



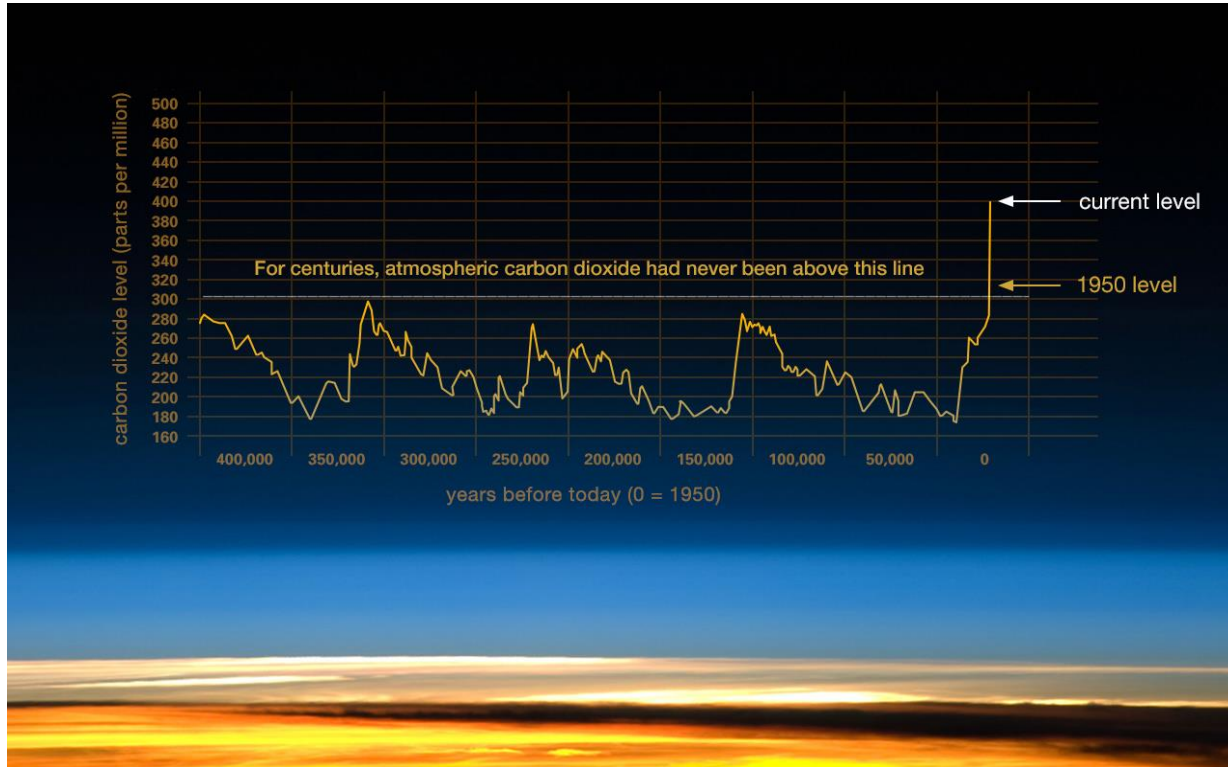
@Marcpalahí

Building the European bioeconomy: why, what and how?

9th November 2017
Moscow, Russia



The fossil-based economy: a story of global **environmental divergence**



By 2030, 2 billion more people in the global middle class

Credit: Vostok ice core data/J.R. Petit et al.; NOAA Mauna Loa CO2 record



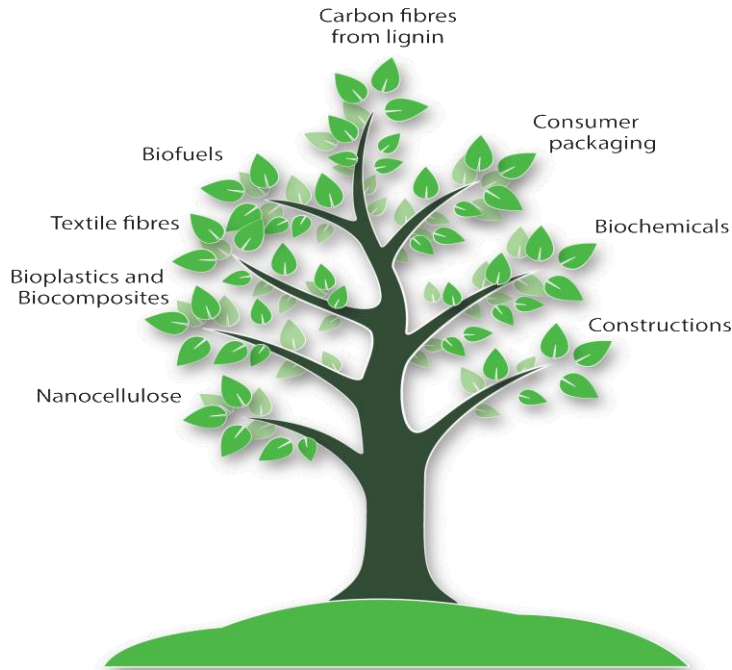
A new paradigm that ensures prosperity within the renewable boundaries of our planet



