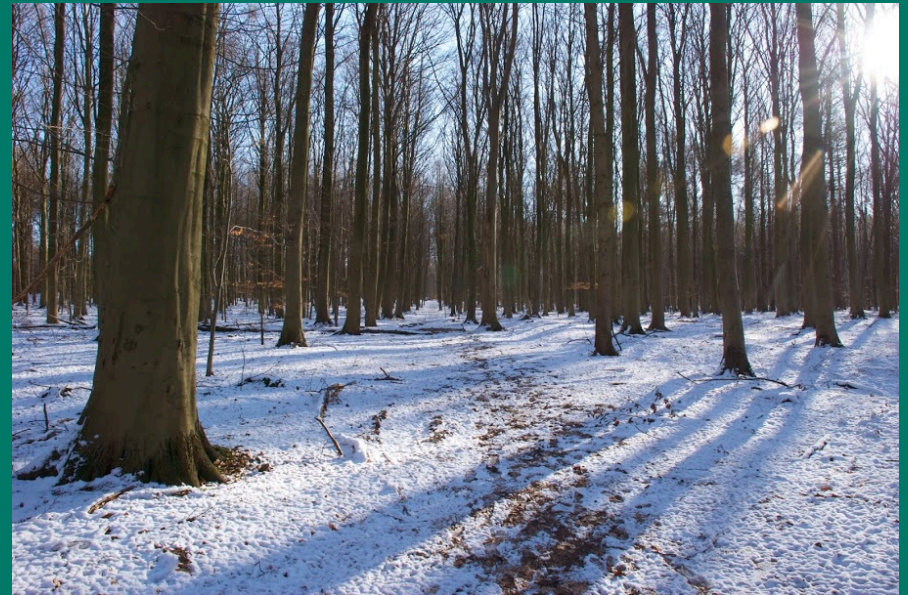


# Circular economy as an option for the forests and the forest sector

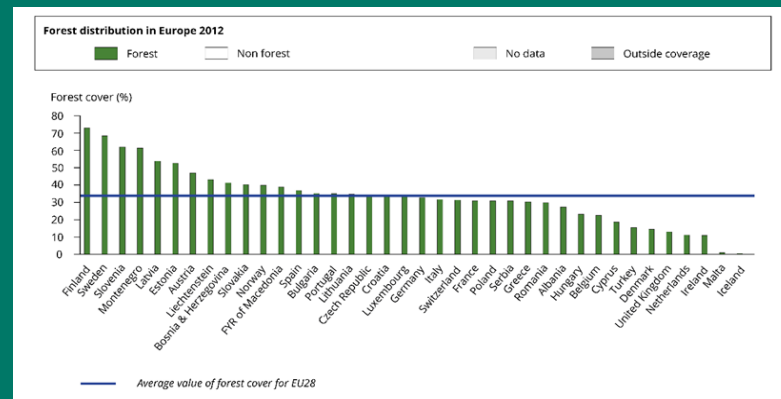
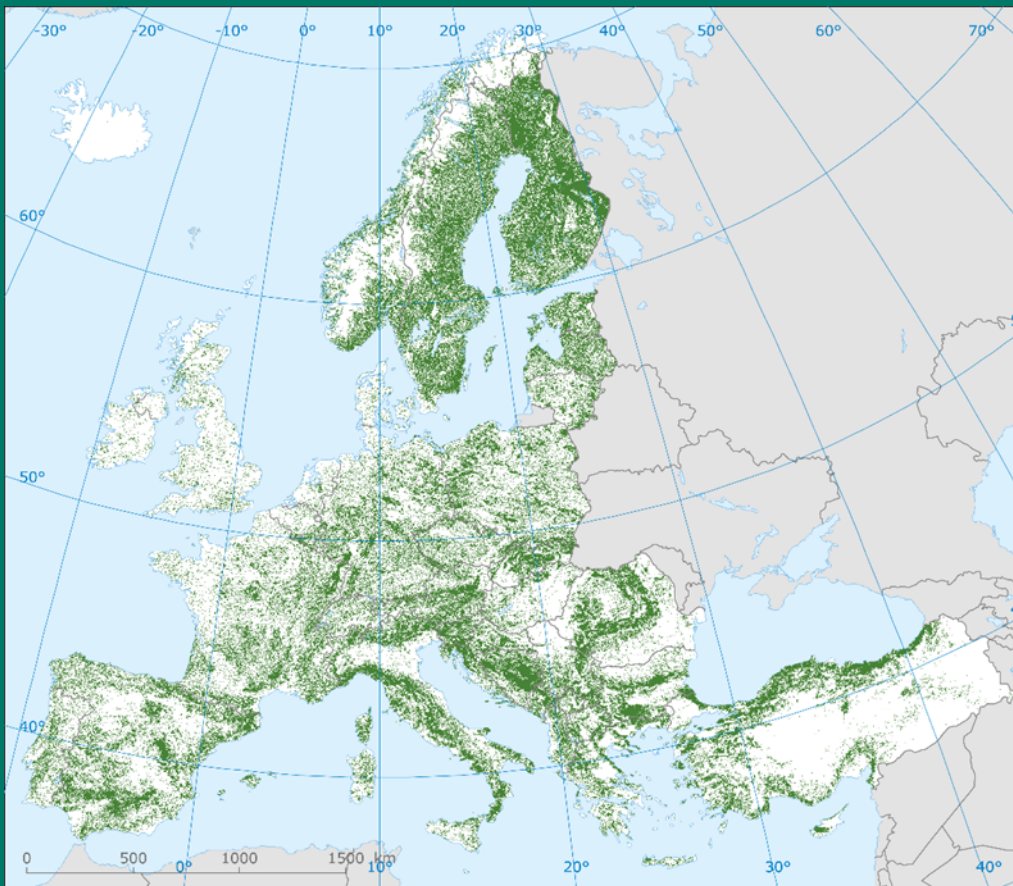


