

**Veranstaltungsreihe „Bauen und Wohnen im Klimawandel“,  
Tübingen, 26 Okt 2023**

# **Klimakrise, Bauwende, Rohstoffchance**

*Prof. Dr. Dr. h.c. mult. Hans Joachim Schellnhuber*

*Direktor Emeritus, Potsdam-Institut für Klimafolgenforschung (PIK);*

*Initiator, Gründer und Co-Geschäftsführer, Bauhaus Erde gGmbH;*

*Designierter Generaldirektor, International Institute for Applied Systems Analysis IIASA*



BAUHAUS ● EARTH



International Institute for  
Applied Systems Analysis

# State of the Union Address by President von der Leyen at the European Parliament Plenary

Brussels, 16 September 2020

## Shaping more beautiful, sustainable and inclusive forms of living together

Original Speech: [here](#)

#neweuropeanbauhaus





LA BIENNALE DI VENEZIA



ARCHITECTURE - 22 MAY 2023

## BIENNALE ARCHITETTURA 2023: THE LABORATORY OF THE FUTURE

The 18th International Architecture Exhibition, curated by Lesley Lokko, is open from 20 May to 26 November at the Giardini, Arsenale and Forte Marghera.



## Experience La Biennale

The New European Bauhaus Collateral Event of the **18th International Architecture Exhibition of La Biennale di Venezia - 25 and 26 May 2023** titled "Radical yet possible future space solutions."

For the first time, the European Union will be present with an event at the [International Architecture Exhibition - La Biennale di Venezia](#) EN. Following the central theme of the Biennale Architettura 2023, "Laboratory of the Future", and in line with the mission of the New European Bauhaus, the conference has been designed as a **radical, intellectual and practical laboratory of the future**.

The event will allow experts, students, and visitors to **experiment, discover and design the future** with the power of their minds.

The participants will reflect on radical, yet possible, human actions leading to a better use of space and resources. In particular, they will discuss **new ways of living, and how to go beyond the conviction that the future of the humankind is bound to already existing solutions**.

Check [here](#) the complete programme.

Re-watch the event [here](#)

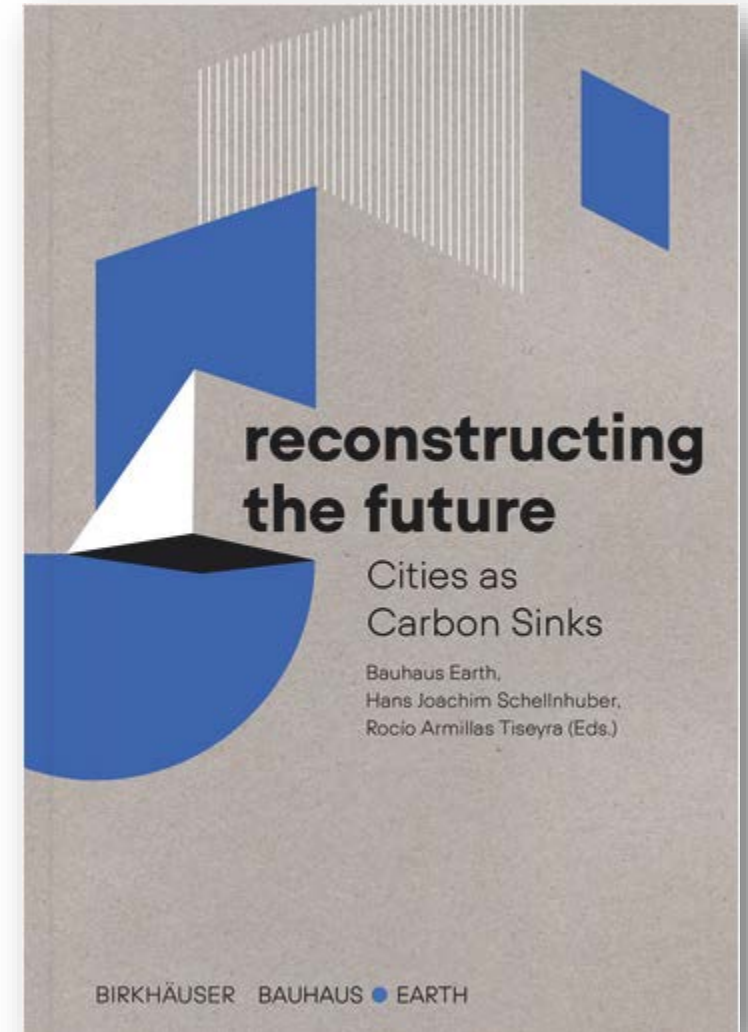
#NewEuropeanBauhaus #BiennaleArchitettura2023

# Reconstructing the Future for People and Planet – a New Bauhaus Initiative

*PAS Conference, 9-10 June 2022*



© Gabriella Clare Marino





**G7 GERMANY**  
Urban Development  
Ministers Meeting

© Bundesregierung



© Henning Schacht

**G7 Urban Development Ministers Meeting,  
Potsdam, September 2022**



GROUP of  
NATIONS

Full article: [here](#)

G7 Japan June 29, 2022

## Japan host G7 Summit Hiroshima in 2023



© Bur



As of 15 September 2022

### Tentative Programme

GEA International Conference 2022

Challenges and Opportunities for Sustainable Societies:

*Climate Change, Energy and Food Security*

*Venue: "Ho-O-no-Ma" and "Providence Hall", Tokyo Prince Hotel, 2F, Tokyo Japan*

#### Day 1: Thursday, 27 October 2022

8:00~ 9:00 Registration, Entrance and Seating

#### 10:00~11:50 Opening Ceremony, "Ho-O-no-Ma" 2F

- Opening Speech: **YAMAGUCHI Shunichi** Chairman of Global Environmental Action (GEA), Member of the House of Representatives, Former Minister of State, Japan
- Address: His Majesty the Emperor
- Guest Speech : **KISHIDA Fumio** Prime Minister of Japan
- Keynote Speech: **John Schellnhuber** Professor, Germany
- Video Message : **Fatih BIROL** Executive Director, International Energy Agency (IEA)

#### 12:00~12:50 Luncheon, "Magnolia" 2F (assigned seats)

- Speeches: **NISHIMURA Akihiro** Minister of the Environment, Japan

24 November 2022

## New European Bauhaus goes

# Into the Woods



**Sanna Marin**  
Prime Minister of Finland



**Ursula von der Leyen**  
President of the European Commission



**Kaja Kallas**  
Prime Minister of Estonia



**Kadri Simson**  
Commissioner for Energy



**Virginijus Sinkevičius**  
Commissioner for Environment



**Hans Joachim Schellnhuber**  
Potsdam Institute for Climate Impact Research



**Eva Furman**  
Secretary-General of the National Commission on Sustainable Development, Prime Minister's Office



**Lena Hök**  
SVP Sustainability, Skanska Global



**Alan Organschi**  
Principal, Gray Organschi Architecture

## Plenary session

### Welcome

Sanna Marin, Prime Minister of Finland

Ursula von der Leyen, President of the European Commission

Kaja Kallas, Prime Minister of Estonia

Ulf Kristersson, Prime Minister of Sweden

### Keynote

Dr. Hans Joachim Schellnhuber, founding director of the Potsdam Institute for Climate Impact Research

### Panel discussion

Kadri Simson, Commissioner for Energy

Virginijus Sinkevičius, Commissioner for the Environment

Lena Hök, EVP Sustainability & Innovation, Skanska Group

Eva Furman, Secretary-General of the National Commission on Sustainable Development, Prime Minister's Office

Alan Organschi, Principal, Gray Organschi Architecture, Director of the Innovation Lab, Bauhaus Earth

### Summary of the plenary session

Maria Ohisalo, Minister of Environment and Climate Change, Finland

## Collaboration

### Greetings from forest!

Antti Kurvinen, Minister of Agriculture and Forestry, Finland

Track 1: Future of forests

Chaired by Tuomo Kalliokoski, Ministry of the Environment of Finland

Track 2: Building a carbon neutral Europe with wood

Chaired by Veronika Valk-Siska, Ministry of Economic Affairs and Communications

Track 3: Architecture inspired by nature

Chaired by Helena Bjarnegård, National Architect of Sweden

### Reflections from panel discussions

### Out of the Woods

How to build skills for sustainable wood architecture?

Networking and refreshments

Organised by the Government of Finland in collaboration with European Commission, Government of Estonia and Government of Sweden.







BASTIAN KAISER

# Bin im Wald!

Mit einem Forstexperten  
durchs grüne Dickicht

HIRZEL

---

Die Deutschen und ihr Wald! Alle fühlen sich berufen mitzureden und wenige Bestseller-Autoren steuern die allgemeine Gefühlslage zum Wald. Bleiben Fakten dabei vielleicht manchmal auf der Strecke? Forst-Experte Bastian Kaiser räumt mit Legenden und Missverständnissen auf und liefert Fakten rund um die Relevanz der Wälder im Hinblick auf aktuelle Klima- und Nachhaltigkeitsdebatten. Er erzählt in diesem ungewöhnlichen Sachbuch die (Kultur-)Geschichte unserer Wälder von der Holzwirtschaft bis zu den Bereichen „Bäume im Brauchtum“ und der „Wald im Märchen“. Dabei lässt er uns an seiner ganz persönlichen und beruflichen Lebensgeschichte teilhaben, die vom Wald durchdrungen ist. Ein Wald-Lesebuch für alle, die sich gerne eine eigene Meinung bilden möchten.

---



## Keynote Dialog

# Climate adaptation – building for an unpredictable future

A changing climate emphasizes the need for a more resilient and regenerative building and landscape practice in both urban and rural contexts. In this session we explore the changes we should be preparing for and have a closer look at the most important high and low-tech instruments in the architect's toolbox for climate adaptation.

**This session is a keynote dialogue moderated by our Master of Ceremonies Connie Hedegaard. Our keynote dialogues are designed as a series of dialogues between trailblazing architects and experts from science, business and politics. All keynote dialogues will be moderated by Connie Hedegaard.**





# NEW EUROPEAN BAUHAUS ECONOMY PANEL DEBATE

It has become a widely referenced statistic that our built environments are responsible for approximately 40 percent of global carbon emissions. Yet, it's less publicised that current carbon reduction policies and pledges, including all binding long-term net-zero targets, would only limit warming to around 2.1°C by the end of the century, resulting in catastrophic consequences.

This reality forces us into a different play; necessitating a systemic transformation of the way we value, use, and build. As the original Bauhaus movement transformed our theory of design, the New Bauhaus movement will fundamentally transform how and what we account for; how we interact with and use spaces; the ways we live and work; and how we design our built environment. This will require us to shift the entire economic landscape of Europe.

This panel debate brings together leading European actors driving systemic transition of European built environments across public and private sectors. Together we will explore how to leverage our collective force to transition, at the scale and speed that is needed. We'll discuss how these fundamental changes will go hand in hand with the way we transform our cities and design our future.

## SPEAKERS



**Kirsten Dunlop**  
CEO, EIT Climate-KIC



**Don Brenninkmeijer**  
Chair Investment Committee at Laudes Foundation, Chair at Built by Nature



**Hélène Chartier**  
Director of Urban Planning and Design, C40 Cities



**Hans Joachim Schellnhuber**  
Founder & Managing Director, Bauhaus Earth



**Indy Johar**  
Architect & Co-Founder, Architecture 00 and Dark Matter Labs



## UIA Sideevent

# Comply with the paris agreement: can we build within planetary boundaries?

**Join a panel discussion on science-based CO2 targets for the building industry that follow the Paris Agreement and the planetary boundaries. Learn about the Reduction Roadmap, its adoption in Denmark, and the need for international scaling.**

The Reduction Roadmap empowers investors, developers, consultants, contractors, and authorities across the industry to set specific emission targets for buildings. As such it is a benchmark showing whether a project is supporting or breaching the Paris Agreement.

The roadmap has been widely adopted as a scientific baseline for the Danish building industry. Now, the time has come to scale the initiative at the European and global level to create a climate-centred movement. Swing by Living Places Copenhagen on July 5 for a drink to hear about the journey of the Reduction Roadmap by its initiators and join the panel discussion between European and Danish climate leaders moderated by Pernille Berg.

The talk is an official UIA Side Event. Participation is free and the event is open to everybody. After the discussion, you can get a tour around Living Places Copenhagen.

Living Places is a newly built housing demonstration project documenting how to reduce lifetime carbon emissions by two thirds and showcasing what is already possible today.

# Waldbrände2023



Kanada

Rhodos

Teneriffa

Hawaii

Irini  
(bei Athen)

Chile

# Überschwemmungen 2023



Italien

Griechenland

Hongkong

Slowenien

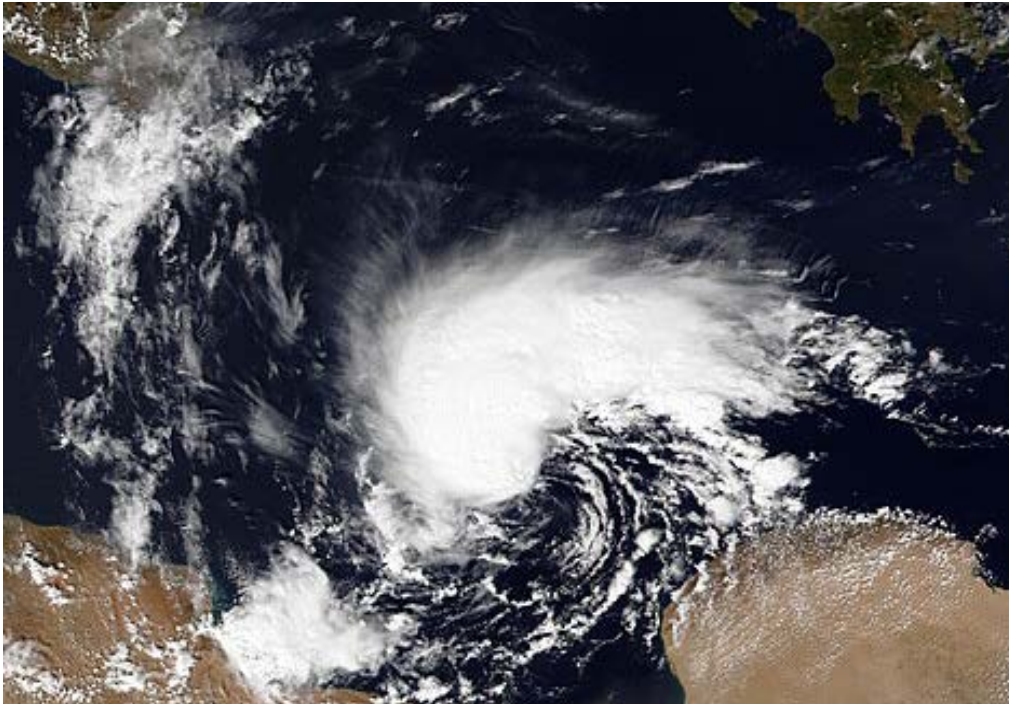
Türkei

Libyen

## What are medicanes? The 'supercharged' Mediterranean storms that could become more frequent

Agence France-Presse

15 Sep 2023



Medicane Daniel (also known as Storm Daniel) to the north of Libya on September 9, 2023.

©[Wikimedia Commons, 2023](#)

The flash flood that has killed thousands of people in Libya this week followed the 'medicane' storm Daniel



📷 Cars piled up atop wave breakers and the rubble of a building destroyed in flash floods after the Mediterranean storm, also known as a 'medicane', Daniel hit Libya's eastern city of Derna.

Photograph: AFP/Getty Images

# Das Pariser Abkommen

Nations Unies  
Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris France



**Weltklimarat  $\leq 1.5^{\circ}\text{C}$  !**

Beschränkung der  
Erderwärmung auf  
“weit unter” 2 Grad Celsius

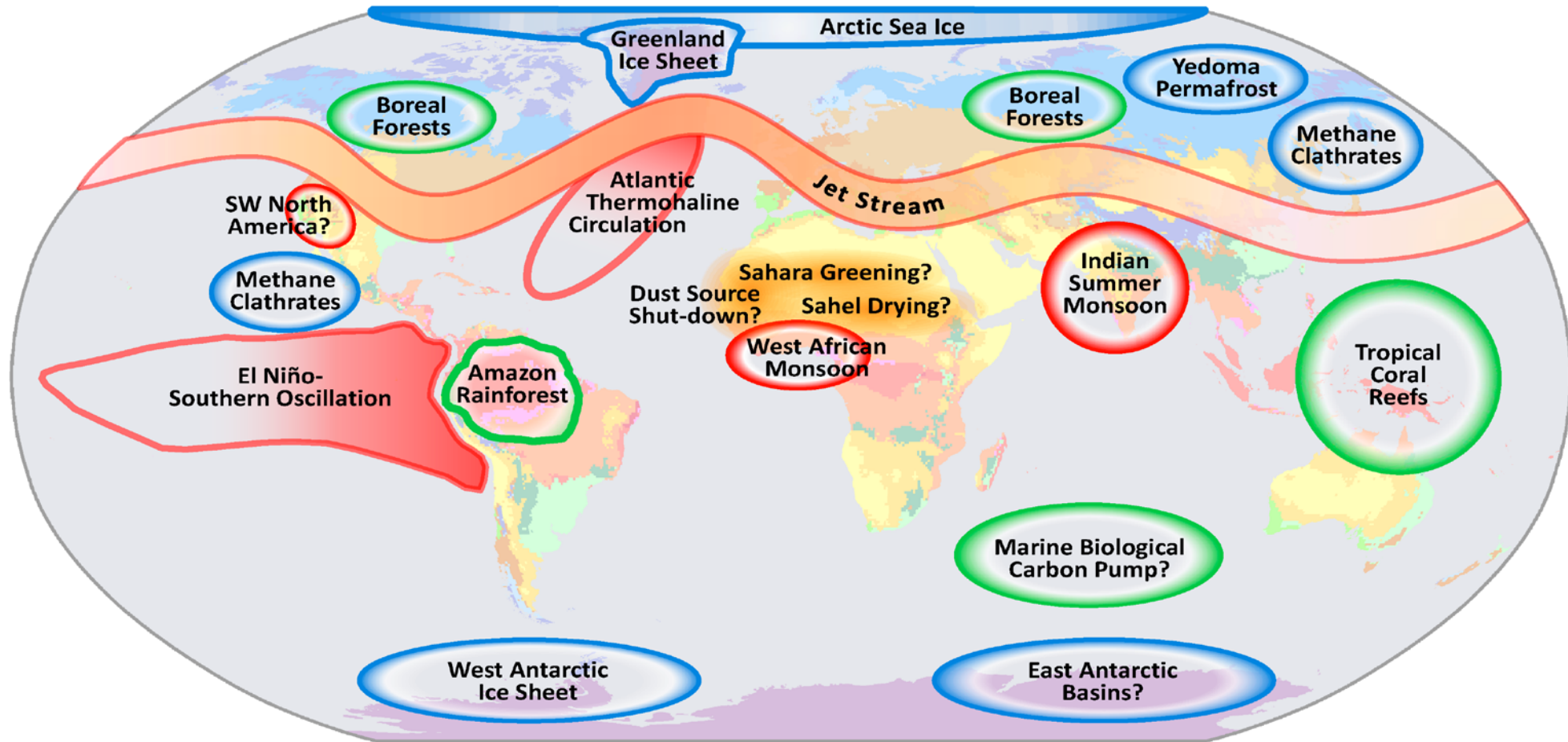
**Netto-Null Emissionen** von  
Treibhausgasen nach Mitte des  
21. Jahrhunderts

Nationale Emissionsziele  
regelmäßig überprüft und  
**verschärft**

Industrieländer stellen von  
2020-2025 jährlich  
**100 Milliarden USD** bereit



# Kippelemente im Erdsystem



- Cryosphere Entities
- Circulation Patterns
- Biosphere Components

## Köppen Climate Classification



Folge des Klimawandels

## Grönlands Eisschild ist verloren

## Greenland ice sheet lost a record 1m tonnes of ice per minute in 2019

Climate-driven loss is likely to be the worst for centuries, and is pushing up sea levels

Original Artikel: [hier](#)

