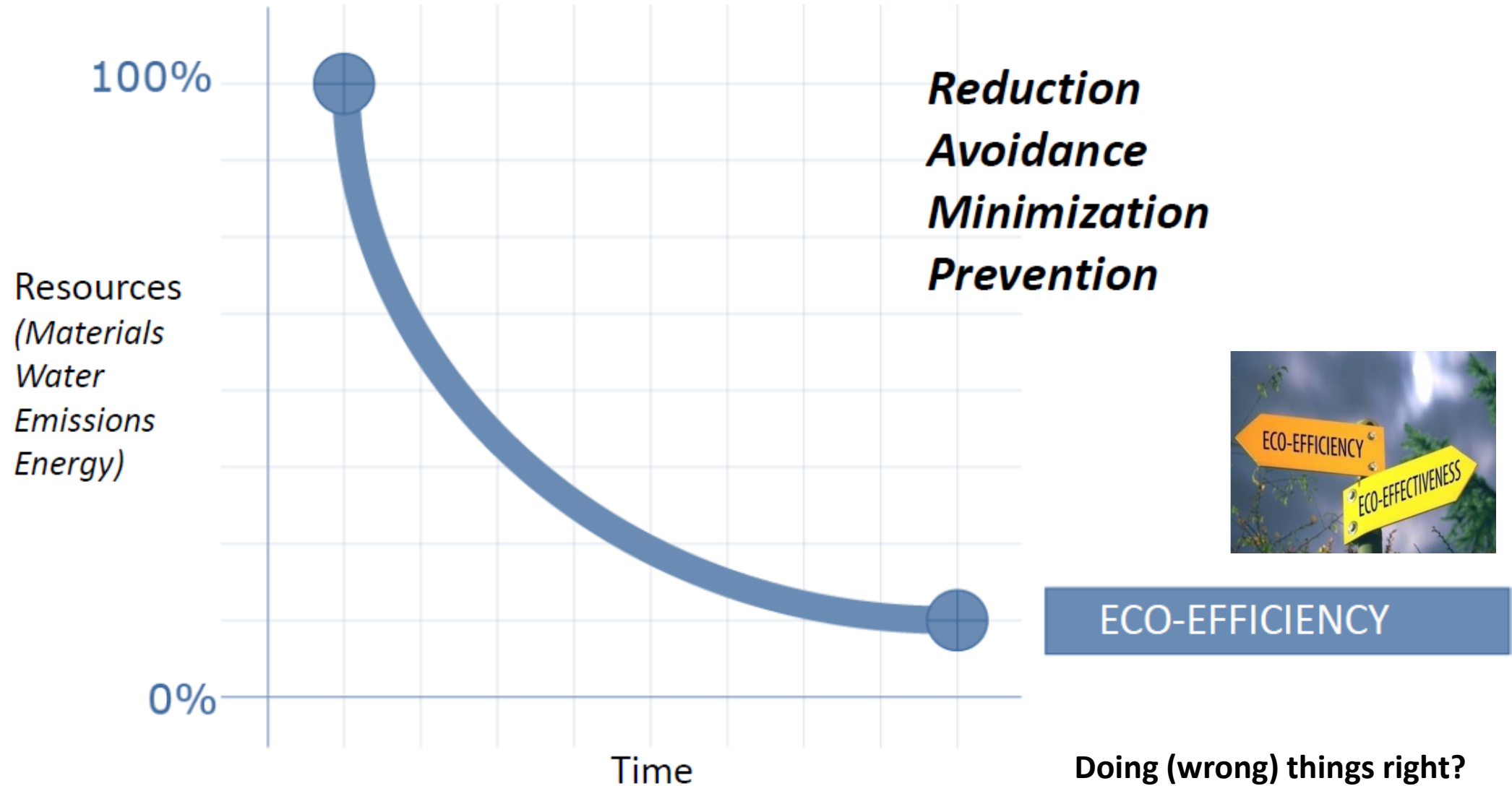


- Recyclable, can be reground and reused after their service life
- Made from recycled materials like wood dust, recycled plastics
- Contains no toxic chemicals or additives

GAIN LEED POINTS!

