



Managing forests— a sustainable way to combat climate change and develop bioeconomy

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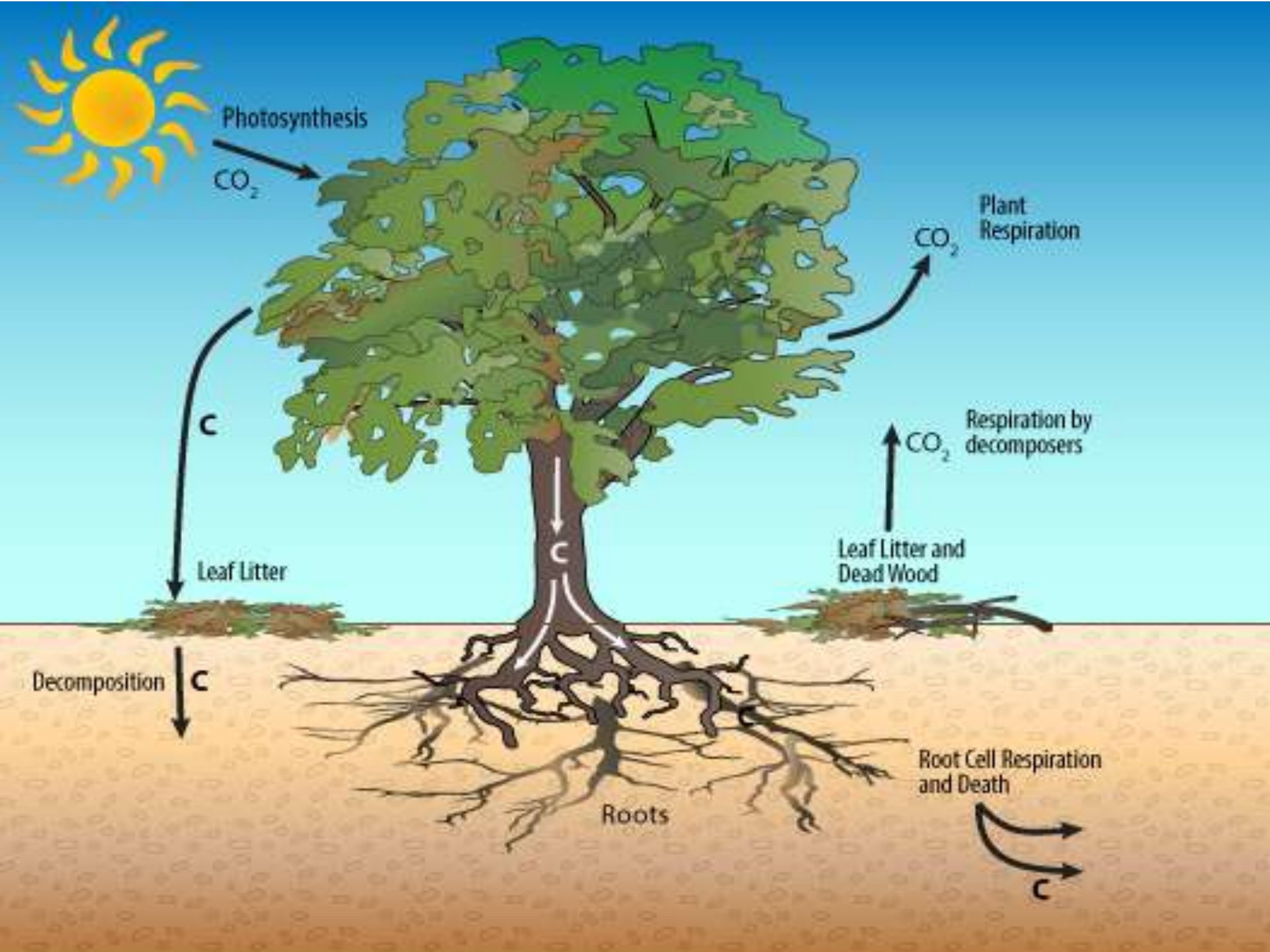
Outline

- Carbon balance of the forests
 - managed vs. unmanaged
- What decides the climate benefit
- Bioenergy vs. fossils



