

Adaptation and mitigation in relation to sustainable development, poverty eradication and food security

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Implications for achieving 1.5°C on Sustainable Development pathways, poverty eradication and food security

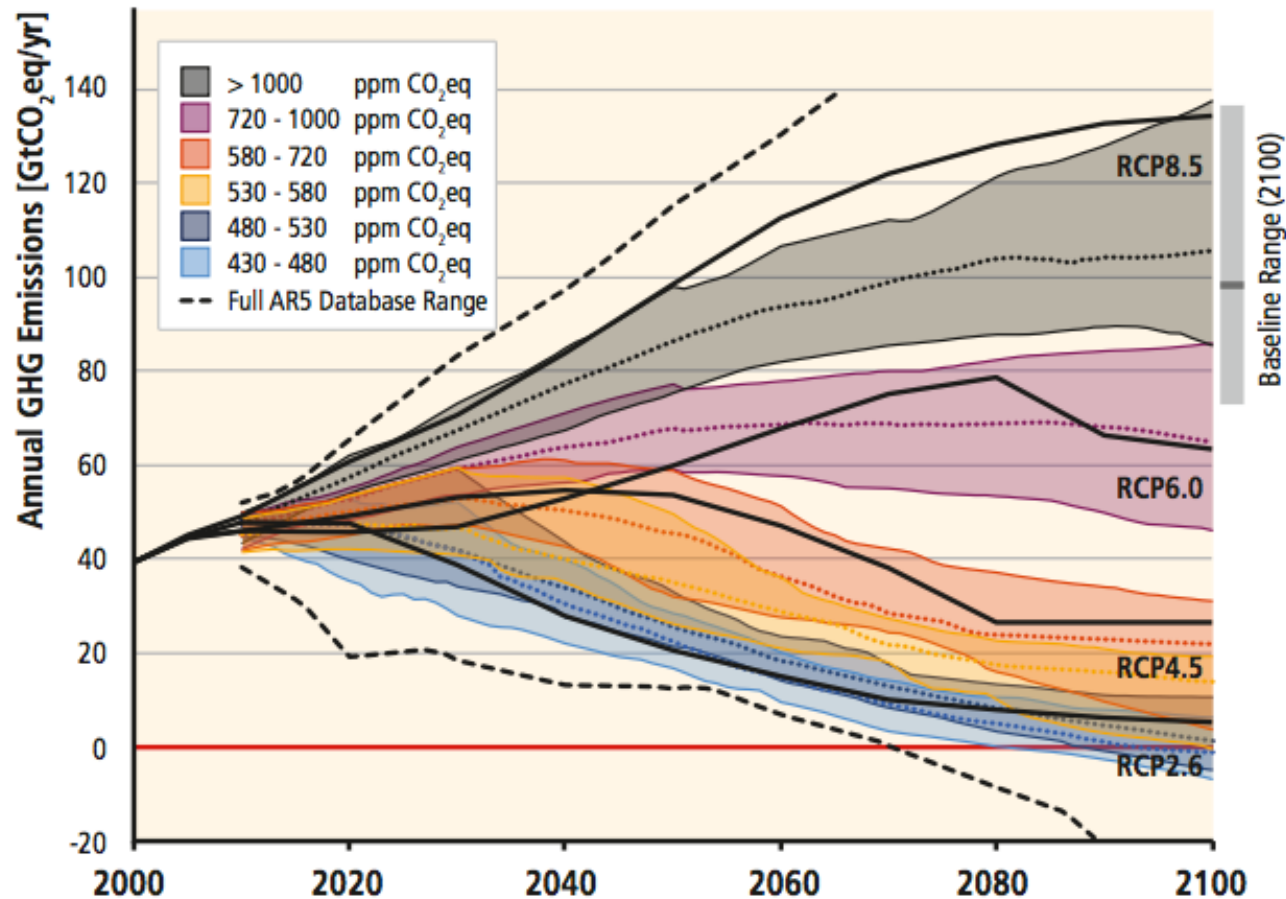
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Relevant findings in the AR5

