

Special event 3: Science and technology futures and scenarios for the SDGs and beyond: what is possible and what does it take?

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STI Forum prep meeting

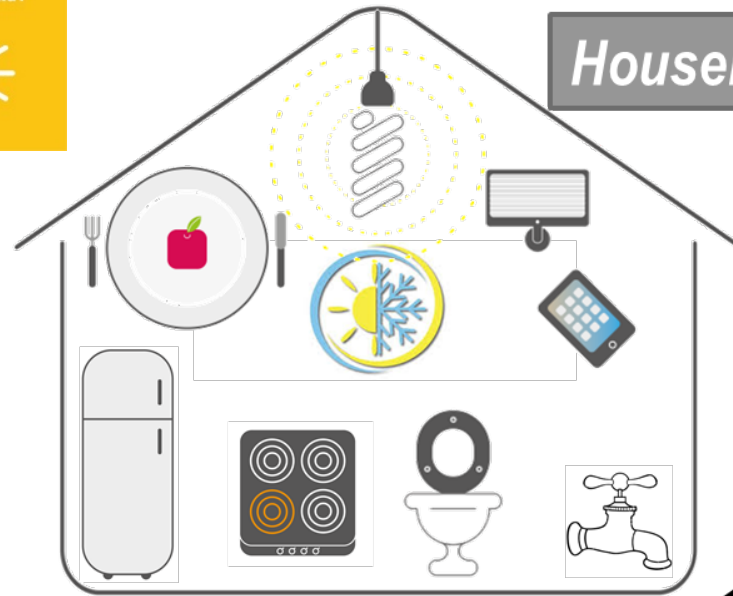
8 March 2022



Technology Futures and Scenarios (3-4 speakers)

- Energy for decent living
 - multi-dimensional poverty and equity considerations
 - Bottom assessment of social and physical welfare
 - Gaps and how to close them
- Maximizing SDG synergies through circular & shared economy
- SDG pathways with focus on Synergies and Trade-offs

Energy for Poverty Eradication



Household

Community

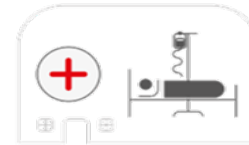
National

Health

Education

Mobility

*Supporting
Infrastructure*



Decent Living Standards – Material basis for Well-being

DLS Indicators

Dimension	Unit
Food	kCal, Micronutrition
Shelter Comfort	m ² , Durable (°C, RH)
Basic appliances	Stove, TV, Fridge
Health/Educ	\$\$
Clothing	Kg
Water/Sanit	Access, m ³
Mobility	P-km