**A Sustainable and Resilient
Bioeconomy**



Forests, a key biological infrastructure



- for a **resilient society**:
 - enhancing biodiversity, water and soil resources
 - climate benefits
- for a **sustainable bioeconomy**:
 - main source of non-food renewable biological resources
 - replacing fossil products



Economic relevance of EU forest industry

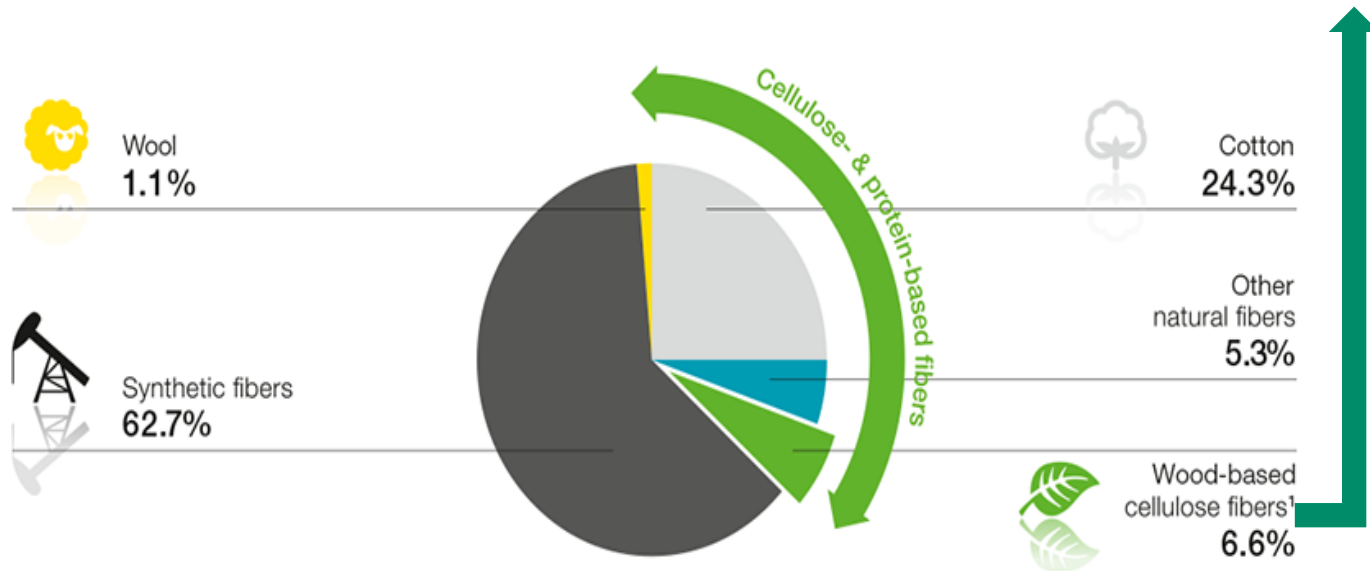
	Textiles Industry	Plastics Industry	Steel Industry	Forest Industry
Turnover value <i>(2014, in billion euros)</i>	166	320	170	302
Employment <i>(2013, millions of workers)</i>	1.70	1.45	0.33	1.45

If forestry is added: **46 billion** euros and **0.5 million** jobs need to be added



Wood-based textiles for sustainable clothing

- Global production of textile fibres:
 - 93 Mt (2015)
- Carbon footprint from new wood-based fibres up to 9 times lower than synthetic



