



# THE ROLE OF FORESTS IN TRANSITIONING TO A CIRCULAR BIOECONOMY

MARC PALAHÍ





# The Genesis



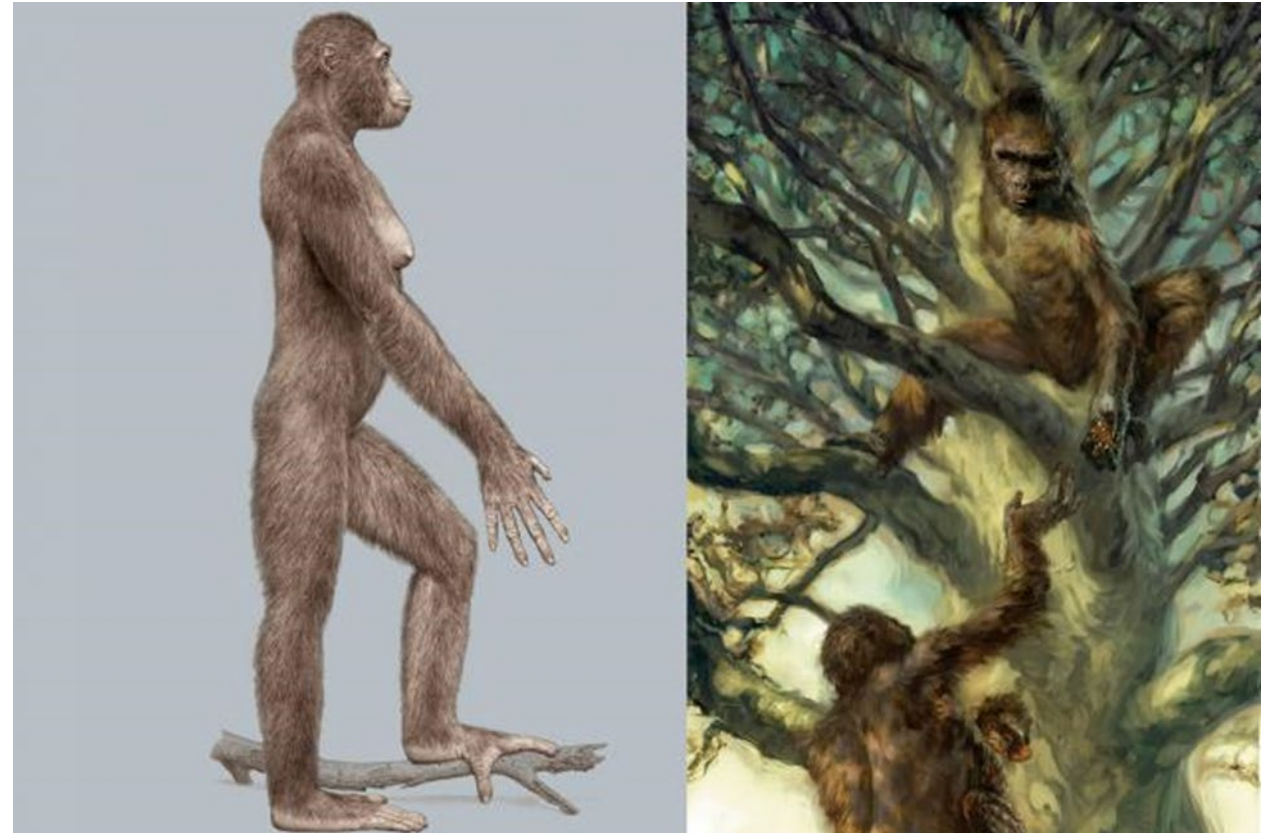
19.2.2024



# The planet of the trees



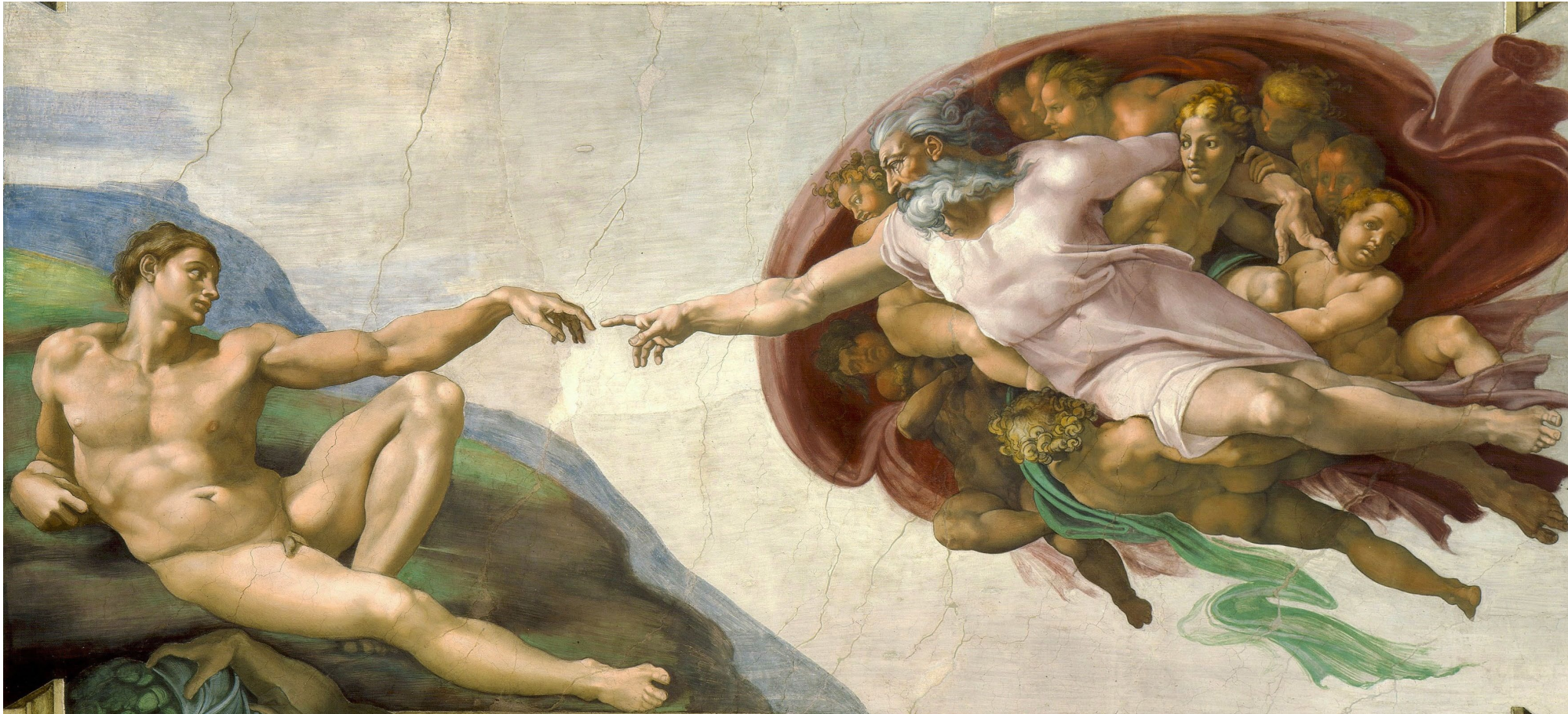
# The planet of the trees



19.2.2024

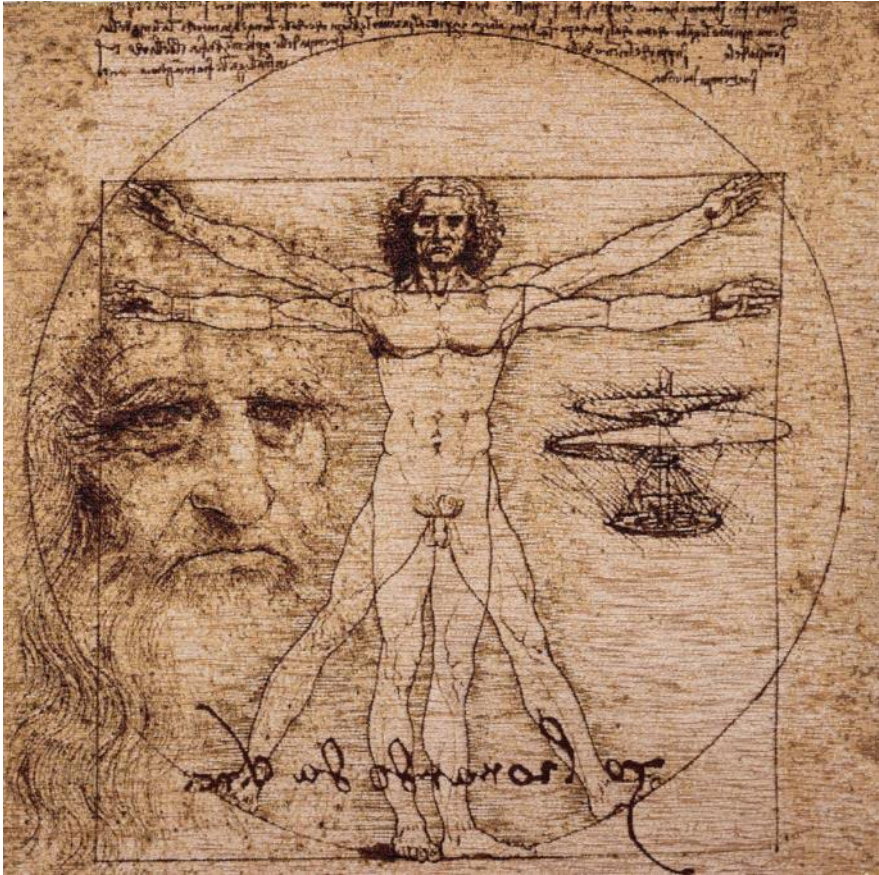
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# Renaissance: modern era