Conclusions

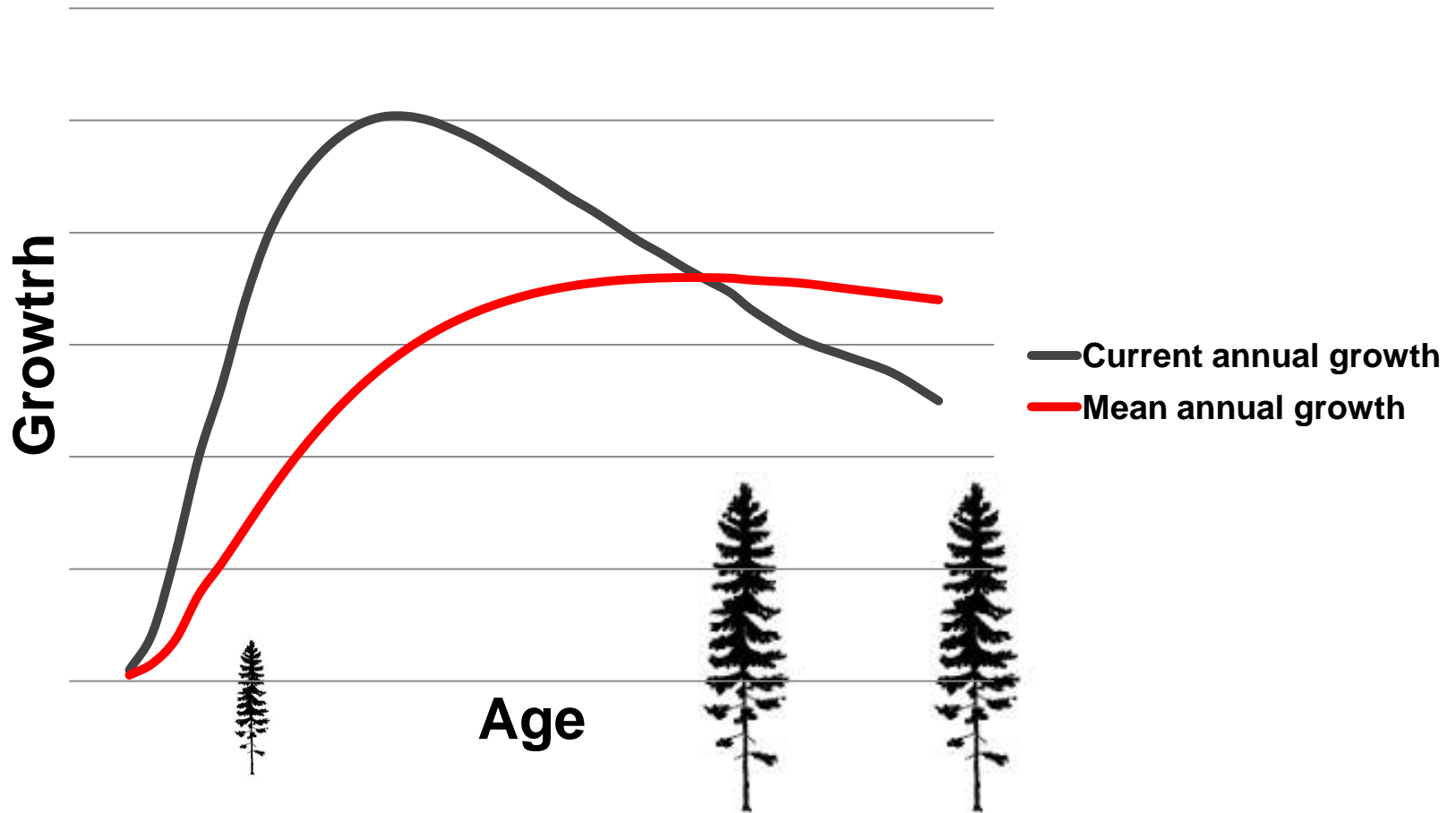
- forest growth is decided by natural conditions and management, i.e. not given by nature
- increased forest growth = increased climate benefit
- increased forest growth means opportunities for increased sustainable yields
- increased sustainable yields mean increased opportunities for the bio-economy to develop



The most important tool to manage sustained forest growth is to cut trees



Forest growth is age-related





Burn coal or biomass - which option causes the highest net emissions of carbon dioxide