„Recyclable – can be re-used after their service life“....True ??

Cradle to **Grave**: target is zero



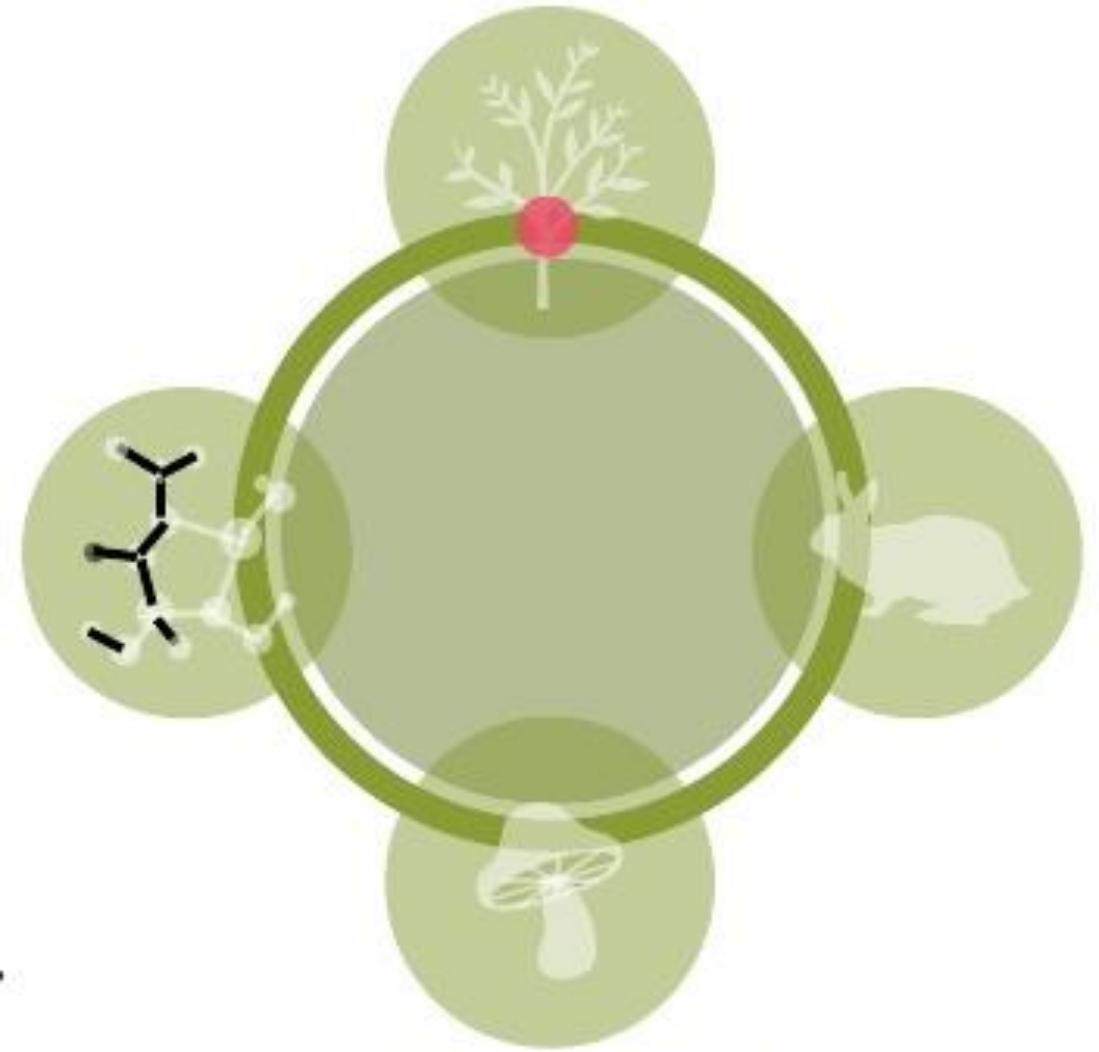
Material design principles

The Cradle to Cradle® Design Paradigm

- **Waste equals food**
(Nutrients are Nutrients!)
- Use current **solar income**
- Celebrate **Diversity**