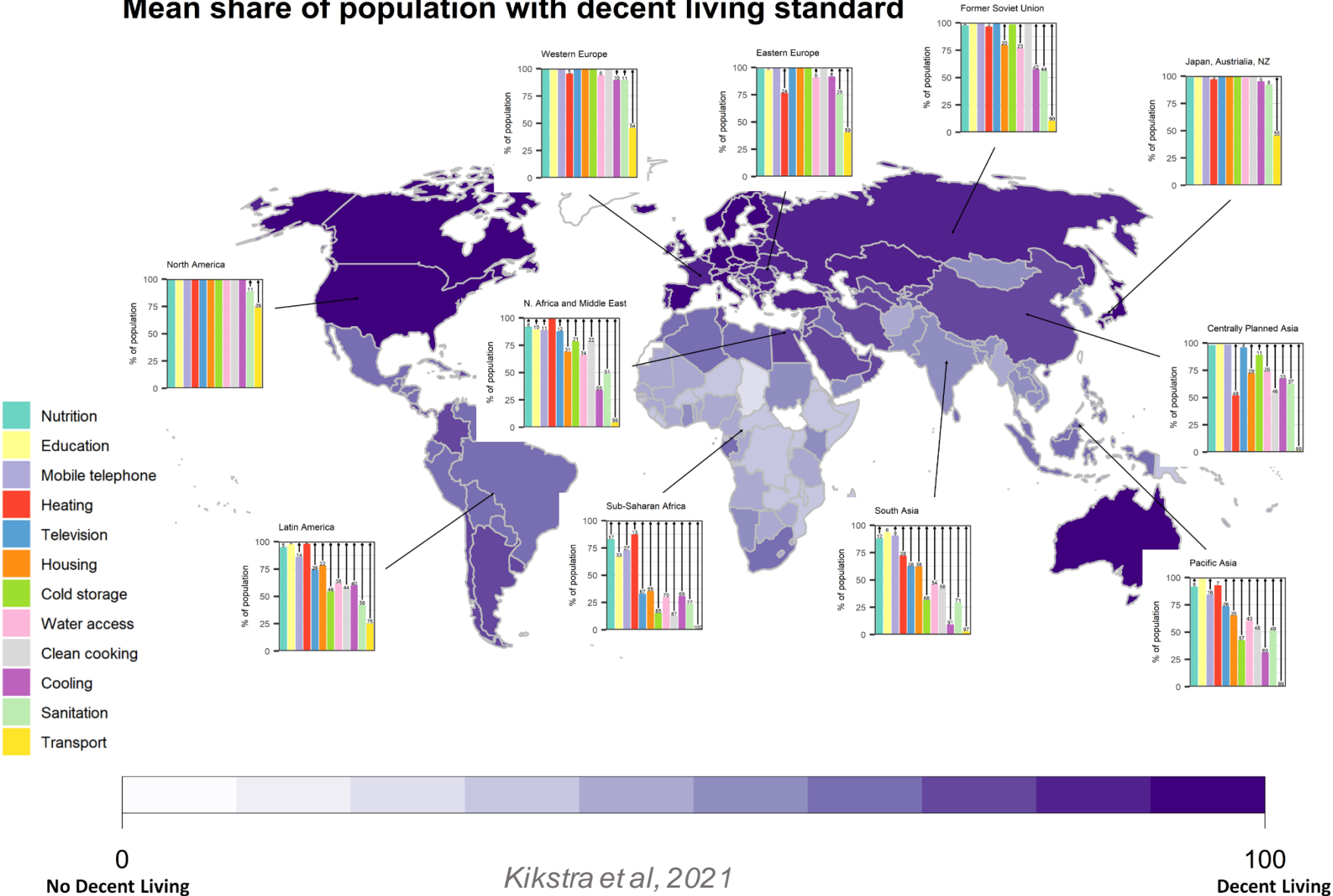
Physical Wellbeing

Dimension	Description/ (Minimum) Thresholds
Housing	Safe, durable (permanent), min space (10 m ² /cap)
Thermal comfort	AC Use (26°C, 60% Humidity), 1 bedroom, nights only. Heating to 18°C
Nutrition	Macro- and micronutrients (protein, zinc, iron, calories)
Clean ckg	LPG or electricity cook stoves
Water	65 l/cap/day, indoor access
Sanitation	Sewage distribution (urban only)
Appliances	Fridge: <200 l; TV; cell phone per adult
Health care	\$665 per capita (national)
Education	\$1000 -\$1500 per student (national)
Mobility Infrastructure	10K p-km motorized; paved roads; public transit

