



Literature for MEST01, Drivers and Dynamics of Climate Change applies from the autumn semester 2025

**Literature established by The Board of the Lund University Centre for
Sustainability Studies on 2025-06-04 to apply from 2025-06-04**

See appendix.



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Klimatförändringens drivkrafter och dynamik, 15 högskolepoäng

Climate Change and Society: Drivers and Dynamics of Climate Change, 15 credits

MEST01 litteraturlista fastställd av LUCSUS styrelse den 4 juni 2025.

Allen, M.R., O.P. Dube, et al., (2018). *Chapter 1: Framing and Context*. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., et al. (eds.)]. Cambridge University Press, Cambridge, UK, pp. 49-92. (43 pages)

Anderson, K., & Peters, G. (2016). The trouble with negative emissions. *Science*, 354(6309), 182-183. (2 pages)

Arias, P.A., et al. (2021) *Technical Summary*. In Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., et al. (eds.)]. Cambridge University Press, Cambridge, UK, pp. 33–144. (112 pages)

Armstrong McKay, D. I., Staal, A., Abrams, J. F., Winkelmann, R., Sakschewski, B., Loriani, S., Fetzer, I., Cornell, S. E., Rockström, J., & Lenton, T. M. (2022). Exceeding 1.5°C global warming could trigger multiple climate tipping points. *Science*, 377(6611). [11 pages]

Beck, S., & Mahony, M. (2017). The IPCC and the politics of anticipation. *Nature Climate Change*, 7(5), 311-313. (3 pages)

Bolin, B. (1970). The carbon cycle. *Scientific American*, 223(3), 125-132. (8 pages)

Bradford, M. A., Wieder, W. R., Bonan, G. B., Fierer, N., Raymond, P. A., & Crowther, T. W. (2016). Managing uncertainty in soil carbon feedbacks to climate change. *Nature Climate Change*, 6(8), 751-758. (8 pages)

Breitburg, D., Levin, L. A., Oschlies, A., Grégoire, M., Chavez, F. P., Conley, D. J., ... & Zhang, J. (2018). Declining oxygen in the global ocean and coastal waters. *Science*, 359(6371). [13 pages]

Bridge, G., Bouzarovski, S., Bradshaw, M., & Eyre, N. (2013). Geographies of energy transition: Space, place and the low-carbon economy. *Energy policy*, 53, 331-340. (10 pages)

Brovkin, V., Brook, E., Williams, J. W., Bathiany, S., Lenton, T. M., Barton, M., ... & Yu, Z. (2021). Past abrupt changes, tipping points and cascading impacts in the Earth system. *Nature Geoscience*, 14(8), 550-558. (9 pages)

Canadell, J.G., et al. (2021). *Chapter 5: Global Carbon and other Biogeochemical Cycles and Feedbacks*. In *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., et al. (eds.)]. Cambridge University Press, Cambridge, United Kingdom, pp. 673–816. (144 pages)

Cavicchioli, R., Ripple, W. J., Timmis, K. N., Azam, F., Bakken, L. R., Baylis, M., ... & Webster, N. S. (2019). Scientists' warning to humanity: microorganisms and climate change. *Nature Reviews Microbiology*, 17(9), 569-586. (18 pages)

Challinor, A. J., Watson, J., Lobell, D. B., Howden, S. M., Smith, D. R., & Chhetri, N. (2014). A meta-analysis of crop yield under climate change and adaptation. *Nature climate change*, 4(4), 287-291. (5 pages)

Clarke, B., Otto, F., Stuart-Smith, R., & Harrington, L. (2022). Extreme weather impacts of climate change: an attribution perspective. *Environmental Research: Climate*, 1(1), 012001. (25 pages)

Clarke, L., et al. 2022: Energy Systems. Chapter 6 in IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, et al. (eds.)]. Cambridge University Press, Cambridge, UK. pp 613-703. (91 pages)

Correljé, A. 2023. Energy systems-Making energy services available. In *Handbook on the Geopolitics of the Energy Transition* (pp. 44-66). Edward Elgar Publishing, Cheltenham, UK. ISBN: 978 1 80037 042 5. (23 pages)

