

IPCC AR6 on climate mitigation: Towards a metamorphosis of climate mitigation policies and scenarios?

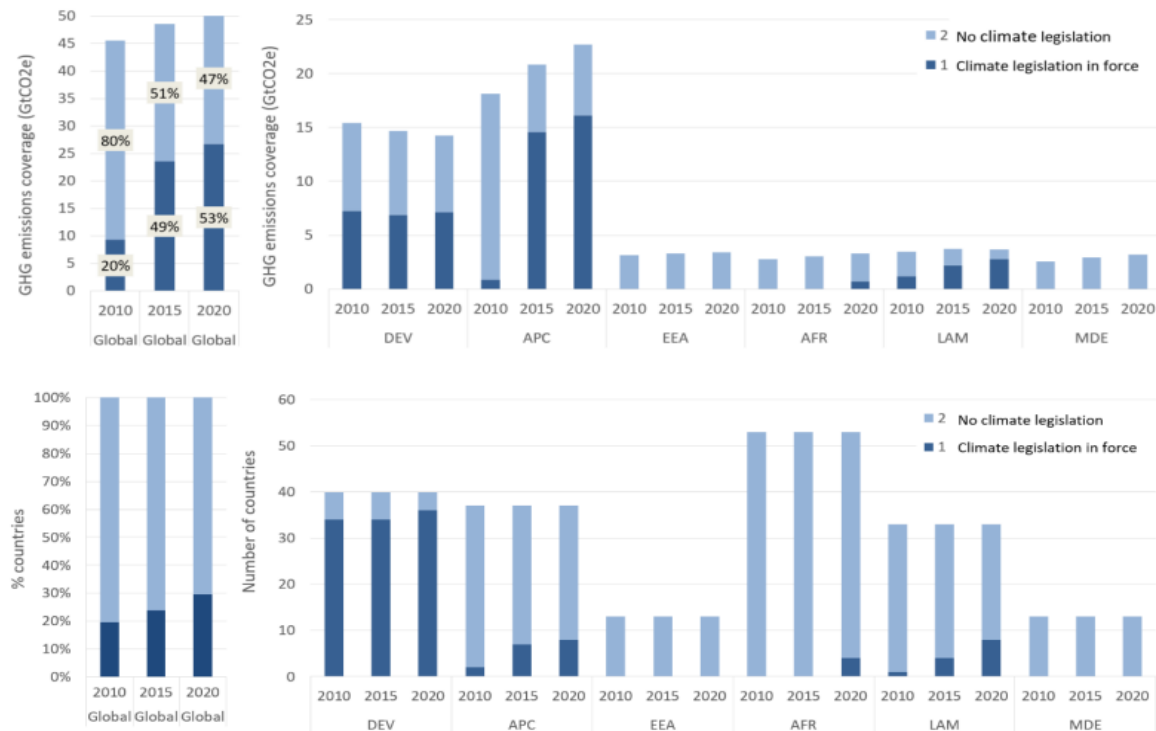
Tsinghua University Lecture
September 22nd, 2022