# Structure

- Overview of forest resources and forest sector in Europe
- Overview of forest sector current situation
- Challenges and opportunities
- How the forest sector fits in a circular economy



# Forests in Europe



## EU28

- Forest cover 182 million ha (~43%)
- Growing stock: 26 billion m<sup>3</sup>
- Wood production (2013): 435 million m<sup>3</sup>



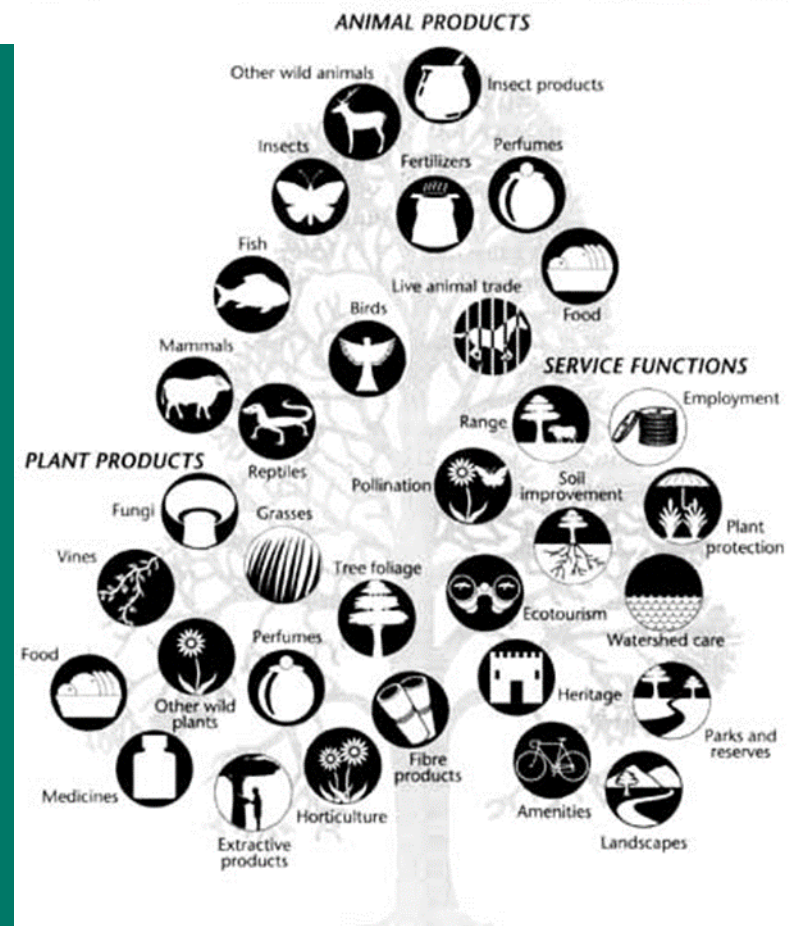
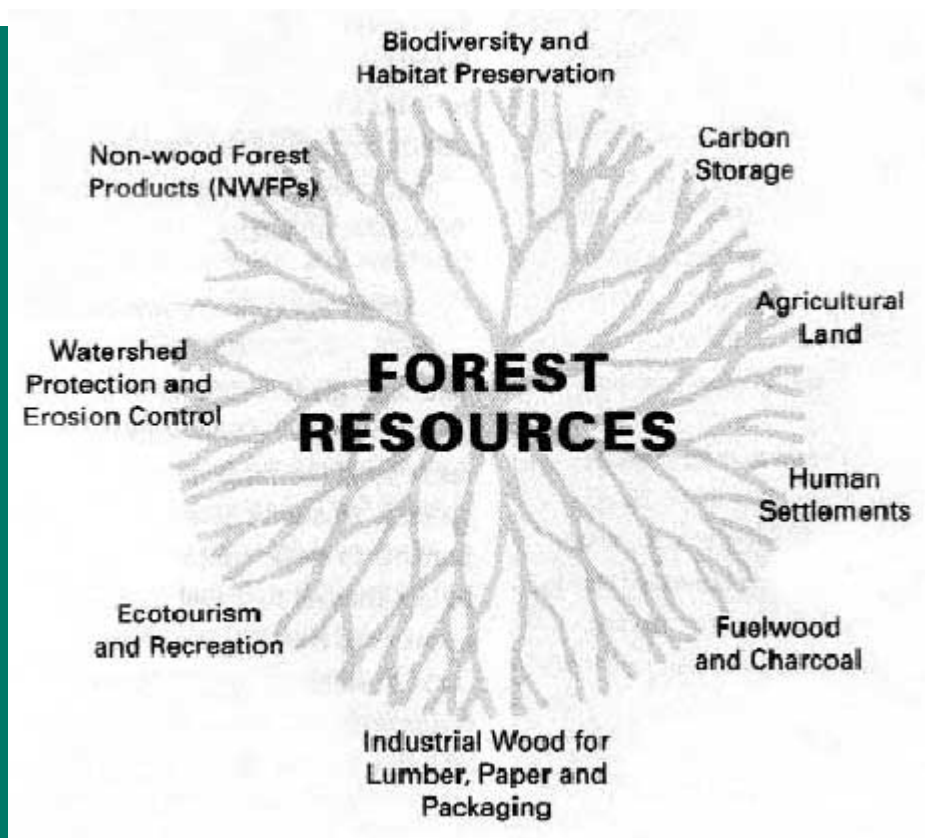
# Why forests and forest sector?

