



Planbureau voor de Leefomgeving

IMAGE contribution to SSP development

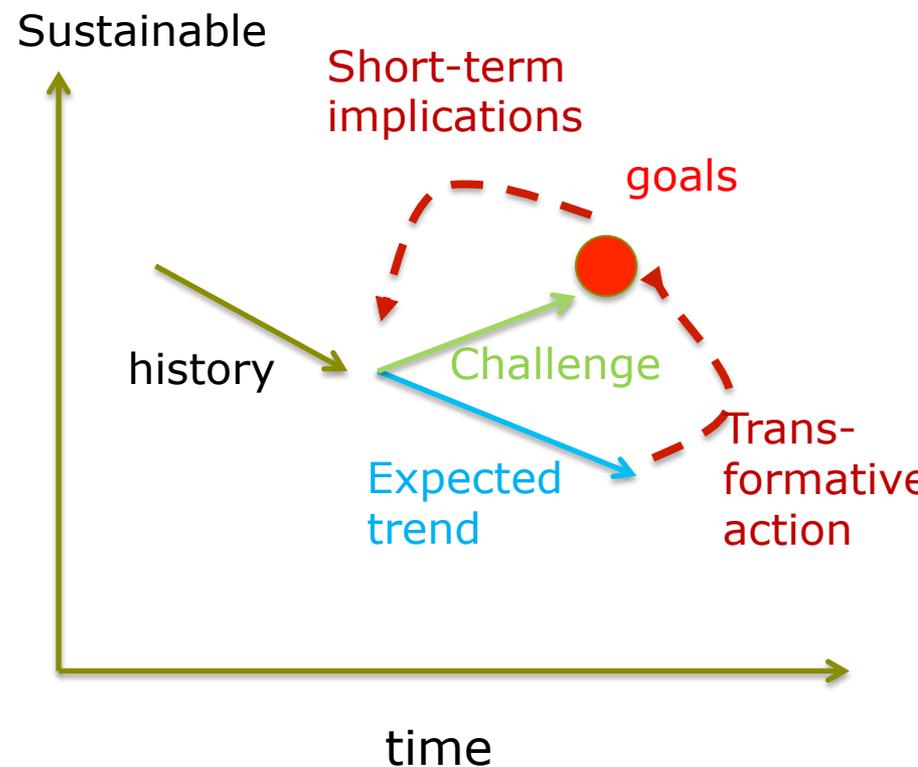


Plans of IMAGE teams

- Implement SSPs in period August – End of September – focus on SSP2, SSP3, SSP1 (other SSPs likely in 2013).
- Focus specifically also on the land storylines – we hope, among others, to profit from work in context AgMIP.
- Focus on climate – but clearly also on relationship with other sustainable development targets.

How did we analyse this?

- Looked at 2 key sectors
 - Food and biodiversity
 - Energy and Climate
- Focused on internationally agreed upon objectives
- Model analysis (integrated assessment); three alternative paths
- Combined with focus on governance



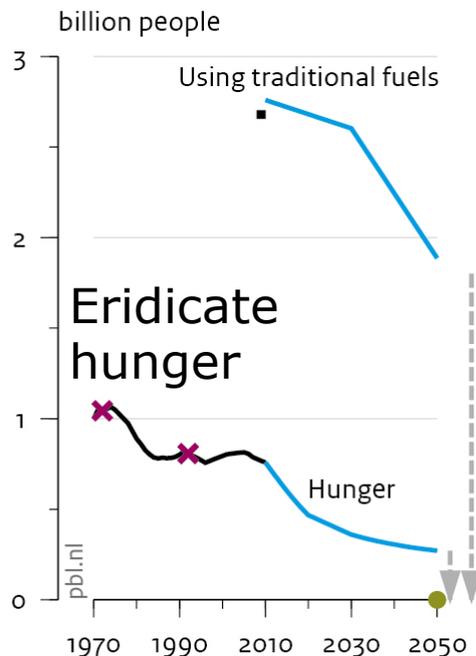


Little progress in achieving sustainable development goals

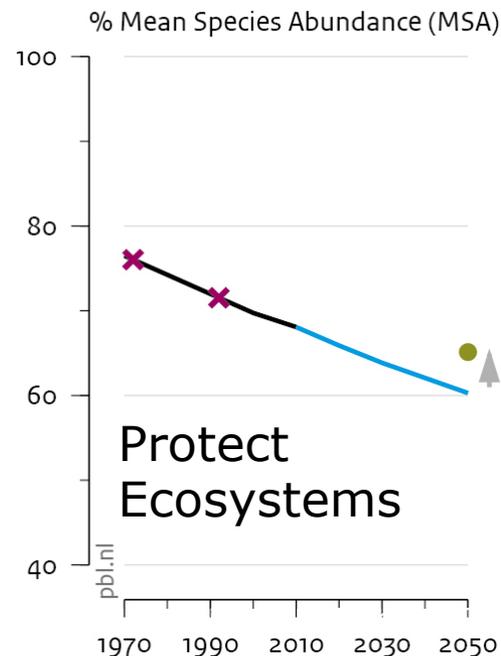
- With continuation of current policies, no breakthrough expected