## DER TAGESSPIEGEL



Eisschild der Insel schwindet

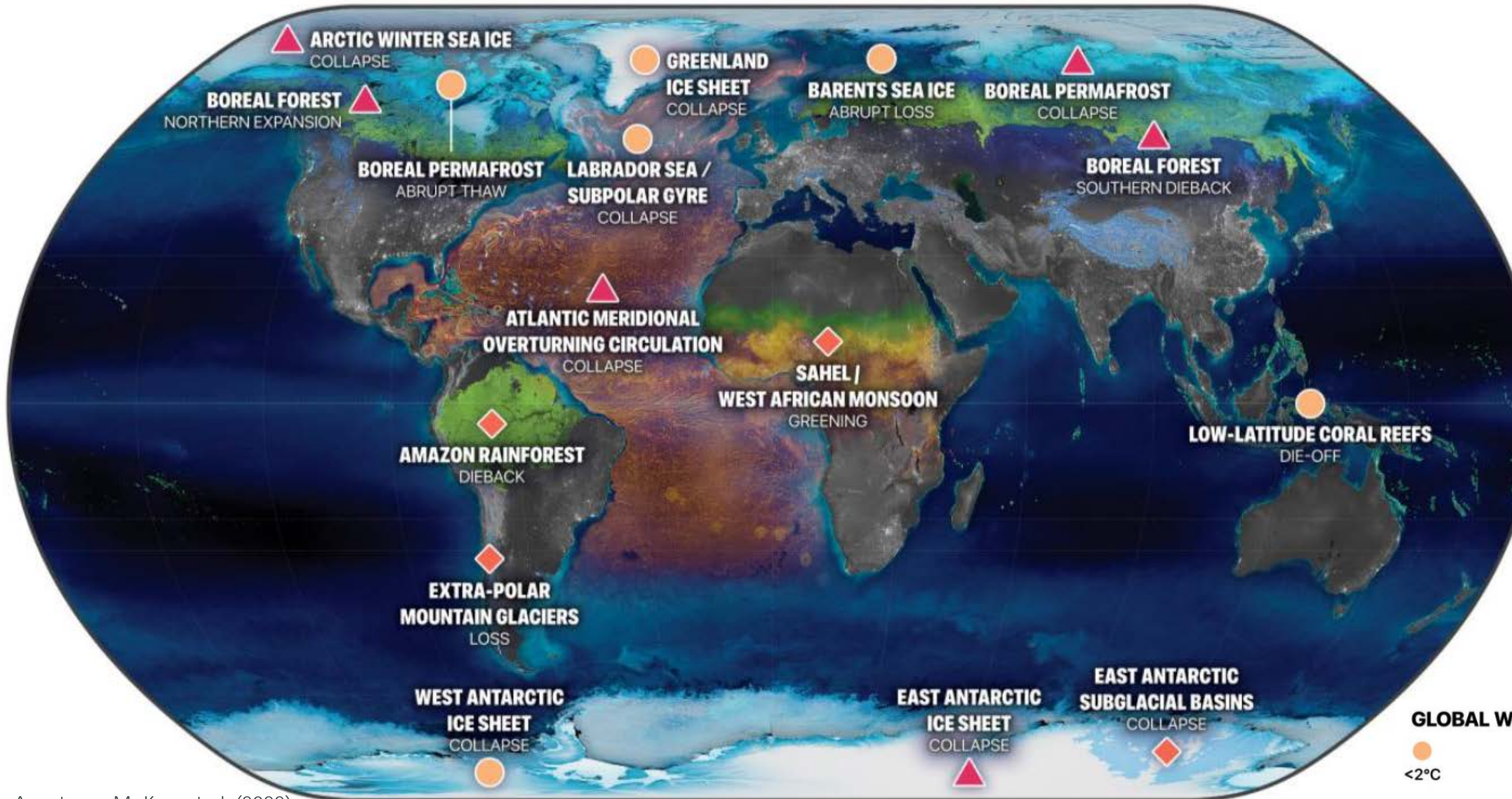
30.09.2020, 22:07 Uhr

## Grönland-Eis schmilzt so schnell wie seit 12.000 Jahren nicht

Nach dem Eiszeitalter trat das Erdklima in eine fast 12.000 Jahre andauernde ruhige Phase ein. Für Grönland könnte sie in diesem Jahrhundert beendet sein. VON [PATRICK EICKEMEIER](#)

Original Artikel: [hier](#)

# Exceeding 1.5°C Global Warming Could Trigger Multiple Climate Tipping Events

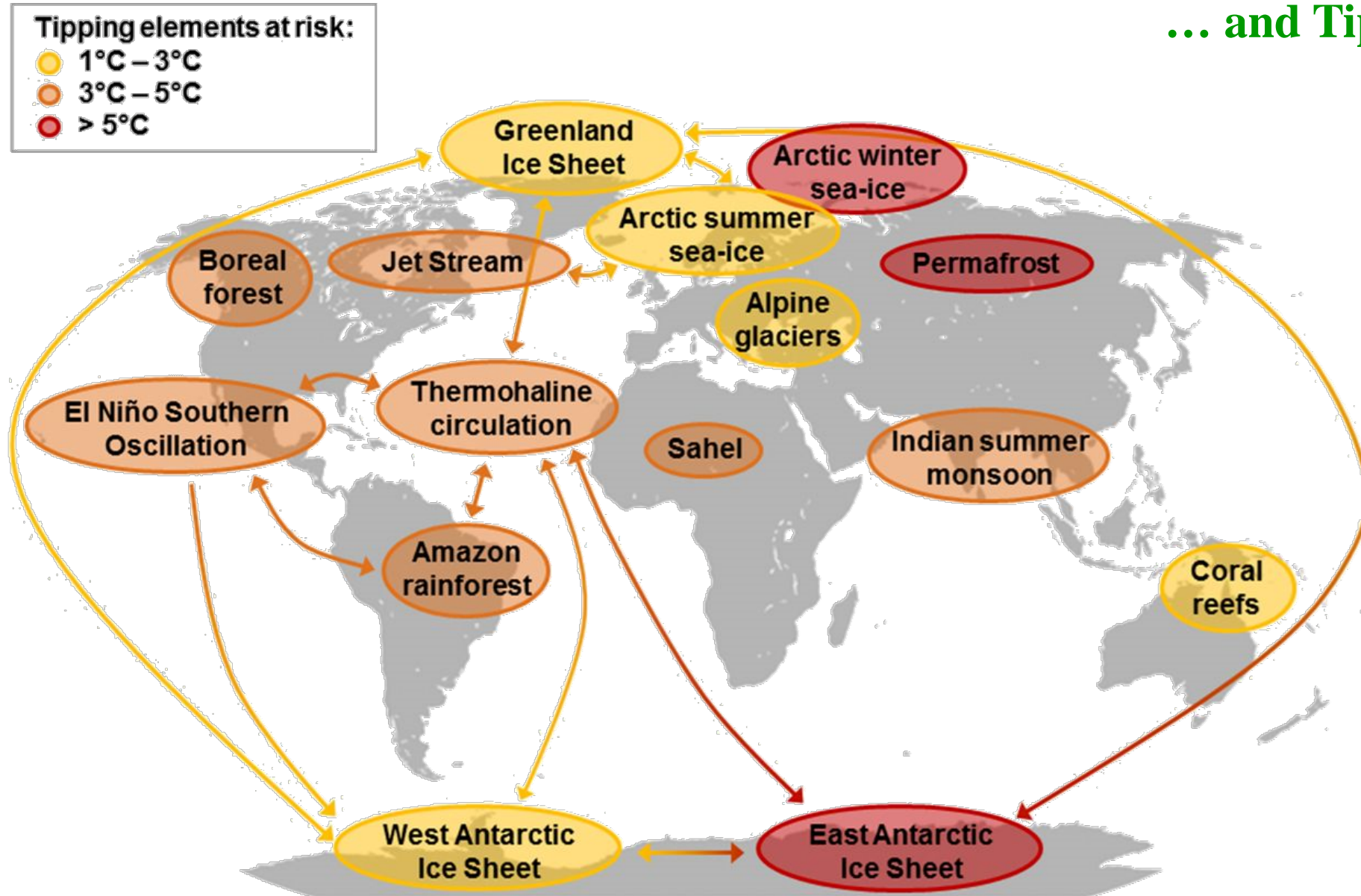


The location of climate tipping elements in the **cryosphere** (blue), **biosphere** (green) and **ocean/atmosphere** (orange), and global warming levels their tipping points will likely be triggered at.

**GLOBAL WARMING THRESHOLDS**  
● <2°C     ◆ 2-4°C     ▲ >4°C

# Exceeding 1.5°C Global Warming Could Trigger Multiple Climate Tipping Events

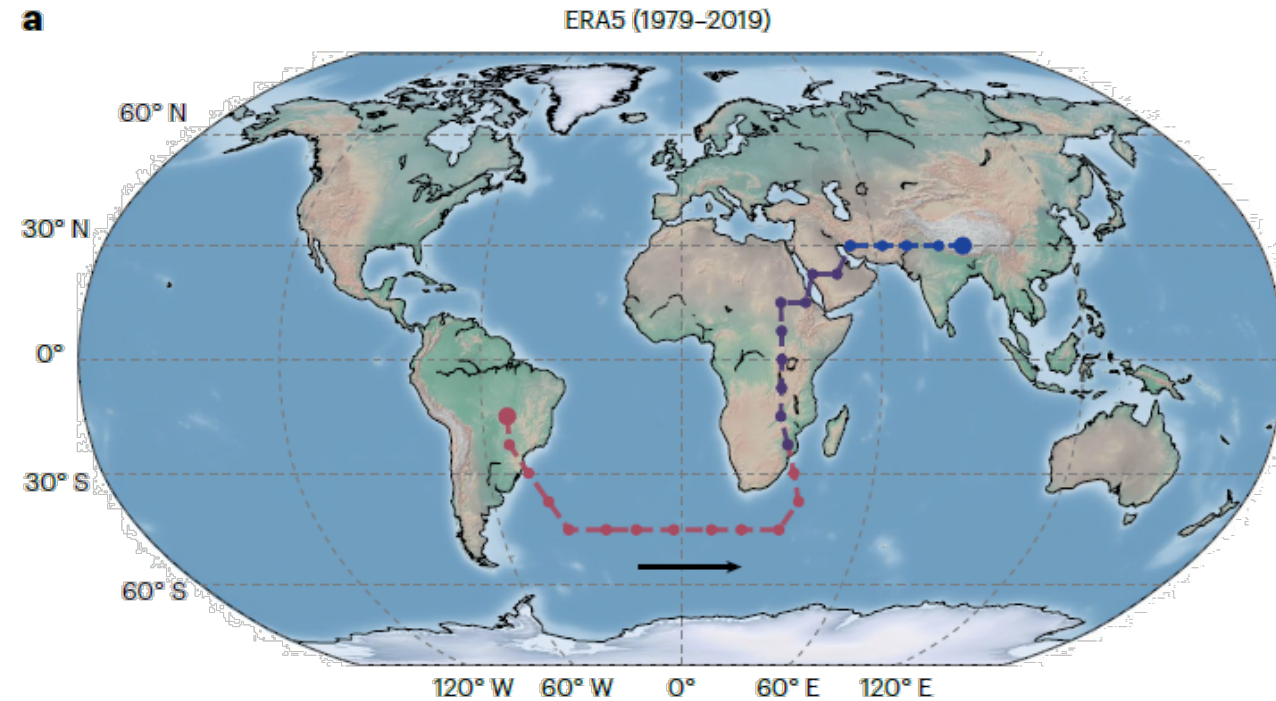
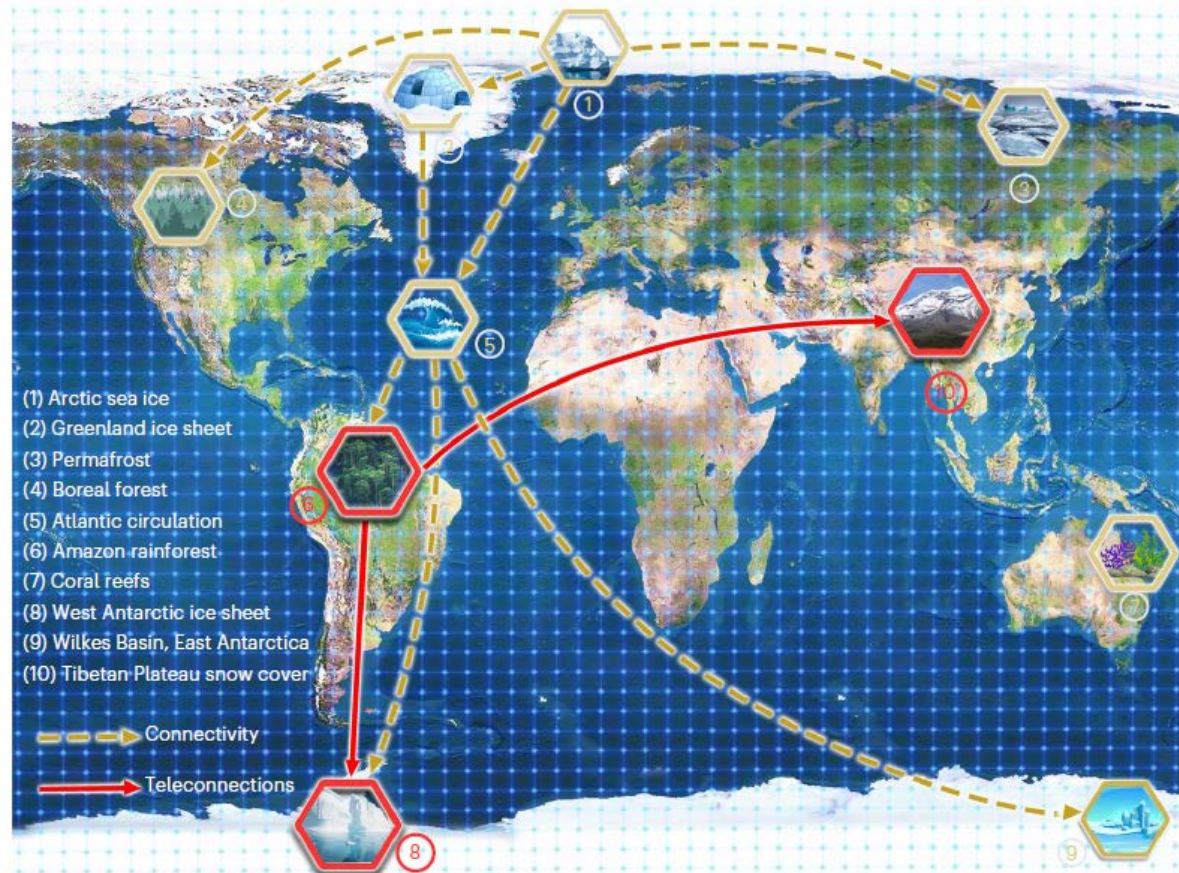
... and Tipping Cascades



# Teleconnections among tipping elements in the Earth system

Teng Liu, Dean Chen, Lan Yang, Jun Meng, Zanchenling Wang, Josef Ludescher, Jingfang Fan , Saini Yang

, Deliang Chen, Jürgen Kurths, Xiaosong Chen , Shlomo Havlin & Hans Joachim Schellnhuber



# Wenn das ganze Eis schmilzt

[National Geographic, 2013](#)



# Wenn das ganze Eis schmilzt

National Geographic, 2013



# Wenn das ganze Eis schmilzt




National Geographic, 2013





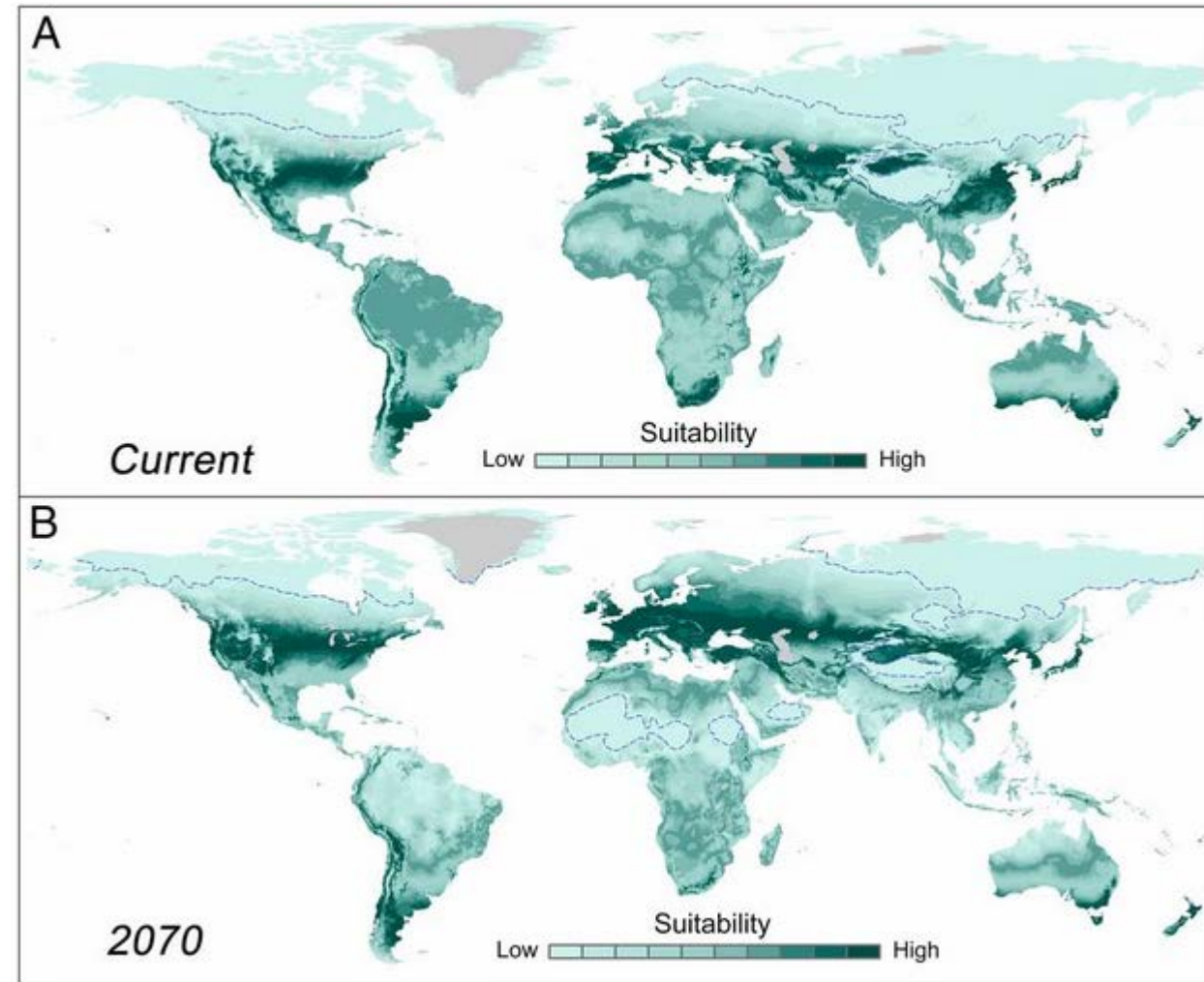
# Wo werden wir leben?

## Future of the human climate niche

Chi Xu (徐驰)<sup>a,1</sup> , Timothy A. Kohler<sup>b,c,d,e</sup>, Timothy M. Lenton<sup>f</sup> , Jens-Christian Svenning<sup>g</sup> , and Marten Scheffer<sup>c,h,i,1</sup>




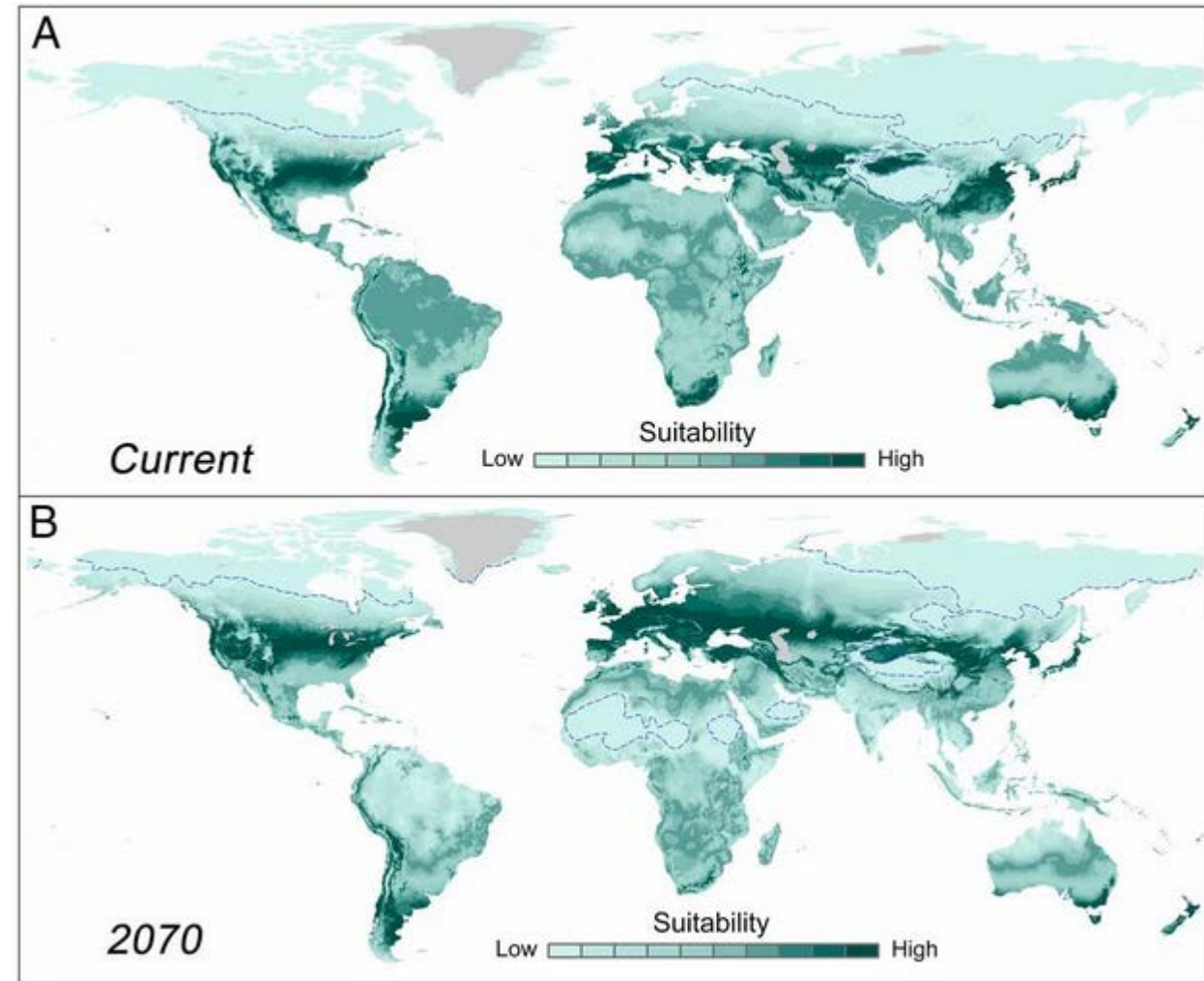
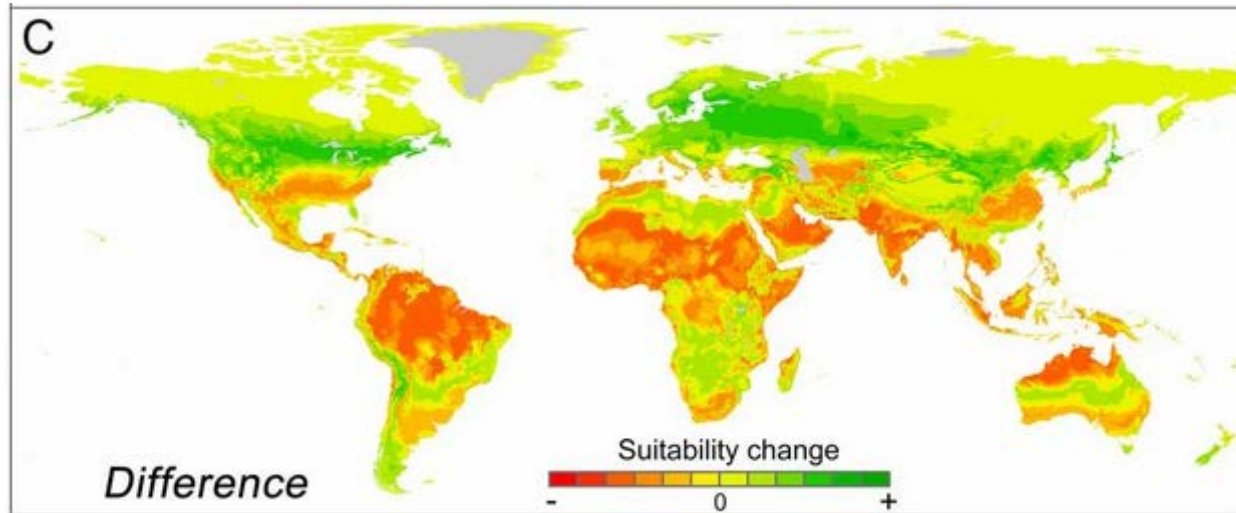
May 4, 2020 | 117 (21) 11350-11355 | <https://doi.org/10.1073/pnas.1910114117>

All species have an environmental niche, and despite technological advances, humans are unlikely to be an exception. Here, we demonstrate that **for millennia, human populations have resided** in the same narrow part of the climatic envelope available **on the globe**, characterized by a major mode **around ~11 °C to 15 °C mean annual temperature (MAT)**.