Sources: ICAC, CIRFS, TFY, FEB, Lenzing estimates



The plastics economy: an inconvenient truth

- Global production of plastics: **311 Mt**
- Resulting in **390 Mt CO2** and **8 Mt** of plastic going to **the oceans** every year

By **2050**, demand for plastics **400% higher**:

- **20%** of the overall oil consumption
- **More plastic than fish in oceans**

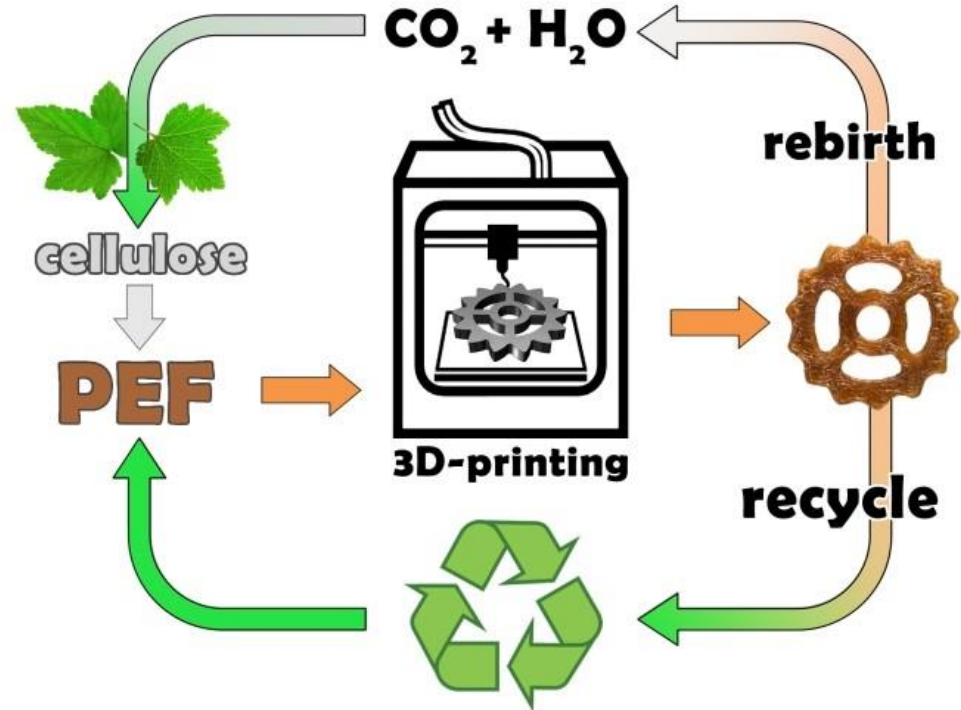


The new plastics economy, Ellen MacArthur Foundation



The case for bioplastics

- Only 0.6% of total production are bio-based plastics
- Biobased plastics result in lower carbon footprint
- Main challenge: **not cost-competitive**
 - 30-100% more costly
 - Operations not yet scale and optimised



Angew. Chem. Int. Ed., **2017**, Accepted manuscript



The case for bioplastics



Car manufacturer Mazda developed bioplastic for interior and exterior use



Forests for climate-smart building construction

- Concrete and steel, dominating materials in urban infrastructures
 - 1 t steel = 1.7 t CO₂
 - 1 t cement = 1 t CO₂
 - **10% of EU CO₂ emissions**

Wood is the only significant construction material that can be grown sustainably

- Reduces by **50% CO₂ emissions and material use** compare to a concrete & steel building
- **Trees and urban forests** reduce the energy needs of buildings and the “urban heat island” effect





The importance of developing Bioeconomy Strategies

To create a **Narrative** that connects with **urban** and **rural** societies

To **strategically connect relevant policies**: forestry, climate change, biodiversity, agriculture, industry & urban development

To define a long-term enabling environment: **goals, sectors, investments, infrastructures, R&D, education, legislation, etc...**



Chepko Danil / Fotolia



Leading the way to a European circular bioeconomy strategy



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Foreword

Esko Aho, Cristina Narbona Ruiz, Göran Persson and Janez Potočnik

1. What are *the gaps* in existing bioeconomy strategies ?
2. Why linking the *bioeconomy* and *circular economy strategies*?
3. *Key strategic elements* for a successful circular bioeconomy strategy?





The bioeconomy should be a new way of thinking

We cannot solve our problems with the same thinking we used when we created them

- Albert Einstein