Implications of low emission pathways on sustainable development

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Total GHG Emissions in all AR5 Scenarios



Source: AR5 WG3 Technical Summary

- Limited number of studies have explored scenarios that are *more likely than not* to be less than 1.5 °C relative to pre-industrial levels by 2100
- Concentrations below 430 ppm CO₂eq in 2100

Mitigation Pathways & SD Pathways

- **There is no single pathway** – with particular socioeconomic, institutional, political, cultural and technological features- **to stabilize CO₂eq concentrations at any level**
- ***The impact*** of climate policy on the over- all costs for achieving other ***societal goals are less well understood and have not been assessed*** thoroughly in the literature:
 - energy and food security, energy access
 - income distribution
 - distribution of economic impacts
 - urban sprawl
 - other environmental factors associated with technologies
 - economic competitiveness

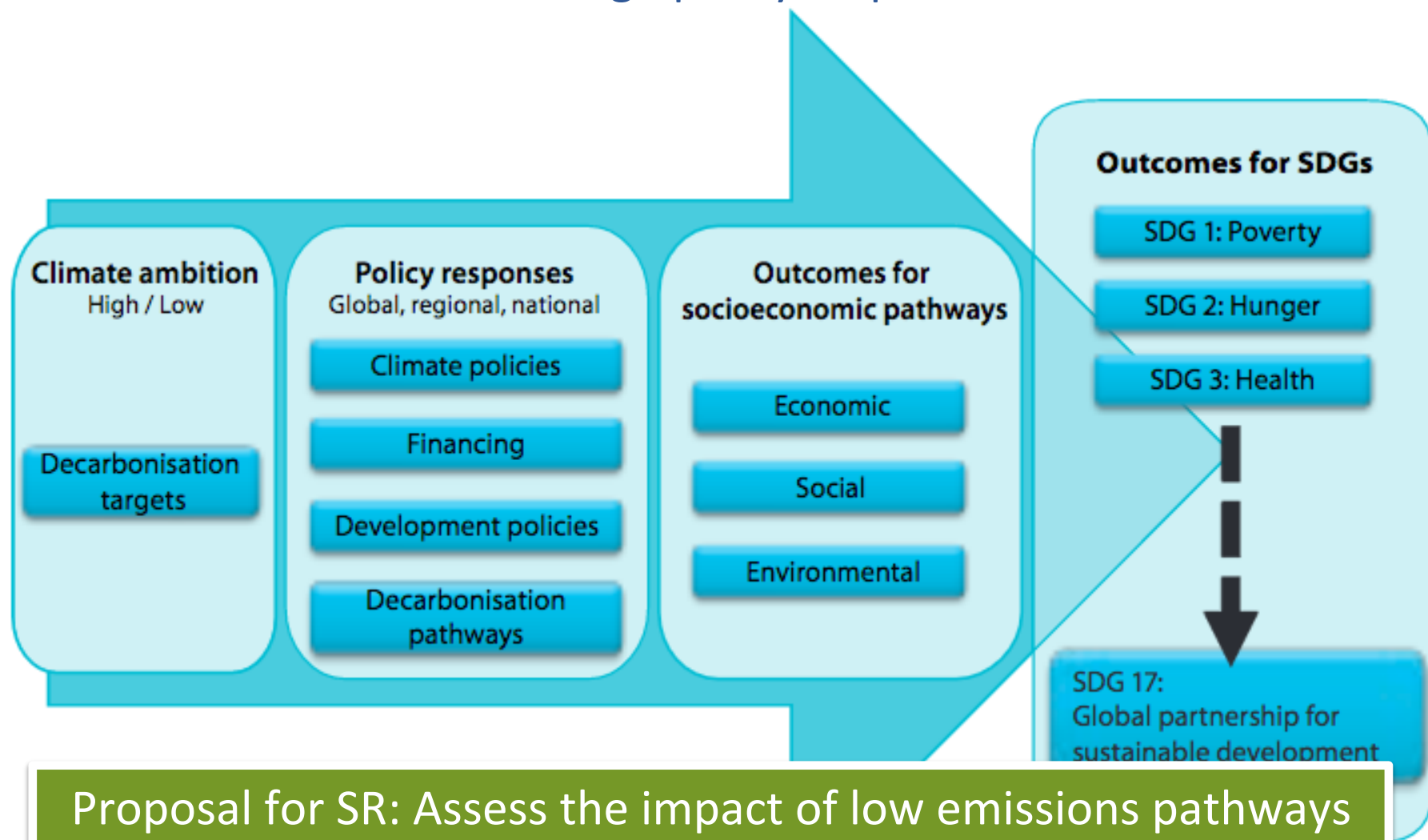
Source: AR5 Synthesis Report

New since AR5

2030 Development Agenda



Decarbonisation pathways influence the overall achievement of SDGs through policy responses



Proposal for SR: Assess the impact of low emissions pathways on SDGs outcomes

Low emission pathways & energy access

- Improvements in wealth, lifestyle change, the provision of access to modern energy services and adequate housing, and urbanization will drive the increases in building energy demand (*robust evidence, high agreement*).
- The manner in which those energy needs are met will influence the development of related emissions.



Low emission pathways & infrastructure

- Substantial amount of new construction taking place in developing countries represents both a risk and opportunity from a mitigation perspective