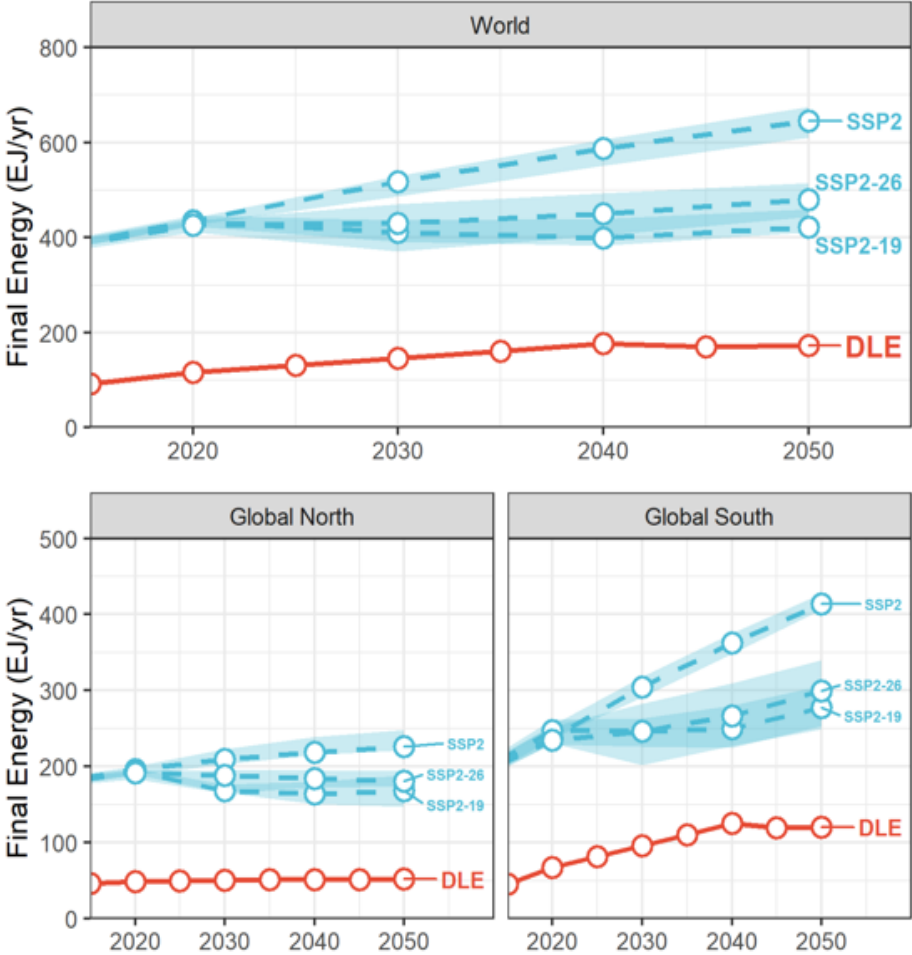
Social Wellbeing

Decent Living Gaps – Today

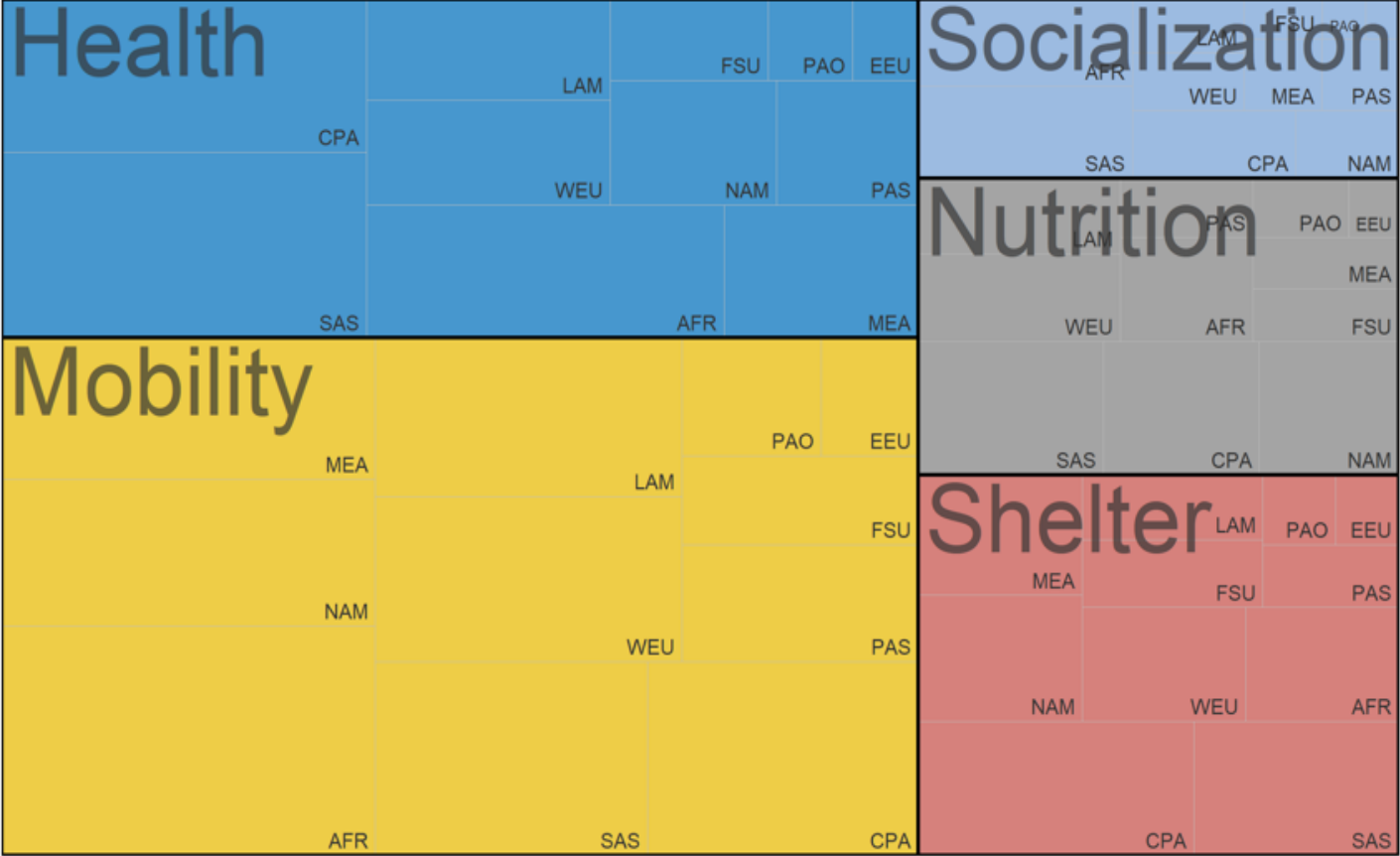
Mean share of population with decent living standard