Key indicators of sustainability

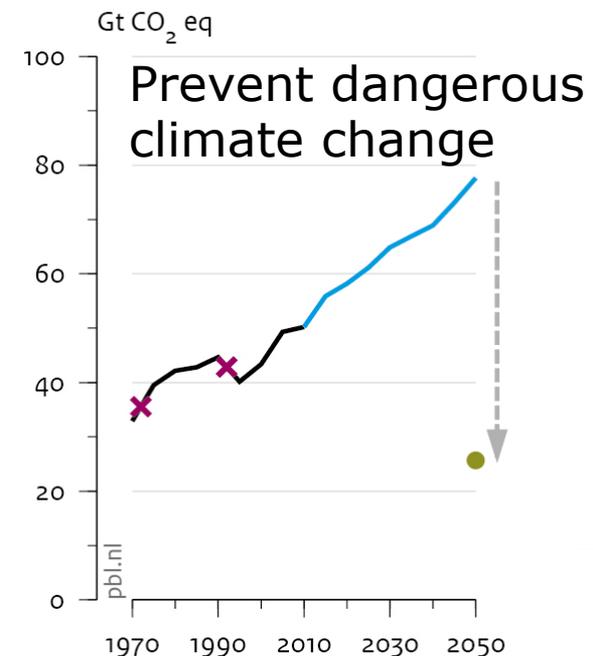
Hunger and traditional fuels



Biodiversity



Greenhouse gas emissions





Three different routes analysed

- Global technology focus (high yields, large-scale energy technologies, international cooperation, trade-liberalisation) SSP5
- Local technology focus (somewhat lower yields, more merged ecological / production functions, efficiency and end-use technologies) SSP-?
- Lifestyle focus (first less meat intensive diets and changes in heating and transportation patterns, rest filled in by technology) SSP1

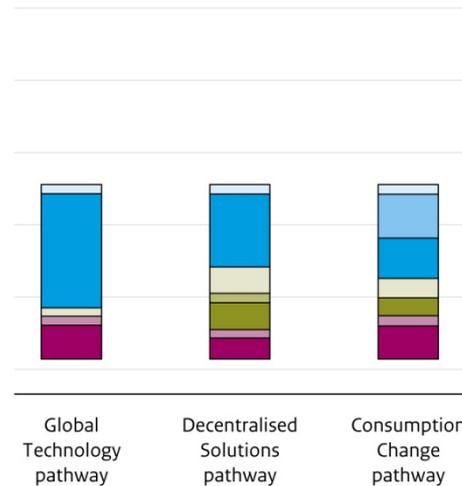
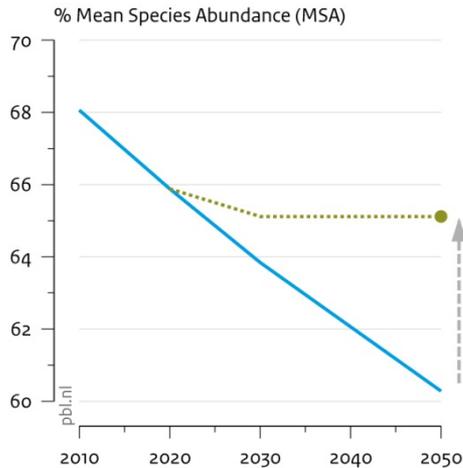


Technical potential exists.... Food and biodiversity

Global biodiversity and options to prevent biodiversity loss

Global biodiversity

Contribution of options to prevent biodiversity loss, 2050



- Trend scenario
- Goal
- Derivation of 2050 goal
- ↑ Policy gap

- Restore abandoned agricultural lands
- Reduce consumption and waste
- Increase agricultural productivity
- Expand protected areas
- Reduce nature fragmentation
- Reduce infrastructure expansion
- Reduce nitrogen emissions
- Mitigate climate change

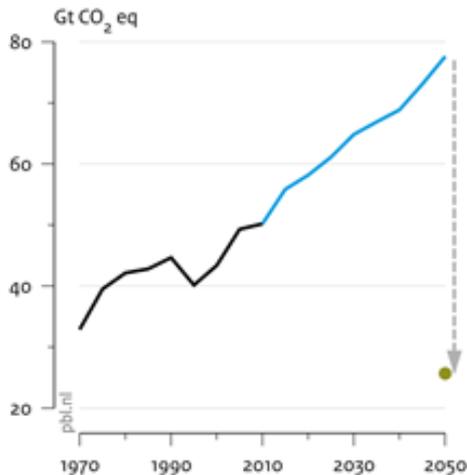
- Different pathways can be chosen
- Key elements:
 - Increase agr. Prod. significantly
 - Mitigate climate change
 - Manage negative impacts of infrastructure
 - Protect ecological hotspots
 - Control consumption



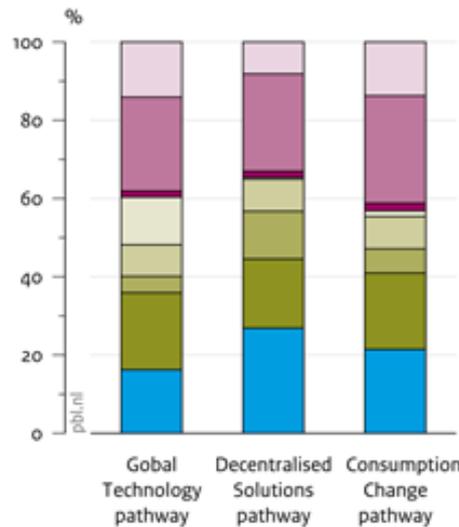
Technical potential exists... energy and climate

Global greenhouse gas emissions and options to reduce emissions

Greenhouse gas emissions



Contribution to cumulative emission reduction, 2010 – 2050



- History
- Trend scenario
- Goal
- ↓ Policy gap

- Avoid deforestation
- Reduce other greenhouse gases
- Reduce other energy-related emissions
- Increase nuclear power
- Increase bio-energy
- Increase solar and wind power
- Increase CO₂ capture and storage
- Improve energy efficiency

- Reaching 2°C target and achieving other energy targets is possible; additional costs ~1-2% of GDP
- Key elements:
 - Energy savings
 - Non-CO₂
 - Carbon-free electricity
- Energy access

Land use pattern in 450 ppm mitigation scenario (2100)



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