- Low emission pathways will require large-scale changes to national energy systems over the coming decades.
- Infrastructure developments and long-lived products that lock societies into GHG-intensive emissions pathways may be difficult or very costly to change, reinforcing the importance of early action for ambitious mitigation.



Source: AR5 WG3 Technical Summary

Low emission pathways & Food security

KF

- Land-use dynamics in mitigation scenarios are influenced by increased demand for food and agricultural productivity improvements.
- Many scenarios reflect strong increases in the degree of competition for land between food, feed, and energy uses.
- Demand-side measures are under-researched, changes in diet, reductions of losses in the food supply chain, and other measures have a significant, but uncertain, potential to reduce GHG emissions from food production.
- AFOLU mitigation options can promote innovation, and many technological supply-side mitigation options also increase agricultural and silvicultural efficiency, and can reduce climate vulnerability by improving resilience.

Source: AR5 WG3 Technical Summary



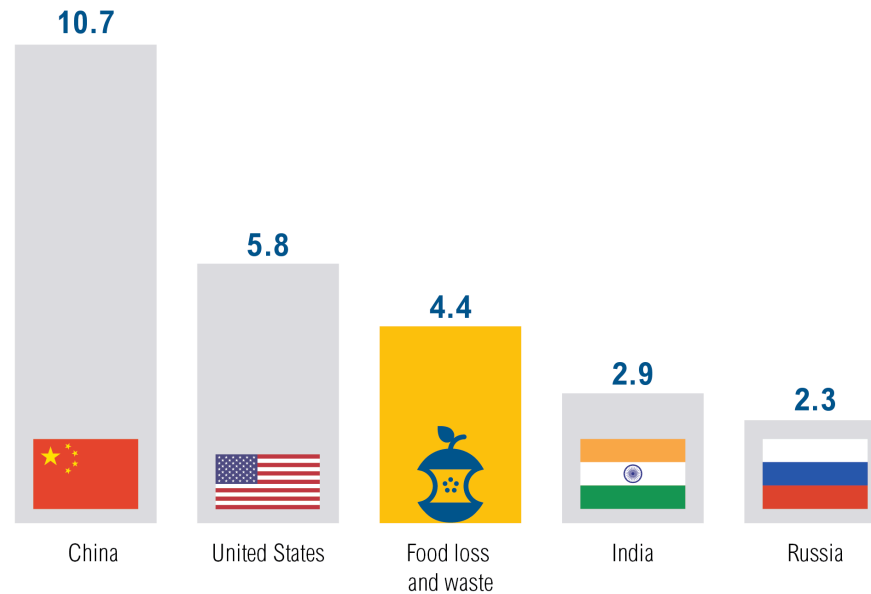
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Mitigation Targets & SDG Targets

If Food Loss and Waste Were its own Country,
it Would Be the Third-Largest Greenhouse Gas Emitter



GT CO₂E (2011/12)*

* Figures reflect all six anthropogenic greenhouse gas emissions, including those from land use, land-use change, and forestry (LULUCF). Country data is for 2012 while the food loss and waste data is for 2011 (the most recent data available). To avoid double counting, the food loss and waste emissions figure should not be added to the country figures.