## Wo werden wir leben?

## Future of the human climate niche

Chi Xu (徐驰)<sup>a,1</sup> , Timothy A. Kohler<sup>b,c,d,e</sup>, Timothy M. Lenton<sup>f</sup> , Jens-Christian Svenning<sup>g</sup> , and Marten Scheffer<sup>c,h,i,1</sup>May 4, 2020 | 117 (21) 11350-11355 | <https://doi.org/10.1073/pnas.1910114117>

## Quantifying the human cost of global warming

Timothy M. Lenton [✉](#), Chi Xu [✉](#), Jesse F. Abrams, Ashish Ghadiali, Sina Loriani, Boris Sakschewski, Caroline Zimm, Kristie L. Ebi, Robert R. Dunn, Jens-Christian Svenning & Marten Scheffer

The Guardian

### Global heating will push billions outside 'human climate niche'

World is on track for 2.7C and 'phenomenal' human suffering, scientists warn

Damian Carrington  
Environment editor

[@dpcarrington](#)  
Mon 22 May 2023 16:00 BST

The world is on track for 2.7C of heating with current action plans and this would mean **2 billion people** experiencing average annual temperatures above 29C by 2030, a level at which very few communities have lived in the past.

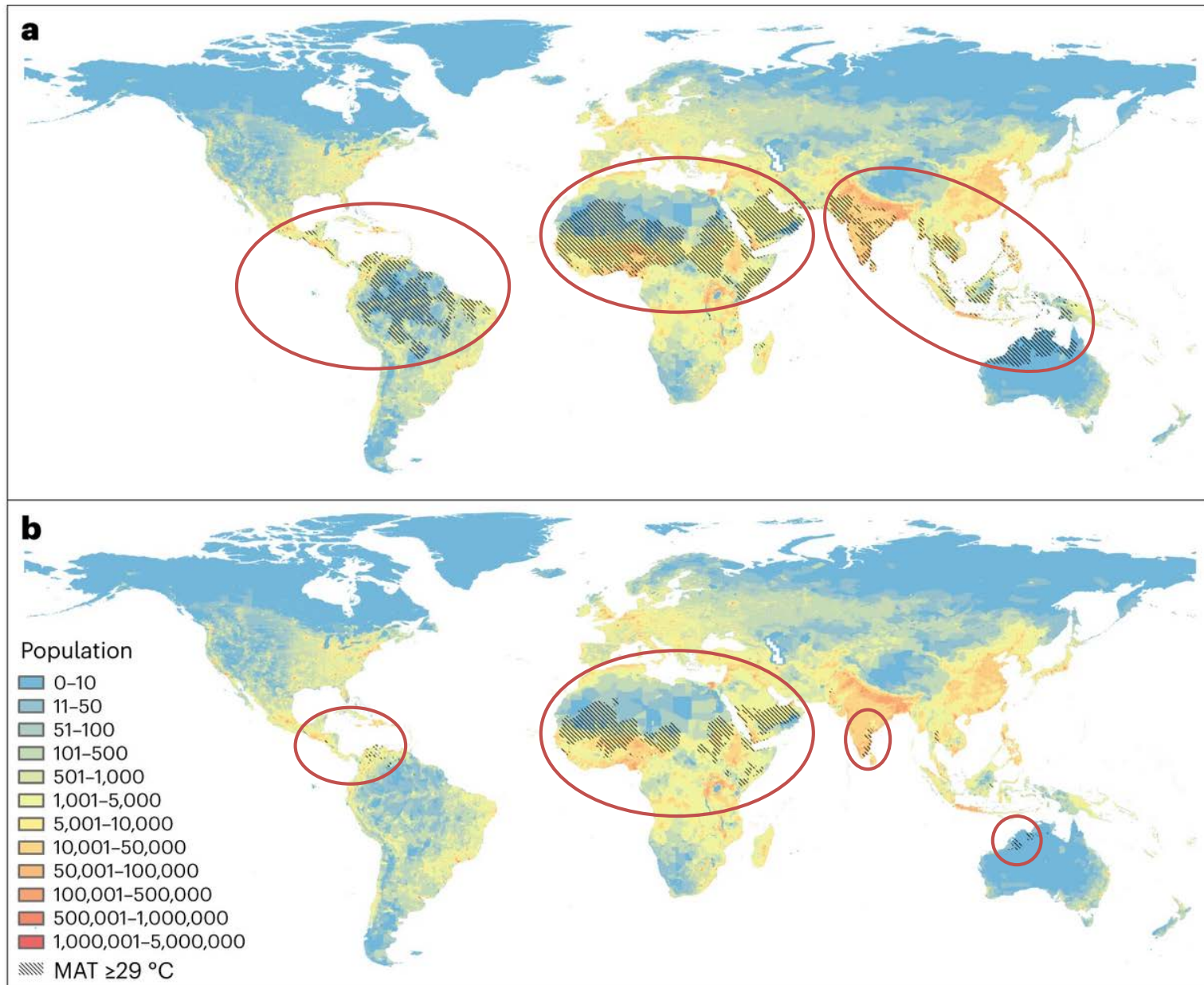
**Up to 1 billion people** could choose to migrate to cooler places, the scientists said, although those areas remaining within the climate niche would still experience more frequent heatwaves and droughts.

However, urgent action to lower carbon emissions and keep global temperature rise to 1.5C would cut the number of people pushed outside the climate niche by 80%, to **400 million**.

Full article: [here](#)

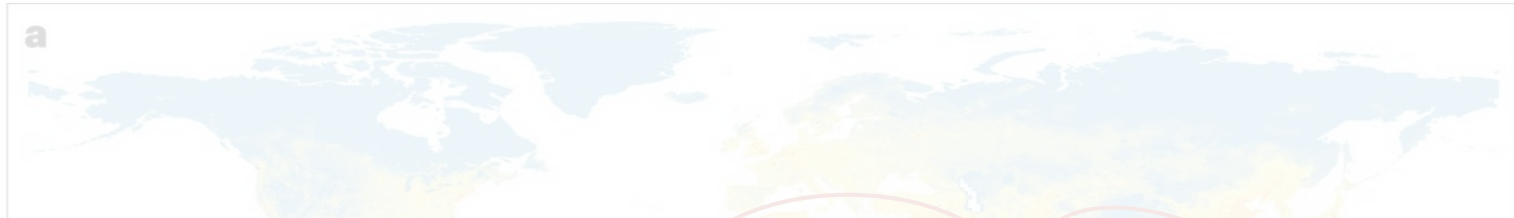
2.7 °C warming

1.5 °C warming



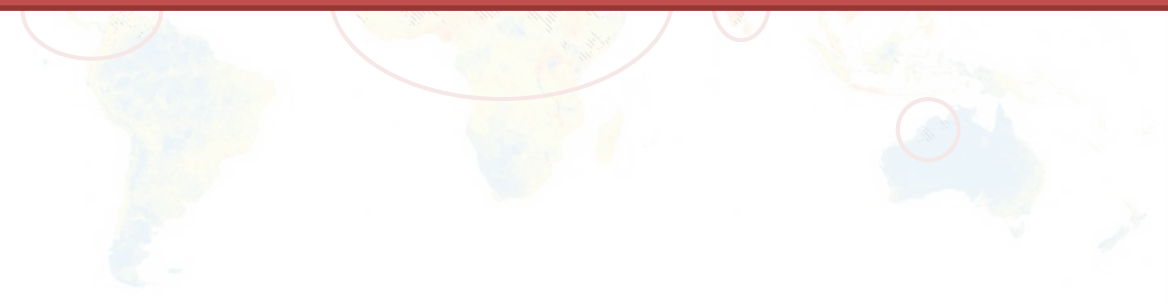
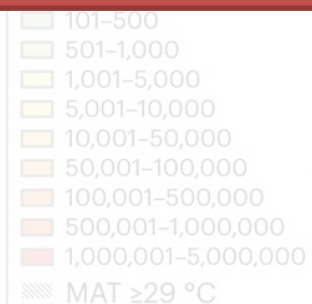
## Quantifying the human cost of global warming

Timothy M. Lenton [✉](#), Chi Xu [✉](#), Jesse F. Abrams, Ashish Ghadiali, Sina Loriani, Boris Sakschewski, Caroline Zimm, Kristie L. Ebi, Robert R. Dunn, Jens-Christian Svenning & Marten Scheffer



2.7 °C global warming could leave one-third (22–39%) of people outside the niche!

1.5 °C w



said, although those areas remaining within the climate niche would still experience more frequent heatwaves and droughts.

However, urgent action to lower carbon emissions and keep global temperature rise to 1.5C would cut the number of people pushed outside the climate niche by 80%, to [400 million](#).

Full article: [here](#)

# The Uninhabitable Earth

Famine, economic collapse, a sun that cooks us: What climate change could wreak — sooner than you think.

By **David Wallace-Wells**

»Ein tiefgreifendes Buch, das mich zugleich in Schrecken versetzt und mir Hoffnung für die Zukunft gibt.« *Jonathan Safran Foer*

**DAVID WALLACE-WELLS**

LITERATUR  
SPIEGEL  
Bestseller

## DIE UNBEWOHNBARE ERDE

Leben nach der Erderwärmung

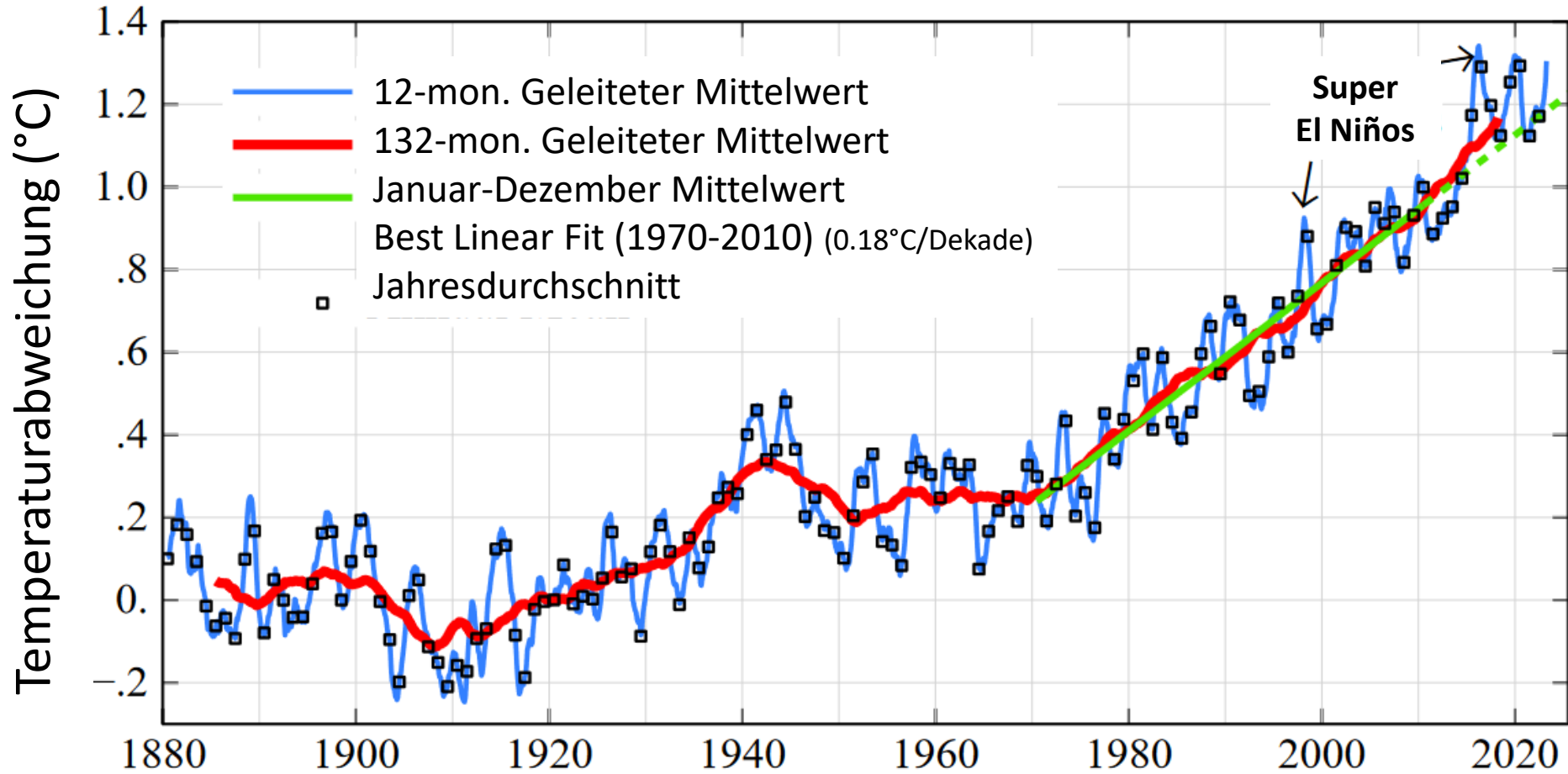
DER  
NEW YORK  
TIMES  
BESTSELLER



LUDWIG

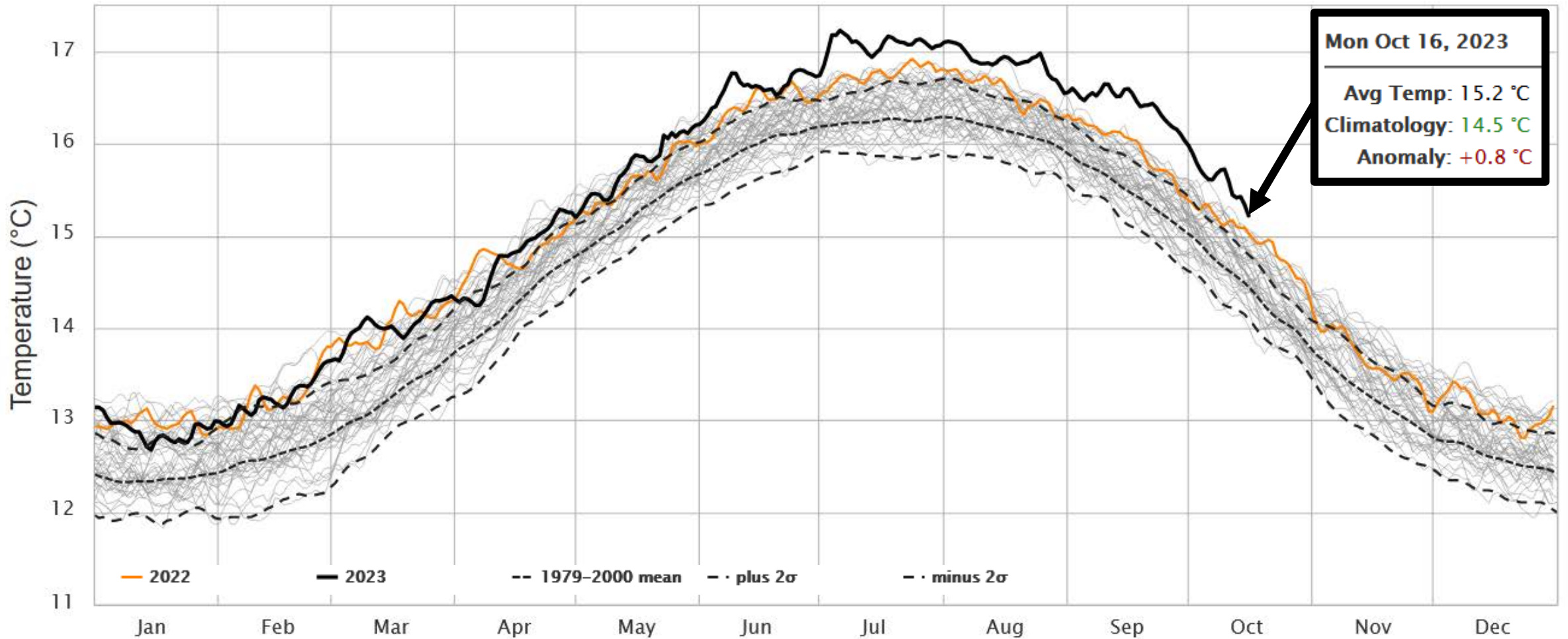
# Globale Durchschnittstemperatur

(im Vergleich zum Durchschnitt 1880-1920)