Degroot, D., Anchukaitis, K. J., Tierney, J. E., Riede, F., Manica, A., Moesswilde, E., & Gauthier, N. (2022). The history of climate and society: a review of the influence of climate change on the human past. *Environmental Research Letters*, 17(10), 103001. (36 pages)

Doney, S. C., Ruckelshaus, M., Duffy, J. E., Barry, J. P., Chan, F., English, C. A., ... & Talley, L. D. (2012). Climate change impacts on marine ecosystems. *Annual review of marine science*, 4(2012), 11-37. (28 pages)

EEA (2022). *Carbon stocks and sequestration in terrestrial and marine ecosystems: A lever for nature restoration?* Briefing no. 05/2022, European Environment Agency, Copenhagen. ISBN: 978-92-9480-467-9. DOI: 10.2800/742383. (10 pages)

Ellenbeck, S., & Lilliestam, J. (2019). How modelers construct energy costs: discursive elements in energy system and integrated assessment models. *Energy Research & Social Science*, 47, 69-77. (9 pages)

Ellis, E. C. (2021). Land use and ecological change: A 12,000-year history. *Annual Review of Environment and Resources*, 46(1), 1-33 (33 pages)

Enríquez-de-Salamanca, Á., Díaz-Sierra, R., Martín-Aranda, R.M. and Santos, M.J., 2017. Environmental impacts of climate change adaptation. *Environmental Impact Assessment Review*, 64, 87-96. (10 pages)

Edwards, P. N. (2011). History of climate modeling. *Wiley Interdisciplinary Reviews: Climate Change*, 2(1), 128-139. (12 pages)

Eyring, V., Mishra, V., Griffith, G. P., Chen, L., Keenan, T., Turetsky, M. R., ... & Van der Linden, S. (2021). Reflections and projections on a decade of climate science. *Nature Climate Change*, 11(4), 279-285. (7 pages)

Falkowski, P., Scholes, R. J., Boyle, E. E. A., Canadell, J., Canfield, D., Elser, J., ... & Steffen, W. (2000). The global carbon cycle: a test of our knowledge of earth as a system. *Science*, 290(5490), 291-296. (6 pages)

Fisher-Vanden, K., & Weyant, J. (2020). The evolution of integrated assessment: Developing the next generation of use-inspired integrated assessment tools. *Annual Review of Resource Economics*, 12(1), 471-487. (17 pages)

Gebrechorkos, S. H., Sheffield, J., Vicente-Serrano, S. M., Funk, C., Miralles, D. G., Peng, J., ... & Dadson, S. J. (2025). Warming accelerates global drought severity. *Nature*, 1-8. (8 pages)

Grant, M. J., & Booth, A. (2009). A typology of reviews: an analysis of 14 review types and associated methodologies. *Health information & libraries journal*, 26(2), 91-108. (18 pages)

Griscom, B. W., Adams, J., Ellis, P. W., Houghton, R. A., Lomax, G., Miteva, D. A., ... & Fargione, J. (2017). Natural climate solutions. *Proceedings of the National Academy of Sciences*, 114(44), 11645-11650. (6 pages)

Haddaway, N. R., Bethel, A., Dicks, L. V., Koricheva, J., Macura, B., Petrokofsky, G., ... & Stewart, G. B. (2020). Eight problems with literature

reviews and how to fix them. *Nature Ecology & Evolution*, 4(12), 1582-1589. (8 pages)

Harsch, M. A., Hulme, P. E., McGlone, M. S., & Duncan, R. P. (2009). Are treelines advancing? A global meta-analysis of treeline response to climate warming. *Ecology letters*, 12(10), 1040-1049. (10 pages)

Hoegh-Guldberg, O., D. Jacob, et al. (2018). *Chapter 3: Impacts of 1.5°C Global Warming on Natural and Human Systems*. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., et al. (eds.)]. Cambridge University Press, Cambridge, UK, pp. 175-312. (138 pages)