Source: CAIT. 2015; FAO. 2015. *Food wastage footprint & climate change*. Rome: FAO.

<http://champions123.org/>

CHAMPIONS 12.3



WORLD
RESOURCES
INSTITUTE



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Mitigation Targets & SDG Targets

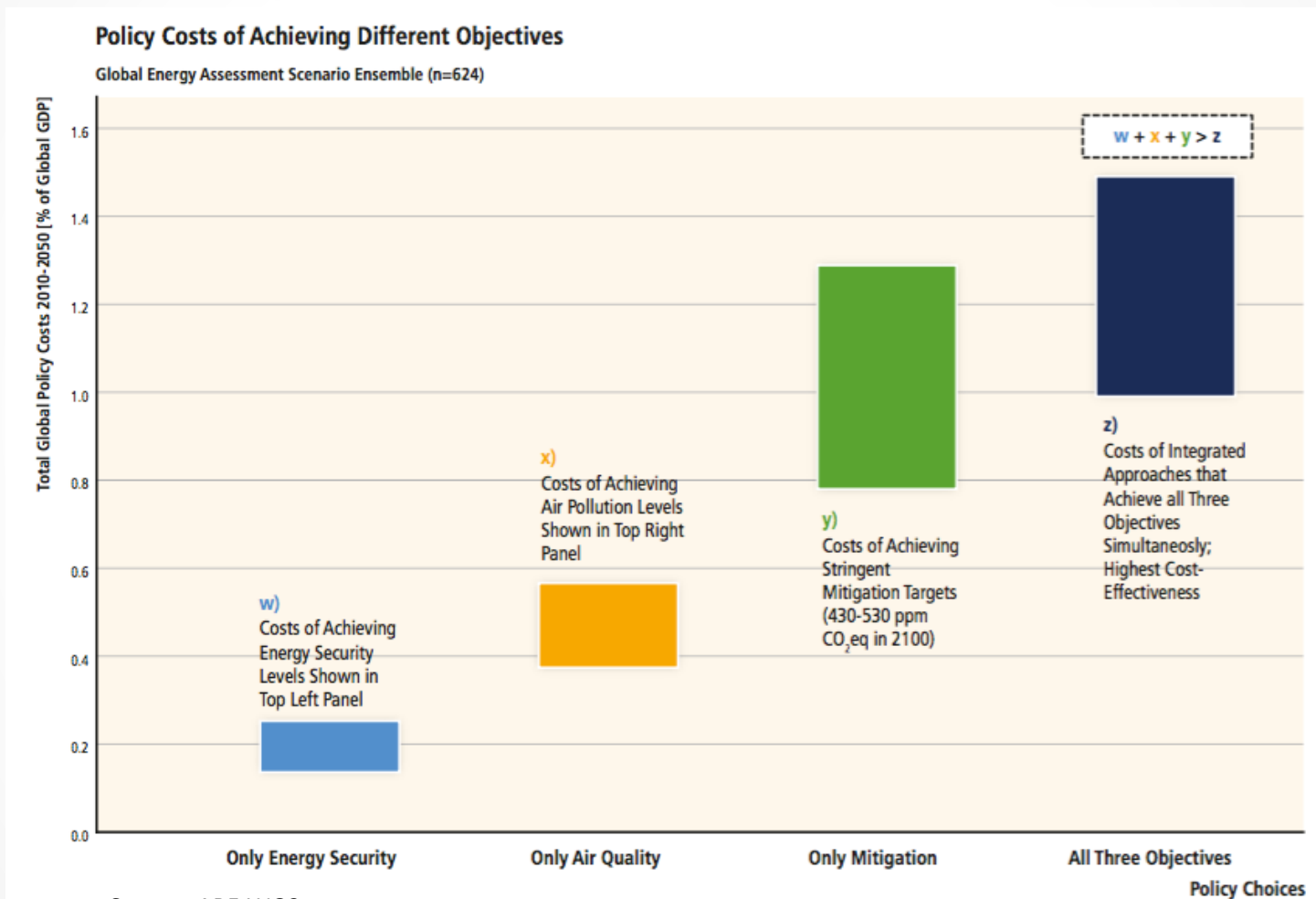


TARGET 12.3

By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses

Proposal for SR: consider the interactions and find common targets between responses to climate change, and efforts needed to achieve the sustainable development goals.