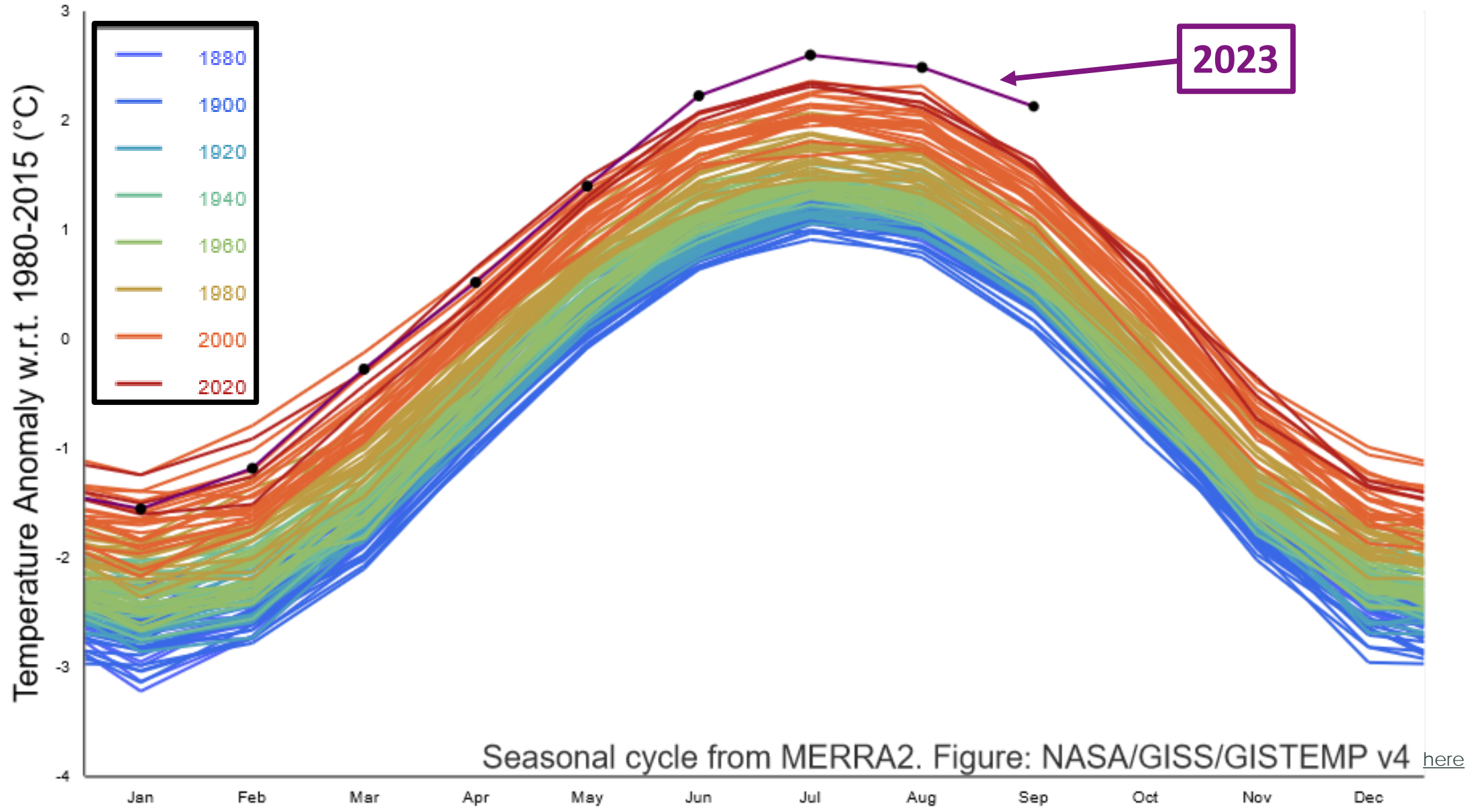


# Lufttemperatur (2-Meter Höhe)

## Global



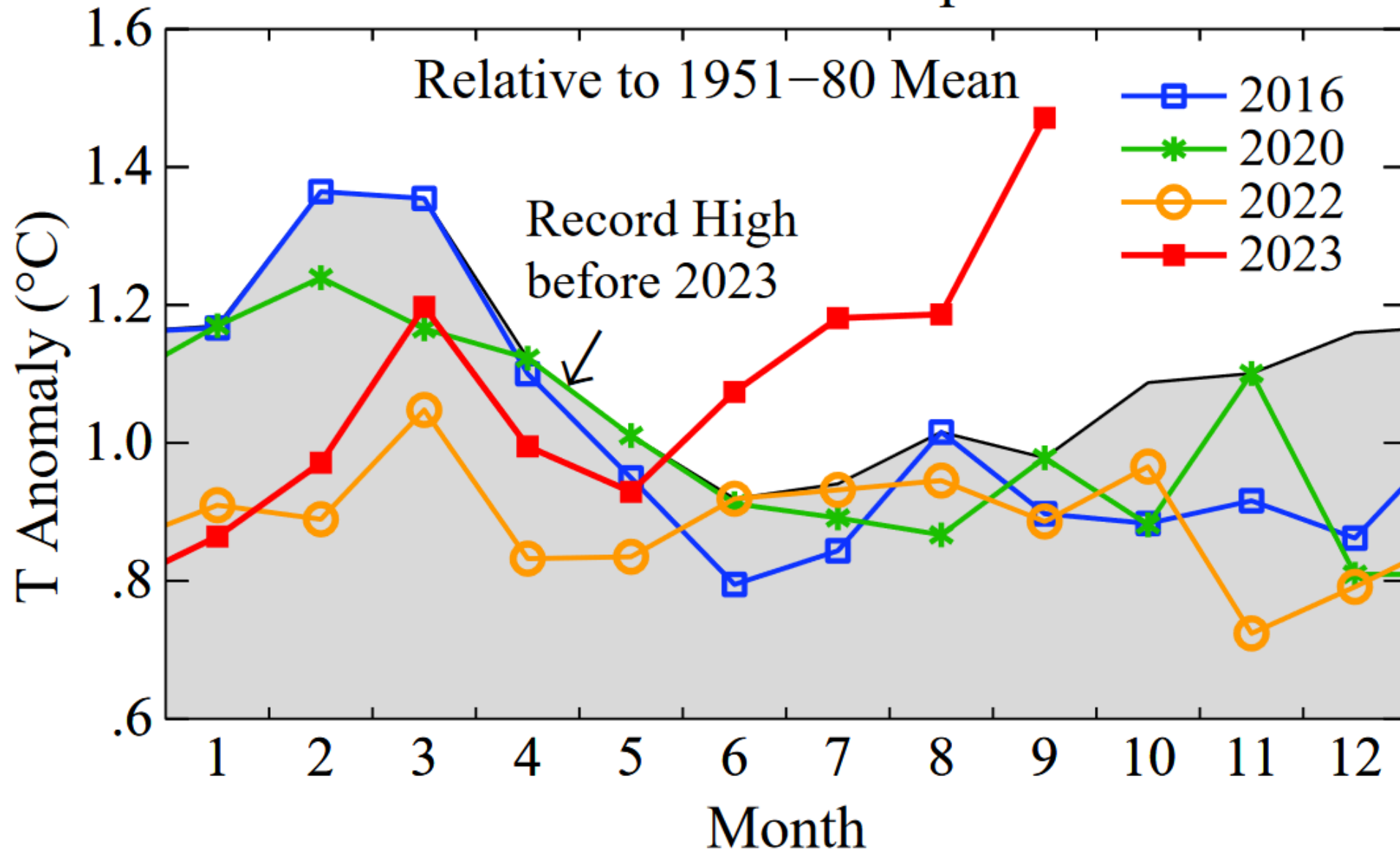
# GISTEMP Seasonal Cycle since 1880



Seasonal cycle from MERRA2. Figure: NASA/GISS/GISTEMP v4 [here](#)

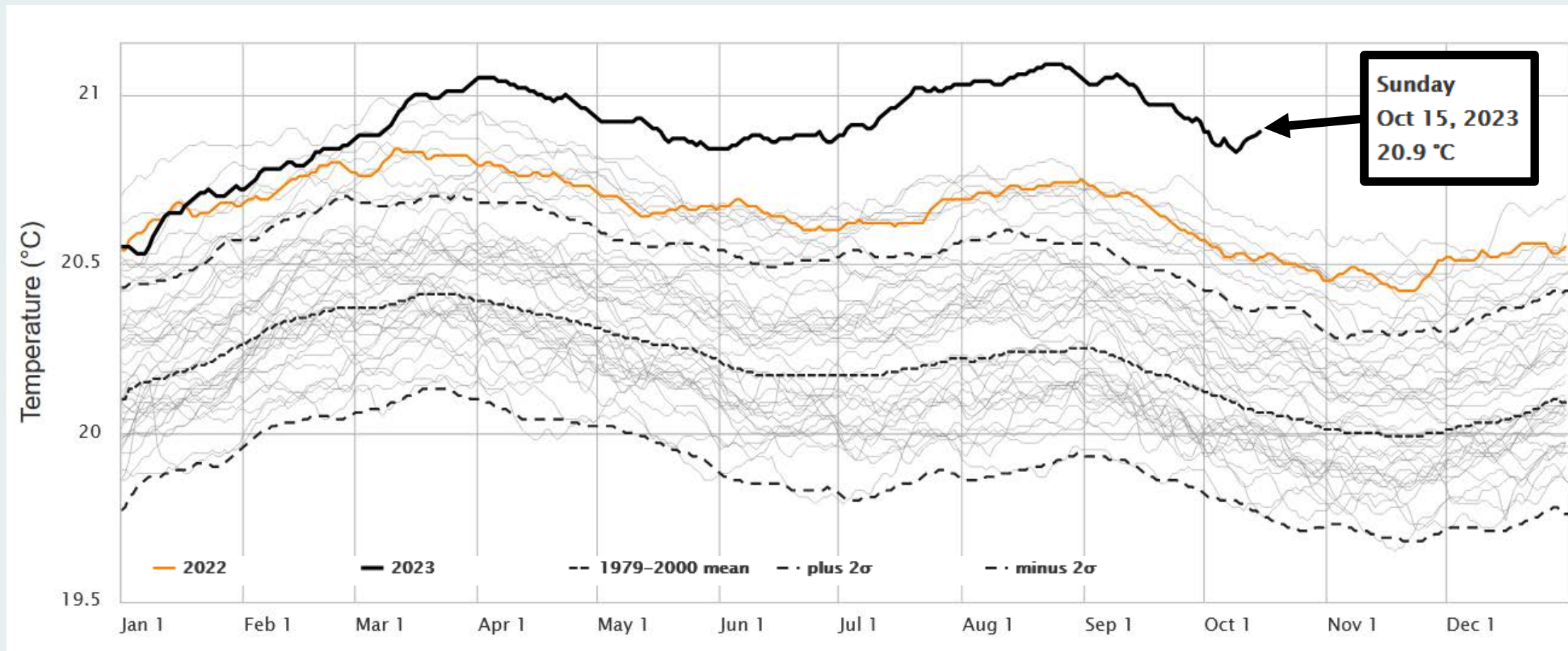


# Global Surface Temperature



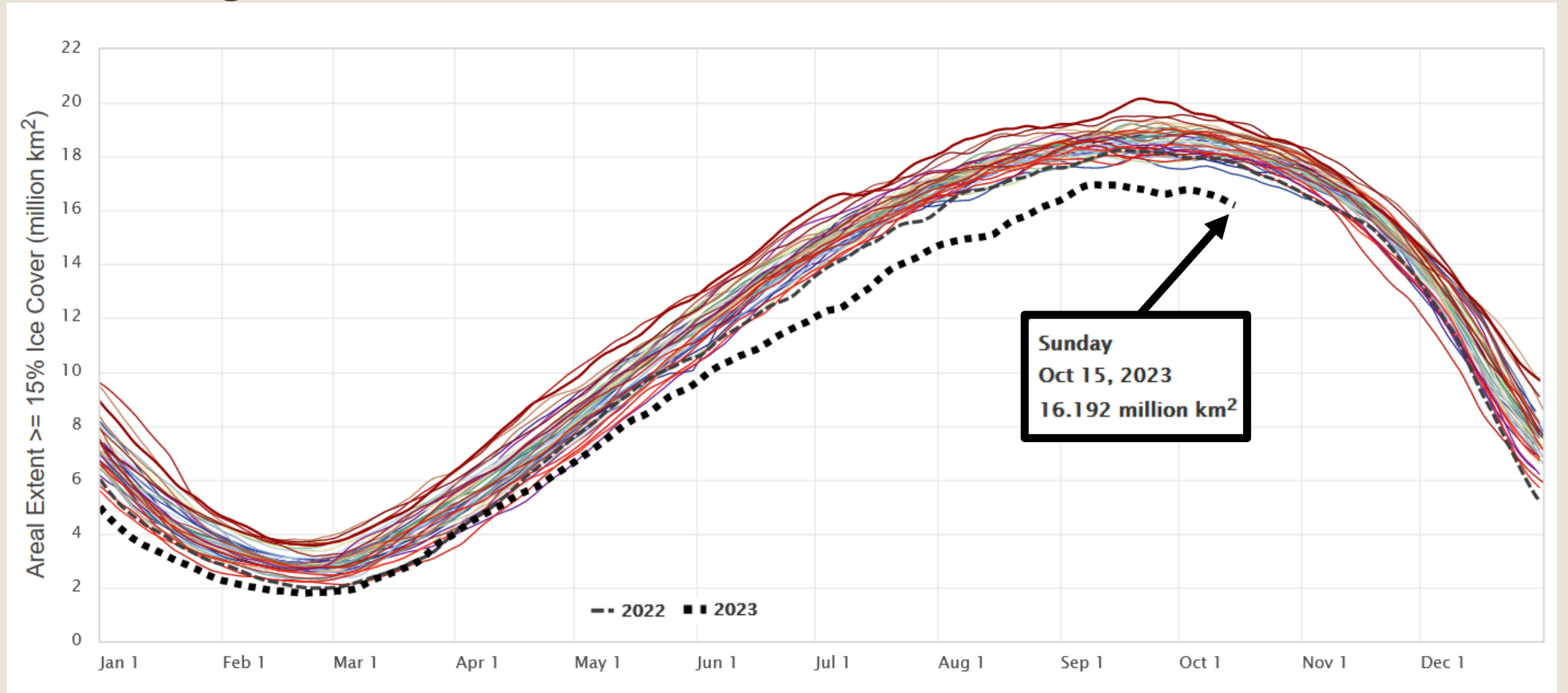
# Ozean Oberflächentemperatur

## Global



# Meereisfläche

## Südhalbkugel

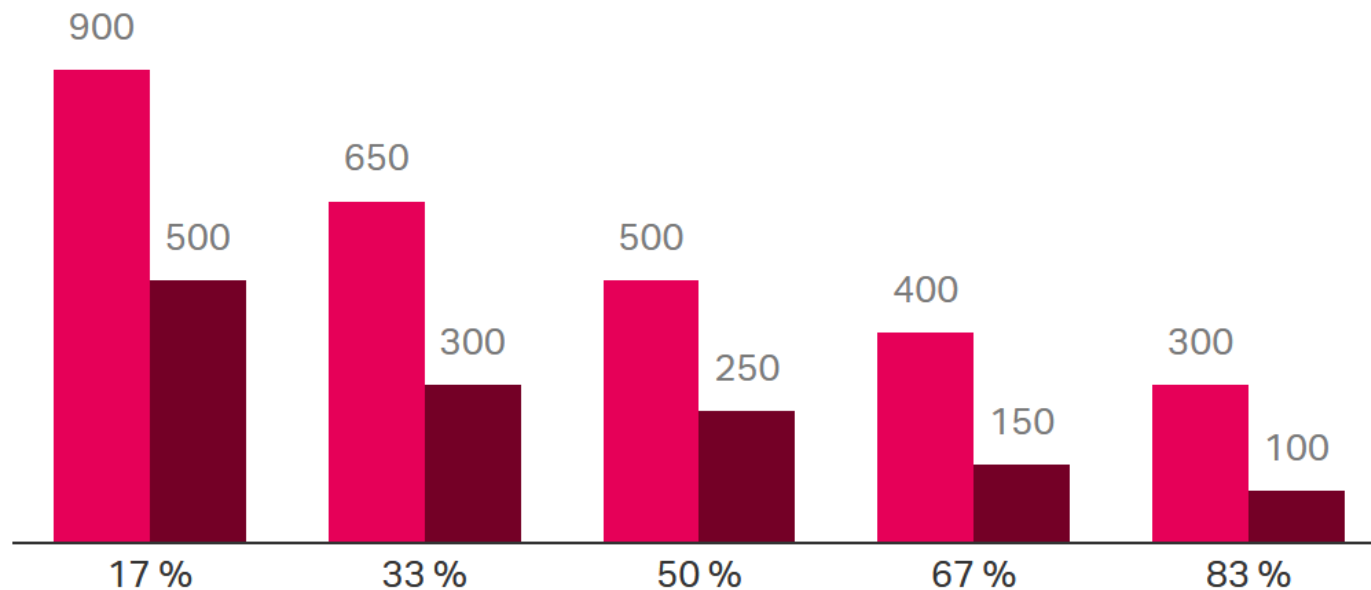


# Die CO<sub>2</sub>-Pleite rückt näher

## Das CO<sub>2</sub>-Budget für die Einhaltung der 1,5-Grad-Grenze hat sich in drei Jahren halbiert

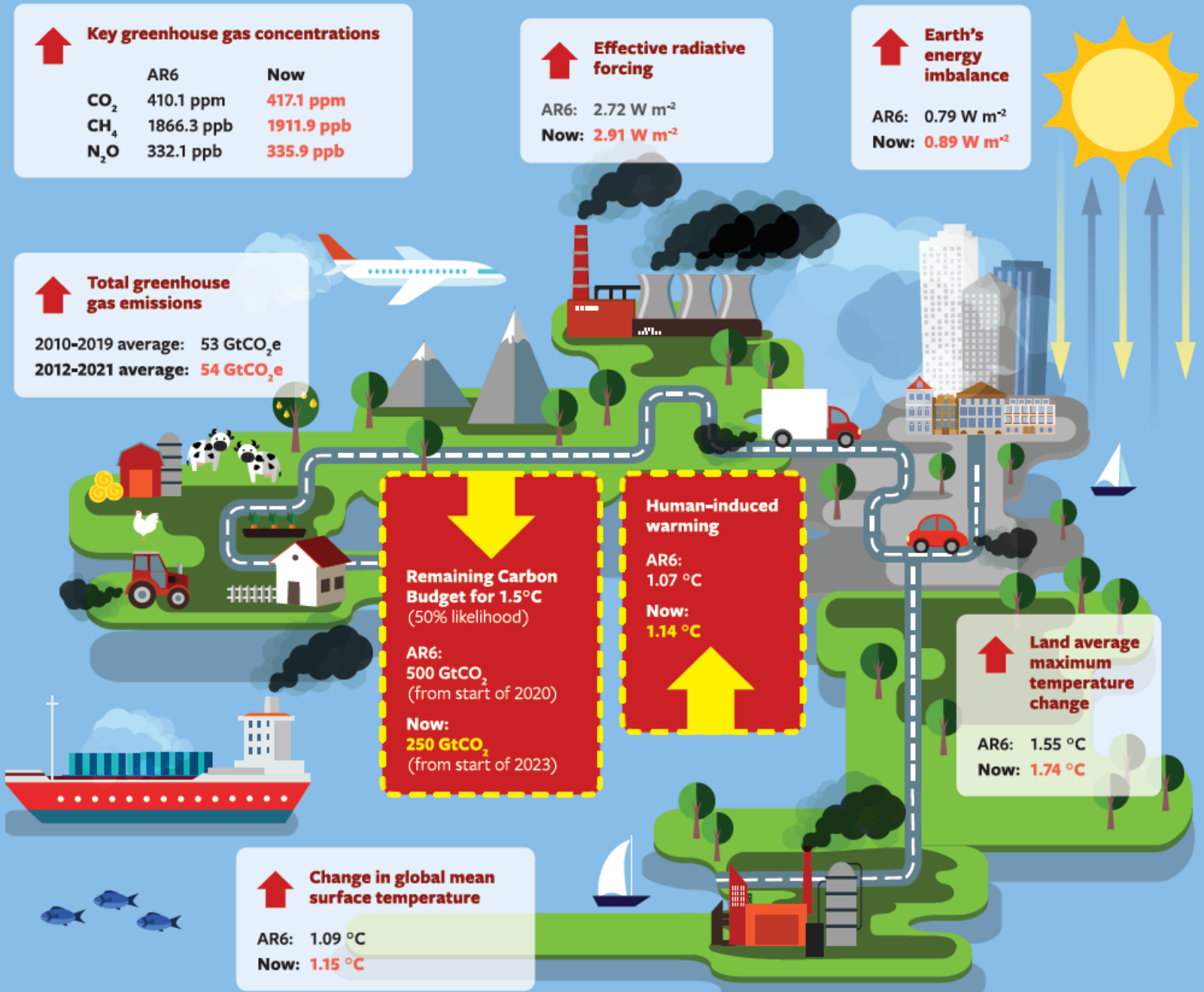
Budget in Milliarden Tonnen CO<sub>2</sub>

■ 2020 ■ 2023



© Graphik: Lalon Sander; Quelle: [Forster et al. 2023](#)

Bei dem jetzigen Treibhausgasausstoß wäre das verbleibende CO<sub>2</sub>-Budget bis 2026 aufgebraucht



**↑ Key greenhouse gas concentrations**

	AR6	Now
CO <sub>2</sub>	410.1 ppm	<b>417.1 ppm</b>
CH <sub>4</sub>	1866.3 ppb	<b>1911.9 ppb</b>
N <sub>2</sub> O	332.1 ppb	<b>335.9 ppb</b>

**↑ Effective radiative forcing**

AR6: 2.72 W m<sup>-2</sup>  
**Now: 2.91 W m<sup>-2</sup>**

**↑ Earth's energy imbalance**

AR6: 0.79 W m<sup>-2</sup>  
**Now: 0.89 W m<sup>-2</sup>**

**↑ Total greenhouse gas emissions**

2010-2019 average: 53 GtCO<sub>2</sub>e  
**2012-2021 average: 54 GtCO<sub>2</sub>e**

**Remaining Carbon Budget for 1.5°C**  
 (50% likelihood)

AR6: 500 GtCO<sub>2</sub>  
 (from start of 2020)

**Now: 250 GtCO<sub>2</sub>**  
 (from start of 2023)

**Human-induced warming**

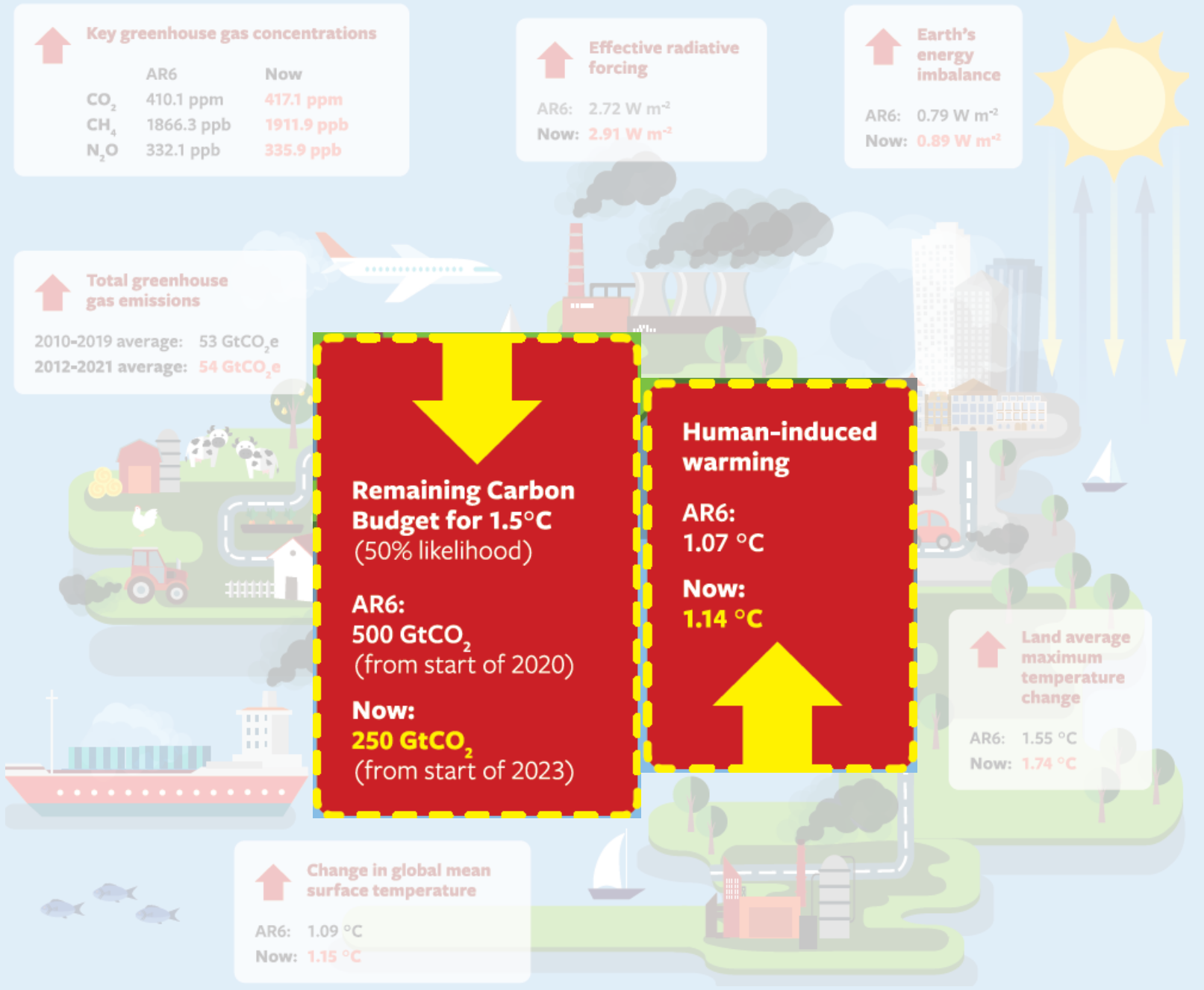
AR6: 1.07 °C  
**Now: 1.14 °C**

**↑ Land average maximum temperature change**

AR6: 1.55 °C  
**Now: 1.74 °C**

**↑ Change in global mean surface temperature**

AR6: 1.09 °C  
**Now: 1.15 °C**



**↑ Key greenhouse gas concentrations**

	AR6	Now
CO <sub>2</sub>	410.1 ppm	417.1 ppm
CH <sub>4</sub>	1866.3 ppb	1911.9 ppb
N <sub>2</sub> O	332.1 ppb	335.9 ppb