- Green economy is calling for new approaches in all sectors
- The many green characteristics of forests:
  - multifunctionality
  - possibilities for payments for ecosystem services
  - renewability of its raw material,
  - low waste
  - high recovery rate of its processes

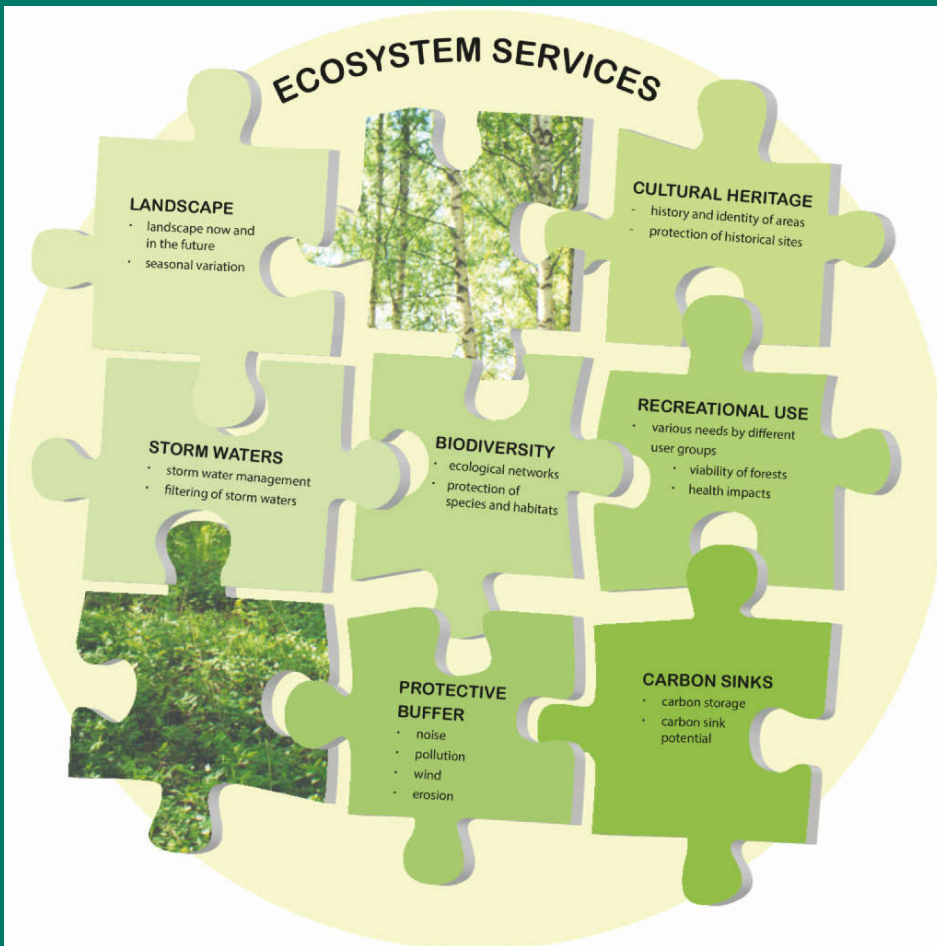




# Products and services from forests



# Ecosystem services from forests



- Provisioning services
- Regulating/maintenance services
- Cultural services

• Source: Maes et al., (2014)



# A sector with high socioeconomic importance

- Forests are both a source of natural capital and a commodity of commercial interest

| Year 2011             | No enterprises | GVA (billion €) | Employed persons (1000) |
|-----------------------|----------------|-----------------|-------------------------|
| Forestry+Logging      |                | 19              | 344                     |
| Wood based industries | 446            | 135             | 3461                    |
| Manufacturing         | 2100           | 1650            | 30100                   |

Eurostat (2015)