Systemic and cross-sectoral approaches to mitigation are expected to be more cost-effective and more effective in cutting emissions than sector-by-sector policies



Integrated approach linking with SDGs

‘Mainstreaming’ climate issues into the design of comprehensive SD strategies at regional, national and local levels.

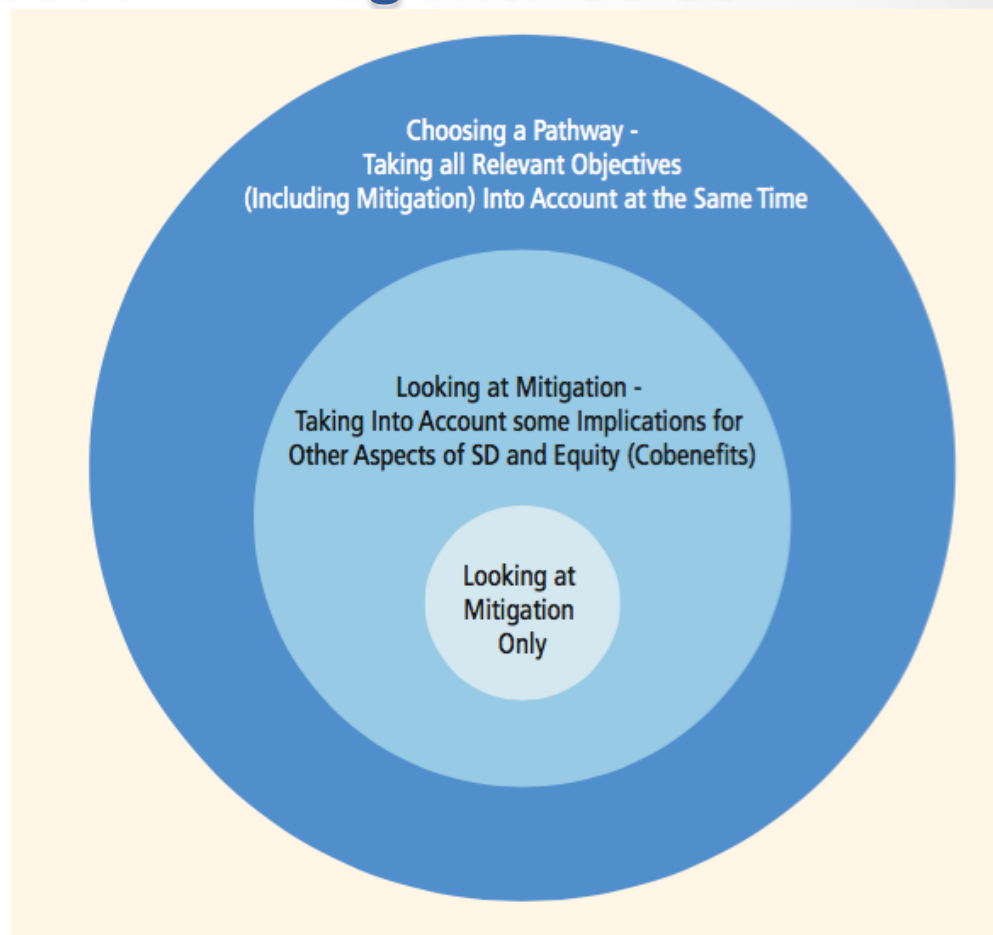


Figure 4.1 | Three frameworks for thinking about mitigation.