Energy needs for DLE significantly less than lowest scenarios in the literature

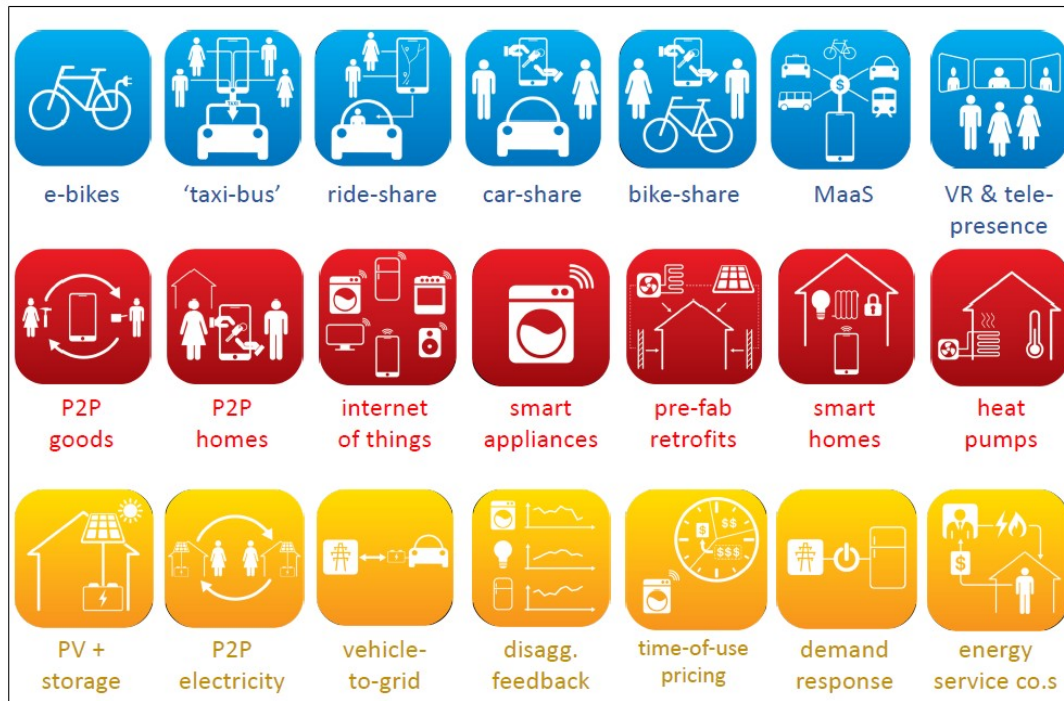


Total yearly Decent Living Energy need
Sizes based total energy per region for SSP2 in our scenario for 2050