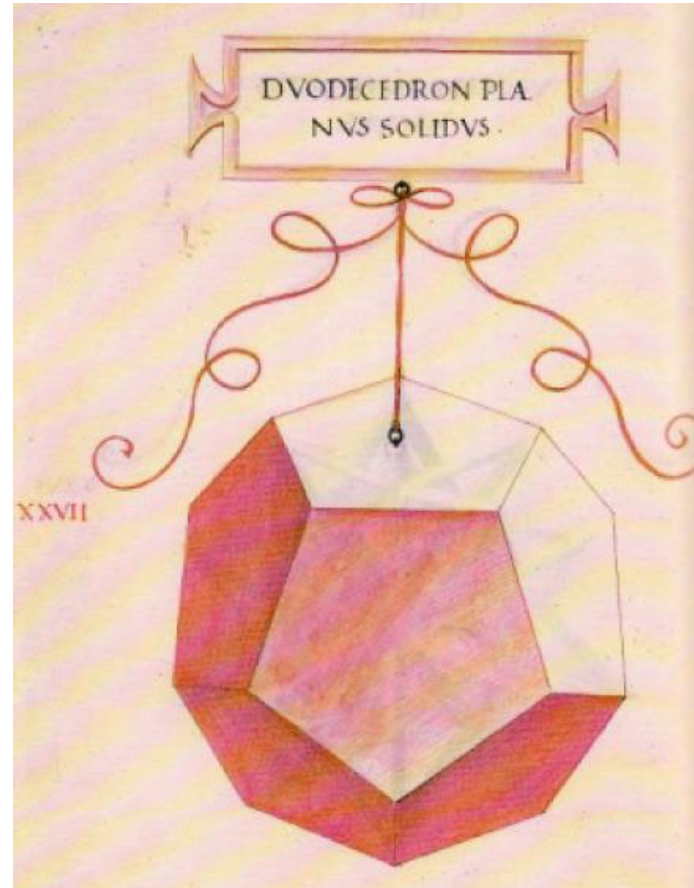


*The creation of Adam, Michelangelo*

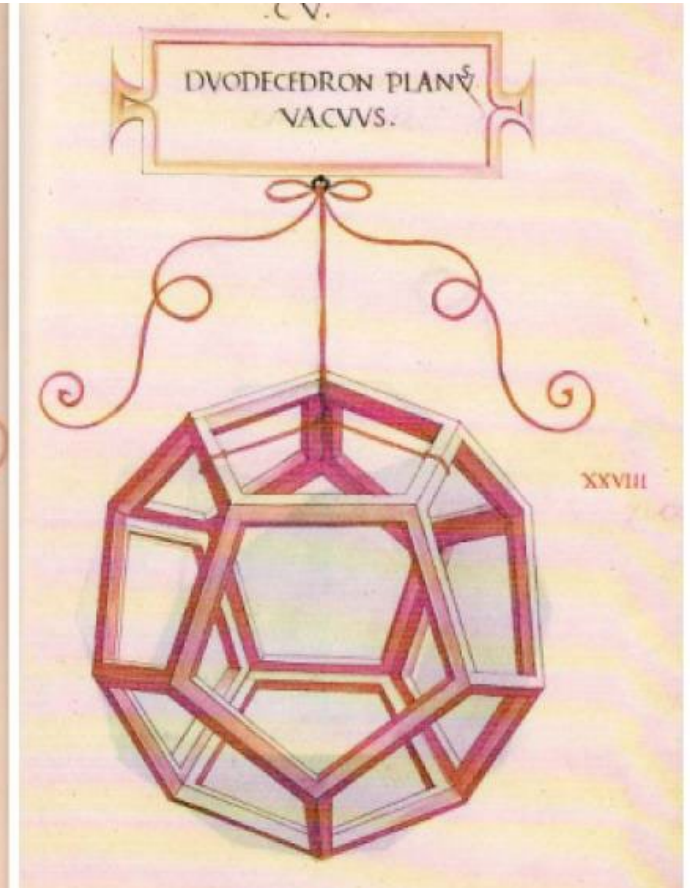
# Renaissance: modern era



*The Vitruvian Man by Leonardo*



*Divina proportione Luca Pacioli*



# Italian bankers financed the Renaissance

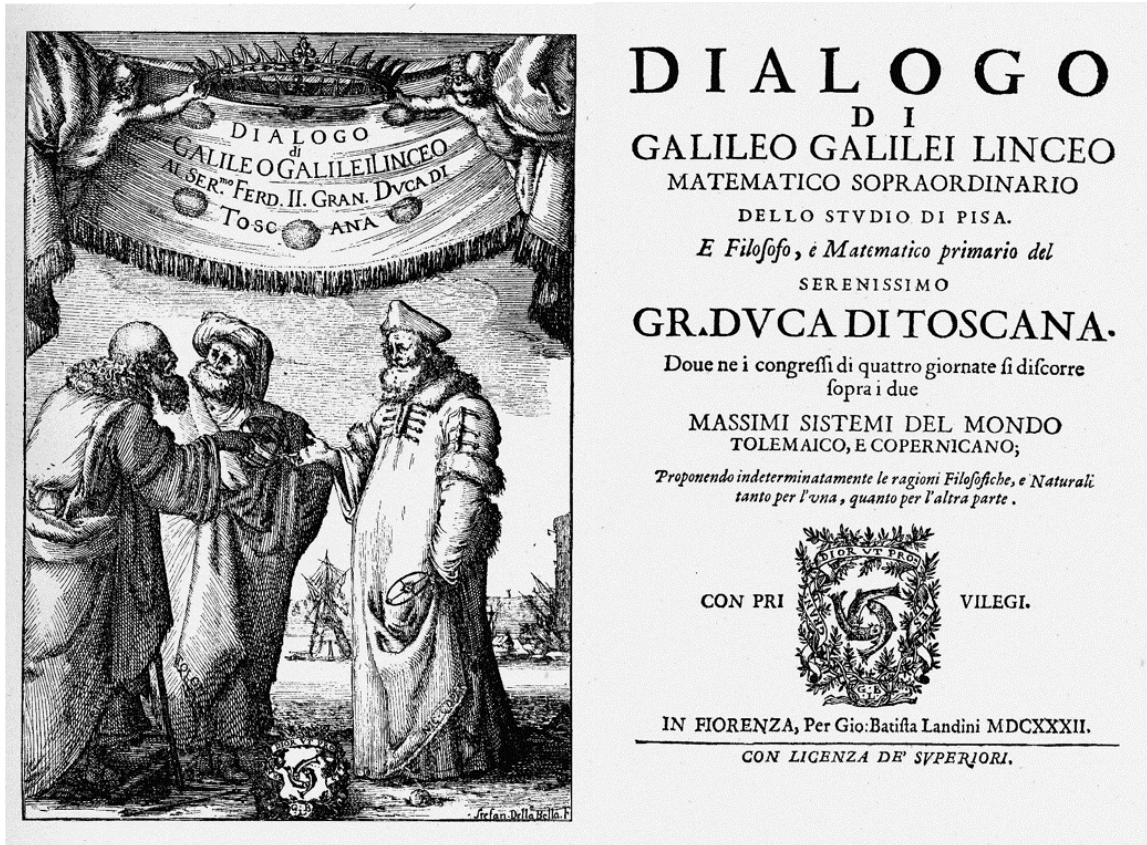


*Luca de Pacioli by Jacopo de' Barbari*



*Giuliano de' Medici by Sandro Botticelli*

# The scientific revolution





# Universities replace monasteries



# Industrial