Hong, C., Burney, J. A., Pongratz, J., Nabel, J. E., Mueller, N. D., Jackson, R. B., & Davis, S. J. (2021). Global and regional drivers of land-use emissions in 1961–2017. *Nature*, 589(7843), 554-561. (8 pages)

Horton, R. M., Mankin, J. S., Lesk, C., Coffel, E., & Raymond, C. (2016). A review of recent advances in research on extreme heat events. *Current Climate Change Reports*, 2, 242-259. (18 pages)

Hulme, M. (2014). Attributing weather extremes to ‘climate change’ A review. *Progress in Physical Geography*, 38(4), 499-511. (12 pages)

Immerzeel, W. W., Lutz, A. F., Andrade, M., Bahl, A., Biemans, H., Bolch, T., ... & Baillie, J. E. M. (2020). Importance and vulnerability of the world's water towers. *Nature*, 577(7790), 364-369. (6 pages)

IPCC (2018). *Summary for Policymakers*. In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., et al. (eds.)]. Cambridge University Press, Cambridge, UK, pp. 3-24. (22 pages)

IPCC (2019). *Summary for Policymakers*. In: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* [H.-O. Pörtner, et al. (eds.)]. Cambridge University Press, Cambridge, UK, pp. 3–35. (33 pages)

IPCC (2019). *Technical Summary*. In: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate* [H.- O. Pörtner, et al. (eds.)]. Cambridge University Press, Cambridge, UK, pp. 39–69. (34 pages)

IPCC (2021). *Climate change 2021: Summary for all*. IPCC Working Group I Technical Support Unit. (11 pages)

Jansson, J. K., & Hofmockel, K. S. (2020). Soil microbiomes and climate change. *Nature Reviews Microbiology*, 18(1), 35-46. (12 pages)

Kanitkar, T., Mythri, A., & Jayaraman, T. (2024). Equity assessment of global mitigation pathways in the IPCC Sixth Assessment Report. *Climate Policy*, 24(8), 1129-1148. (20 pages)

Konar, M., Evans, T. P., Levy, M., Scott, C. A., Troy, T. J., Vörösmarty, C. J., & Sivapalan, M. (2016). Water resources sustainability in a globalizing world: who uses the water?. *Hydrological Processes*, 30(18), 3330-3336. (6 pages)

Lenton, T. M., L. Laybourn, D.I. Armstrong McKay, S. Loriani, J.F. Abrams, S.J. Lade, J.F. Donges, M. Milkoreit, S.R. Smith, E. Bailey, T. Powell, L. Fesenfeld, C. Zimm, C.A. Boulton, J.E. Buxton, J.G. Dyke, A. Ghadiali (2023), Global Tipping Points Report 2023: ‘Summary Report’ in [T. M. Lenton et al. (eds), 2023, The Global Tipping Points Report 2023. University of Exeter, Exeter, UK. (29 pages)

Lenton, T. M., Rockström, J., Gaffney, O., Rahmstorf, S., Richardson, K., Steffen, W., & Schellnhuber, H. J. (2019). Climate tipping points—too risky to bet against. *Nature*, 575(7784), 592-595. (5 pages)

Lloyd, E. A., & Oreskes, N. (2018). Climate change attribution: when is it appropriate to accept new methods? *Earth's Future*, 6(3), 311-325. (15 pages)

Malhi, Y., Lander, T., le Roux, E., Stevens, N., Macias-Fauria, M., Wedding, L., Girardin, C., Kristensen, J. Å., Sandom, C. J., Evans, T. D., Svenning, J.-C., & Canney, S. (2022). The role of large wild animals in climate change mitigation and adaptation. *Current Biology*, 32(4), R181-R196. (16 pages)

Matthews, H. (2016). Quantifying historical carbon and climate debts among nations. *Nature Climate Change* 6, 60–64. (5 pages)

Milkoreit, M. (2023). Social tipping points everywhere?—Patterns and risks of overuse. *Wiley Interdisciplinary Reviews: Climate Change*, 14(2), e813. (12 pages)