Proposal for SR: assessment of development pathways going beyond a narrow focus on distinct mitigation and adaptation options

Systemic and integrated approach linking with SDGs

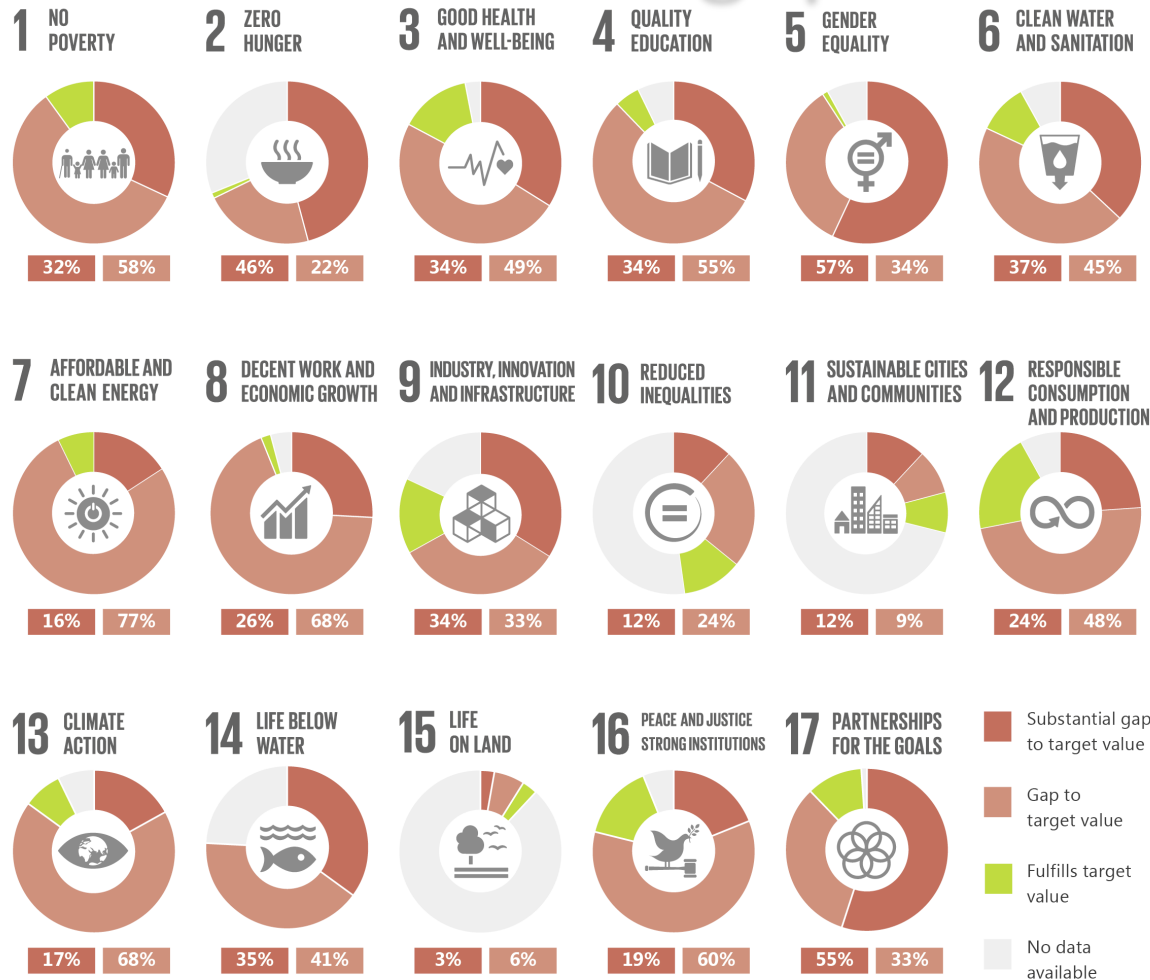
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- Integrated approach, paying greater attention to governance and institutional capacity shortcomings
 - Systemic approach
 - Food systems
 - Energy systems
 - Urban Systems (Cities)

Distributional implications of low emission pathways

- In order to reach atmospheric concentration levels of about 450 to about 500ppm CO₂eq by 2100, the majority of mitigation relative to baseline emissions over the course of century will occur in the non-Organisation for Economic Co-operation and Development (OECD) countries (*high confidence*).