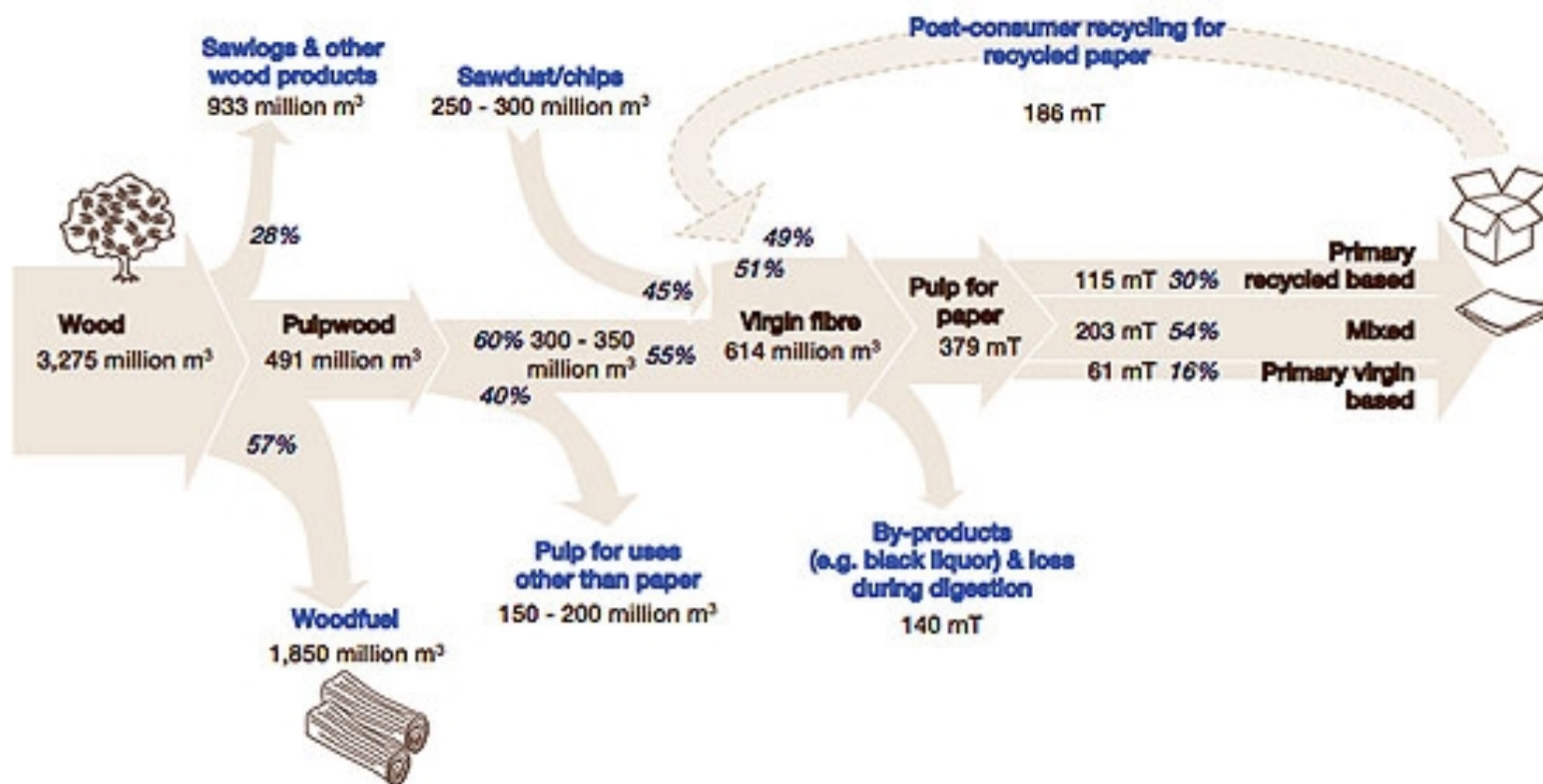
# What is the current situation of the forest sector?

- Increased production and consumption of raw wood materials after a long period of decline / stagnation
- In particular wood for energy – still the single most important source of renewable energy
- But also within housing and construction and wood products





# An example of forest sector activity



# Big changes within the forest sector

- Climate Change
- Protecting and enhancing biodiversity, ensure sustainability
- Globalisation
- Digital technology and media development
- New forest-based products (bioenergy, biomaterials, biorefineries, etc.)
- Increased demands for forest products and services (concerns for wood supply)

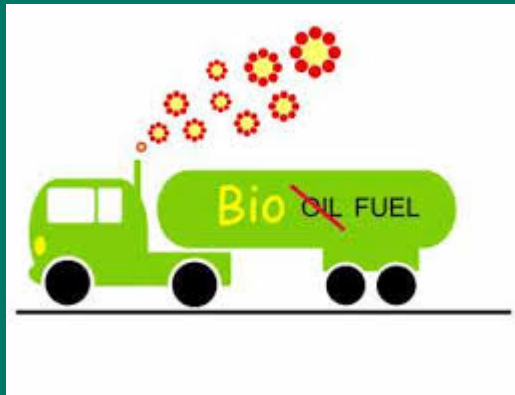


# Opportunities.. wood as the material for circular economy for renewal and innovation

- Wood
  - Natural
  - Renewable
  - Re-usable
  - Recyclable
  - Minimal harmful waste
  - Long life time
  - Innovationable
  - Lower use of energy