Minx, J. C., Lamb, W. F., Callaghan, M. W., Fuss, S., Hilaire, J., Creutzig, F., ... & Dominguez, M. D. M. Z. (2018). Negative emissions—Part 1: Research landscape and synthesis. *Environmental Research Letters*, 13(6), 063001. (29 pages)

Nicholls, R. J., & Cazenave, A. (2010). Sea-level rise and its impact on coastal zones. *Science*, 328(5985), 1517-1520. (4 pages)

O'Neill, B. C., Kriegler, E., Riahi, K., Ebi, K. L., Hallegatte, S., Carter, T. R., ... & Van Vuuren, D. P. (2014). A new scenario framework for climate change research: the concept of shared socioeconomic pathways. *Climatic change*, 122, 387-400. (14 pages)

Oreskes, N. (2018). *The scientific consensus on climate change: How do we know we're not wrong?* In *Climate modelling: Philosophical and conceptual issues* (pp. 31-64). Springer. (36 pages)

Otto, F. E. (2017). Attribution of weather and climate events. *Annual Review of Environment and Resources*, 42, 627-646. (20 pages)

Palazzo Corner, S., Siegert, M., Ceppi, P., Fox-Kemper, B., Frölicher, T. L., Gallego-Sala, A., ... & Rogelj, J. (2023). The zero emissions commitment and climate stabilization. *Frontiers in Science*, 1, 1170744. (26 pages)

Pecl, G. T., Araújo, M. B., Bell, J. D., Blanchard, J., Bonebrake, T. C., Chen, I. C., ... & Williams, S. E. (2017). Biodiversity redistribution under climate change: Impacts on ecosystems and human well-being. *Science*, 355(6332), eaai9214. (10 pages)

Pedersen, J. S. T., Santos, F. D., van Vuuren, D., Gupta, J., Coelho, R. E., Aparício, B. A., & Swart, R. (2021). An assessment of the performance of scenarios against historical global emissions for IPCC reports. *Global Environmental Change*, 66, 102199. (14 pages)

Powell, J. (2017). Scientists reach 100% consensus on anthropogenic global warming. *Bulletin of Science, Technology & Society*, 37(4), 183-184. (2 pages)

Prentice, I. C., Bondeau, A., Cramer, W., Harrison, S. P., Hickler, T., Lucht, W., ... & Sykes, M. T. (2007). Dynamic global vegetation modeling: quantifying terrestrial ecosystem responses to large-scale environmental change. *Terrestrial ecosystems in a changing world*, 175-192. (18 pages)

Pörtner, H.-O., D.C. Roberts, et al. (2022). *Technical Summary*. In: *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [H.-O. Pörtner, et al. (eds.)]. Cambridge University Press, Cambridge, UK. Sections A, B, C, pp. 40–69. (30 pages)

Riahi, K., Van Vuuren, D. P., Kriegler, E., Edmonds, J., O'Neill, B. C., Fujimori, S., Bauer, N., Calvin, K., et al. (2017). The Shared Socioeconomic Pathways and their energy, land use, and greenhouse gas emissions implications: An overview. *Global environmental change*, 42, 153-168. (16 pages)

Sanderman, J., Hengl, T., & Fiske, G. J. (2017). Soil carbon debt of 12,000 years of human land use. *Proceedings of the National Academy of Sciences*, 114(36), 9575-9580. (6 pages)

Seneviratne, S. I., et al. (2021) Chapter 11: Weather and climate extreme events in a changing climate. In: Masson-Delmotte, V. P., et al. (eds.) *Climate Change 2021: The Physical Science Basis: Working Group I contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, UK, pp. 1513-1766. Executive Summary (4 pages)