**↑ Effective radiative forcing**

AR6: 2.72 W m<sup>-2</sup>  
 Now: 2.91 W m<sup>-2</sup>

**↑ Earth's energy imbalance**

AR6: 0.79 W m<sup>-2</sup>  
 Now: 0.89 W m<sup>-2</sup>

**↑ Total greenhouse gas emissions**

2010-2019 average: 53 GtCO<sub>2</sub>e  
 2012-2021 average: 54 GtCO<sub>2</sub>e

**Remaining Carbon Budget for 1.5°C**  
 (50% likelihood)

AR6: 500 GtCO<sub>2</sub>  
 (from start of 2020)

Now: 250 GtCO<sub>2</sub>  
 (from start of 2023)

**Human-induced warming**

AR6: 1.07 °C  
 Now: 1.14 °C

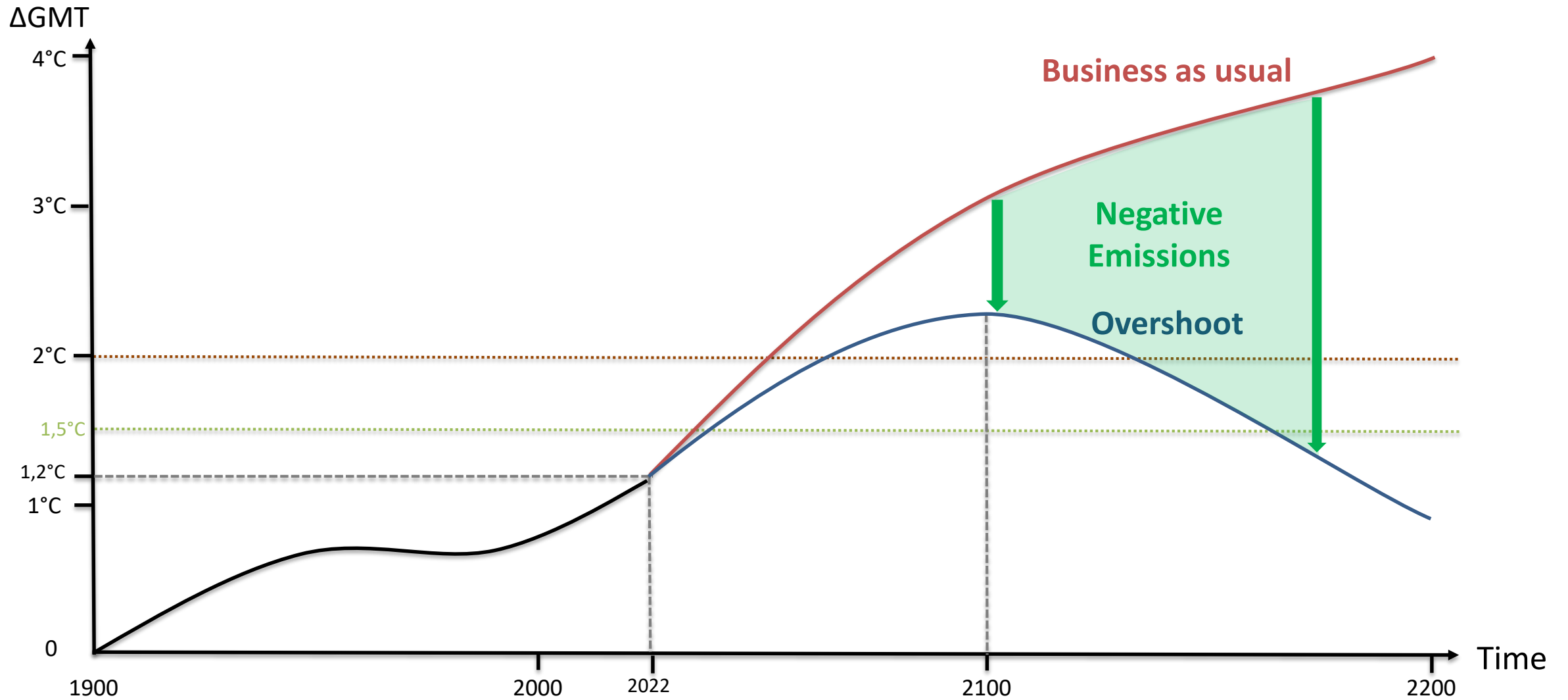
**↑ Land average maximum temperature change**

AR6: 1.55 °C  
 Now: 1.74 °C

**↑ Change in global mean surface temperature**

AR6: 1.09 °C  
 Now: 1.15 °C

# Klimareparatur: Repair or Despair!

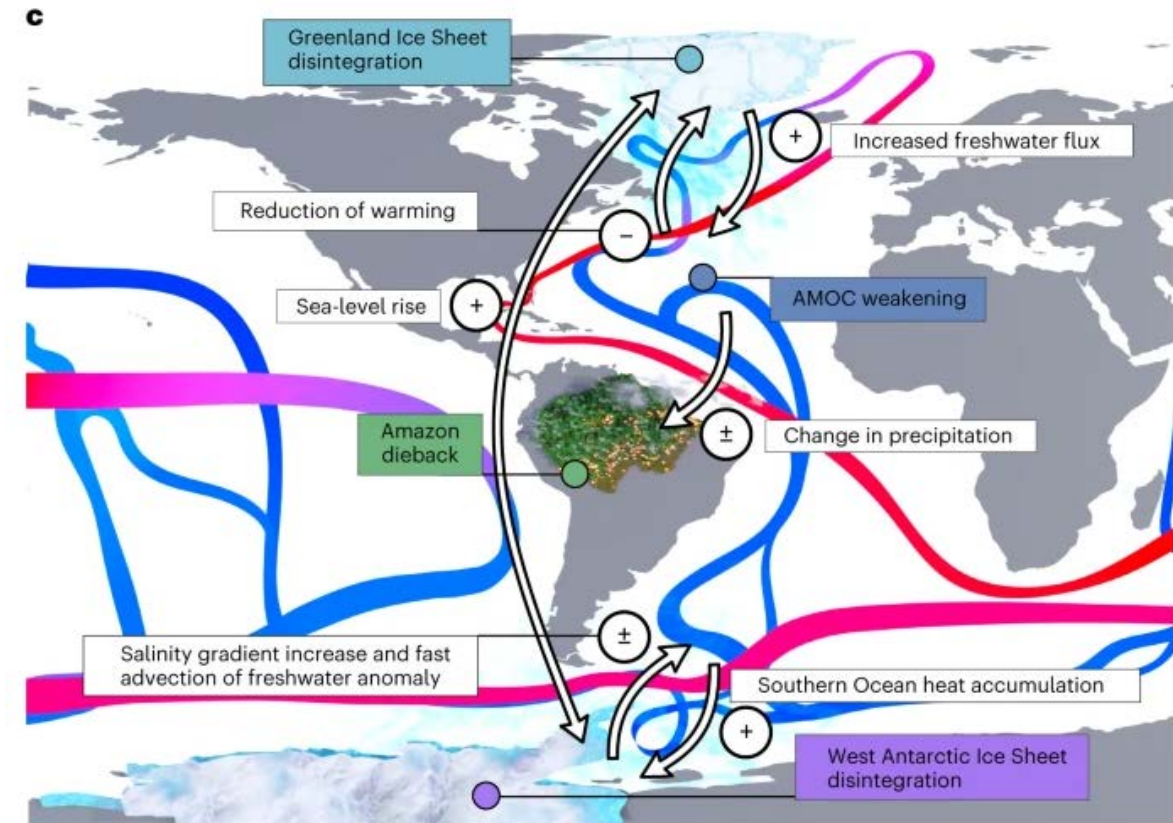


# Global warming overshoots increase risks of climate tipping cascades in a network model

[Nico Wunderling](#) , [Ricarda Winkelmann](#), [Johan Rockström](#), [Sina Loriani](#), [David I. Armstrong McKay](#), [Paul D. L. Ritchie](#), [Boris Sakschewski](#) & [Jonathan F. Donges](#) 

## Abstract

Current policies and actions make it very likely, at least temporarily, to overshoot the Paris climate targets of 1.5–<2.0 °C above pre-industrial levels. If this global warming range is exceeded, potential tipping elements such as the Greenland Ice Sheet and Amazon rainforest may be at increasing risk of crossing critical thresholds. This raises the question of how much this risk is amplified by increasing overshoot magnitude and duration. Here we investigate the danger for tipping under a range of temperature overshoot scenarios using a stylized network model of four interacting climate tipping elements. Our model analysis reveals that temporary overshoots can increase tipping risks by up to 72% compared with non-overshoot scenarios, even when the long-term equilibrium temperature stabilizes within the Paris range. Our results suggest that avoiding high-end climate risks is possible only for low-temperature overshoots and if long-term temperatures stabilize at or below today's levels of global warming.





# Overshooting the critical threshold for the Greenland ice sheet

[Nils Bochow](#) , [Anna Poltronieri](#), [Alexander Robinson](#), [Marisa Montoya](#), [Martin Rypdal](#) & [Niklas Boers](#)

## Abstract

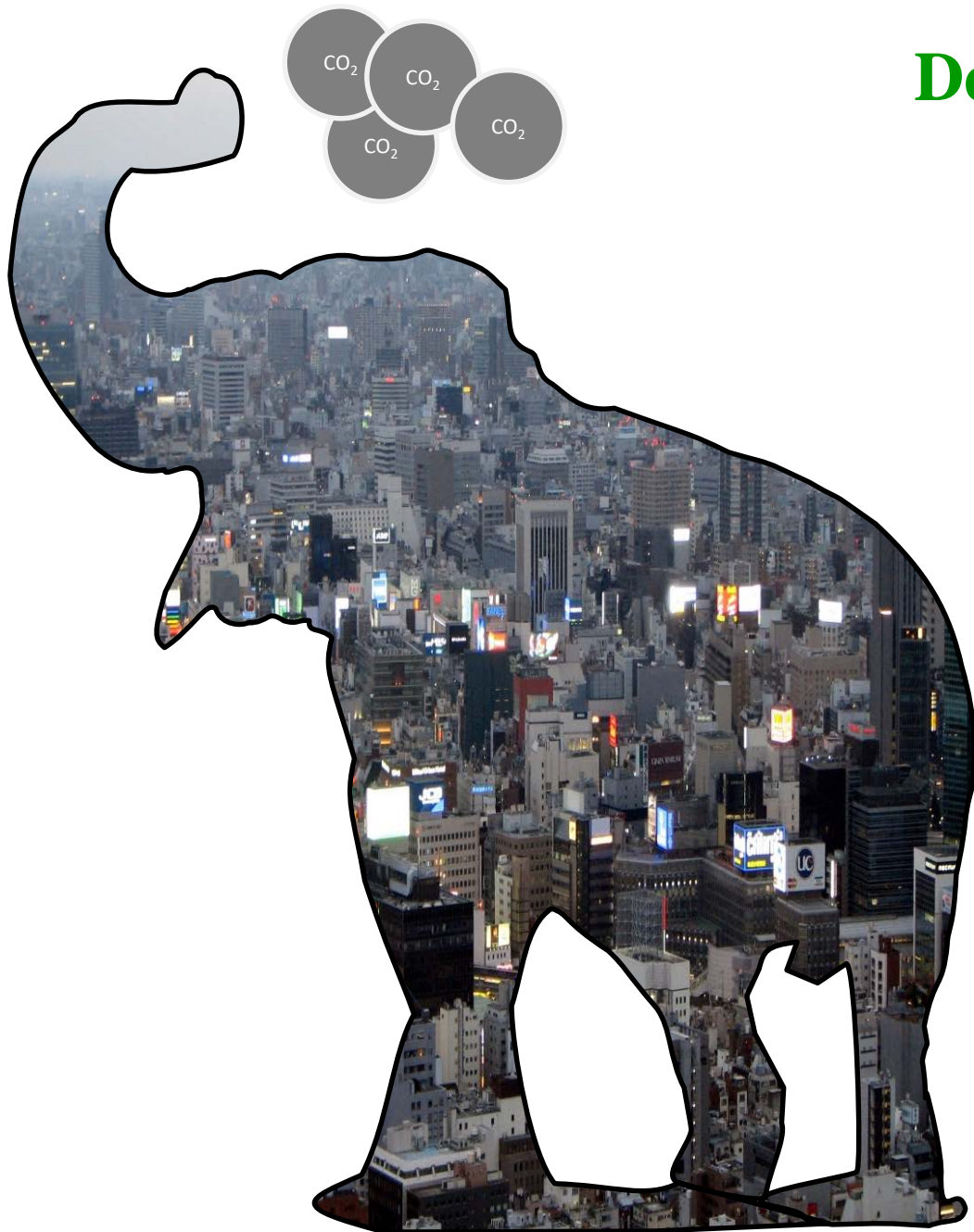
Melting of the Greenland ice sheet (GrIS) in response to anthropogenic global warming poses a severe threat in terms of global sea-level rise (SLR)<sup>1</sup>. Modelling and palaeoclimate evidence suggest that rapidly increasing temperatures in the Arctic can trigger positive feedback mechanisms for the GrIS, leading to self-sustained melting<sup>2,3,4</sup>, and the GrIS has been shown to permit several stable states<sup>5</sup>. Critical transitions are expected when the global mean temperature (GMT) crosses specific thresholds, with substantial hysteresis between the stable states<sup>6</sup>. Here we use two independent ice-sheet models to investigate the impact of different overshoot scenarios with varying peak and convergence temperatures for a broad range of warming and subsequent cooling rates. Our results show that the maximum GMT and the time span of overshooting given GMT targets are critical in determining GrIS stability. We find a threshold GMT between 1.7 °C and 2.3 °C above preindustrial levels for an abrupt ice-sheet loss. GrIS loss can be substantially mitigated, even for maximum GMTs of 6 °C or more above preindustrial levels, if the GMT is subsequently reduced to less than 1.5 °C above preindustrial levels within a few centuries. However, our results also show that even temporarily overshooting the temperature threshold, without a transition to a new ice-sheet state, still leads to a peak in SLR of up to several metres.

**Wood4Bauhaus Virtual Conference,  
8 April 2021**

**Reforesting the Planet,  
Retimbering the City**

**Professor H. J. Schellnhuber CBE**  
*Director Emeritus, Potsdam Institute for Climate Impact Research*





## Der Elefant im Klimaraum: Gebaute Umwelt

~ 40 %

der globalen Treibhausgasemissionen

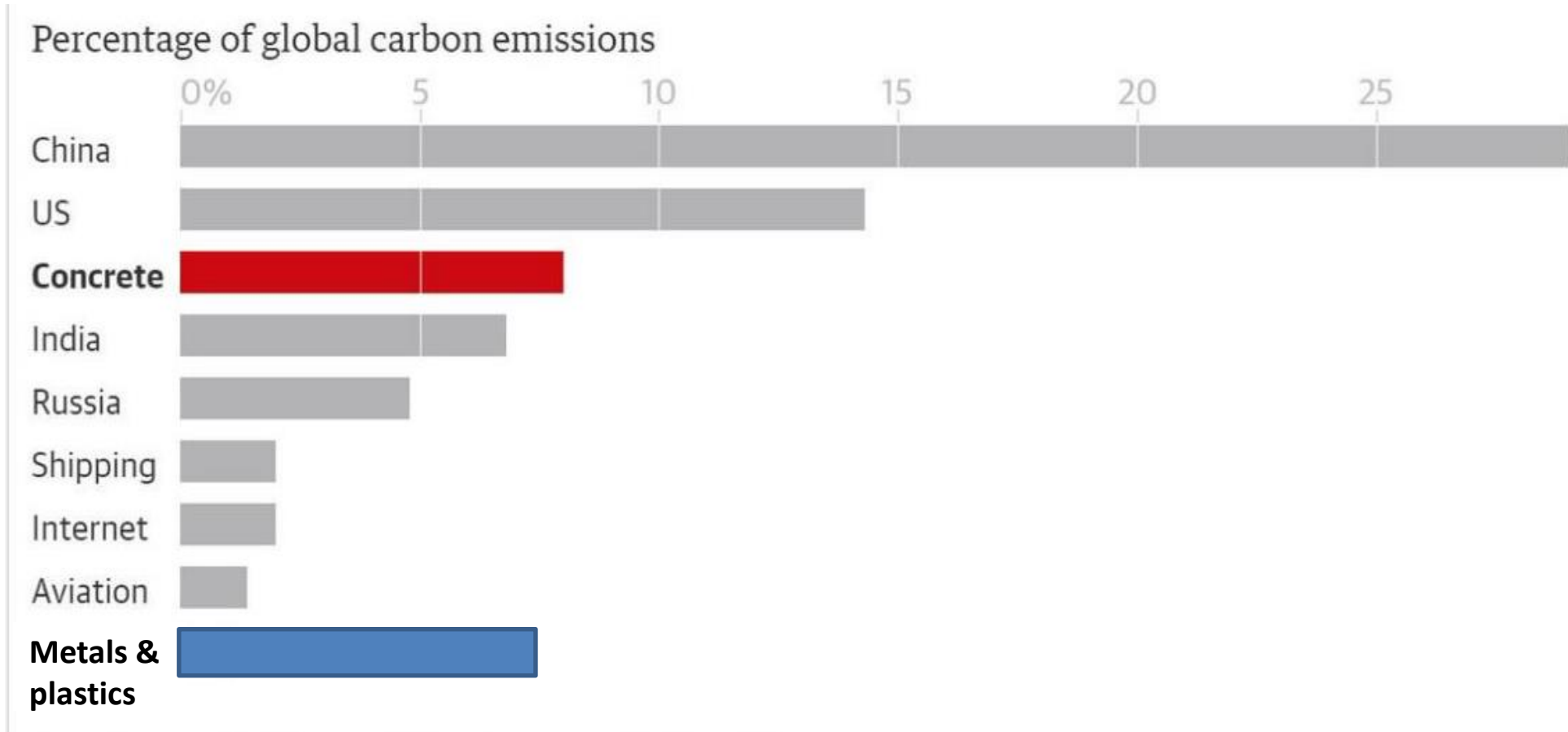
~ 55 %

der Abfälle in den entwickelten Ländern

~ 90 %

der mineralischen Ressourcen in  
Deutschland

# Wenn Beton und Stahl Staaten wären...



Nr. 3 global

Nr. 4 global

# Unsichtbare Kosten: Bauwesen und Beton



© Omar Chatriwala/flickr

- Das globale Bauwesen wird bis 2050 so viel neue Infrastruktur benötigen wie bereits seit 1850 errichtet wurde.
- Dadurch wird der größte Teil des CO<sub>2</sub> Budgets (1.5°C) aufgebraucht, wenn konventionelle Materialien wie Beton verwendet werden.
- Allein in China wurde zwischen 2008 und 2010 so viel Beton verbaut, wie im gesamten 20. Jahrhundert in den USA