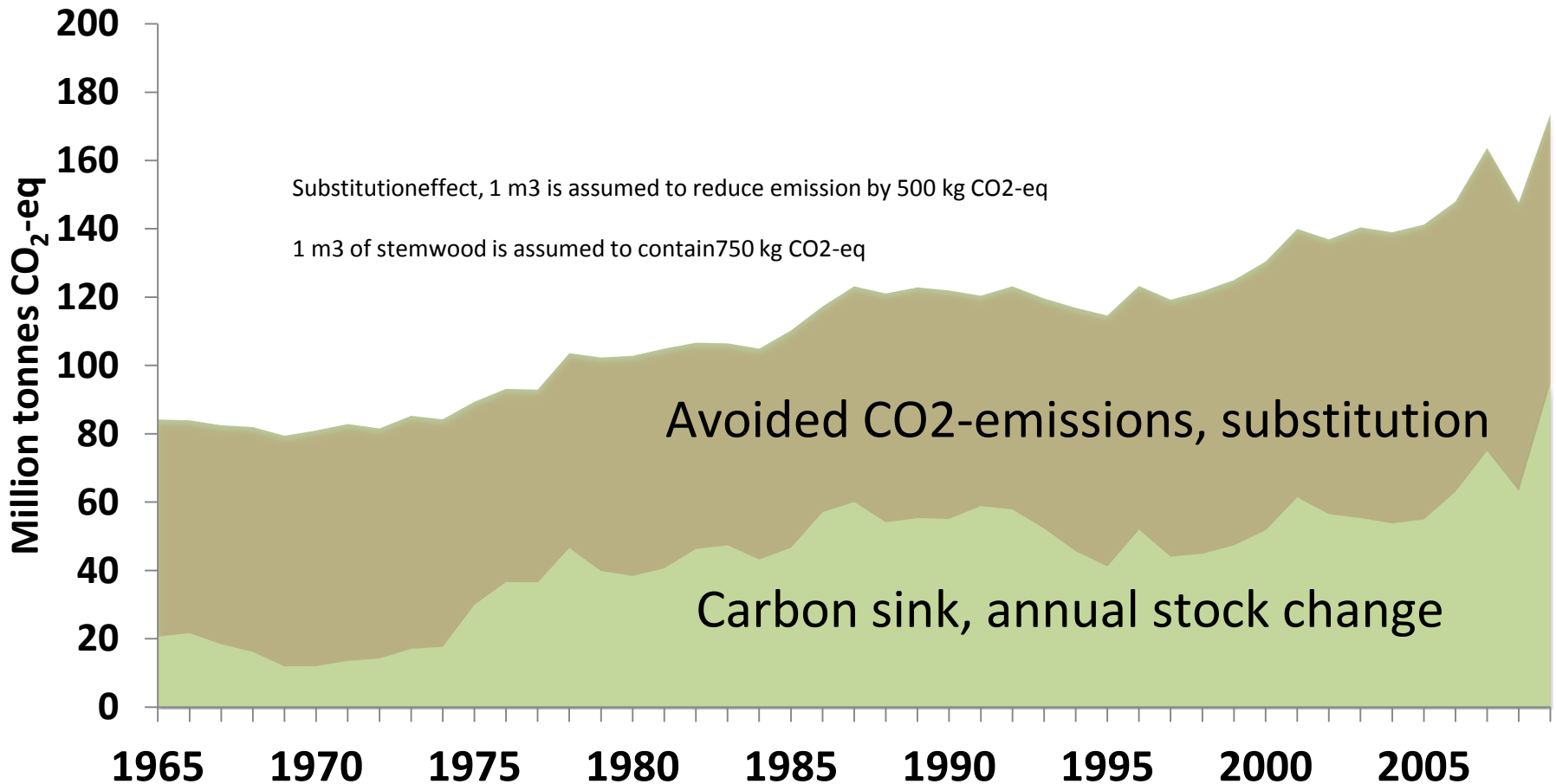
Burning coal is a permanent transfer of fossil carbon from the ground to the atmosphere.

If you assume that biomass must regrow after harvest biomass is worse than coal in the short term. In the long term trees will regrow and then bioenergy will be better than coal.

If you assume that we grow the trees first, then bioenergy is always better than coal.

Suppose we manage an entire estate of forests. At any one time harvesting and growing occur simultaneously. Carbon goes into the forest at the same, or higher, rate than it goes out. Bioenergy is far better than coal.

Annual carbon benefit, Norway, Sweden, Finland



Use or conserve the forest?

A forest that is not growing
more than today can not
make further climate
benefit.

it is a matter that is determined by what we think
about the future

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