Revolution



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# The fossil era starts



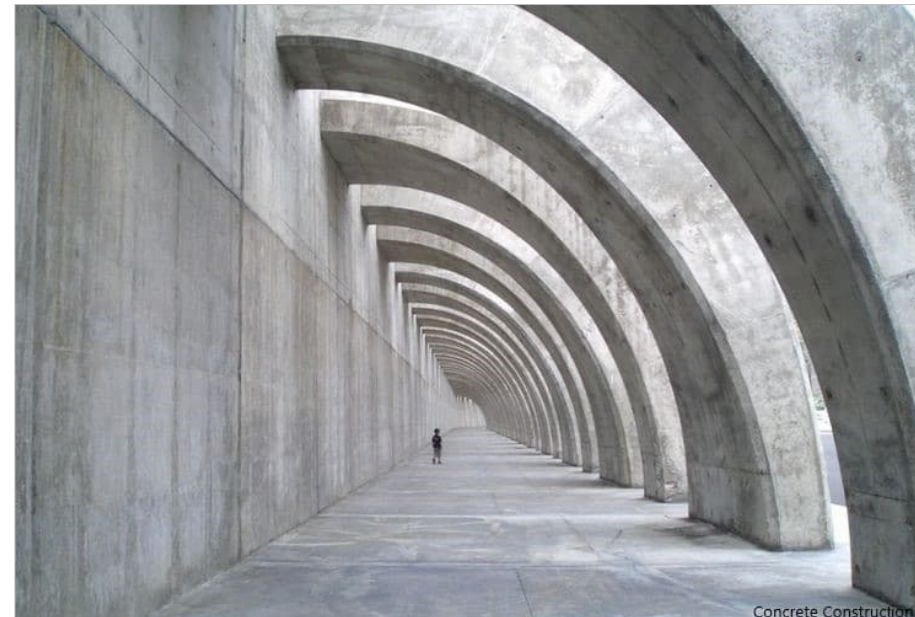
**COAL**



**OIL**



**NATURAL GAS**



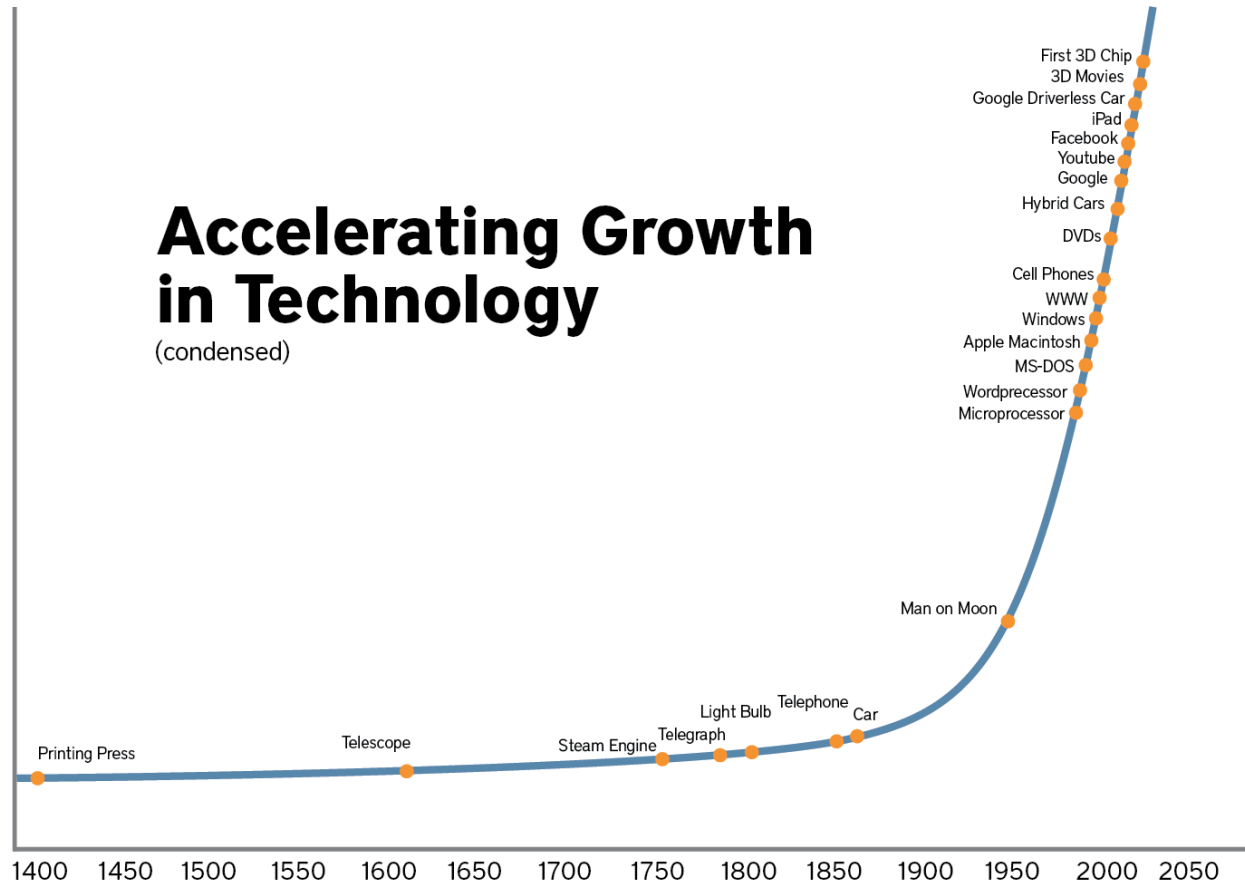
Concrete Construction



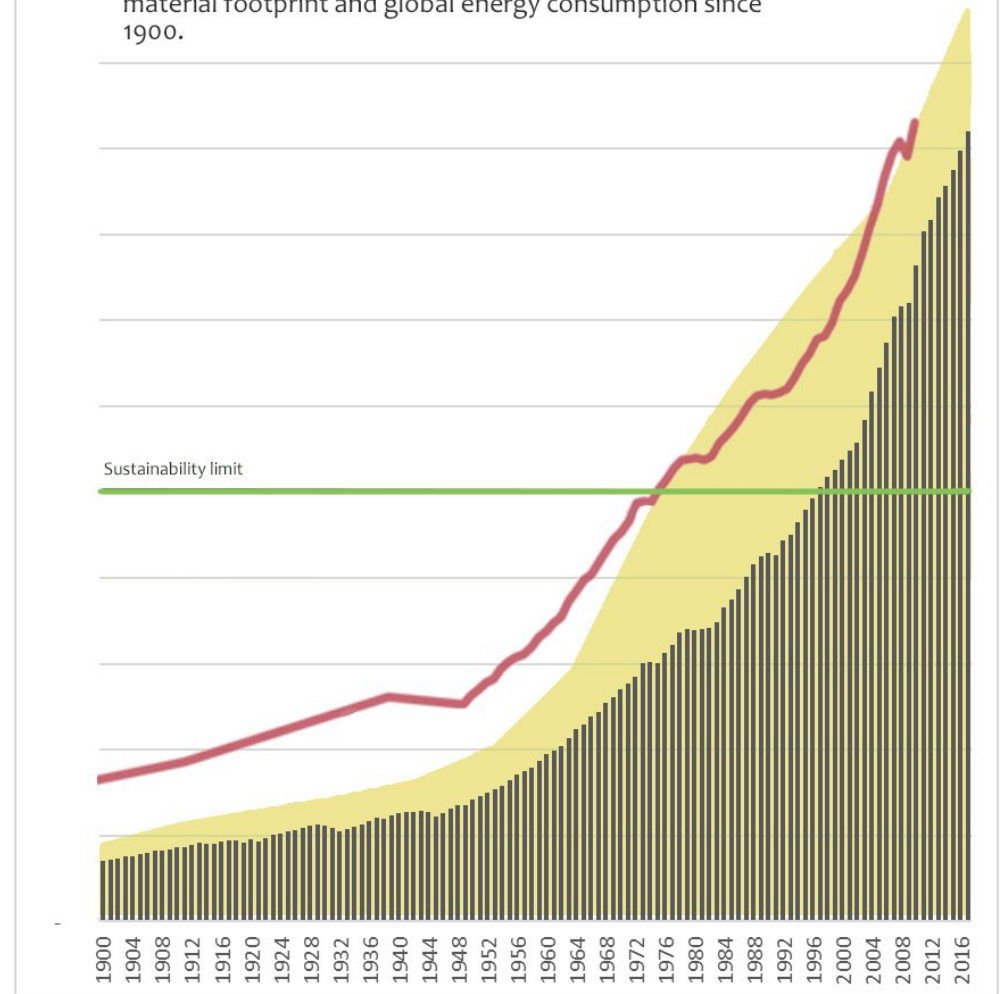
CIRCULAR BIOECONOMY ALLIANCE

# Accelerating Growth in Technology

(condensed)



The Great Acceleration: comparison of global GDP, global material footprint and global energy consumption since 1900.