- Scanlon, B. R., B. L. Ruddell, P. M. Reed, R. I. Hook, C. Zheng, V. C. Tidwell & S. Siebert (2017) The food-energy-water nexus: Transforming science for society. *Water Resources Research*, 53, 3550-3556. [6 pages]
- Scheffers, B. R., De Meester, L., Bridge, T. C., Hoffmann, A. A., Pandolfi, J. M., Corlett, R. T., ... & Watson, J. E. (2016). The broad footprint of climate change from genes to biomes to people. *Science*, 354(6313), aaf7671. (12 pages)
- Schimel, D., et al. (1995). *Chapter 1: CO₂ and the carbon cycle*. In: Climate Change 1994: Radiative Forcing of Climate Change and an Evaluation of the IPCC IS92 Emission Scenarios [J.T. Houghton, et al. (eds.)]. Cambridge University Press, Cambridge, UK, pp. 35-71. (36 pages)
- Schlesinger, W. H., & Amundson, R. (2019). Managing for soil carbon sequestration: Let's get realistic. *Global Change Biology*, 25(2), 386-389. (4 pages)
- Schneider, S.H. (1989). The changing climate. *Scientific American*, 261(3), 70-79. (10 pages)
- Smith, C., Baker, J. C. A., & Spracklen, D. V. (2023). Tropical deforestation causes large reductions in observed precipitation. *Nature*, 615(7951), 270-275. [5 pages]
- Steffen, W., Richardson, K., Rockström, J., Schellnhuber, H. J., Dube, O. P., Dutreuil, S., ... & Lubchenco, J. (2020). The emergence and evolution of Earth System Science. *Nature Reviews Earth & Environment*, 1(1), 54-63. (10 pages)
- Steffen, W., Rockström, J., Richardson, K., Lenton, T. M., Folke, C., Liverman, D., ... & Schellnhuber, H. J. (2018). Trajectories of the Earth System in the Anthropocene. *Proceedings of the national academy of sciences*, 115(33), 8252-8259. (8 pages)
- Stott, P. (2016). How climate change affects extreme weather events. *Science*, 352(6293), 1517-1518. (2 pages)
- Stringer, L. C., Mirzabaev, A., Benjaminsen, T. A., Harris, R. M., Jafari, M., Lissner, T. K., ... & Tirado-von Der Pahlen, C. (2021). Climate change impacts on water security in global drylands. *One Earth*, 4(6), 851-864. (14 pages)
- Supran, G., Rahmstorf, S., & Oreskes, N. (2023). Assessing ExxonMobil's global warming projections. *Science*, 379(6628), eabk0063. (10 pages)
- Thomas, A., Baptiste, A., Martyr-Koller, R., Pringle, P., & Rhiney, K. (2020). Climate change and small island developing states. *Annual Review of Environment and Resources*, 45(6), 1-27. (27 pages)
- van de Ven, D. J., Mittal, S., Nikas, A., Xexakis, G., Gambhir, A., Hermwille, L., ... & Peters, G. P. (2025). Energy and socioeconomic system

transformation through a decade of IPCC-assessed scenarios. *Nature Climate Change*, 1-9. (9 pages)

Van Valkengoed, A. M., & Steg, L. (2019). Meta-analyses of factors motivating climate change adaptation behaviour. *Nature climate change*, 9(2), 158-163. (6 pages)

Van Vuuren, D. P., Edmonds, J., Kainuma, M., Riahi, K., Thomson, A., Hibbard, K., ... & Rose, S. K. (2011). The representative concentration pathways: an overview. *Climatic change*, 109, 5-31. (27 pages)

Walsh, K. J., McBride, J. L., Klotzbach, P. J., Balachandran, S., Camargo, S. J., Holland, G., ... & Sugi, M. (2016). Tropical cyclones and climate change. *Wiley Interdisciplinary Reviews: Climate Change*, 7(1), 65-89. (25 pages)

Wheeler, T., & Von Braun, J. (2013). Climate change impacts on global food security. *Science*, 341(6145), 508-513. (6 pages)

Zhang, Z., Moore, J. C., Huisingh, D., & Zhao, Y. (2015). Review of geoengineering approaches to mitigating climate change. *Journal of Cleaner Production*, 103, 898-907. (10 pages)

Total number of pages

Total prescribed reading approximately 1605 pages. Additional reading expected for assignments. Course has heavy practical component, so less reading than recommended 2500 pages.

Author gender balance

The authors perceived as female are highlighted in yellow.

Number of articles with assumed female first author: 23 (28%)

Number of articles with at least one assumed female author: 61 (76%)