Proposal for SR: Assess distributional implication of Paris Agreement

Mind the gap



GeSI
GLOBAL e-SUSTAINABILITY
INITIATIVE

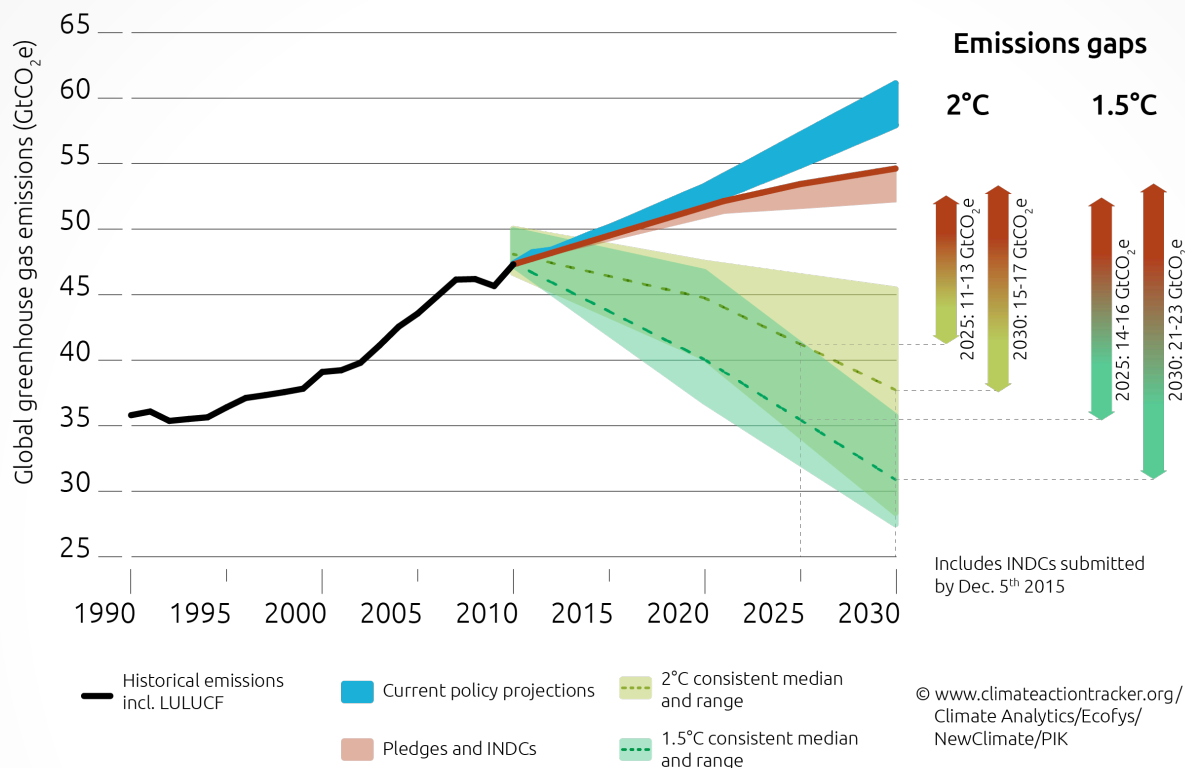
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Mind the gap



Proposal for SR: How to address the gap between the aggregate effect of Parties' mitigation pledges and the efforts needed to 1.5 °C gap **together with SDGs gap**, in the context of regional/ national priorities



wbcsd climate smart agriculture

+50%

Make 50% more food available

and strengthen the climate resilience of farming communities

-50%

Reduce agricultural and land-use change emissions from commercial agriculture

- By at least 2.7 Gt CO₂ eq/yr by 2020 (50%)

Proposal for SR: Take into account and assess the impact of ongoing initiatives from private sector & local governments/ cities