Biological Nutrient



Biological
Metabolism

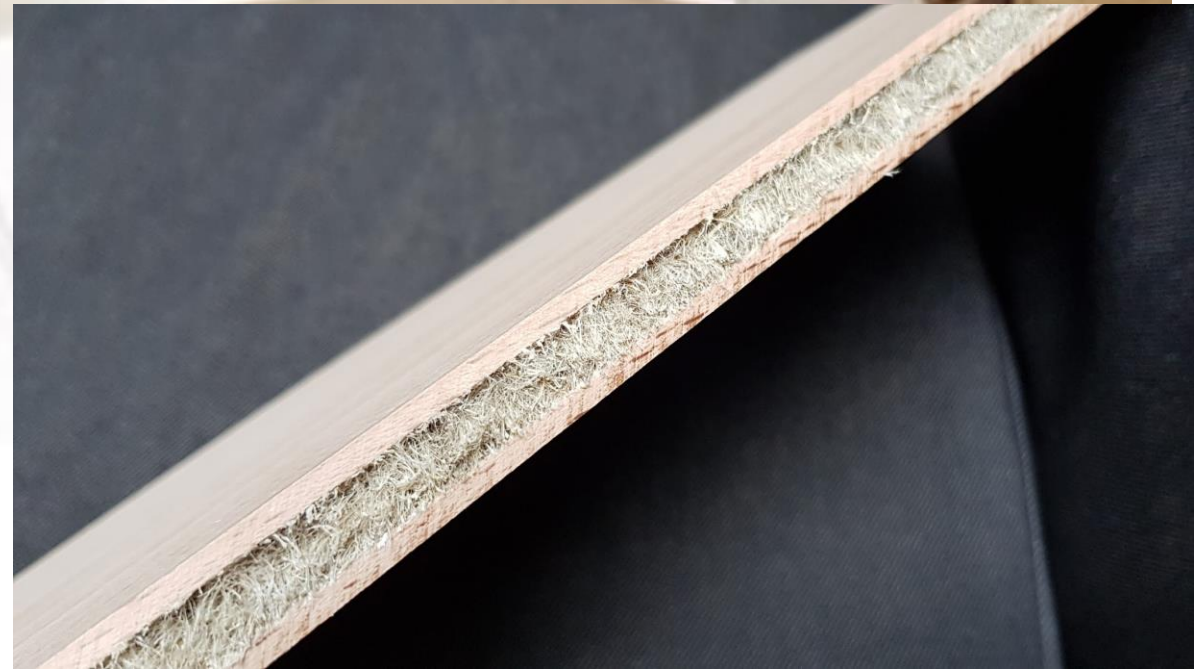
TRIGEMA BIODEGRADABLE T-SHIRT



NEW DIMENSIONS OF
QUALITY FOR
APPAREL GOODS
- User's Health
- Safe for the
Environment



C2C Innovations with wood
Wood...both cycles !!



