

Switzerland's Candidate for WG I Vice-Chair, IPCC 7th Assessment Report (AR7)

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- Strengthened science-policy interface, including for Global Stocktake
- Enhanced cross-collaboration between IPCC working groups
- Improved assessment of climate extremes for mitigation and adaptation options

ACADEMIC ACHIEVEMENTS

- 2007-present** ETH Zurich, Switzerland, Faculty member and research group leader, Institute for Atmospheric and Climate Science
Full Professor of Land-climate dynamics (2016-present), Associate Professor with tenure (2013-2016), Tenure-track Assistant Professor (2007-2012)
- 2023 (4mth)** Stanford University, USA: Visiting Scholar
- 2013 (3mth)** University of New South Wales, Australia: Research Sabbatical
- 2003-04** NASA/Goddard Space Flight Center, Maryland, USA: Visiting Research Associate
- 1999-2002** ETH Zurich, Switzerland: PhD in Atmospheric and Climate Science (“Terrestrial Water Storage: A Critical Variable for Mid-latitude Climate and Climate Change”)
- 1995-99** MSc in Environmental Sciences (Major: Atmospheric Physics), ETH Zurich, Switzerland
- 1992-95** BSc in Biology (“Pré-licence”), University of Lausanne, Switzerland
- 1992** Maturité Fédérale, Type B (Majors: Latin, English); Baccalauréat Vaudois, Type BX (Majors: Mathematics, Physics, Latin); Gymnase cantonal de Chamblandes, Pully (VD), Switzerland
- Languages:** French (native), English (proficient), German (proficient), Spanish (intermediate) (work experience in Europe, North America, South America, Australia; family origin from Switzerland and Sri Lanka)

IPCC EXPERTISE AND LEADERSHIP

Long-standing (14 year) expertise within the IPCC:

- **Coordinating Lead Author and Lead Author of three reports, including two cross-WG reports:**
 - IPCC AR6 WG I (2018-2021): **CLA**, Chapter 11 “Weather and climate extremes in a changing climate”; Author of Summary for Policymakers
 - IPCC SR15 (2017-2018, cross WG I-WG II- WG III report): **LA**, Chapter 3 “Impact of 1.5°C global warming on natural and human systems”; Author of Summary for Policymakers
 - IPCC SREX (2009-2012, cross WG I-WG II report): **CLA**, Chapter 3 “Changes in climate extremes and their impacts on the natural physical environment”
 - Contributing author to several other IPCC chapters, e.g. IPCC AR6 WG II Chapter 16 “Key risks across regions and sectors” (assessment for burning ember on climate extremes)
- **IPCC approval sessions (IPCC SREX, IPCC SR15, IPCC AR6 WGI)**
- **IPCC scoping meetings (SREX, Norway, 2009; SR15, Switzerland, 2016; SRCCL, Ireland, 2017; IPCC AR6 Synthesis report (SYR), Singapore, 2019) and IPCC expert meetings and workshops (WCRP/IPCC post-AR5 workshop, Switzerland, 2014; IPCC Expert meeting on Climate change, Food and Agriculture, Ireland, 2015; IPCC Workshop on the Use of Scenarios in the 6th Assessment Report and Subsequent Assessments, Thailand, 2023)**
- **IPCC presentation at UNFCCC COP26 meeting in Glasgow (2021): IPCC AR6 WG I Q&A panel**

AWARDS AND RECOGNITIONS

- 2023 [Honorary doctorate, Utrecht University](#)
- 2022 [Highly cited researcher in Geoscience and Environment and Ecology \(https://clarivate.com/highly-cited-researchers/; listed every year since 2014\)](https://clarivate.com/highly-cited-researchers/)
- 2021 [European Geosciences Union Hans Oeschger Medal](#)
- 2021 [Listed #9 on Reuters “Hot List” of most influential scientists](#)
- 2020 [One of 15 ERC grantees chosen for highlight for celebration of 10'000th ERC grant](#)
- 2020-22 [European Research Council Proof-of-Concept Grant \(“MESMER-X” project\), lead PI](#)
- 2020 [Elected member of European Academy of Science \(EURASC\)](#)
- 2014-19 [European Research Council Consolidator Grant \(“DROUGHT-HEAT” project\), lead PI](#)
- 2014 World Economic Forum: [Annual meeting of the new champions, Tianjin, China](#)
- 2013 [James B. Macelwane Medal, American Geophysical Union \(AGU\)](#)
- 2013 Fellow, American Geophysical Union (AGU)
- 2012 Editor's Citation for Excellence in Refereeing for Geophysical Research Letters, AGU

VISION

The IPCC stands at a critical point in its history where its assessments build the basis for international policy-making in near real time. To achieve the aims sets in the **2015 Paris agreement** signed by world nations, immediate reductions of greenhouse gas emissions need to be achieved, including a halving of CO₂ emissions until 2030, in less than 7 years. In this new phase to be established within the 7th IPCC cycle, it is essential that a **stronger alignment between UNFCCC and IPCC** is achieved, with a direct IPCC contribution to the **Global Stocktake** in 2023 and 2028. The **integration between the WG I, WG II and WG III assessments**, that was built up in the 6th IPCC cycle, needs to be further strengthened to address key remaining policy-relevant questions at their interface: In particular, this includes the consideration of changes in **weather and climate extremes, and associated impacts, as constraints for emissions scenarios**, and the more in-depth assessment of **low-likelihood high-impact scenarios**. The new IPCC bureau will have the responsibility to ensure that these challenges can be met in this new phase, to inform how global policy decisions can enable a stabilized climate future.