|| Global material footprint (1900-2017). International Resource Panel, Global Material Flows Database.

— Global GDP per capita (1900-2010), New Maddison Project Database and World Bank.

■ World energy consumption (1900-2016), Vaclav Smil (2017). Energy Transitions: Global and National Perspectives. & BP Statistical Review of World Energy.

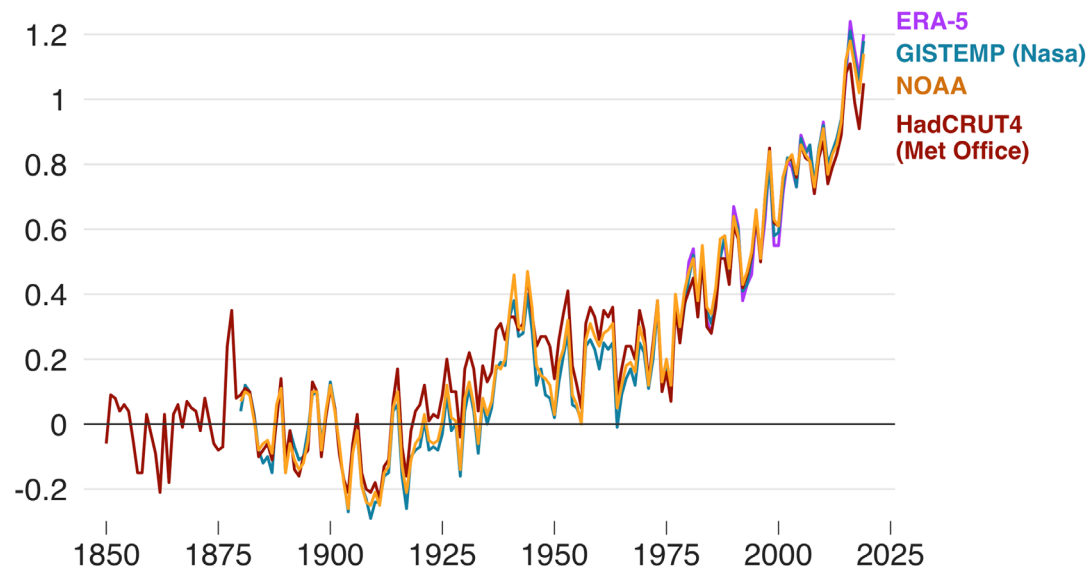


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# A system-level failure: a tipping point