Maximizing SDG synergies through digitalization, circular & sharing economy

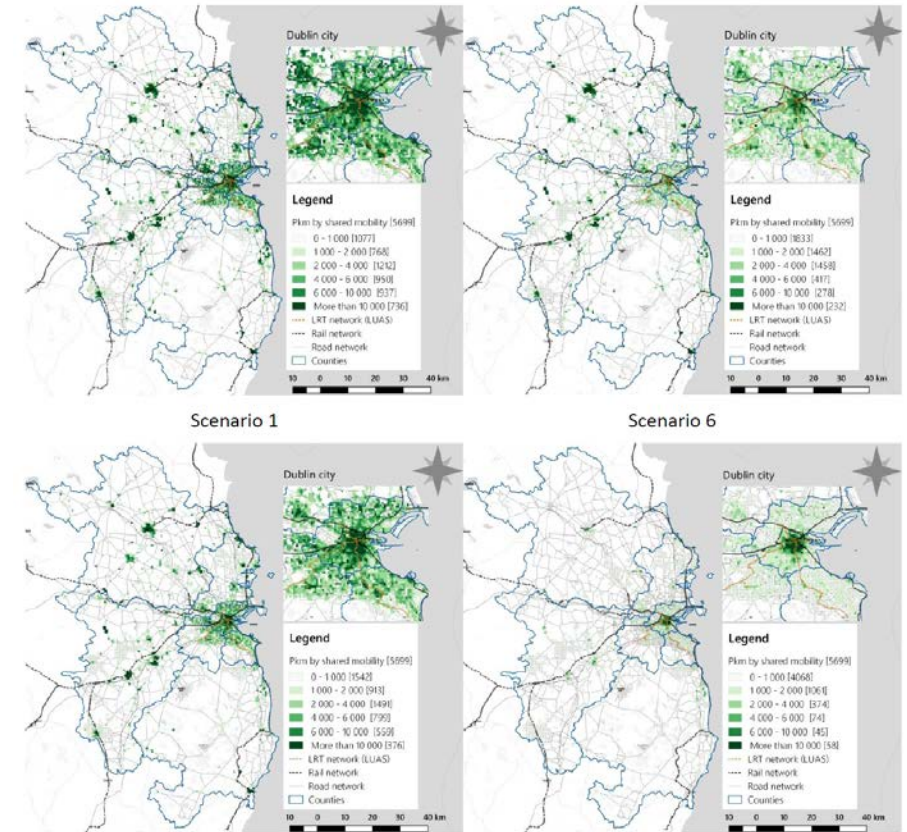
Disruptive End-user Innovations



(1) From ownership to usership – (2) Sharing Economy – (3) From atomized to connected

Source: Charlie Wilson

Dublin: shared mobility Source: ITF, 2018



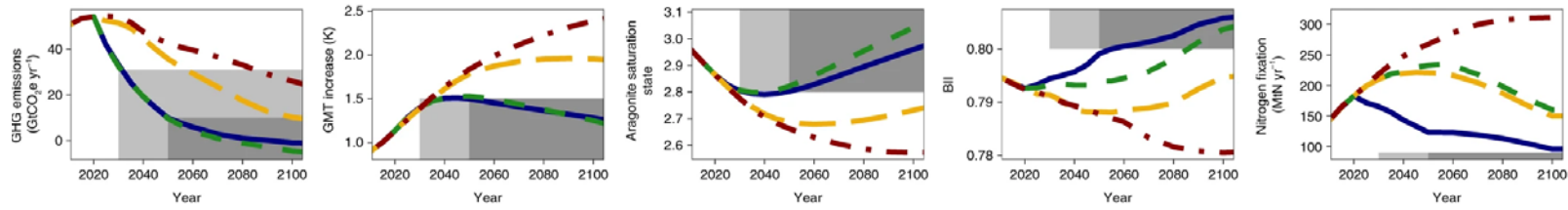
only 2% of the current vehicles can provide better service!