SCIENTIFIC COORDINATION, ADVISORY BOARDS, INSTITUTIONAL RESPONSIBILITIES

World Climate Research Programme (WCRP): Several leadership roles since 2014: WCRP Extremes grand challenge (co-chair, 2015-2022); GEWEX core project (co-chair, 2014-2018)

Met Office Hadley Centre Climate Programme, Programme Board, UK: Since 2023

IIASA Scientific Advisory Committee, Vienna, Austria: Since 2023

PIK ISIMIP Advisory Board, Potsdam, Germany: Since 2022

Leading roles in several EU research projects: e.g. Work package leader in HEurope TRACCE (2023-27), HEurope RESCUE (2022-26), EU H2020 XAIDA (2021-25), EU H2020 PROVIDE (2021-24)

Swiss Academy of Science, Advisory Board on Climate Science and Policy (ProClim): Since 2023

Associate Vice-president for Sustainability, ETH Zurich: Since 2023

Deputy director, Institute for Atmospheric and Climate Science, ETH Zurich: Since 2020

PUBLICATIONS

Author of more than 270 peer-reviewed scientific publications, highly cited researcher in the fields of geoscience and environment and ecology (<https://clarivate.com/highly-cited-researchers/>)

h index: web of science: **94**, google scholar: **117**; number of citations (without self-citation): 32,253

10 selected publications (*: led by group member; underlined: group member)

*Beusch, L., Z. Nicholls, L. Gudmundsson, M. Hauser, M. Meinshausen, and S.I. Seneviratne, 2022: From emission scenarios to spatially resolved projections with a chain of computationally efficient emulators: coupling of MAGICC (v7.5.1) and MESMER (v0.8.3). *Geoscientific Model Development*, 15 (5), 2085-2103, doi: 10.5194/gmd-15-2085-2022.

*Schumacher, D.L., M. Hauser, and S.I. Seneviratne, 2022: Drivers and mechanisms of the 2021 Pacific Northwest Heatwave, *Earth's Future*, e2022EF002967, <https://doi.org/10.1029/2022EF002967>.

Seneviratne, S.I., X. Zhang, M. Adnan, W. Badi, C. Derenczynski, A. Di Luca, S. Ghosh, I. Iskandar, J. Kossin, S. Lewis, F. Otto, I. Pinto, M. Satoh, S.M. Vicente-Serrano, M. Wehner, and B. Zhou, 2021: Chapter 11: Weather and Climate Extreme Events in a Changing Climate. 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., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1513–1766, doi:10.1017/9781009157896.013.

*Liu, L., L. Gudmundsson, M. Hauser, D. Qin, S. Li, and S.I. Seneviratne, 2020: Soil moisture dominates dryness stress on ecosystem production globally. *Nature Communications*, <https://doi.org/10.1038/s41467-020-18631-1>

Seneviratne, S. I., and M. Hauser, 2020: Regional climate sensitivity of climate extremes in CMIP6 and CMIP5 multi-model ensembles. *Earth's Future*, doi: 10.1029/2019EF001474.

*Padron, R., L. Gudmundsson, B. Decharme, A. Ducharme, D.M. Lawrence, J. Mao, D. Peano, G. Krinner, H. Kim, and S.I. Seneviratne, 2020: Observed changes in dry-season water availability attributed to human-induced climate change. *Nature Geoscience*, 13, 477-481

Seneviratne, S.I., J. Rogelj, R. Séférian, R. Wartenburger, M.R. Allen, M. Cain, R.J. Millar, K.L. Ebi, N. Ellis, O. Hoegh-Guldberg, A.J. Payne, C.-F. Schleussner, P. Tschakert, R.F. Warren, 2018: The many possible climates from the Paris Agreement's aim of 1.5°C warming. *Nature*, 558, 41-49.

*Humphrey, V., J. Zscheischler, P. Ciais, L. Gudmundsson, S. Sitoh, S.I. Seneviratne, 2018: Sensitivity of atmospheric CO₂ growth rate to observed changes in terrestrial water storage. *Nature*, 560, 628-631.

Seneviratne, S.I., R. Wartenburger, B.P. Guillod, A.L. Hirsch, M.M. Vogel, V. Brovkin, D.P. van Vuuren, N. Schaller, L. Boysen, K.V. Calvin, J. Doelman, P. Greve, P. Havlik, F. Humpenöder, T. Krisztn, D. Mitchell, A. Popp, K. Riahi, J. Rogelj, C.F. Schleussner, J. Sillmann, E. Stehfest, 2018: Climate extremes, land-climate feedbacks, and land use forcing at 1.5°C. *Phil Trans. R. Soc. A.*, 376, 20160450.

Seneviratne, S.I., M.G. Donat, A.J. Pitman, R. Knutti, and R.L. Wilby, 2016: Allowable CO₂ emissions based on regional and impact-related climate targets. *Nature*, 529, 477-483, doi:10.1038/nature16542.

PERSONAL INFORMATION

Last name: Seneviratne
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Place of birth: Lausanne (VD), Switzerland
Citizenship: Swiss
Family status: Married, 2 children (04/10, 02/14)

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