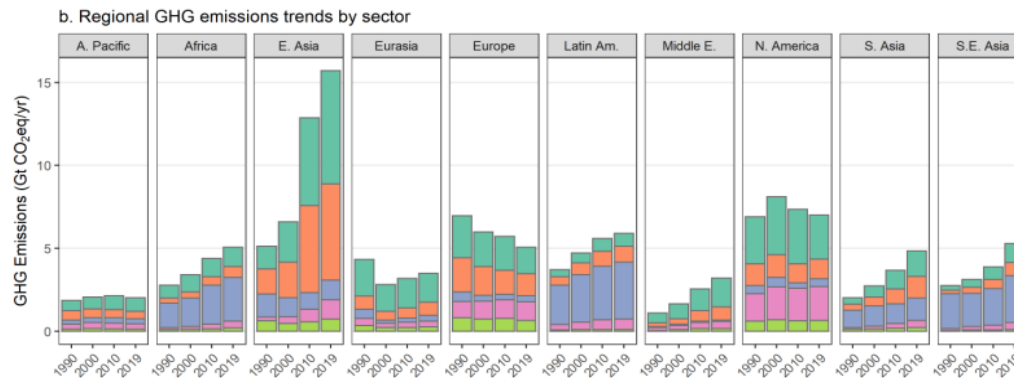
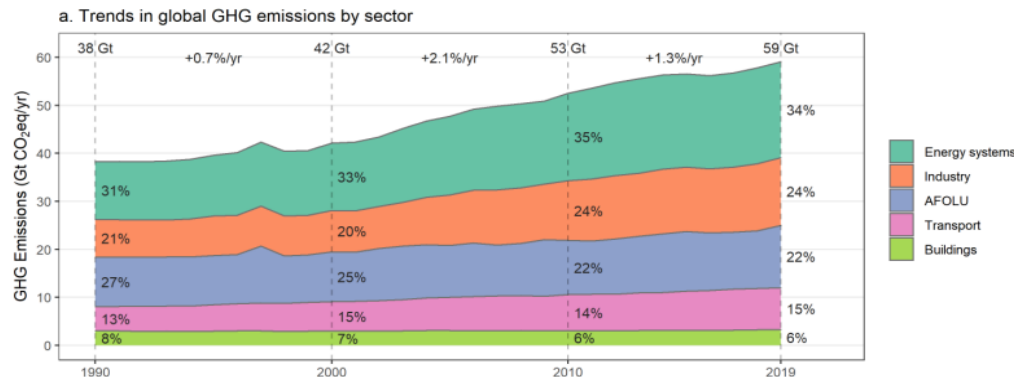


The share of GHG emissions under climate legislation more than doubled in the last decade

National climate change mitigation legislation



However, GHG emissions increased across all sectors and regions





Because the focus of climate policies is mainly on the decarbonisation of supply

Sector	Contribution of direct emissions per sector to global GHG emissions in 2019		Sector	Contribution of direct and indirect emissions per sector to global GHG emissions in 2019
Electricity and heat	23%	Energy	Electricity and heat	0%
Other energy	10%		Other energy	12%
Industry	24%		Industry	34%
Transport	15%		Transport	15%
Buildings	5.6%		Buildings	16%
Agriculture, forest and land use	22%		Agriculture, forest and land use	22%

A shift towards demand reduction in end-use sectors is needed to decarbonize our economies



Demand and services



Energy



Land use



Industry



Urban



Buildings



Transport



Defining sufficiency in the IPCC SPM is an important first step, but more is needed to make the concept mainstream

“Sufficiency policies are a set of measures and daily practices that avoid demand for energy, materials, land and water while delivering human wellbeing for all within planetary boundaries.”



The word “*sufficiency*” occurs 179 times in IPCC AR6 on climate mitigation

Chapters with sufficiency occurrence	# of occurrence	Chapters with ZERO occurrence
Summary for Policy Makers	3 times in the building section	Chap 1: Introduction and framing Chap 2: Emissions trends and drivers Chap 4: Mitigation and development pathways in the near- to mid-term Chap 6: Energy systems Chap 7: Agriculture, Forestry, and Other Land Uses (AFOLU) Chap 8: Urban systems and other settlements Chap 13: National and sub-national policies and institutions Chap 14: International cooperation Chap 16: Innovation, technology development and transfer Chap 17: Accelerating the transition in the context of sustainable development
Technical summary	12 times in the building section	
Chap 3: Mitigation pathways compatible with long-term goals	2 times and 1 reference	
Chap 5: Demand, services and social aspects of mitigation	6 times and 10 references	
Chap 9: Buildings	120 times and 14 references	
Chap 11: Industry	3 times and 1 reference	
Chap 12: Cross-sectoral perspectives	6 times in the building section	
Chap 15: Investment and finance	1 reference	