Emissions: -31%

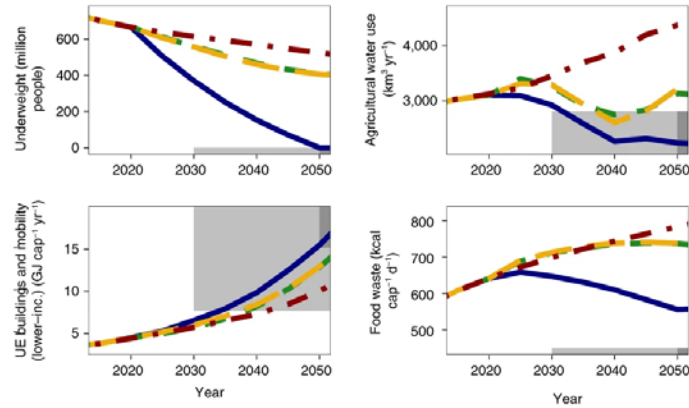
Congestion: -37%

Better, more convenient, cleaner service at lower costs!

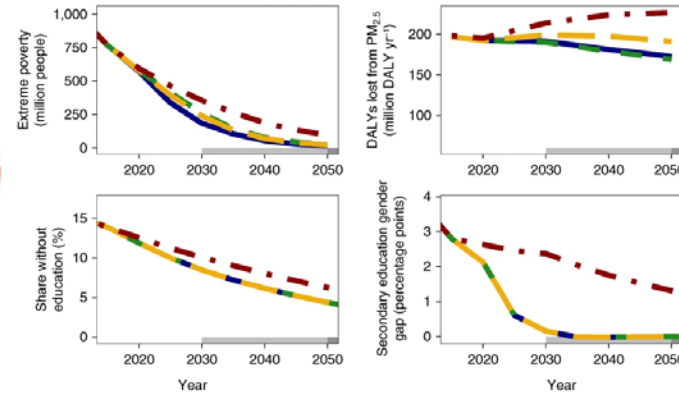
Planetary integrity



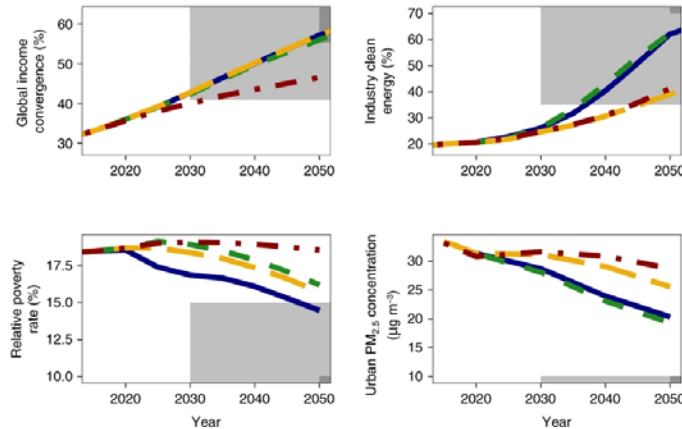
Provision of material needs



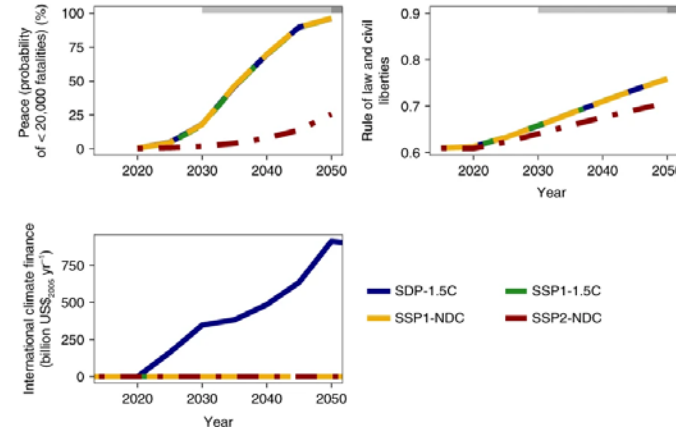
People



Prosperity



Political institutions, peace and partnership

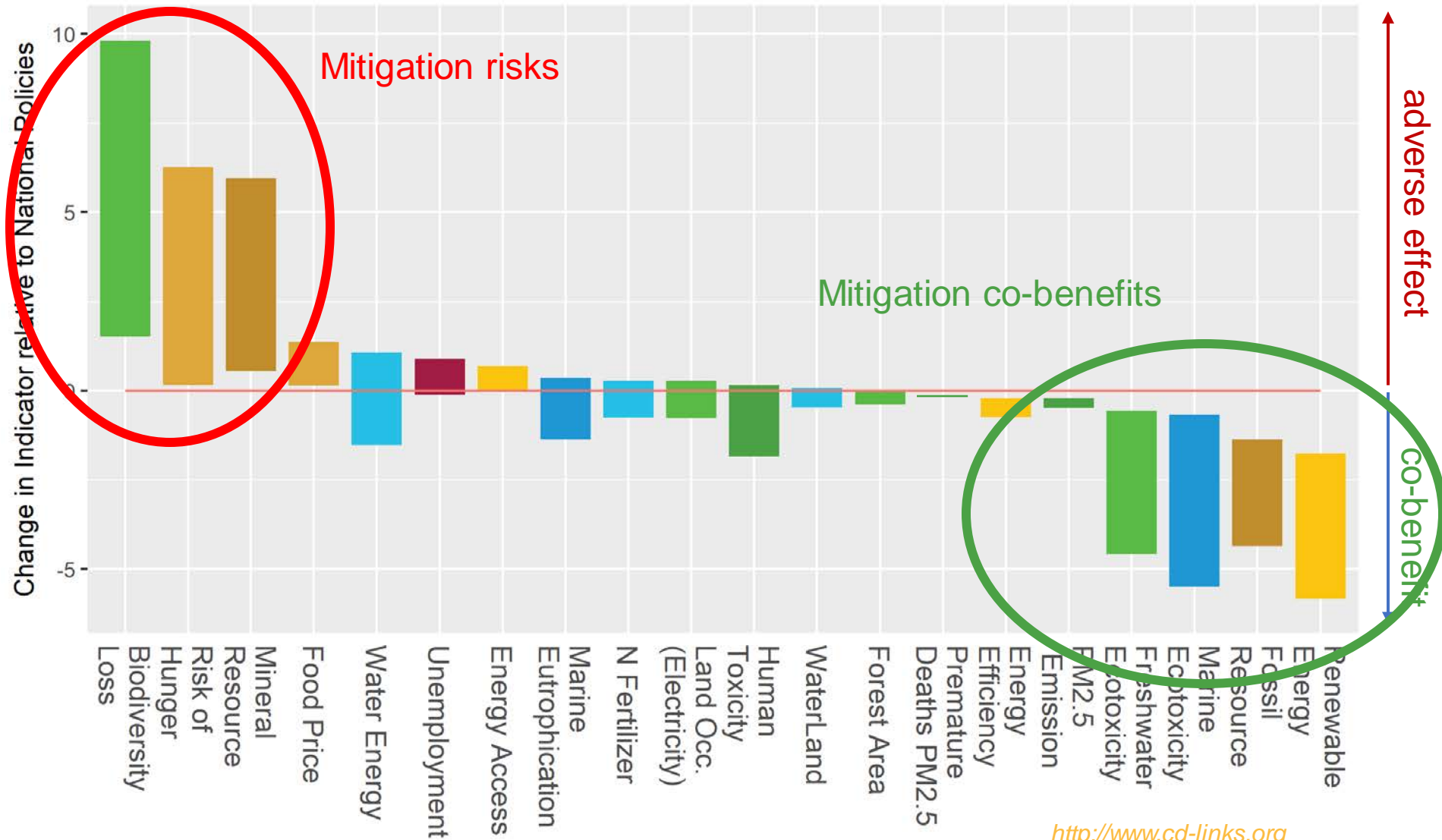
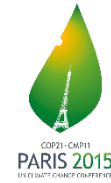


SDP-1.5C SSP1-1.5C
SSP1-NDC SSP2-NDC

New SDG Pathways

Soergel et al, 2021

SDG interactions



Technology Futures and Scenarios

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 - Gaps and how to close them
 - *Narasimha Rao (Yale University, US)*
- Maximizing SDG synergies through circular & shared economy
 - *Charlie Wilson (Oxford), Elena Verdolini (CMCC), Helga Weiss (Germany), ITF (Mobility), IRP panel,*
 - *New Business models (EDITS)*
- SDG pathways with focus on Synergies and Trade-offs
 - *Volker Krey/Bas van Ruijven (IIASA), Biodiversity?*