# Creativity and innovation not only from direct use of forest resources but use of waste e.g.



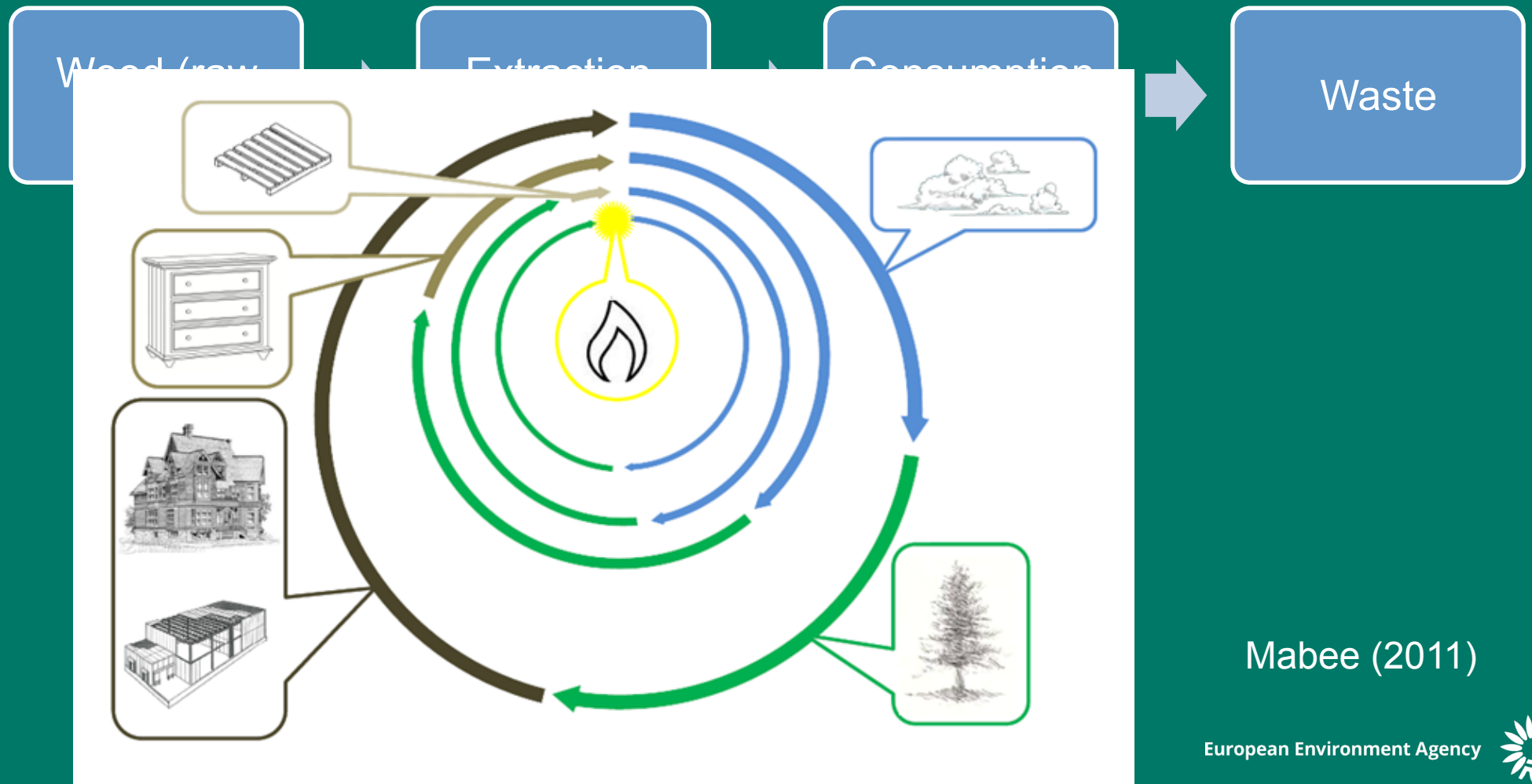
# Towards circular economy

- Resource management
- Decoupling economic growth from resource use
- Products that no longer reach end-of-life but rather become inputs for future use and new services arise to mitigate the impacts of a throwaway culture.