Pulp molding furniture



Technical Nutrient



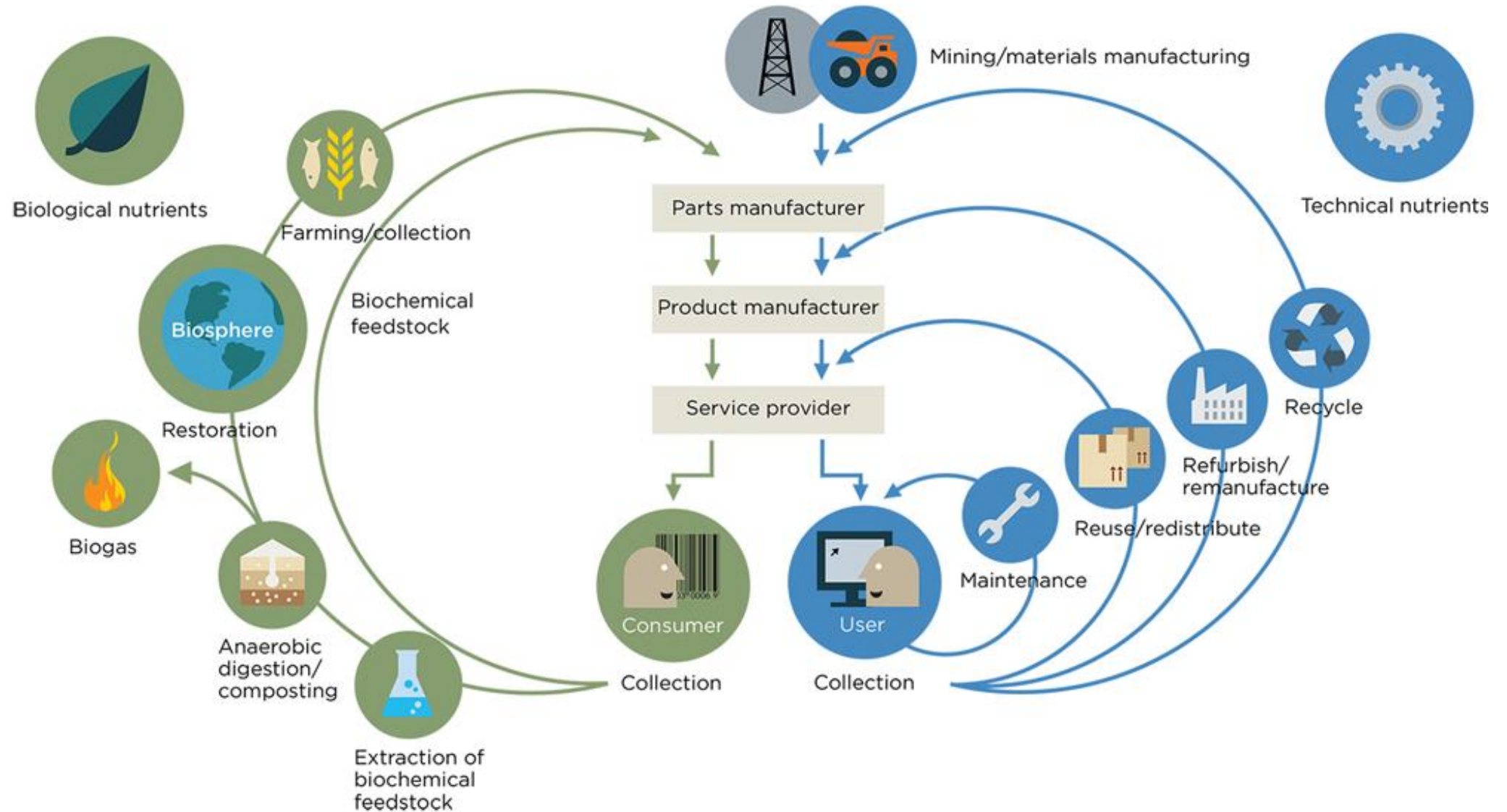
Technical
Metabolism





From as early as 1984, Herman Miller has been practicing EPR primarily through its AsNewProgram. Herman Miller not only takes back and remanufactures its furniture products, it has also established a subsidiary company, called Phoenix Design, to operate that business. One of the resulting products – AsNew – combines recovered components with new components, with the objective of providing more competitive products at a lower price (Herman Miller 1993).

The two cycles of a future bioeconomy !



Thank you!