

Invitation to interdisciplinary research symposium 17-23 August 2025

at Historische Sternwarte, Georg-August-University Göttingen, Germany

## **Land use under climate change – co-learning with Latin America by combining natural and social science perspectives across spatio-temporal scales**

We live in an interconnected, globalized world: Local land use is not only determined by the natural configuration of a landscape that formed over millennia and longer, such as rock-/soil types and topography, which influence microclimate, water and biogeochemical cycling in interaction with biota. Local land use is also determined by socioeconomic factors and regulations across administrative units and the global market that influence the way rocks, water, forest, grass and agricultural land are actively used (e.g. as resources for energy, food, technology) or not (e.g. when subject to conservation or after abandonment). The colonization of the Americas increased resource extraction, impacted biocultural identities, and transformed land use patterns at a global scale. From a Latin American perspective, the colonization was essential for the industrialization of the “western” world, which then spread to the whole globe since the 19<sup>th</sup> century (Kaltmeier et al., 2024).

Anthropogenic climate change that has resulted in locally variable rates of warming and an overall increase in extreme weather events is affecting the entire planet. It poses a severe challenge on how we use our land to sustain our livelihoods when temperatures, water availability, and seasonality are changing. Land use and climate change are closely associated: not only on a local scale where a change from forest to agricultural land influences microclimate and water cycling, but also on the global scale where land cover interacts with climate via the Earth energy balance, water and biogeochemical cycles (IPCC, 2019; Lawrence et al., 2022). For example, an important modification of global climate was related to the colonization of the Americas that caused a 10 % loss of the world’s population and the subsequent reforestation of formerly used open lands that withdrew carbon and cooled the climate globally (Koch et al., 2019). Especially, the use of fossil carbon and mineral resources to fuel the industrialization and the global plantation system have modified the Earth system to support a “western” way of life. It led not only to the global climate and biodiversity crises, but also to global inequities and injustice, that especially affect the Global South and cultures with a different “way of life” (i.e., indigenous cultures).

To understand how local land use can adapt to and help to mitigate global climate change, especially for the benefit of vulnerable societies, it is important to consider the interrelationships between the different components of the Earth system (as studied by natural sciences) and of the human system (as studied by the social sciences). Many of these relationships are connected across spatial and temporal scales. For example, global economic dynamics contributed to modify diverse forests to pine and Eucalyptus plantations. Joint analyses of human history and geological/paleoecological evidence revealed legacies of past land use decisions that affect the current landscape functioning and ecosystem management (e.g., Dietze et al., 2019). Recently, land use policies and ecosystem restoration increasingly consider local, especially indigenous knowledge systems together with scientific evidence (Gordon et al., 2023). Hence, a healthy and sustainable land use under climate change may be possible when considering inter- and transdisciplinary perspectives across spatial and temporal scales that foster a different way of thinking (“andere Denkweise”) on human-environment interactions.

**We invite you to join our** university-wide exchange during an **interdisciplinary research symposium that aims at fostering** such **new perspectives on land use under climate change** by connecting natural and social sciences at the UGOE Göttingen with scientists and stakeholders from Latin America. We aim to build a new network in Göttingen with Latin American experts and local knowledge holders, including indigenous leaders, to learn for and from **Latin America** – a continent that is highly sensitive

to climate change (Reyes et al., 2017) and that, with only 16 % of the Earth surface, hosts 40 % of the world's biodiversity and 23 % of global forests (BMZ, 2023), including the Amazon rainforest, an important "tipping element" of the Earth system (Rockström et al., 2024).

Göttingen is an internationally known hub in research on (tropical) land use and sustainable development that has already a large expertise in the Global South. With a new focus at UGOE on Latin America, we also would strengthen research-oriented education and training of the next generation of scientists and practitioners in land use and sustainable development.

### **Proposed program for Symposium "Latin American land use under climate change"**

17th-23rd Aug. 2025, location: Historische Sternwarte, Göttingen (online stream of keynotes)

<b>So</b>	Arrival of invited Latin American experts and local knowledge holders Guided university tour for international guests and interested colleagues Welcome at c. 13:00, get-to-know each other interaction
<b>Mo</b>	2 Keynote Lectures: e.g. Climate change LA & Land Use in Anthropocene LA Overview talks of main LA research in different faculties (hybrid), after Coffee break Ice breaker 2 Keynote Lectures: e.g. Human-natural history & Local knowledge perspective Poster session with initial flash talks
<b>Tu</b>	Short introduction to potential funding options, after lunch World Cafe-style discussion on 3 key topics of common interest (Topics) Reporting back to plenum: defining common grounds, followed by dinner
<b>We</b>	World Cafe-style discussion on "how do we work" (Methods) Plenum evaluation of "Methods"-discussions, hybrid option, after lunch Defining joint field of research, first brief literature review in groups Public podium discussion in Forum Wissen, followed by dinner Summarizing findings, setting a schedule/tasks for next steps in collaborative research
<b>Thu</b>	Farewell lunch Visit of SUB and A.v.H. books from 19th century w. guests and interested colleagues
<b>Fr</b>	Walking excursion surrounding of Göttingen for guests and interested colleagues to learn about Göttingen landscape history (all day, lunch in the field)
<b>Sa</b>	Departure of invited speakers

Organized by Prof. [Elisabeth Dietze](#) and Prof. [Prof. Marcela Ibanez Ph.D.](#) and colleagues,

including members of the