## Temperature rise since 1850

Global mean temperature change from pre-industrial levels, °C



Source: Met Office

BBC





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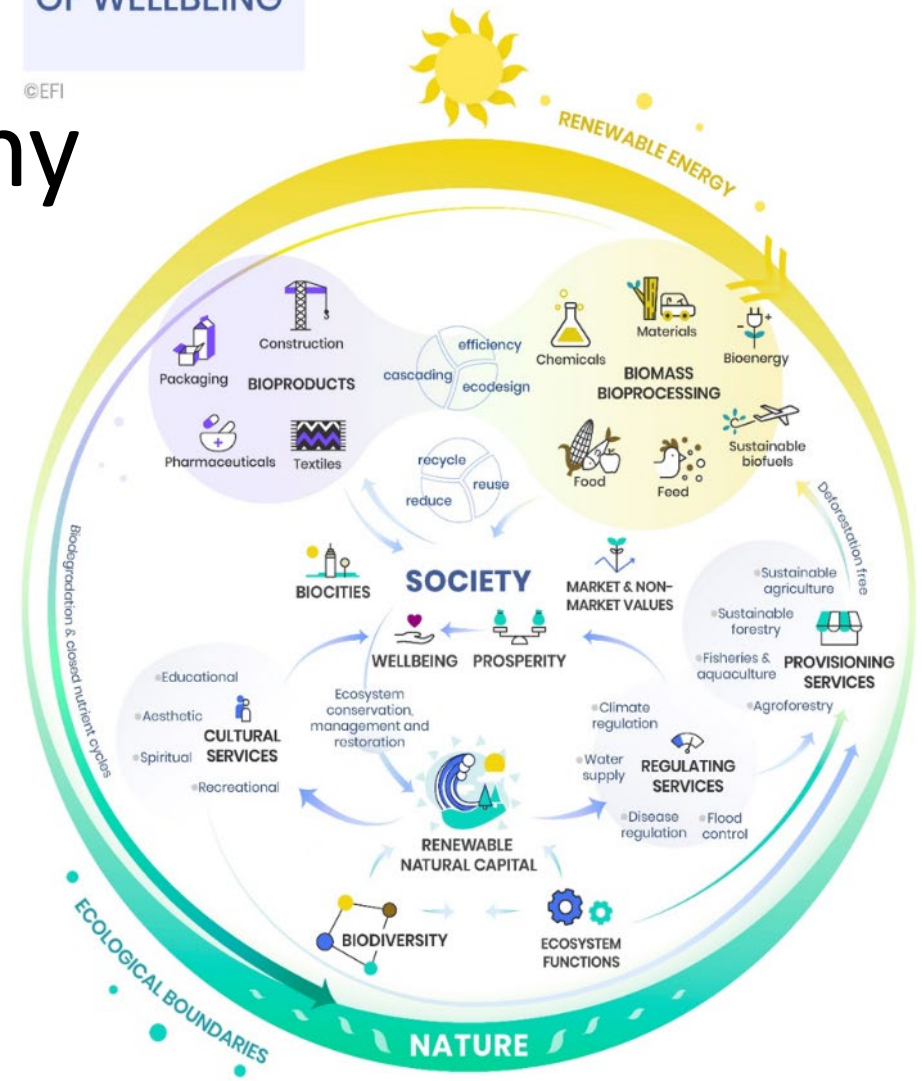
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**CIRCULAR BIOECONOMY OF WELLBEING**

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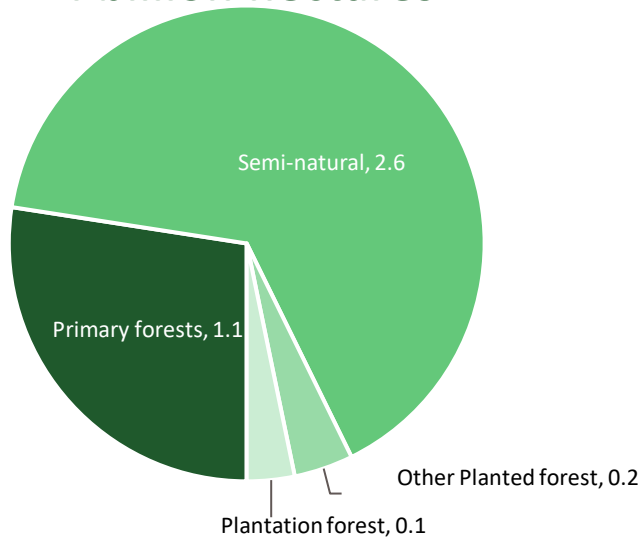
# A new economy powered by Nature



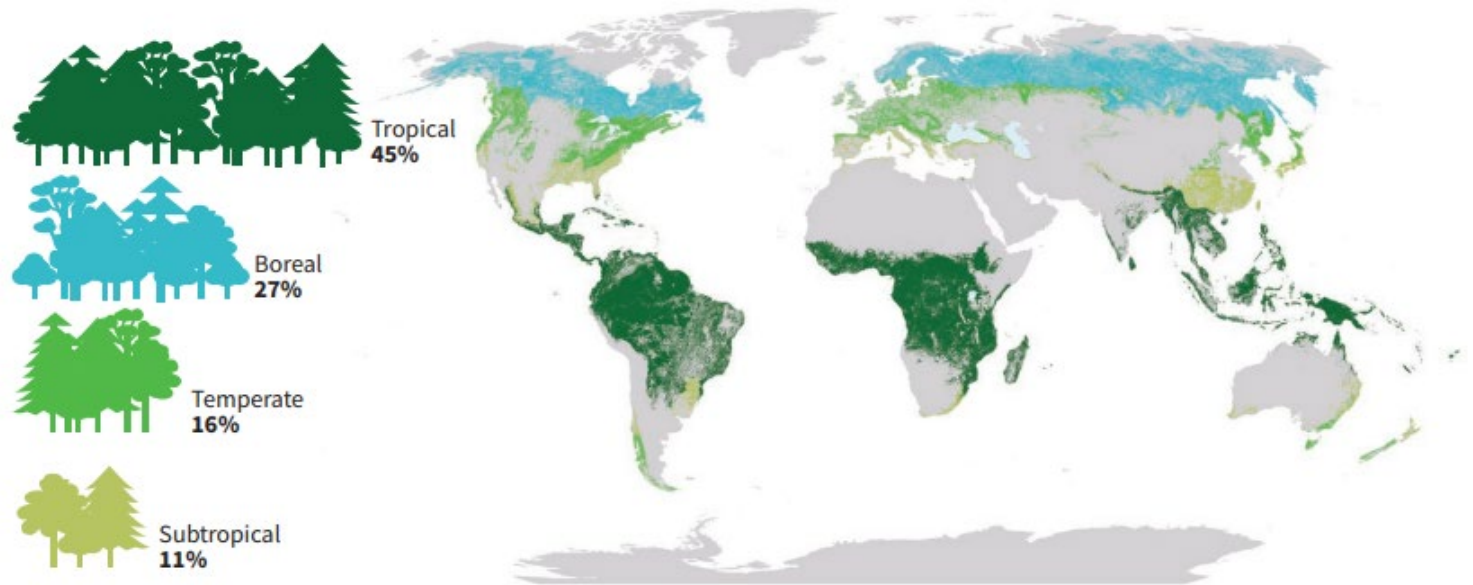
1. Biodiversity
2. Science
3. Circular
4. Holistic

