

Agriculture and climate change

Status

- Accelerating climate change is worsening conditions for agriculture

Conventional agriculture

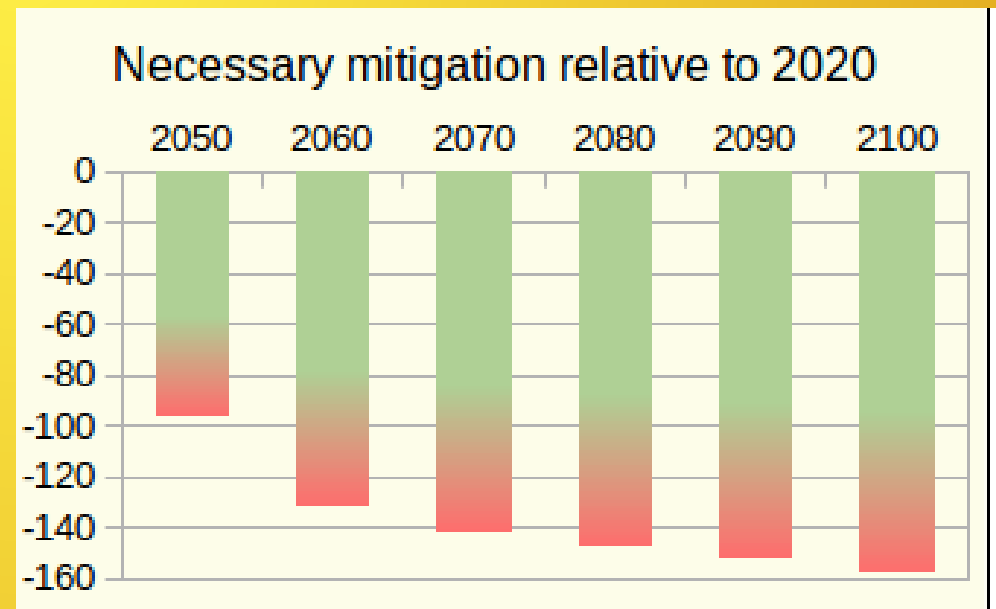
- main emitter of GHG
- vulnerable to climate change
- harmful to biodiversity

Challenges

- need for negative emissions
- scale
- velocity

Key climate data

RCP8.5 / DK	Mid-century	End-century
Temperature	+2°C	+3.4°C
Precipitation	+7%	+14%
Cloudburst	+41%	+70%



Comparison of conventional agriculture and agroforestry

Carbon footprint analysis

- cradle to farm gate
- all inputs
- all GHG emissions

The 2050 system

- alley cropping 30m strips
- long – and short term tree crops
- grain/legume intercropping

Results

Conventional to agroforestry	Difference %
CO ₂ e / area	-127
Energy / area	-19
CO ₂ e / energy	-134
Protein / area	-14
CO ₂ e / protein	-131
Resilience	Improved
Biodiversity	Improved