→ **Klimaschutz wird in den Städten entschieden!**

# Städte in der Evolution des Kohlenstoffkreislaufes

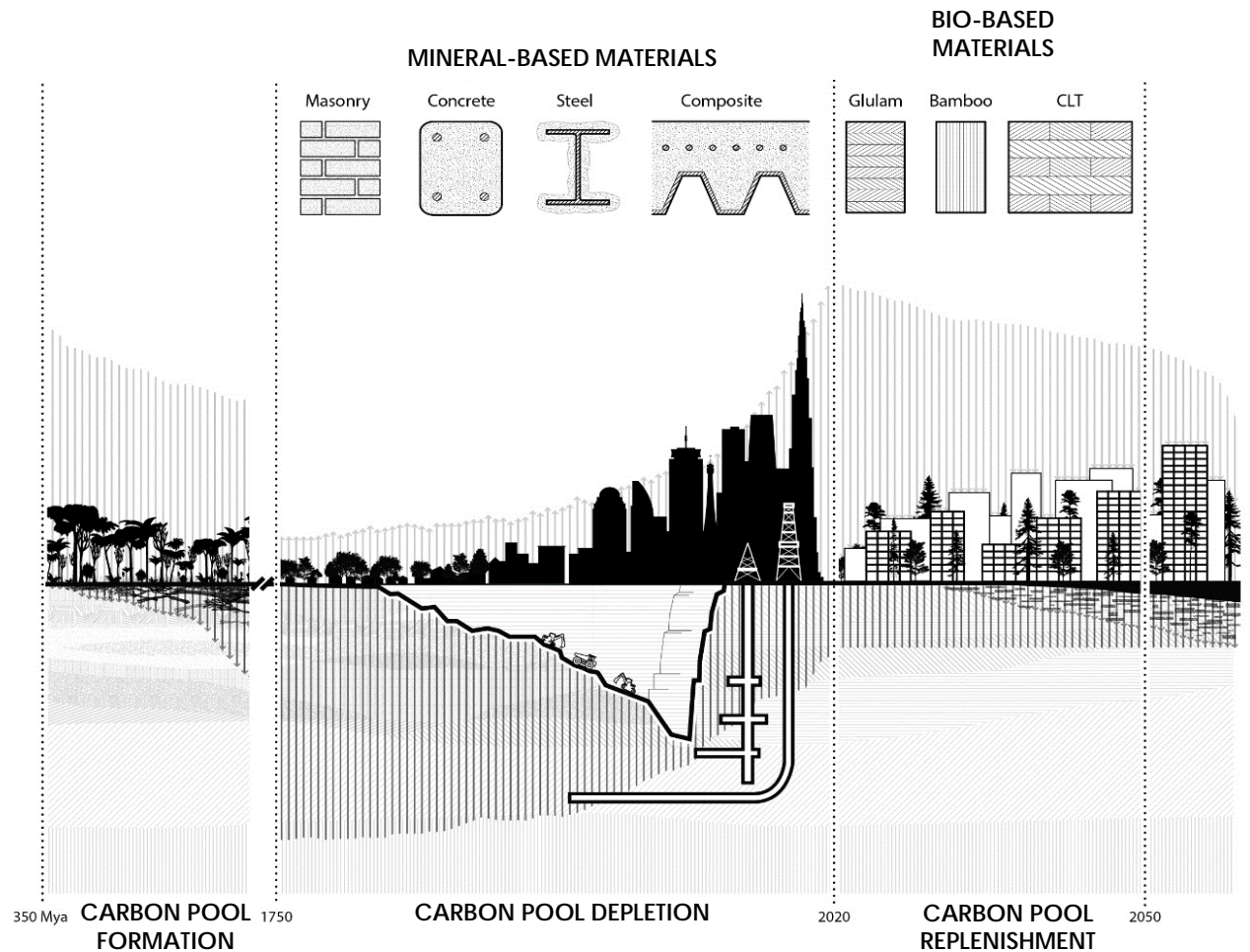
nature  
sustainability

Perspective | Published: 27 January 2020

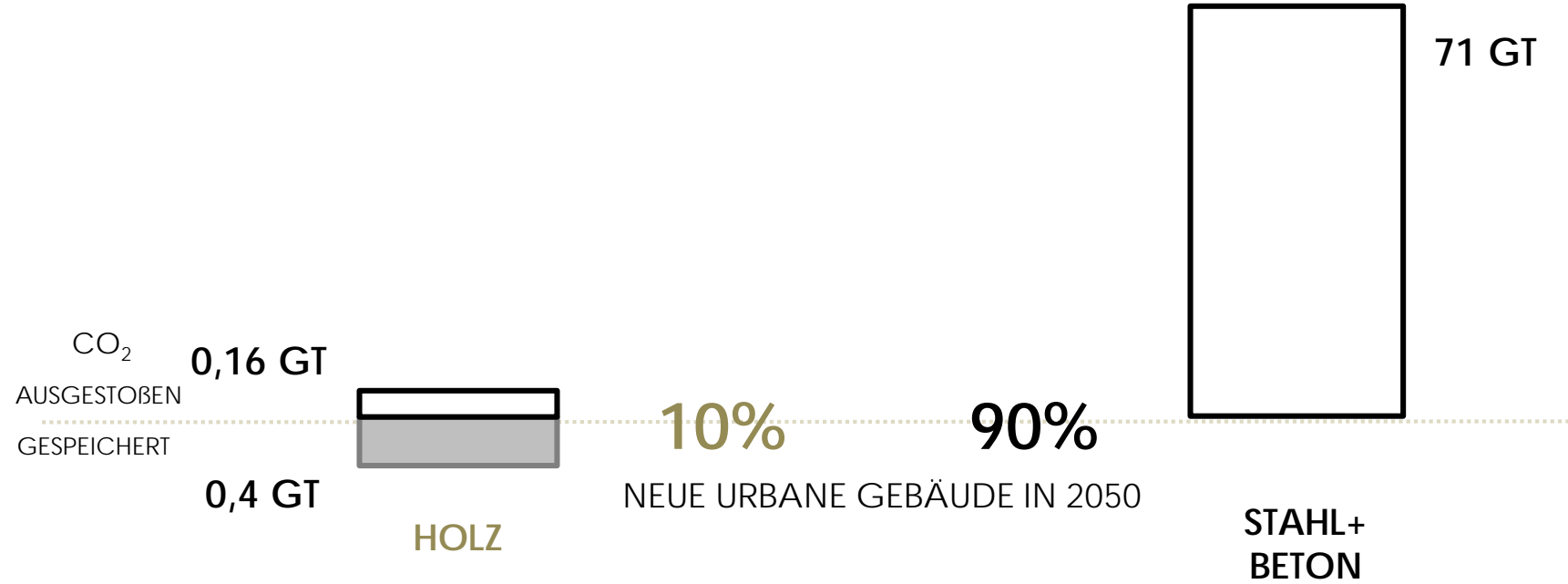
## Buildings as a global carbon sink

Galina Churkina , Alan Organschi, Christopher P. O. Reyer, Andrew Ruff, Kira Vinke, Zhu Liu, Barbara K. Reck, T. E. Graedel & Hans Joachim Schellnhuber

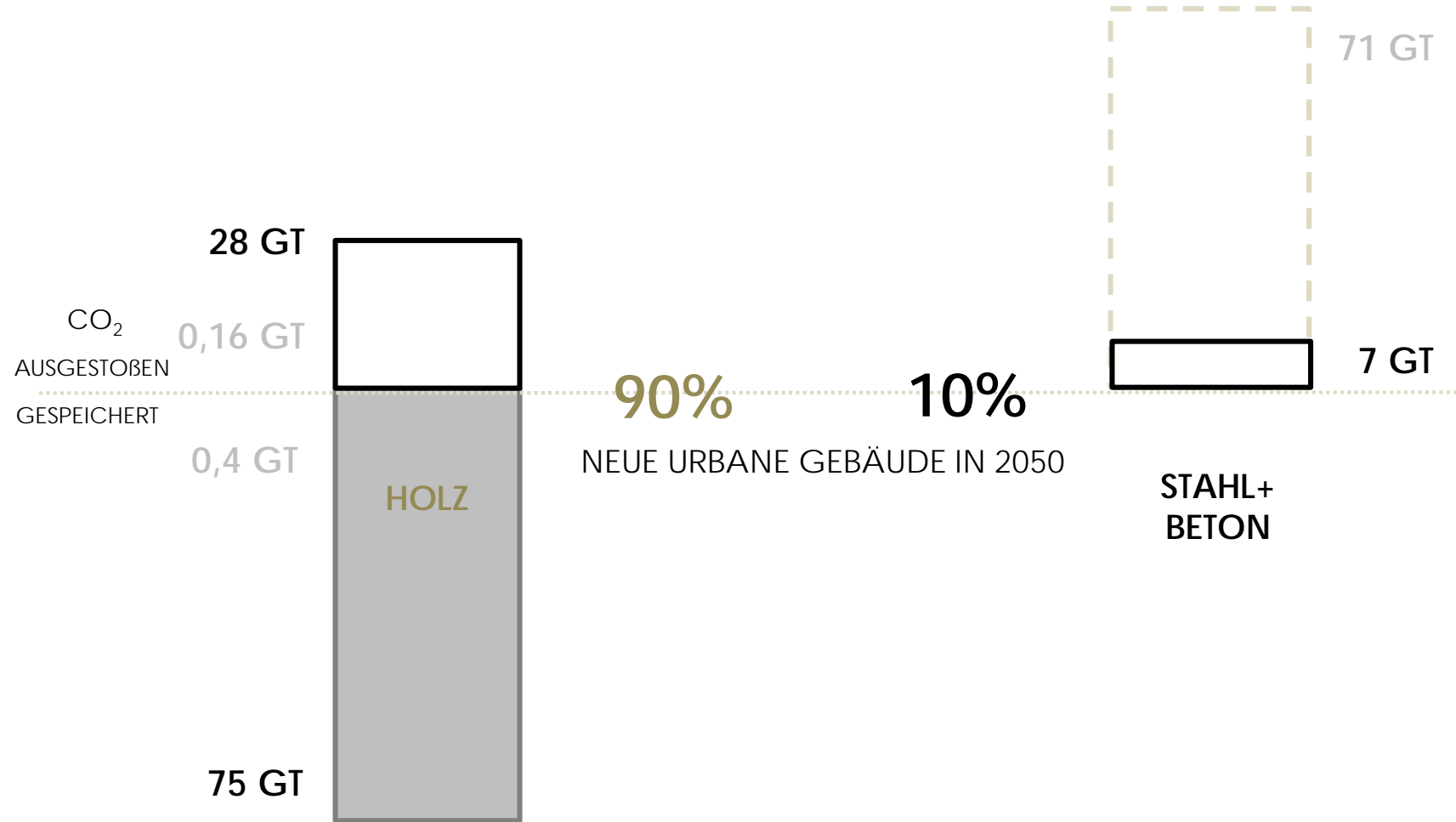
<https://doi.org/10.1038/s41893-019-0462-4>



# Gebäude als globale Kohlenstoffsenke



# Gebäude als globale Kohlenstoffsenke



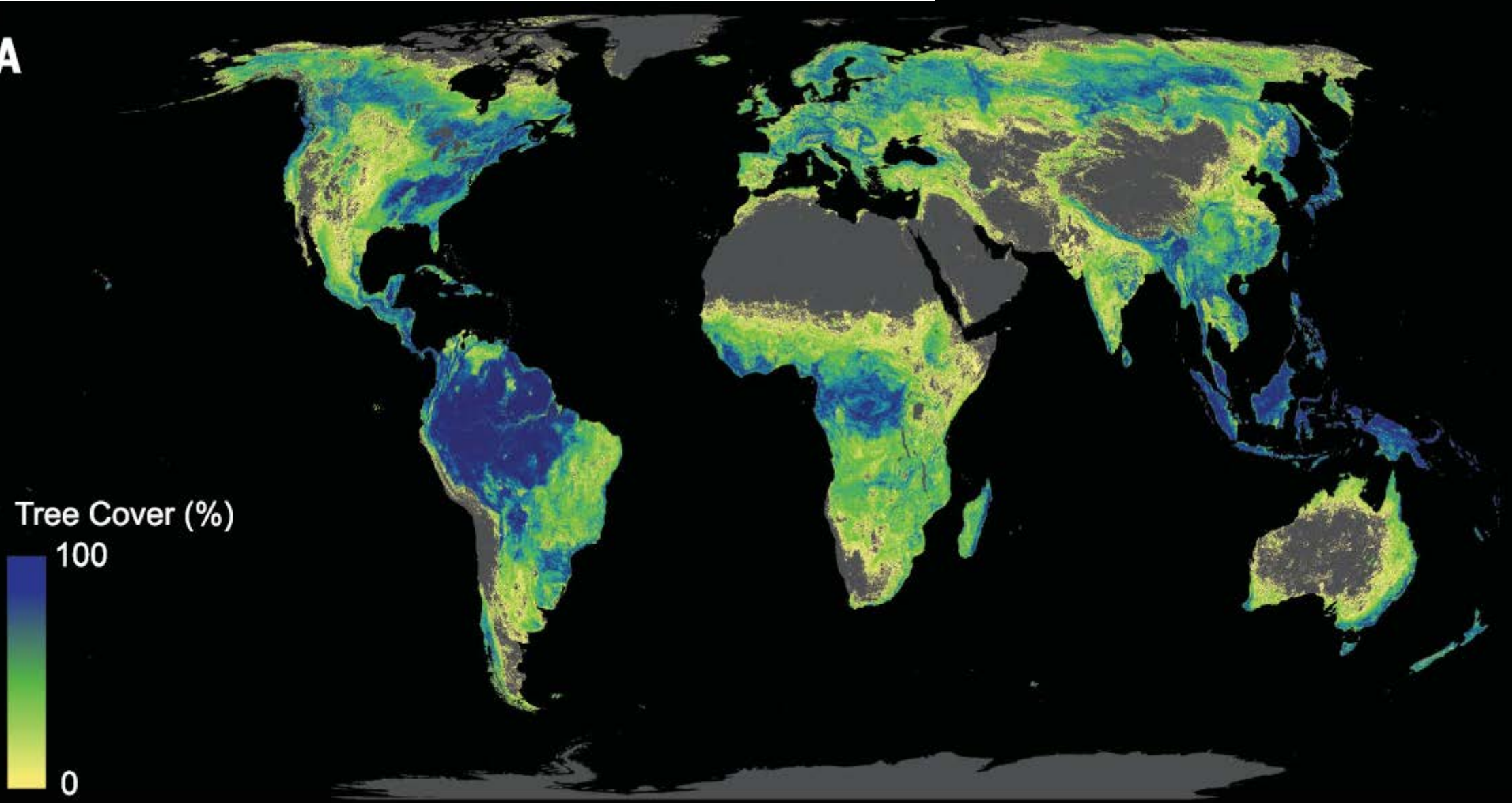


# The global tree restoration potential

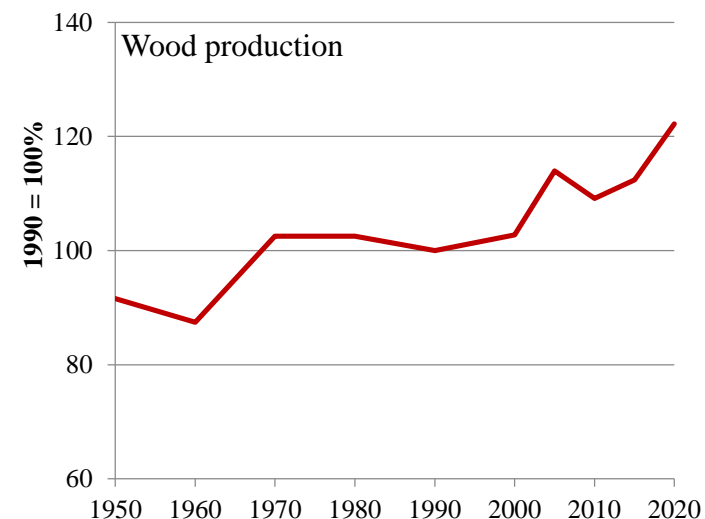
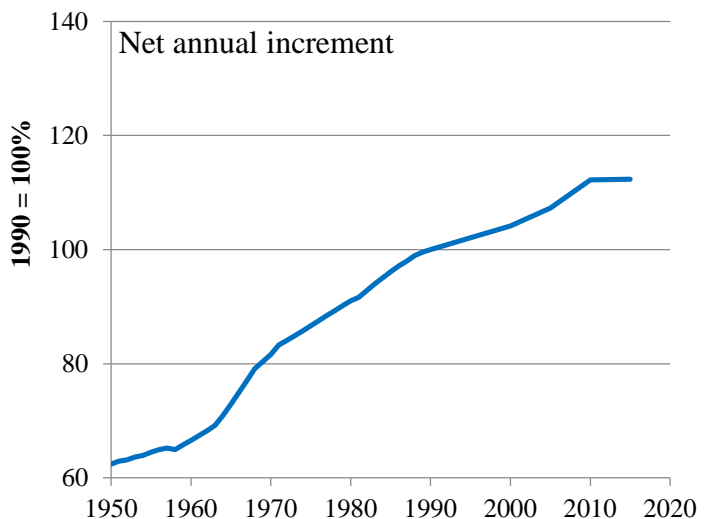
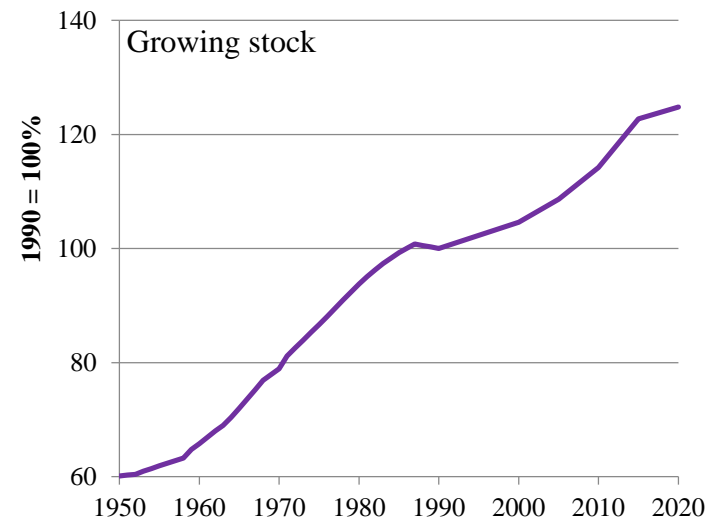
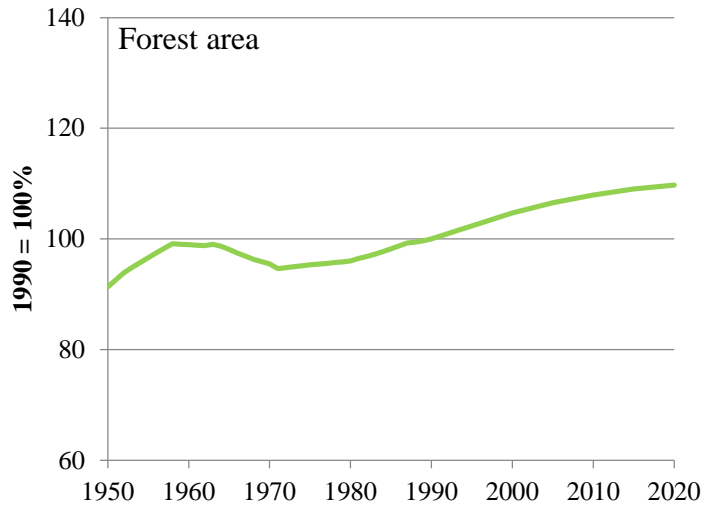
Jean-Francois Bastin<sup>1\*</sup>, Yelena Finegold<sup>2</sup>, Claude Garcia<sup>3,4</sup>, Danilo Mollicone<sup>2</sup>,  
Marcelo Rezende<sup>2</sup>, Devin Routh<sup>1</sup>, Constantin M. Zohner<sup>1</sup>, Thomas W. Crowther<sup>1</sup>

Full paper: [here](#)

A



# Development of EU forest resources



- Forest resources expanded significantly over the past 70 years
- Since 1950 steep increase in growing stock, annual increment and wood production can be observed.
- Changes since 1990 in EU + UK:
  - Forest area: +10%
  - Growing stock: +49%
  - Net annual increment: +24%
  - Wood production: +41%

\*Long term trends in the graphs are only shown for 21 EU Member States (16 for net annual increment) due historic data availability.

Source: Forest Europe, 2021; Kuusela, 1994; Gold, 2003; Gold, 2006; FAOSTAT, 2022.

# Land use change and carbon emissions of a transformation to timber cities

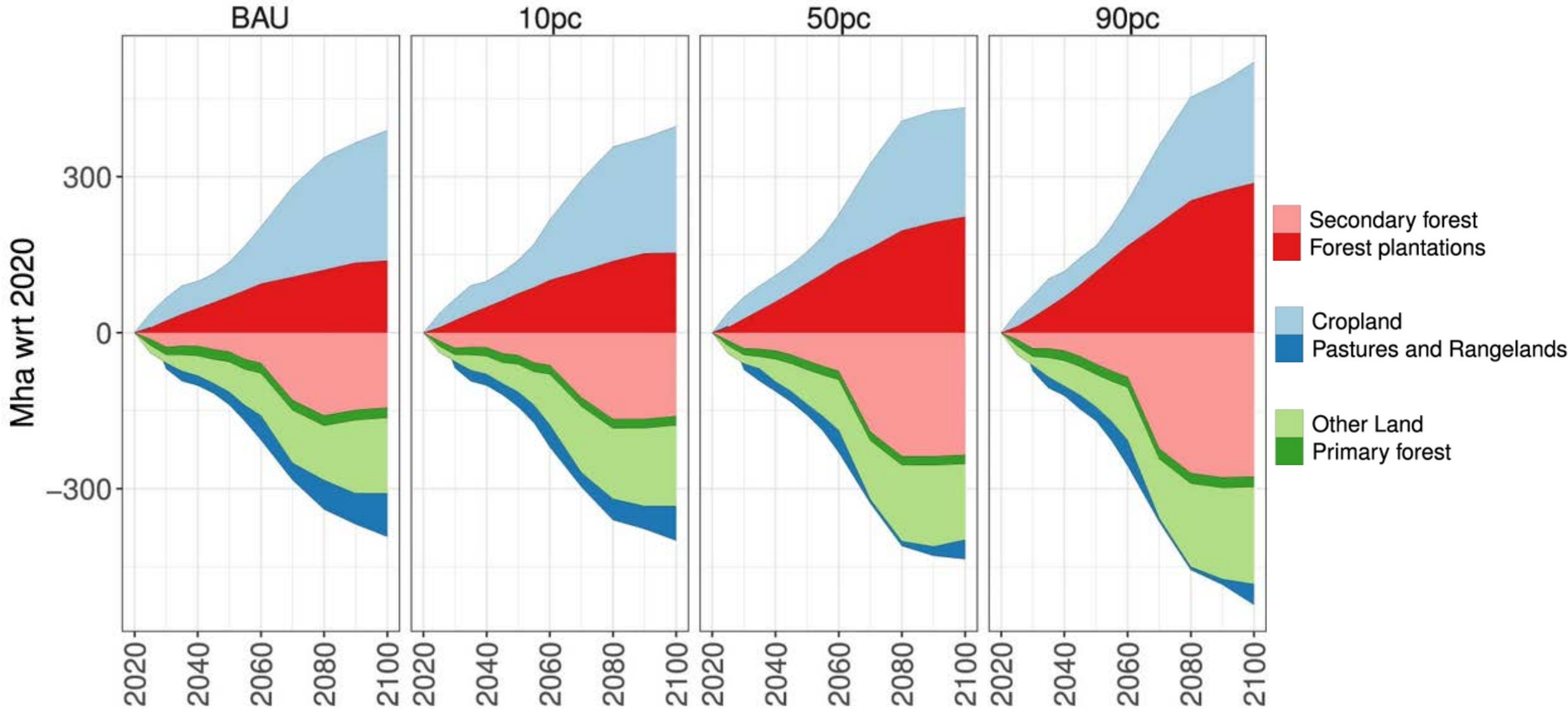
[Abhijeet Mishra](#) , [Florian Humpenöder](#), [Galina Churkina](#), [Christopher P. O. Reyer](#), [Felicitas Beier](#), [Benjamin Leon Bodirsky](#), [Hans Joachim Schellnhuber](#), [Hermann Lotze-Campen](#) & [Alexander Popp](#)