# Forests, our keystone system

## Forest by type in 2021 4 billion hectares



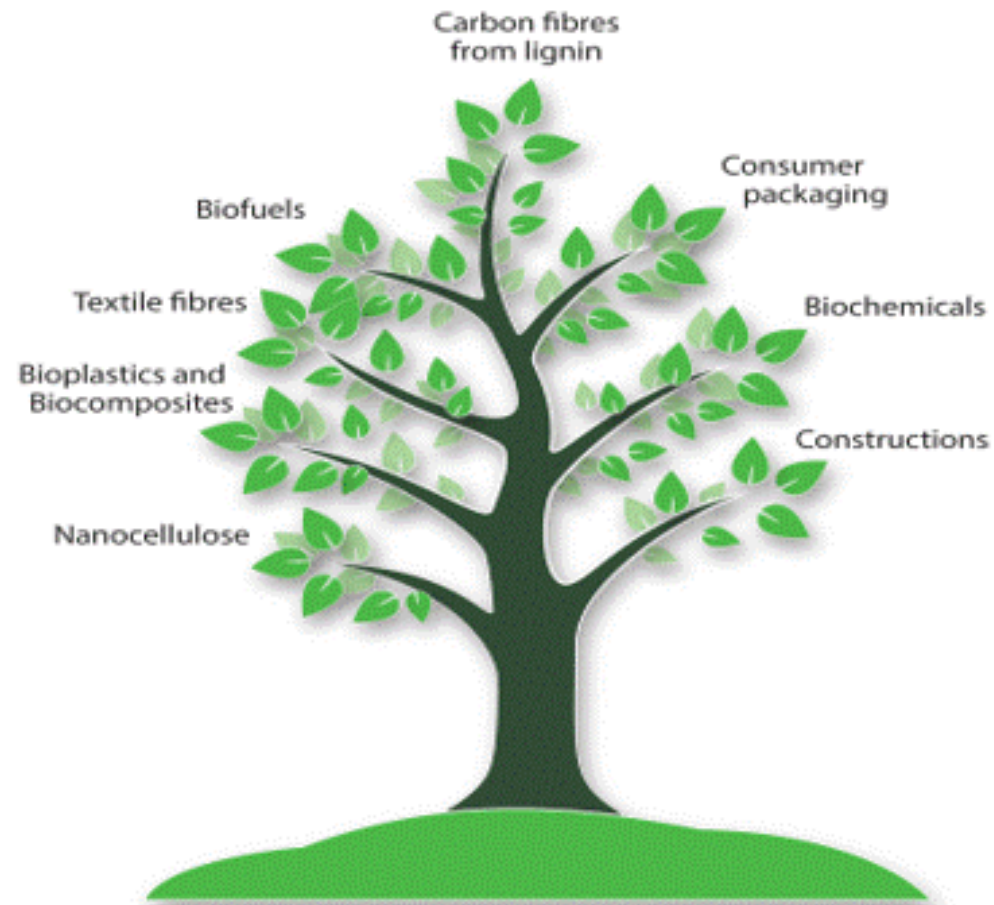
## Proportion and distribution of global forest area by climatic domain, 2020



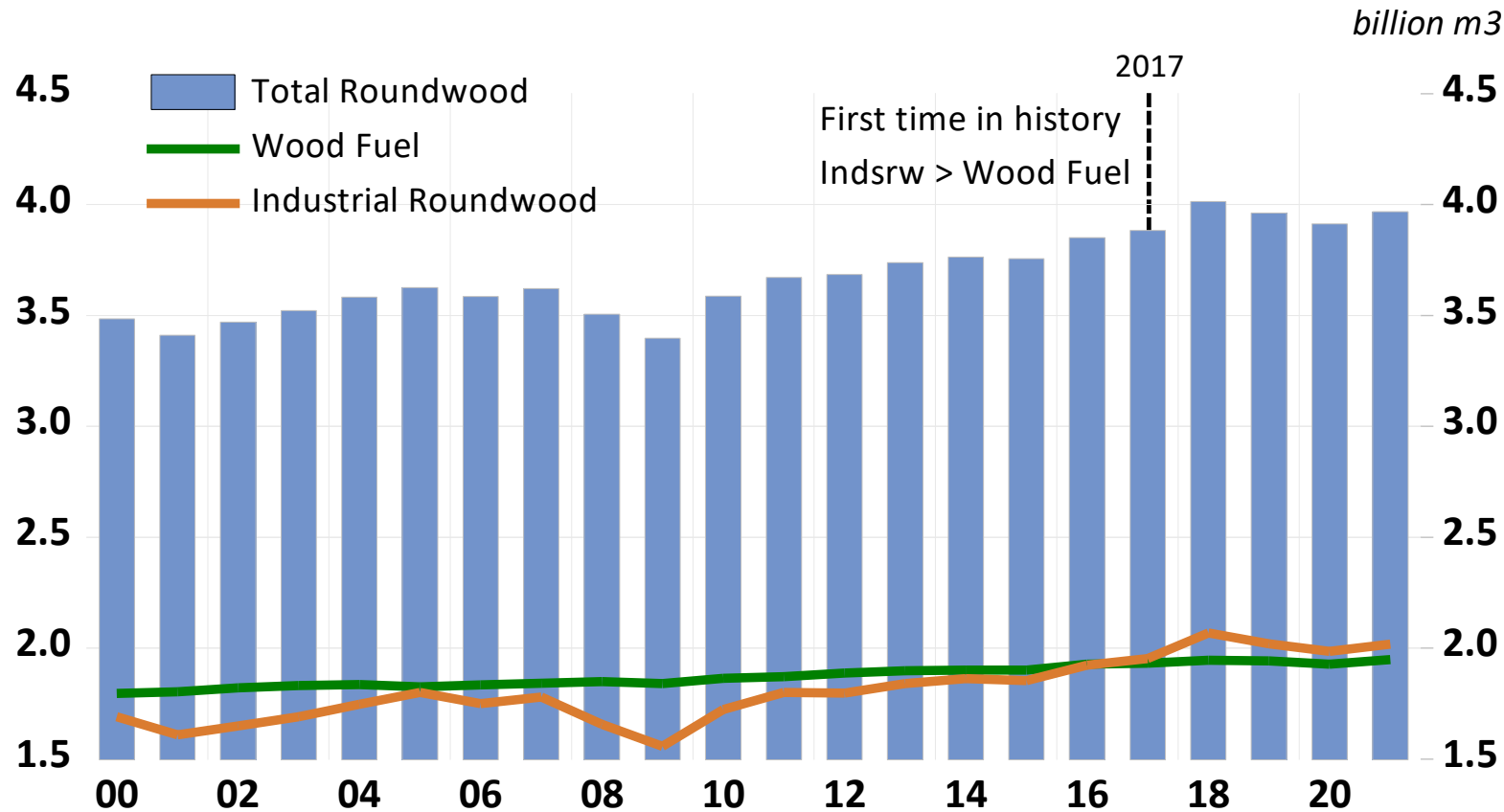
Source: Adapted from United Nations World map, 2020.