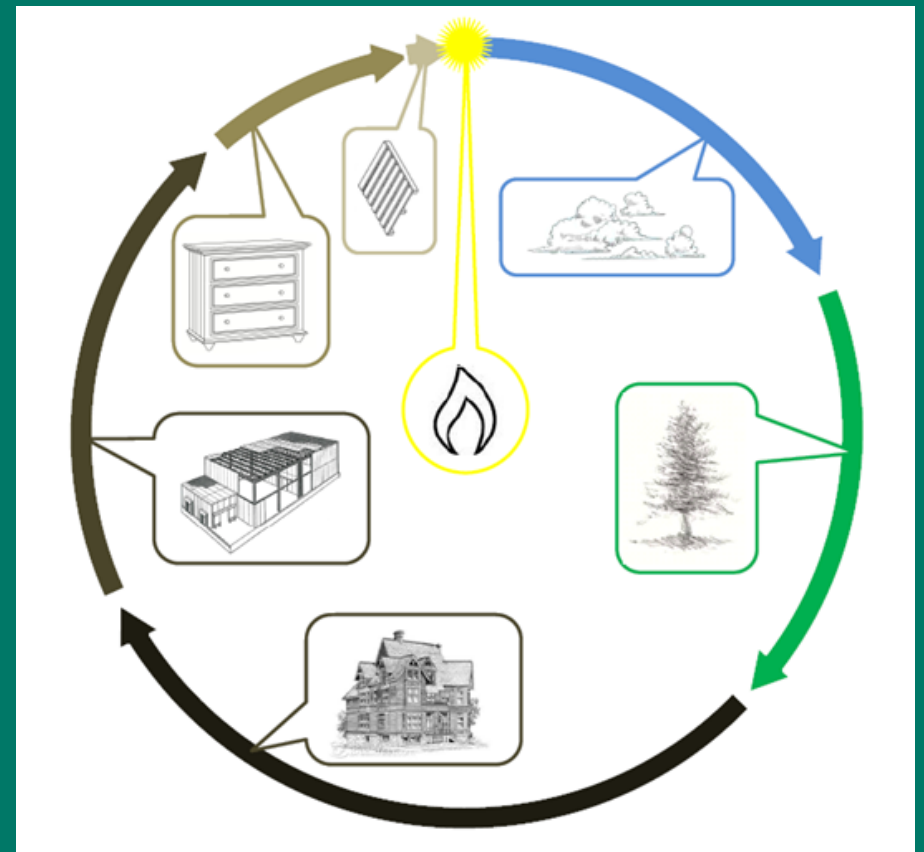
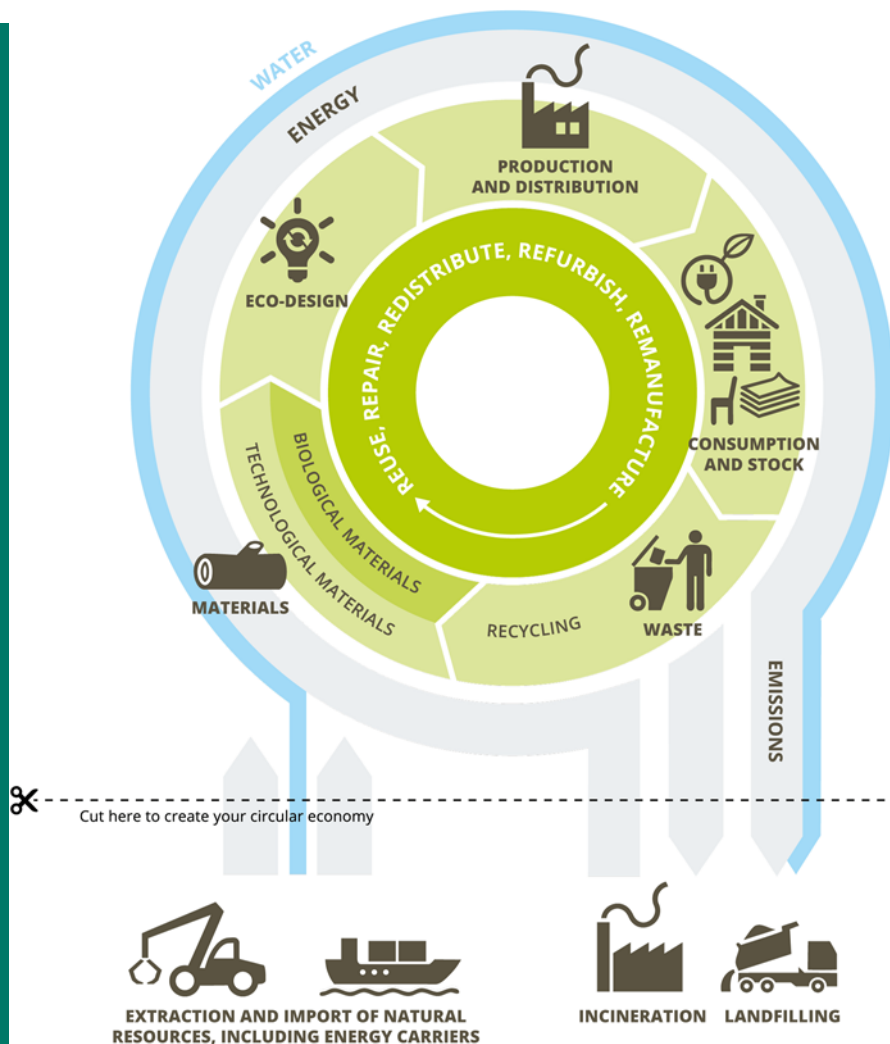