## Abstract

---

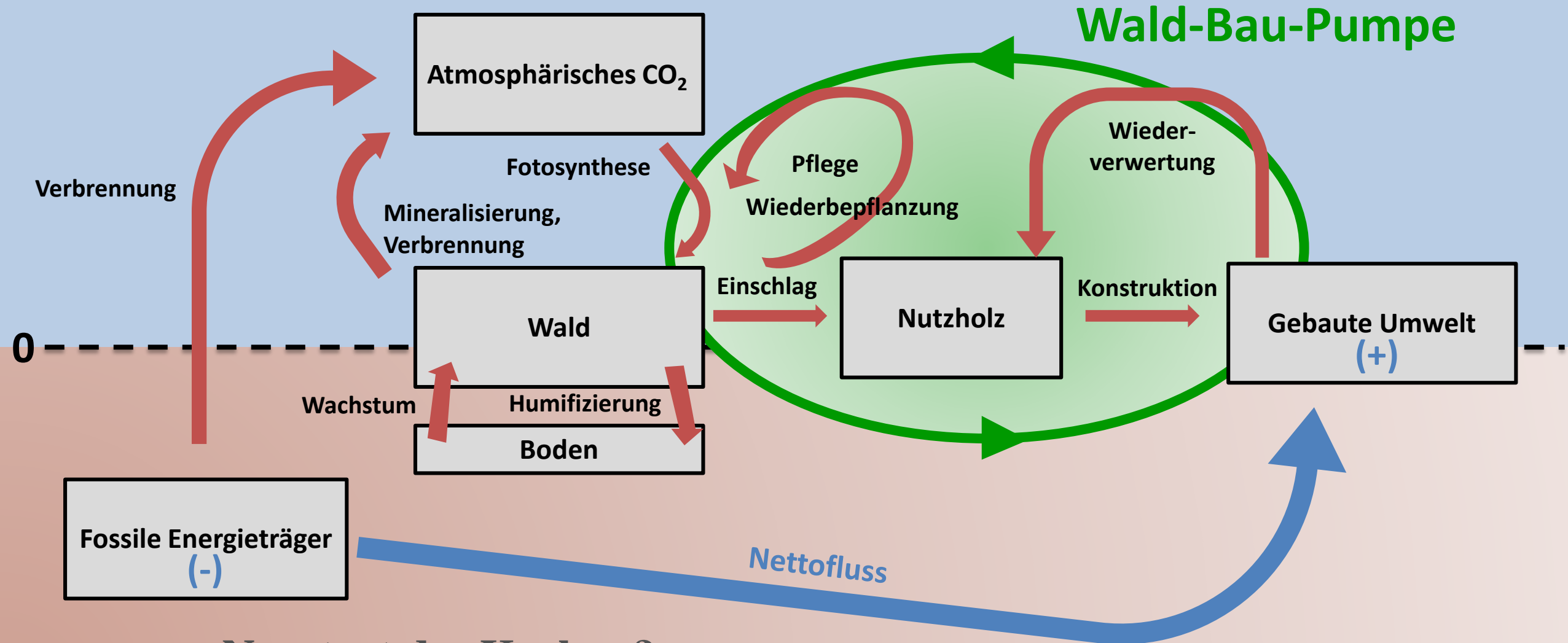
Using engineered wood for construction has been discussed for climate change mitigation. It remains unclear where and in which way the additional demand for wooden construction material shall be fulfilled. Here we assess the global and regional impacts of increased demand for engineered wood on land use and associated CO<sub>2</sub> emissions until 2100 using an open-source land system model. We show that if 90% of the new urban population would be housed in newly built urban mid-rise buildings with wooden constructions, 106 Gt of additional CO<sub>2</sub> could be saved by 2100. Forest plantations would need to expand by up to 149 Mha by 2100 and harvests from unprotected natural forests would increase. Our results indicate that expansion of timber plantations for wooden buildings is possible without major repercussions on agricultural production. Strong governance and careful planning are required to ensure a sustainable transition to timber cities even if frontier forests and biodiversity hotspots are protected.

# Comparative changes in global land use between 2020 and 2100. (relative to 2020)



# Die Wald-Bau-Pumpe

Anthropogen gestörtes / gesteuertes System



Neustart des Karbon?

# Die Wald-Bau-Pumpe

Anthropogen gestörtes / gesteuertes System

## Um das Klima wieder herzustellen

- (i) Erhalt und Pflanzung von 500 Milliarden Bäumen
- (ii) Bau von 2 Milliarden Wohneinheiten aus der geernteter Biomasse

## Die naturbasierte Lösung!

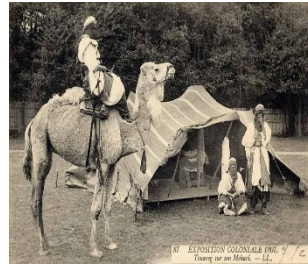
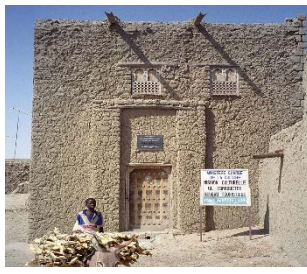
Fossile Energieträger  
(-)

Nettofluss

Neustart des Karbon?



# What Will Become of Vernacular Architecture?



Davide Ponzini  
Michele Nastasi

# Starchitecture

SCENES, ACTORS AND SPECTACLES IN CONTEMPORARY CITIES

THE MONACELLI PRESS

---

**How and why do spectacular buildings get commissioned and procured? What are their visible urban effects? What can urban planners, architects, and policymakers learn in order to engage in more successful citymaking?**

In recent years, media and critical attention has been lavished on famous architects, and the contributions of their designs to the branding of cities. The post-“Bilbao effect” global landscape is one where cities compete for the highest-profile skyscrapers, cultural projects, and high-profile developments designed by star architects whom even casual readers know by first name: Frank Gehry, Bjarke Ingels, Jean Nouvel, Zaha Hadid, Norman Foster, Rem Koolhaas.

Far less is known about the decision-making processes behind these projects and their subsequent urban effects. A unique combination of urban studies and photography, *Starchitecture* investigates projects designed by star architects in cities including Paris, New York, Abu Dhabi, Bilbao, and the architectural microcosm of the Vitra campus in Weil am Rhein, Germany. Author Davide Ponzini and photographer Michele Nastasi seek to explain and critique a growing global condition by revealing how starchitecture has been and continues to be deployed in cities around the world. The arguments they raise are vital to understanding the urban landscapes of today, and tomorrow.

---



## Alles so organisch betoniert

VON ULF MEYER - AKTUALISIERT AM 22.08.2021 - 14:38

Original Artikel: [hier](#)



**Löhrs Garten oder Schleuderbeton in Baumform**

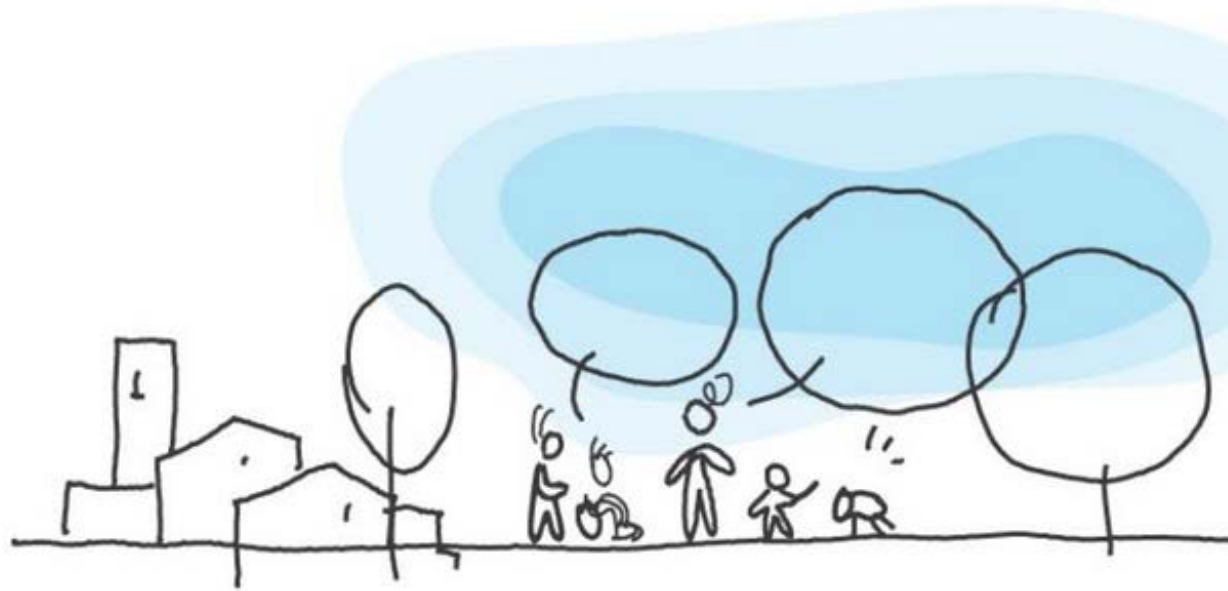
# Contemporary Cairo: Sustainable, Inclusive, Beautiful?



Original Bauhaus

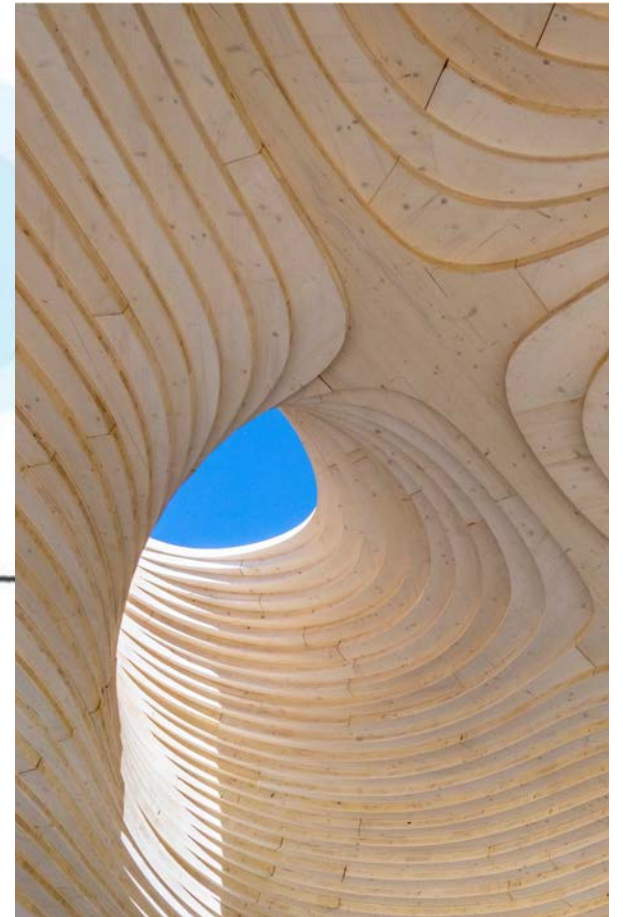


The New European Bauhaus



New European Bauhaus  
beautiful | sustainable | together

Bauhaus Earth



# Sommerhaus von Albert Einstein

Erbaut 1929



Konrad Ludwig Wachsmann

(1901-1980)





© Archiv Michael und Christa Grüning

## Konrad Wachsmann & Walter Gropius

”

Nachdem ihm 1941 die Flucht in die USA gelang, gründeten Wachsmann und der dort bereits im Exil lebende Walter Gropius ein gemeinsames Büro und entwickelten das vielgerühmte General-Panel-System. Es handelte sich dabei um hölzerne Bauplatten, die rundherum das gleiche Profil aufwiesen und durch standardisierte Hakenverschlüsse miteinander verbunden wurden. Außerdem waren in den Platten sämtliche elektrischen Installationen enthalten, so dass nach Aufbau des flexibel gestaltbaren Hauses nur noch der Anschluss ans Stromnetz erfolgen musste. Dieses Fertighaus-System wurde ein Meilenstein in der Geschichte des industriellen Bauens.

“

[Rossner, 2007](#)

courtesy of Pablo van der Lugt



# MJOSTARNET

(18 STORIES, 85.4 METERS)

---

**Location**  
Brumunddal, Norway

---

**Architect**  
Volf Arkitekter

---

**Bearing structure**  
Glulam exoskeleton  
Post and beam glulam system  
LVL cassette flooring  
CLT walls and shafts

# Hotel Jakarta in the Netherlands



**BUGA 2019 Pavillon Heilbronn**

**BUGA 2023 Pavillon Mannheim**



# TRIQBRIQ



**TRIQBRIQ Produktion in Stuttgart**  
**No-Tech meets High-Tech**



**TRIQBRIQ Rohbau in 6 Tagen fertig gestellt**

# Die Große Transformation im 21. Jahrhundert

Dumme, spaltende, lineare Petro-Wirtschaft



ENERGIE UND MATERIALIEN AUS ENDLICHEN QUELLEN

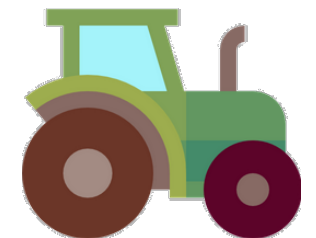
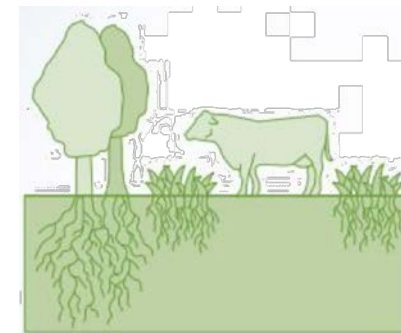


ENERGIE UND MATERIALIEN AUS ERNEUERBAREN QUELLEN

**Green Business**





Oder

**No Business!**



Intelligente, inklusive, zirkuläre Bioökonomie

# Radical transformation pathway towards sustainable electricity via evolutionary steps

Dmitrii Bogdanov <sup>1</sup>, Javier Farfan<sup>1</sup>, Kristina Sadovskaia<sup>1</sup>, Arman Aghahosseini <sup>1</sup>, Michael Child <sup>1</sup>, Ashish Gulagi<sup>1</sup>, Ayobami Solomon Oyewo<sup>1</sup>, Larissa de Souza Noel Simas Barbosa<sup>2</sup> & Christian Breyer <sup>1</sup>

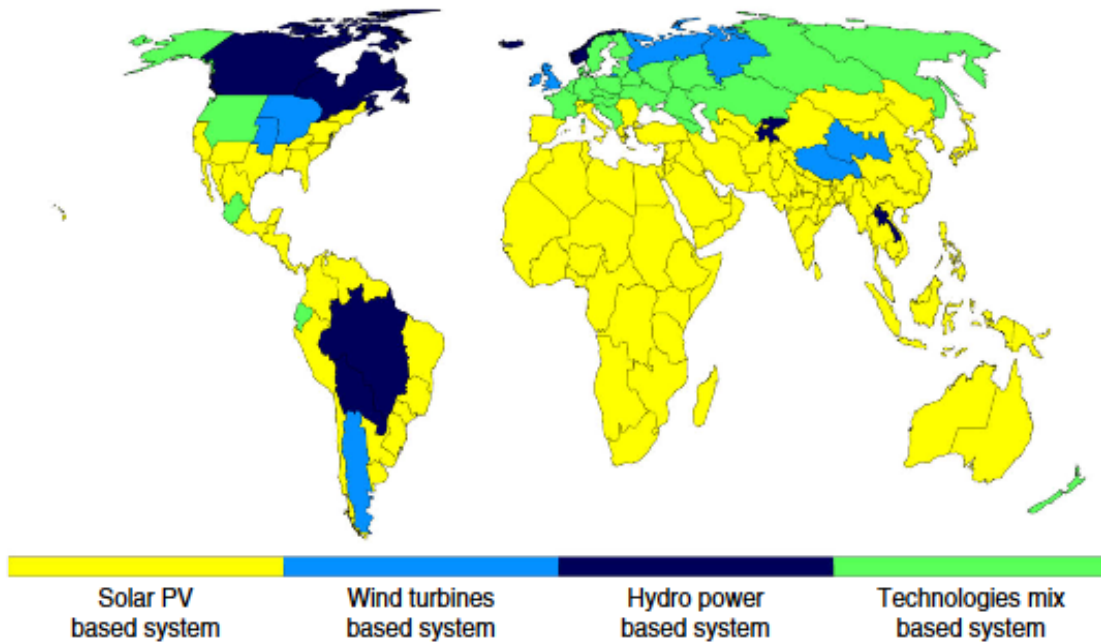


Fig. 1: Main types of 100% renewable electricity systems based on their main source of electricity (>50% share of electricity generation). If none of the technologies have a share exceeding 50% defined as “Technology mix-based system”

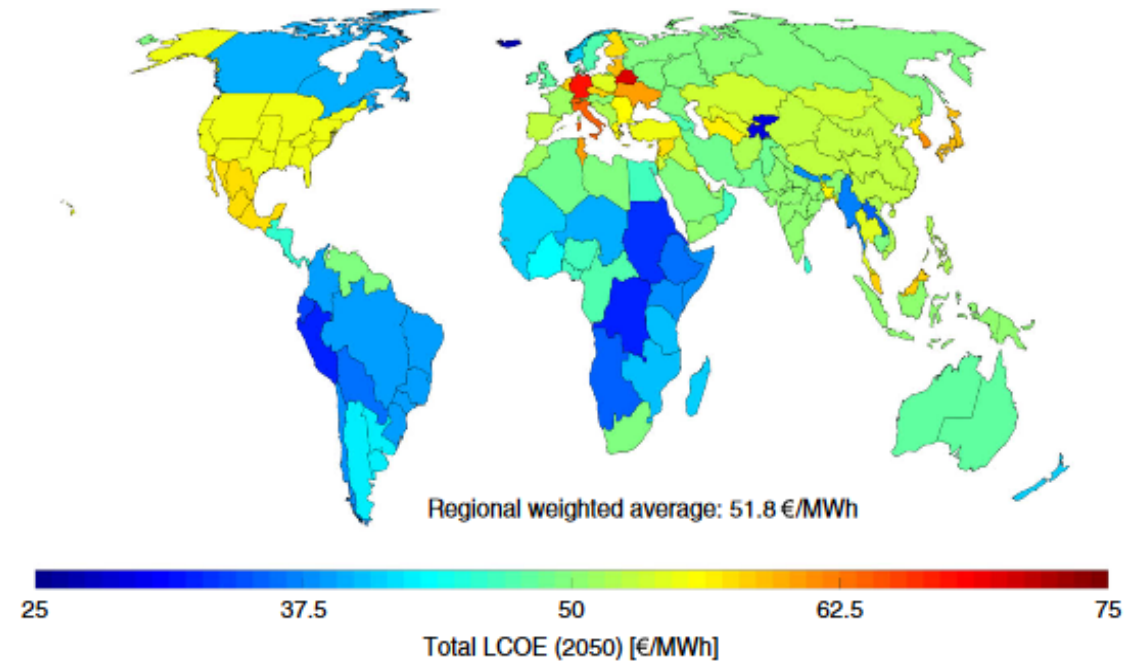


Fig. 2: Levelized cost of electricity for 100% renewable electricity systems in 2050. Numbers are calculated based on the generation mix for 2050 and financial and technical assumptions for all electricity system components.