# Renewable resources for a circular bioeconomy



# World roundwood production: 50% industrial roundwood, 50% wood fuel

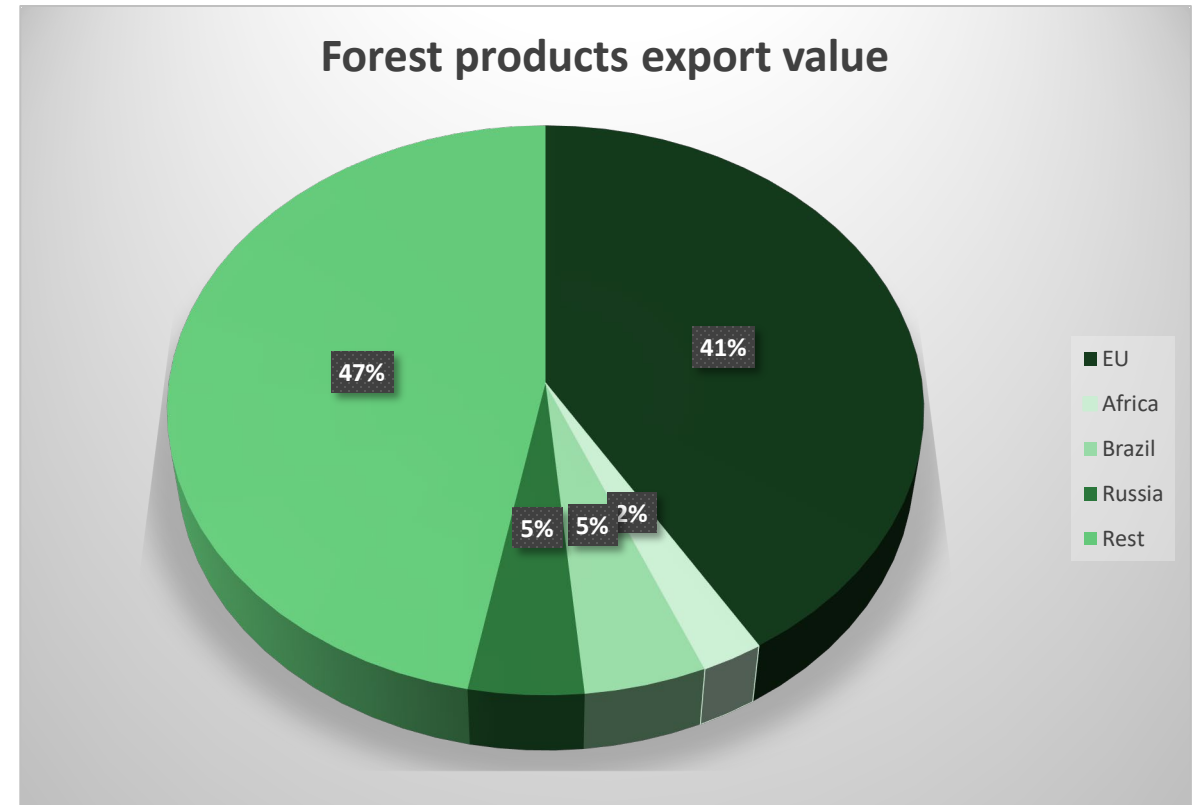
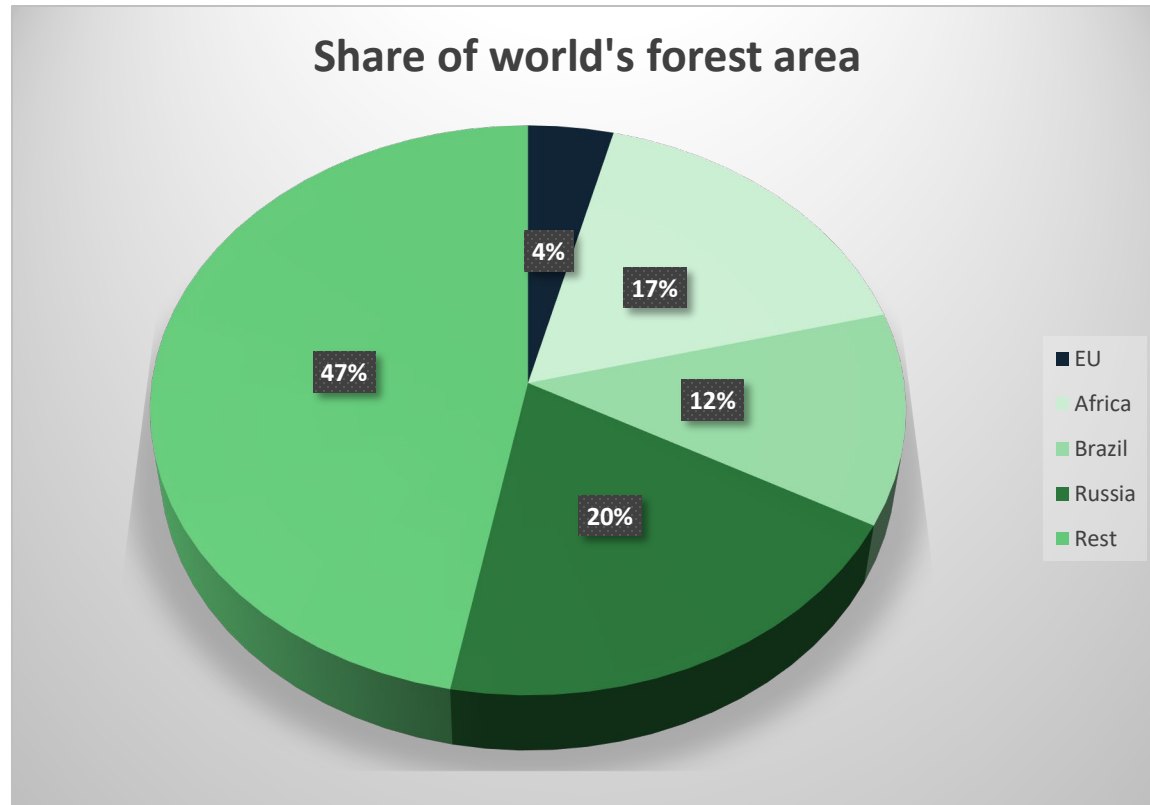