# From linear economy ...



# To circular economy...

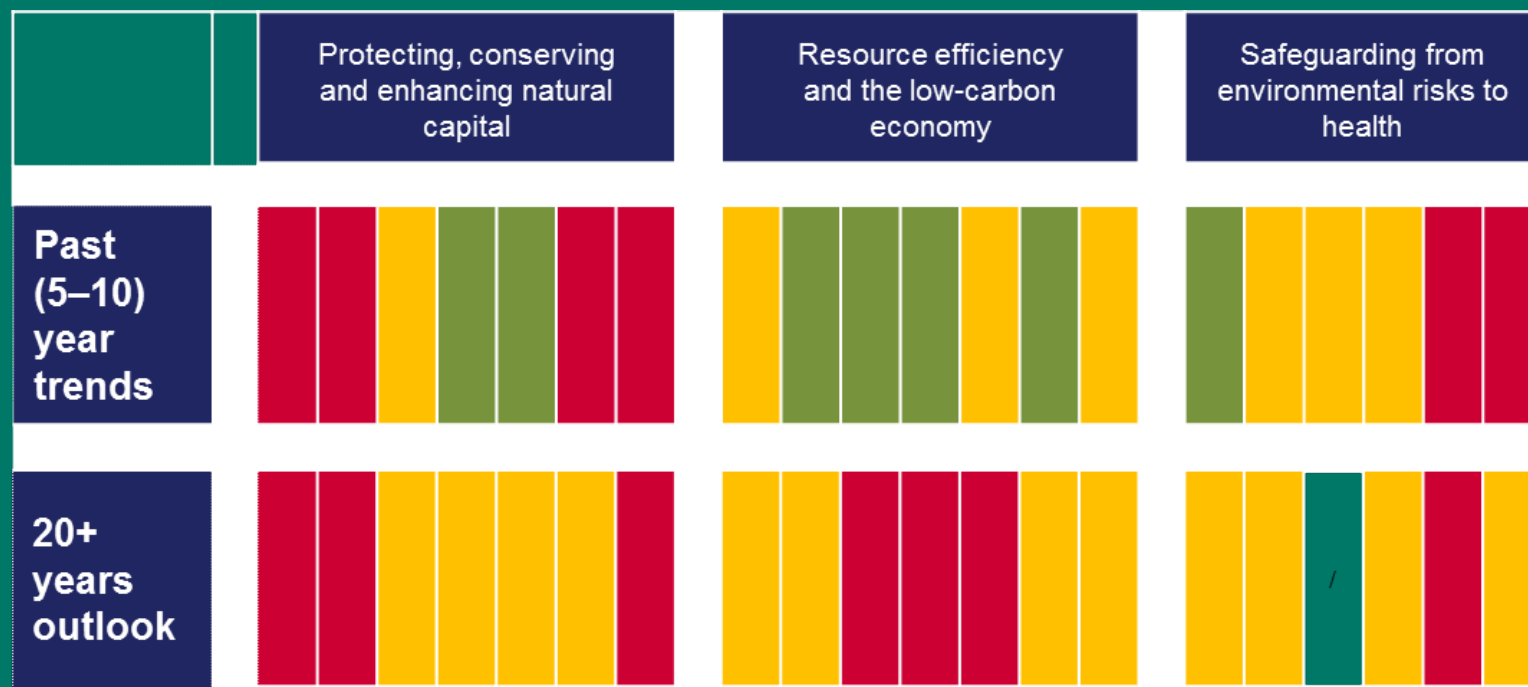





Mabee (2011)