The road to mainstream sufficiency in scientific literature is bumpy

Sufficiency is overlooked in scenarios submitted to IPCC AR6 database

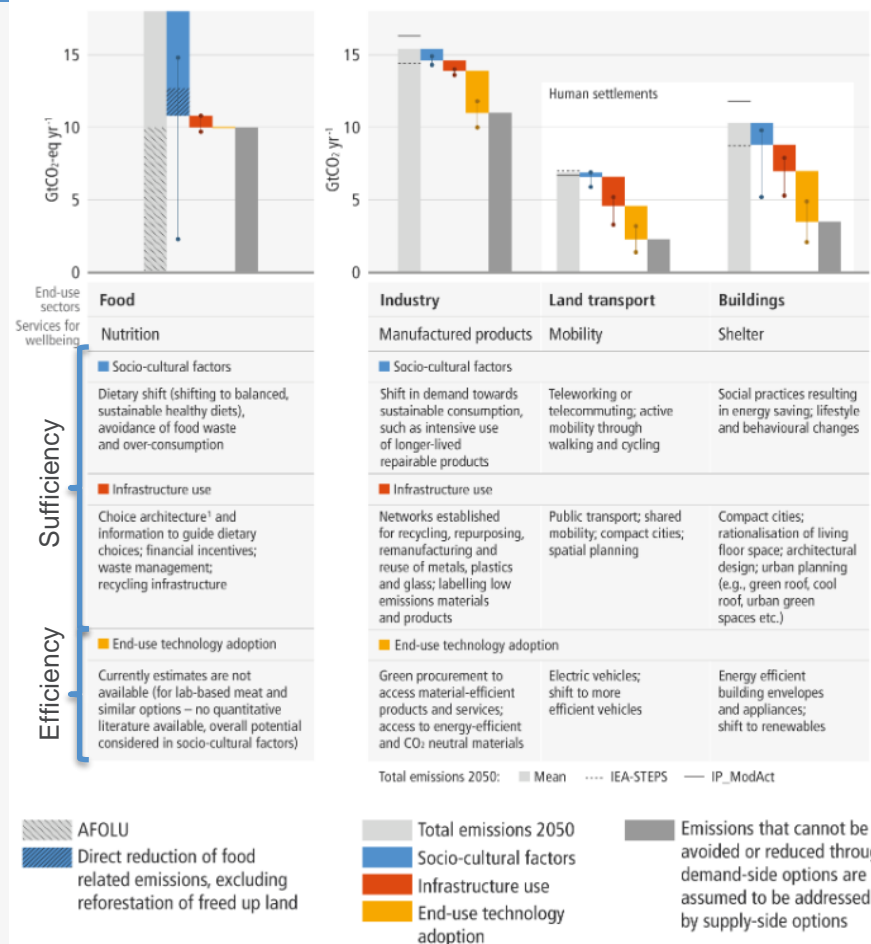
Description	Subset	# of scenarios
C1: Below 1.5 °C with no or limited overshoot	<1.5°C peak warming with \geq 33% chance, and <1.5°C end of century warming with >50% chance	97
C2: Below 1.5°C with high overshoot	<1.5°C peak warming with \geq 33% chance, and <1.5°C end of century warming with >50% chance	133
C3: Likely below 2°C	<2°C peak warming with >67% chance	311
C4: Below 2°C	<2°C peak warming with >50% chance	159
C5: Below 2.5°C	<2.5°C peak warming with >67% chance	212
C6: Below 3°C	<3°C peak warming with >50% chance	97
C7: Below 4°C	<4°C peak warming with >50% chance	164
C8: Above 4°C	>4°C peak warming with \geq 50% chance	29