Data source: FAOSTAT

**In 2021, world produced 14% more roundwood than in 2000**

By Lauri Hetemaki  
Data: World Bank; \*constant prices

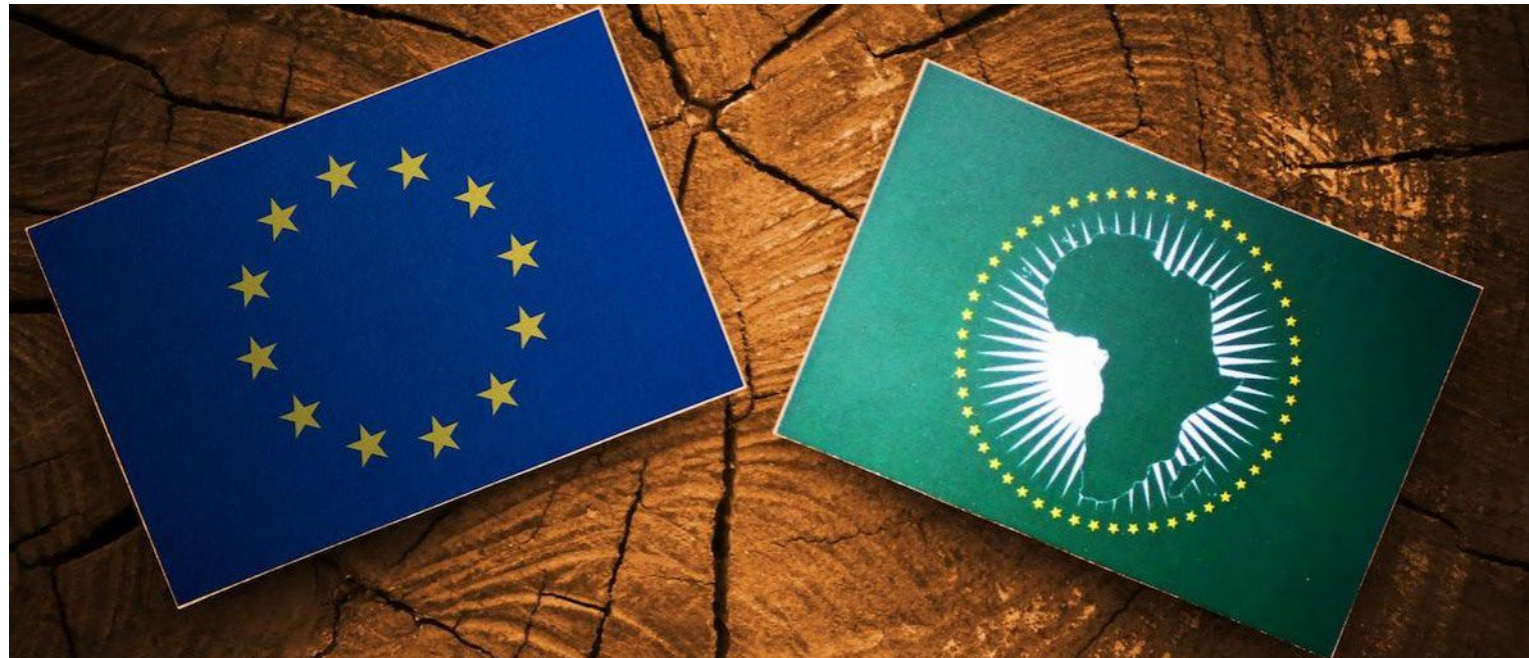
# The wood economy behind the forests



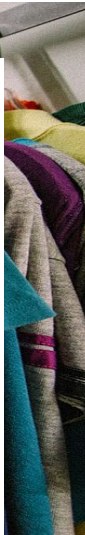
# The what and how matters: EU vs Africa

**EU: 500 Mm<sup>3</sup> = 41% (= 102 billion USD)**  
**Africa: 800 Mm<sup>3</sup> = 2.4% (= 6 billion USD)**

In Africa 90% of the wood is used for energy while in the EU 25%



# What if Africa could shift 50% wood to...?



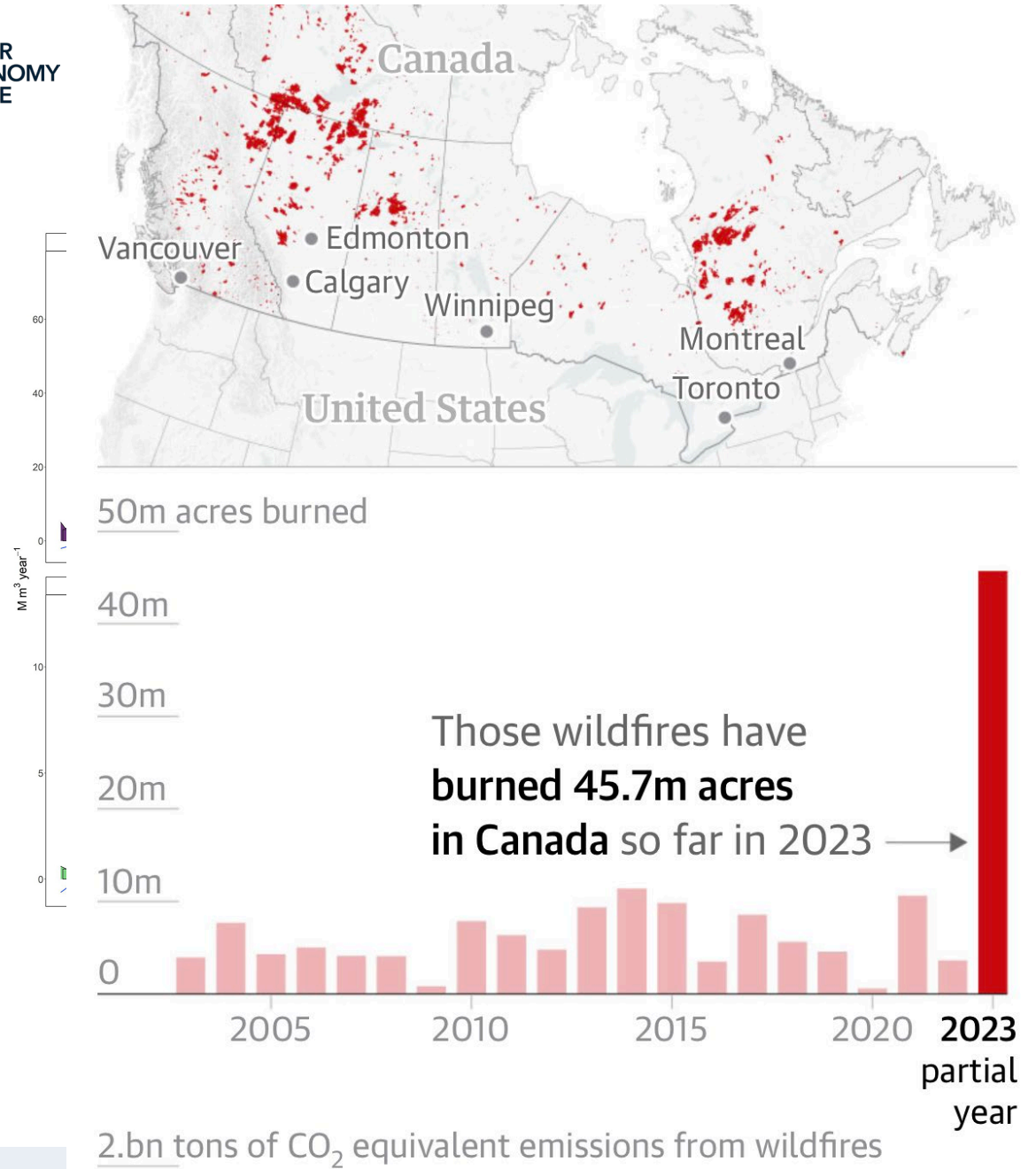
8 Million jobs and 200 billions USD additional contribution to Africa's economy



RESEARCH ARTICLE | [Open Access](#) | 

## Significant increase in natural disturbance impacts on European forests since 1950

Marco Patacca ✉, Marcus Lindner, Manuel Esteban Lucas-Borja, Thomas Cordonnier, Gal Fidej, Barry Gardiner, Ylva Hauf, Gediminas Jasinevičius, Sophie Labonne ... [See all authors](#) ▾



# Way forward: a new forest paradigm for a circular bioeconomy

- Unprecedented situation in terms of risks and opportunities
- A synergistic approach:
  - Bioeconomy-Biodiversity, Mitigation-Adaptation, Productivity-Resilience
- Invest in forests to transform our economy rather than to offset for a broken economy...
- A holistic approach:
  - To rethink our land, food and industrial systems
  - As basis for good governance and scientific research

# A new Renaissance

- Nature at the centre
- From science-fiction to science-wisdom
- The role of Universities





# Let's be humble...



## This is the planet of the trees!