



Chapter 3: Mitigation pathways compatible with 1.5°C in the context of sustainable development



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Cross-cutting issues

- Input to discussion to political feasibility
- Ensure mechanisms for linking chapters (bridging authors)

1. Framing of pathway assessment, including methodological aspects, spatial and time scales, scope of literatures, assumptions
2. Constraints on and uncertainties in global greenhouse gas emissions and other climate drivers compatible with definitions of limiting warming to 1.5°C and 2°C, including considerations of overshoot
3. Characteristics of mitigation and development pathways compatible with 1.5°C, compared to 2°C and other reference levels of collective mitigation ambition, including: short- and long-term; sectoral; demand/supply-side; technology implications, etc.
4. Enabling conditions and constraining factors related to achieving 1.5°C pathways, including technological, environmental, institutional/political and socio-economic risks and opportunities
5. Socio-economic and sustainable development implications of 1.5°C mitigation, including equity, adaptation, opportunities for economic diversification, and other societal objectives

- Framing bullet: Methodological aspects of pathway analysis that refers to what is in the literature, and in the methods how it is assessed (eg differences between requirements and consistency of the pathways). Transparency assumptions
 - Spatial scales and timescales addressed in the framing
 - Three literatures that were mentioned: IAM literature, national bottom-up sectoral, case studies
 - *Sources and assumptions
 - How the chapter approaches the topic
- Constraints on global greenhouse gas emissions and other climate drivers compatible with 1.5C and 2C, consistent with potential definitions of limiting warming to 1.5C, and earth system response uncertainty
 - Including considerations of overshoot
- Characteristics of mitigation and development pathways consistent with 1.5 °C, compared to 2 °C and another reference level of collective mitigation ambition, at global, regional and local scale
 - Describe characteristics of these pathways: emissions, energy, land use, technology, agriculture and food systems, transport
 - Timescales, sectoral, short-term/long-term
 - Demand-side, and not only a supply-side view
 - Overshoot pathways and inclusion of non-overshoot pathways
 - Level of collective mitigation ambition: put into context not just with 2C but also an incremental policy scenario. Compare to other RCP scenarios?
 - Focus on 1.5C came because of available information on 2C, but cannot say how to translate 1.5C into Gts. 1.5 is on the high end of ambition. NDCs represent current level of political ambition. RCP gets to around 1.5, but from a different way. Need a reference to level of ambition.
 - Rather than having 'another reference' have other reference
- **Enabling conditions and constraining factors related to achieving 1.5C pathways (link to ch 4 and 6), including technical and socio-economic considerations etc.**
 - Pathways compared to bottom-up literature, political economy etc. to qualify them
 - Technically and economically feasible
 - Technologies, scalability, timescales to see whether 1.5C is something that could be achieved
 - Benefits and risks of all technologies, not specific technologies
 - Social, economic, environmental life cycle risk assessment of technologies
 - Use of the term 'feasibility', maybe use 'implementation requirements (information needed to assess feasibility)'. When talking about feasibility asking people to project beliefs
 - 'Feasibility' to include social sciences. Can replace if have word that indicates that would like social sciences to be involved
 - Word 'feasibility' comes out of Paris Agreement. Is it feasible to go to 1.5, and how do we interpret that (in terms of technology, time scale, how much it costs)
 - Is it technically feasible, but also whether it's politically feasible, whether it's institutionally feasible. Feasibility speaks to multiple bottlenecks
 - 'Enabling conditions and constraining factors needed to achieve 1.5C pathway'
 - Link to ch 4 where they will go into more detail, so this is a starting point for assessment
- Socio-economic implications of mitigation and opportunities for economic diversification. Implications of these pathways to sustainable development and other societal objectives
 - What you find outside the models
 - Co-benefits and adverse effects
 - Equity, poverty, food security
 - Related to issues other than climate change and mitigation eg air pollution, energy security. So risks of mitigation technologies not here, but in other bullets
 - To technologies, or pathways or..?
 - Changes in sectors
 - Risk of technologies, air pollution, energy security. Discuss the positives
 - SDGs. How does this relate to socio-economic implications
 - What you find inside the models: rates, capital needed
 - Equity, food security, poverty
 - What result from mitigation in terms of cost, distributional impacts, sectoral impacts
 - More related to development and equity more than technology
 - Socio-economic characteristics of these pathways. Different type of literature, and whether this would relate to the pathways
 - Wider than just development and equity, linked to co-benefits and adverse side-effects. Links to transport, health, energy access. Broader than looking at costs and investment needs. Look at literature that might be unrelated to pathways