Paris compatible scenarios

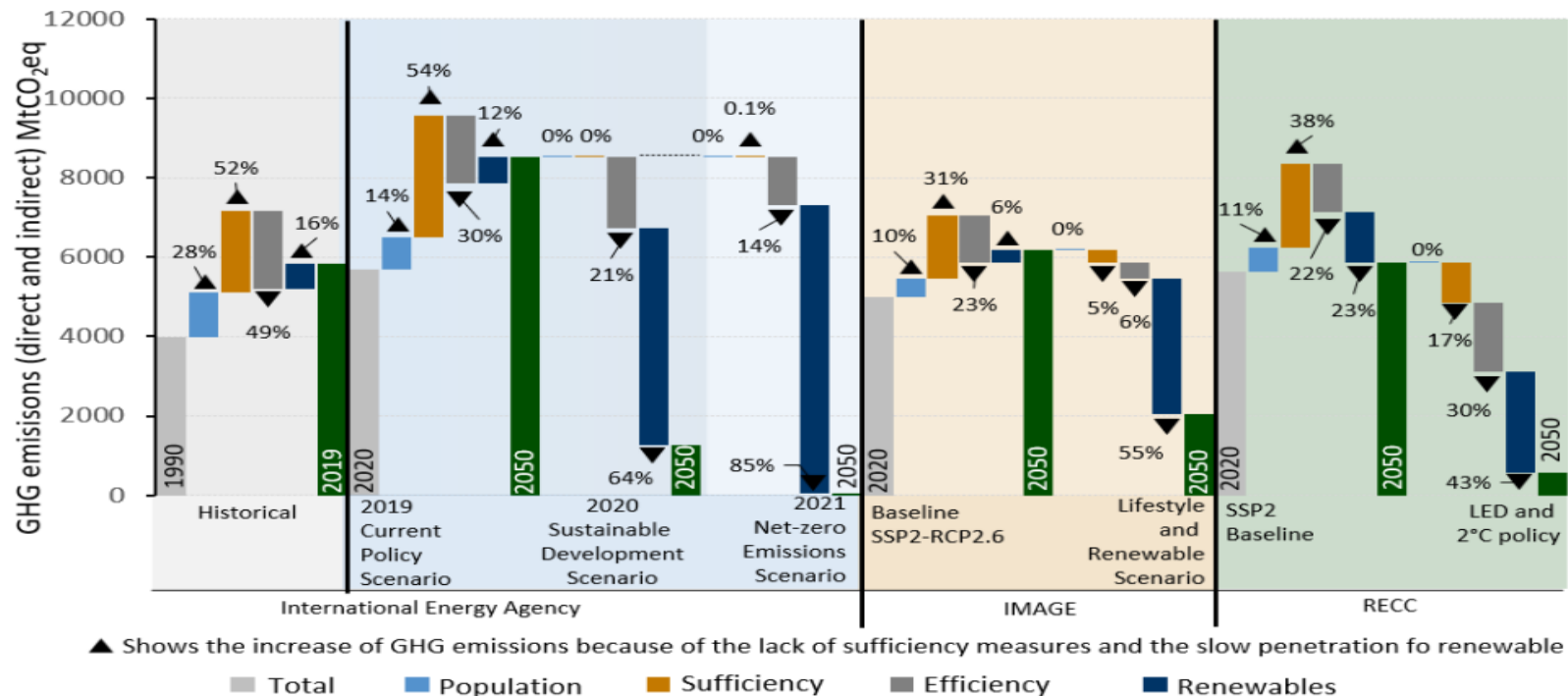
An intellectual revolution is needed to ensure sufficiency is considered in climate scenarios

The 1.5°C target is out of reach without sufficiency policies

Average mitigation potentials	Sufficiency		Efficiency
	Socio-cultural factors	Infrastructure use	Technological improvement
Food	40%	7%	NA
Industry	5%	5%	21%
Land transport	5%	30%	50%
Buildings	15%	20%	50%



Otherwise, efficiency improvement will continue to be offset by the lack of sufficiency measures



Today's decarbonisation choice is between sufficiency and the reliance on unproven technologies to decarbonise our economies



Thank You

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