

Framework climate pathways for ESM chain (7)

Defining emission milestones, like net-zero 2050, cumulative emissions, approximate temperature goals

REPs
Representative Emission Pathways:
 CO₂, CH₄, N₂O, HFCs, aerosols, land-use patterns
 +Uncertainty (1)

RTPs: Representative Transition Pathways
 Energy/CO₂ prices, regulatory requirements.

RCPs: Representative Concentration Pathways
 CO₂, CH₄, N₂O, HFCs, ... ozone, and aerosol loadings.
 (best estimates (2) corresponding to REPs)
 +Uncertainty (3)

Global Warming Levels (5)
GWLs

Climate Change Scenarios

WGI
 Earth System and General Circulation Models

WGIII

WGII

RWPs: Representative Warming Pathways
 +Uncertainty (4)

RHPs: Representative Hazard Pathways
 (incl. precipitation, sea level rise, river runoff, coastal erosion, wildfires, etc.)

RIPs: Representative Impact and Risks pathways

Species-level and Human impacts
 (incl. infectious diseases, heat stress, species distributions, insurance losses etc.)

Defining shared policy assumptions

e.g. SPAs

Socio-economic storylines

Defining shared socio-economic pathways

e.g. SSPs

RSPs Representative Socio-Economic Pathways:
 GDP, Population, Technology...

Population models etc.

So far, under-represented feedback (8)

Defining adaptation pathways

RAPs: Representative Adaptation Pathways

Legend:

Circle: Mitigation policy or adaptation policy assumptions that can modulate the cause-effect chain

Pathways with emphasis on regional granularity

Solid lines: 'best-estimate', median or default time series

Ranges: Indication of (multiple) uncertainties

Puzzle: indicating a multifaceted relationship, with multiple consistency options

Arrows: Indicating a cause-effect relationship

Multiple dots for socio-economic pathways, mitigation and adaptation action decisions, to indicate their multifaceted and independent range of options

Entry points for different communities to derive quantitative pathways from qualitative narratives.