European Environment Agency

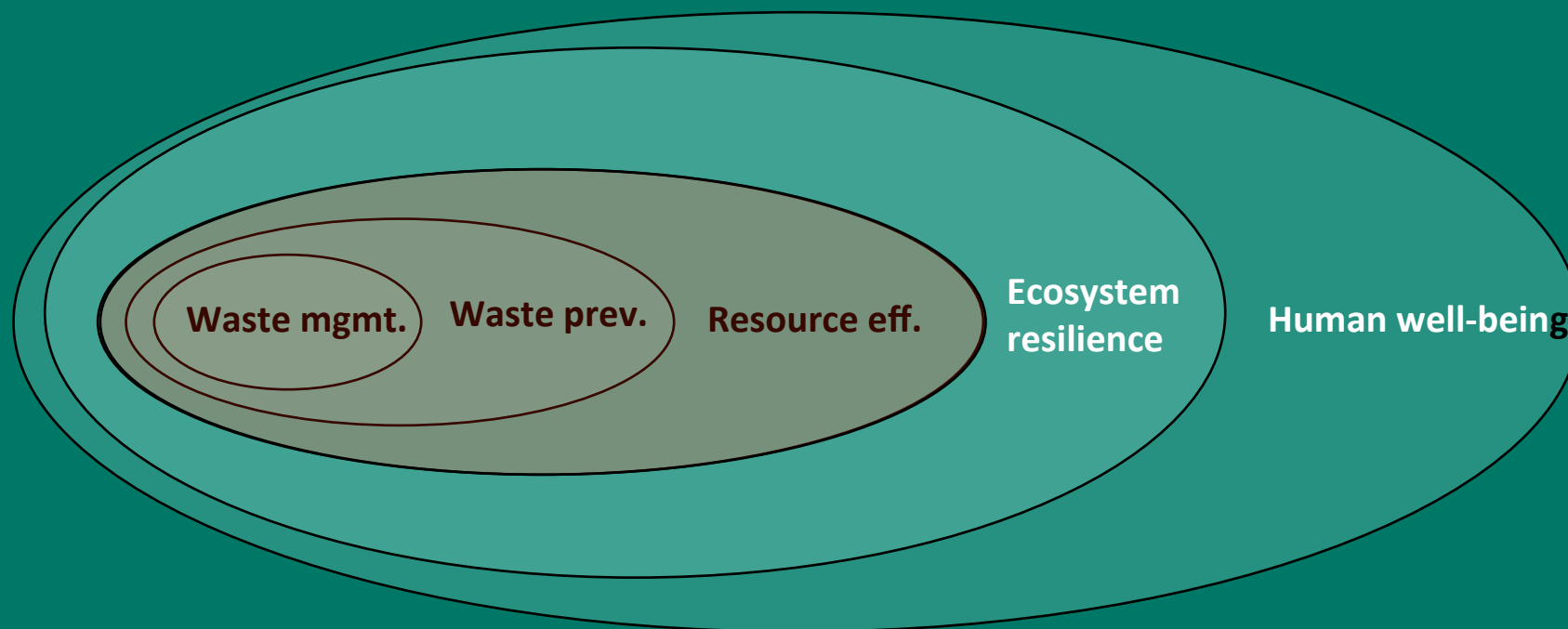


# Threats to long-term resilience



Improving trends dominate   
 Trends show mixed picture   
 Deteriorating trends dominate 

# A circular economy as part of a green economy



Circular economy focus

Green economy focus

Waste acquis

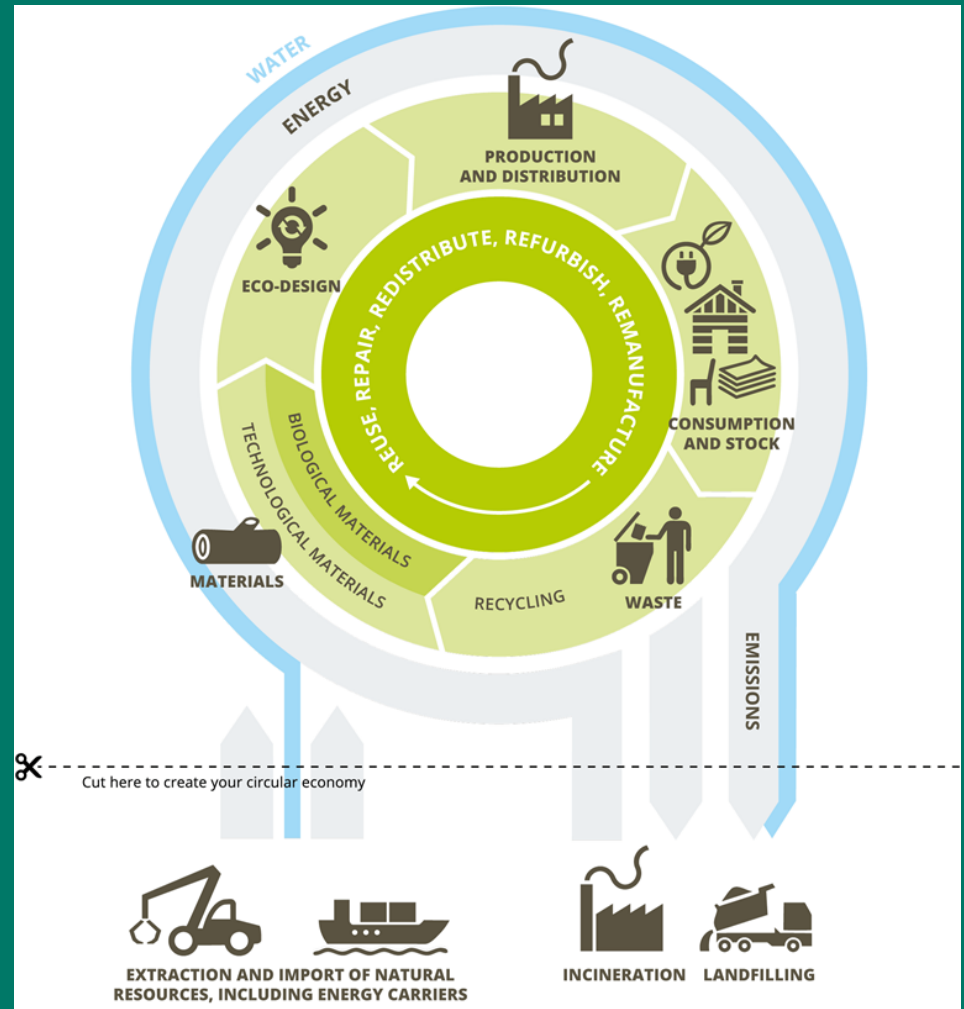
RE Roadmap

7th EAP



# Focusing on resource efficiency and ecosystem resilience

- Safeguarding / inclusion of natural capital in CE to minimise the damages to our resource base





# Ongoing initiatives and policy instruments

- Ensure sustainable management and use of primary resources
- MAES

## EU 2020 Biodiversity Strategy



Are Europe's ecosystems in good shape to continue delivering essential ecosystem services?



Can we value the flow of ecosystem services from ecosystems to society?



Which drivers of change increase or decrease the delivery of ecosystem services?

**We need to map and assess ecosystems and their services**



# Thank you for your attention

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