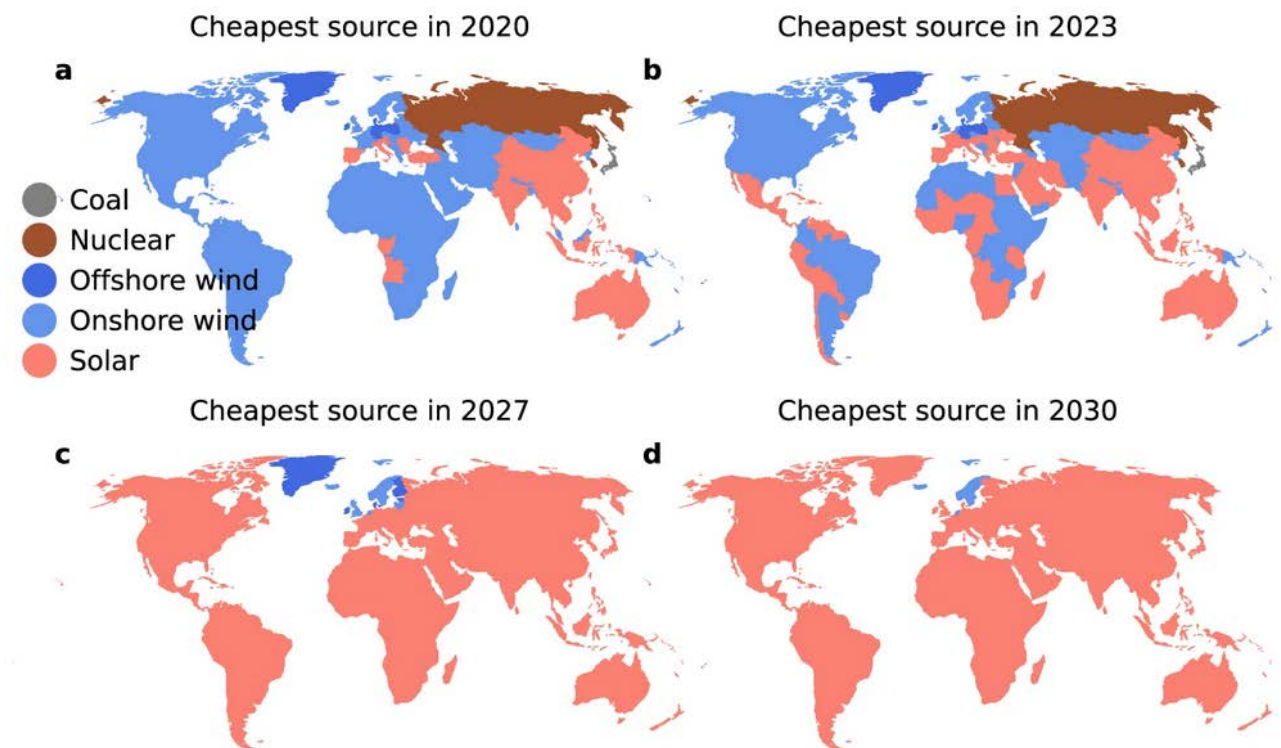
# The momentum of the solar energy transition

Femke J. M. M. Nijse , Jean-Francois Mercure, Nadia Ameli, Francesca Larosa, Sumit Kothari, Jamie

Rickman, Pim Vercoulen & Hector Pollitt

## Abstract

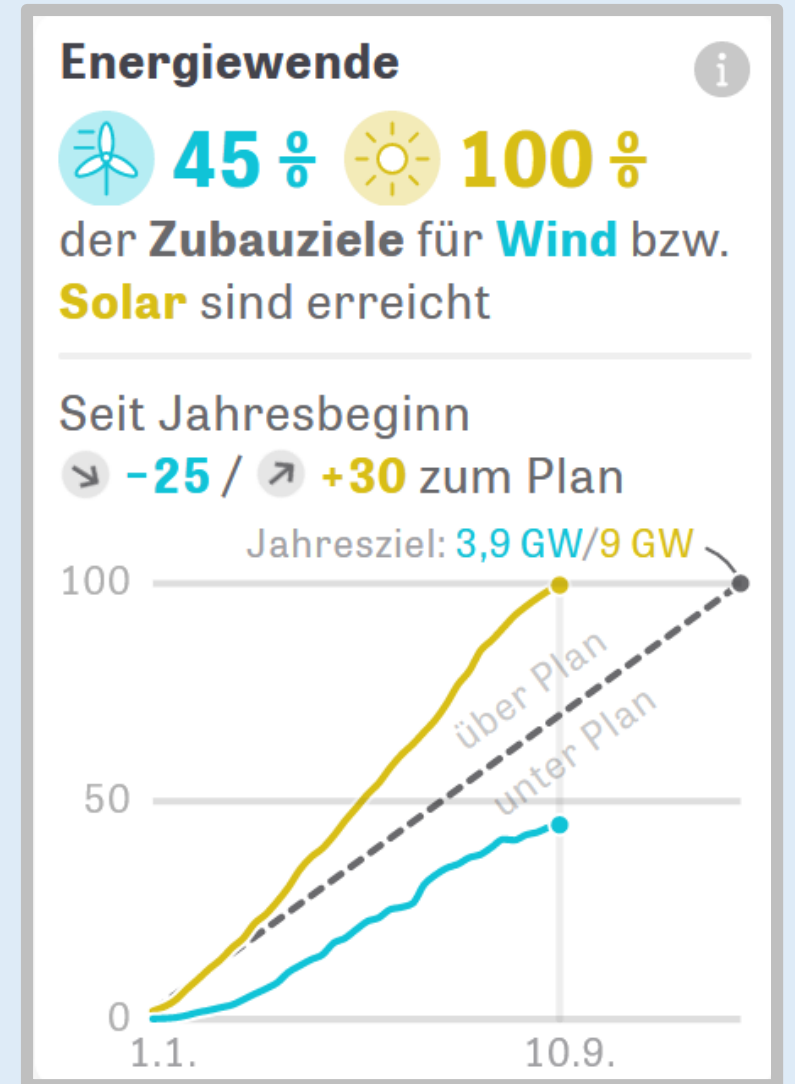
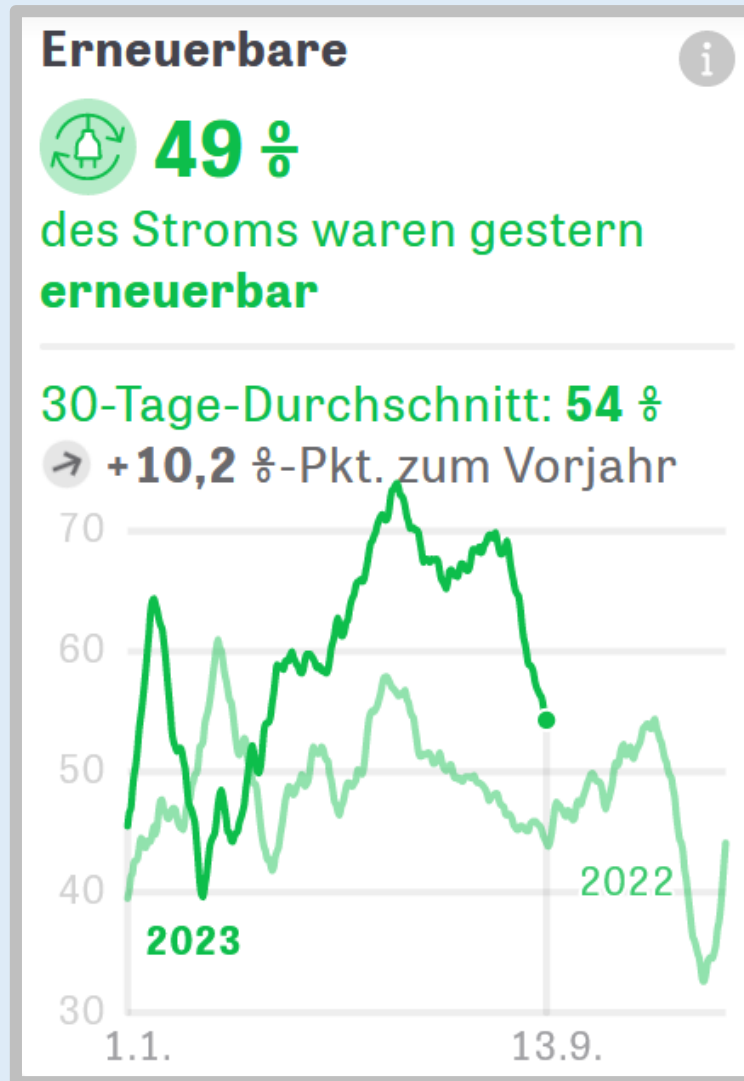
Decarbonisation plans across the globe require zero-carbon energy sources to be widely deployed by 2050 or 2060. Solar energy is the most widely available energy resource on Earth, and its economic attractiveness is improving fast in a cycle of increasing investments. Here we use data-driven conditional technology and economic forecasting modelling to establish which zero carbon power sources could become dominant worldwide. We find that, due to technological trajectories set in motion by past policy, a global irreversible solar tipping point may have passed where solar energy gradually comes to dominate global electricity markets, without any further climate policies. Uncertainties arise, however, over grid stability in a renewables-dominated power system, the availability of sufficient finance in underdeveloped economies, the capacity of supply chains and political resistance from regions that lose employment. Policies resolving these barriers may be more effective than price instruments to accelerate the transition to clean energy.



Each map shows the 70 E3ME regions: in 2020 (a), 2023 (b), 2027 (c) and 2030 (d). The biggest shift occurs between 2020 and 2027, which sees a range of technologies give way to solar PV as the cheapest source of electricity.

# Energiemonitor

Stand: 14.09.2023



# Reconstructing the Future for People and Planet – a New Bauhaus Initiative

*PAS Conference, 9-10 June 2022*



Credit: Gabriella Clare Marino

Pritzker-Preisträger Francis Kéré

# »Wenn alle so bauen würden wie der Westen, wäre die Erde morgen kaputt«

Ein Interview von Jan Petter  
07.05.2022, 20.55 Uhr

Als erster Afrikaner hat Francis Kéré den weltweit wichtigsten Architekturpreis gewonnen. Er lebt seit dem Studium in Berlin. Hier erzählt er, wie klimagerechtes Bauen geht – und warum China ihm keine Angst macht.



Tamara Eckhardt / DER SPIEGEL





# Termite mounds harness diurnal temperature oscillations for ventilation

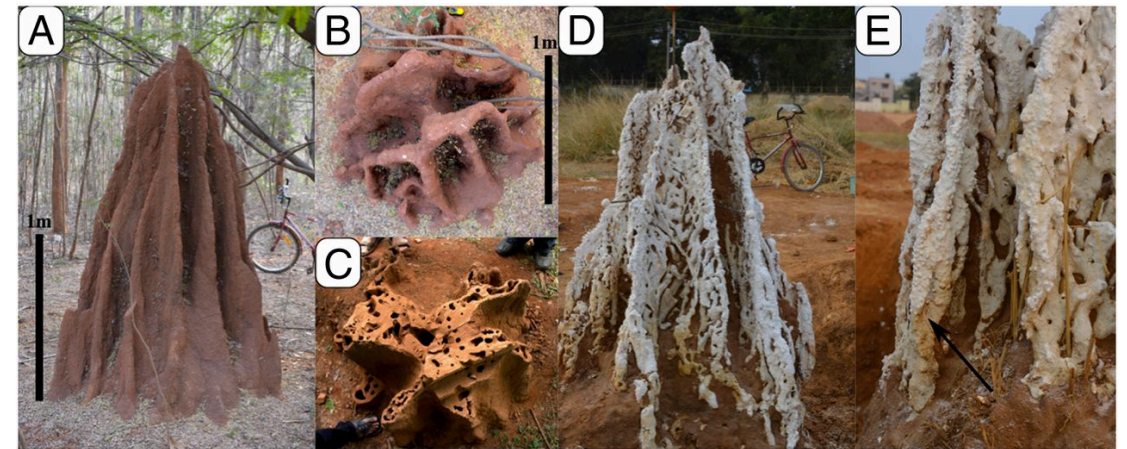
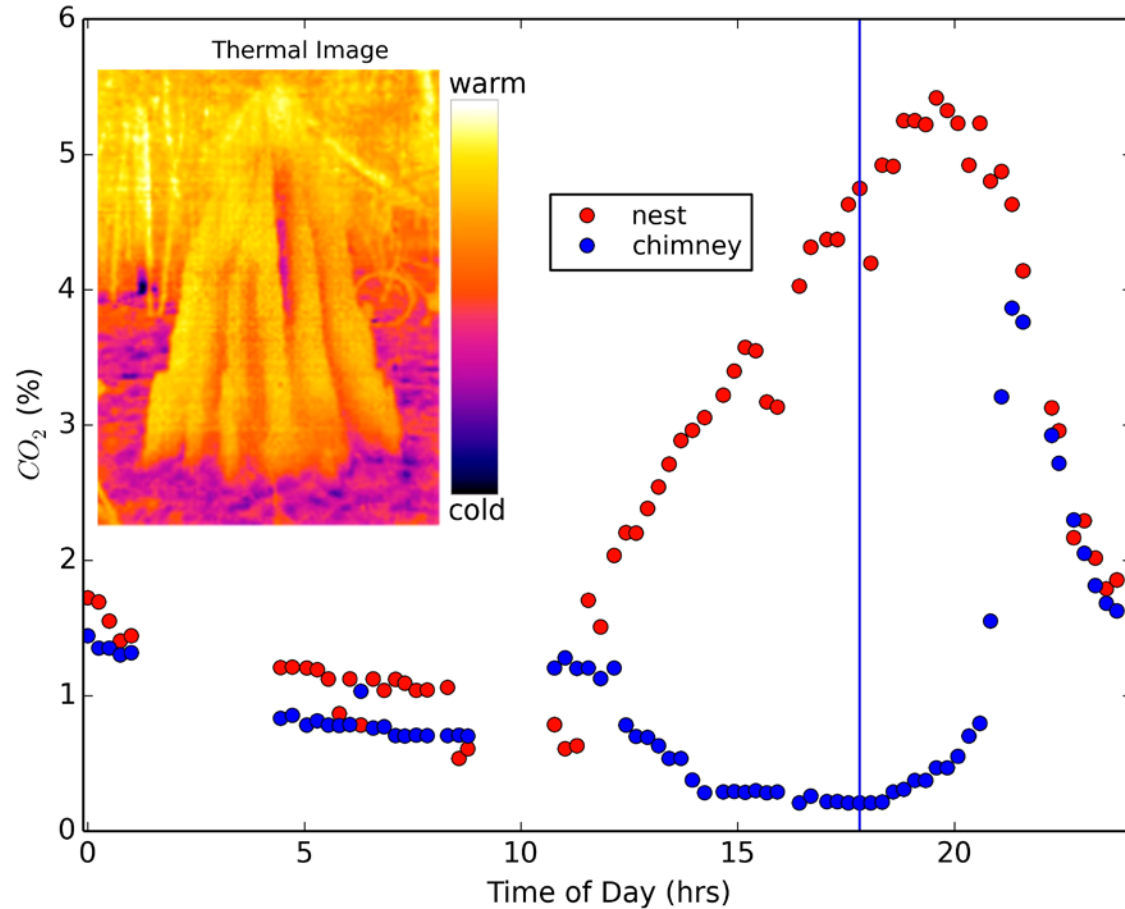
Hunter King<sup>a,1</sup>, Samuel Ocko<sup>b,1</sup>, and L. Mahadevan<sup>a,c,d,2</sup>

PNAS

Proceedings of the  
National Academy of Sciences  
of the United States of America

PNAS | September 15, 2015 | vol. 112 | no. 37 | 11589–11593

Original article: [here](#)



PERFEKT PORÖS

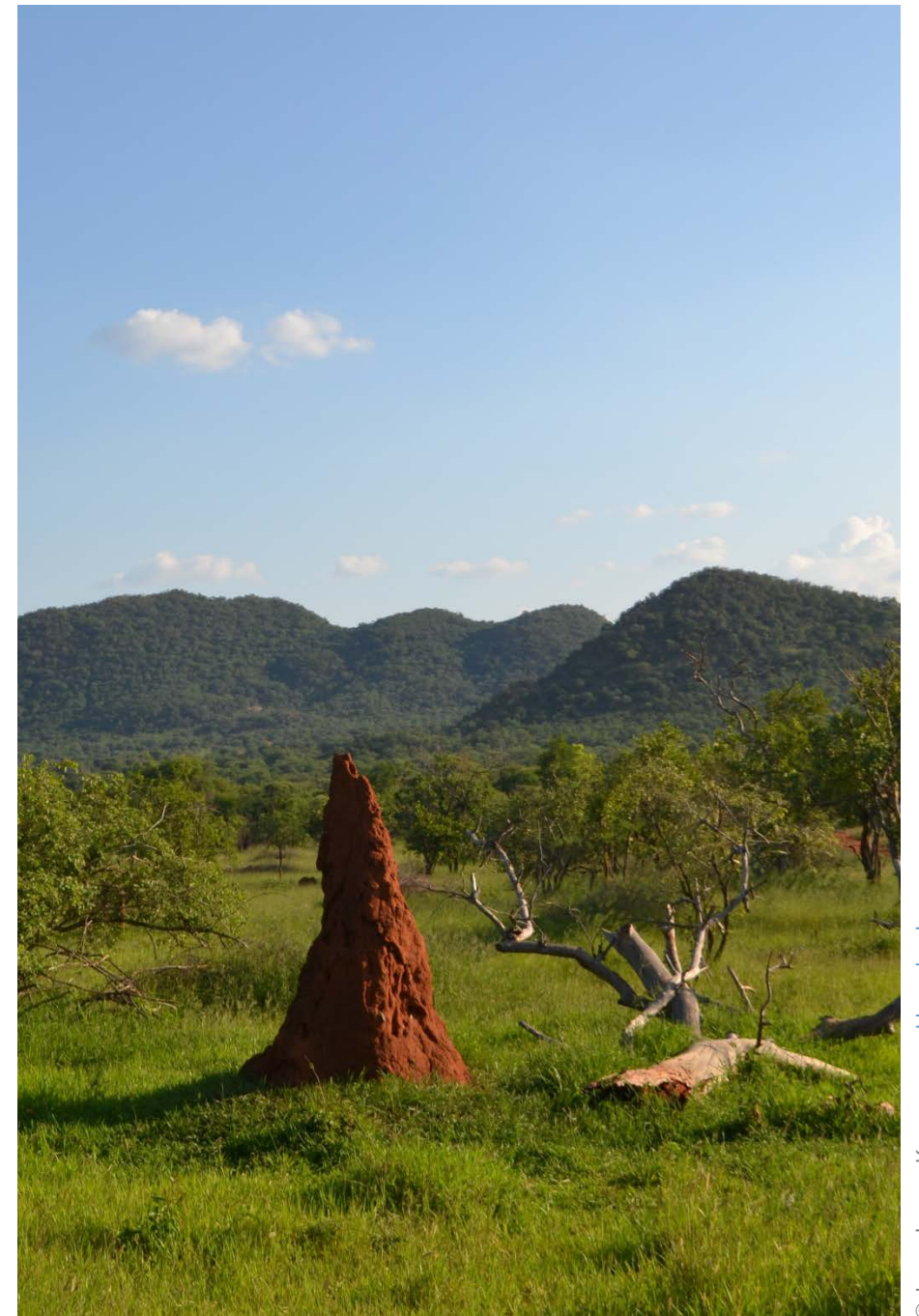
# Termitenhügel klimatisieren sich selbst besser als jedes Gebäude

Die Bauwerke von Termiten verfügen in ihrem Inneren über ein besonderes Mikroklima. Forschende fanden heraus, wie es funktioniert und das Wissen genutzt werden könnte

Reinhard Kleindl

29. Mai 2023, 10:00, [27 Postings](#)

Originalartikel: [hier](#)



PERFEKT PORÖS

# Termitenhügel klimatisieren sich selbst besser als jedes Gebäude

Die Bauwerke von Termiten verfügen in ihrem Inneren über ein besonderes Mikroklima. Forschende fanden heraus, wie es funktioniert und das Wissen genutzt werden könnte

Reinhard Kleindl

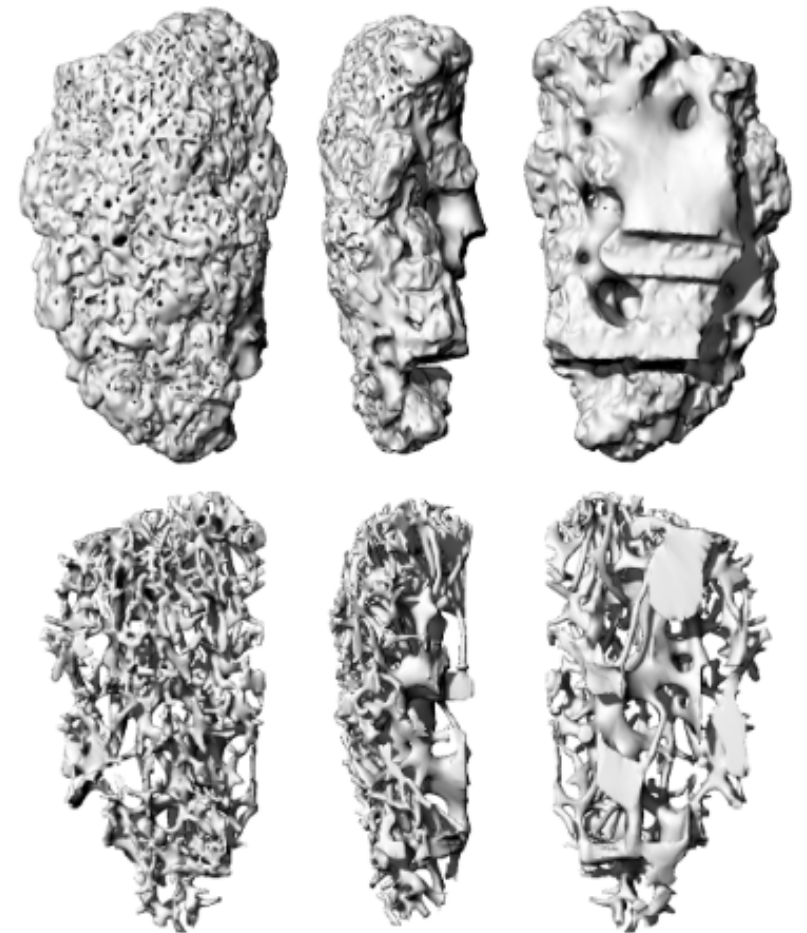
29. Mai 2023, 10:00, [27 Postings](#)

Originalartikel: [hier](#)

## Termite-inspired metamaterials for flow-active building envelopes

David Andréen<sup>1\*</sup> and Rupert Soar<sup>2</sup>

Full paper: [here](#)



# Built by Diébédo Francis Kéré in Burkina Faso



# Klima-Anpassung Windtürme mit Wasserreservoirs

*Ab anbar* (Wasserreservoirs) in Yazd, Iran

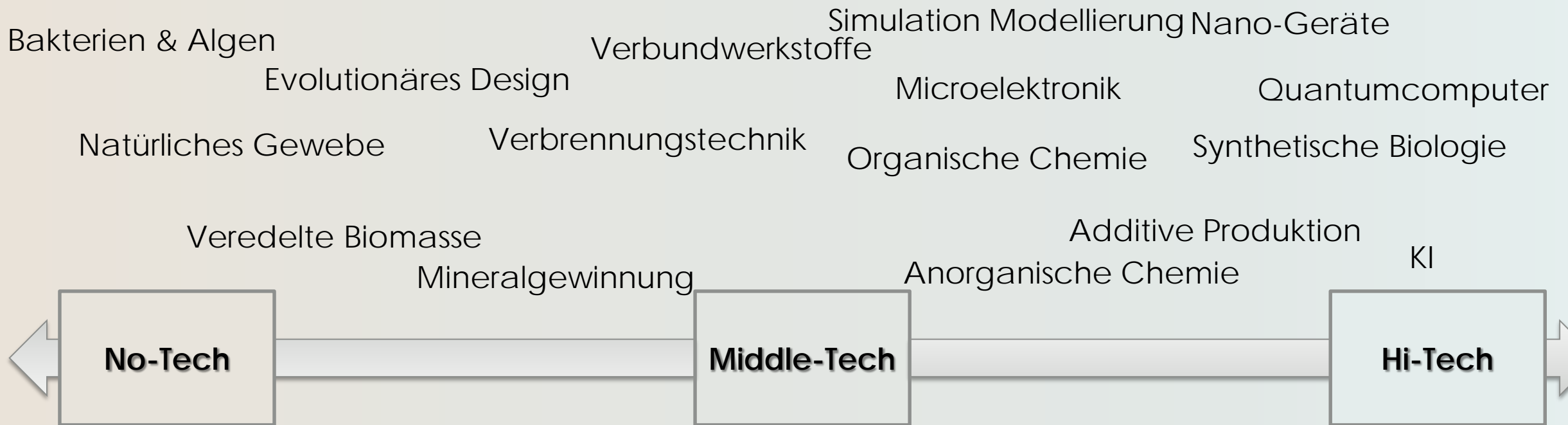




# Nature-based solutions

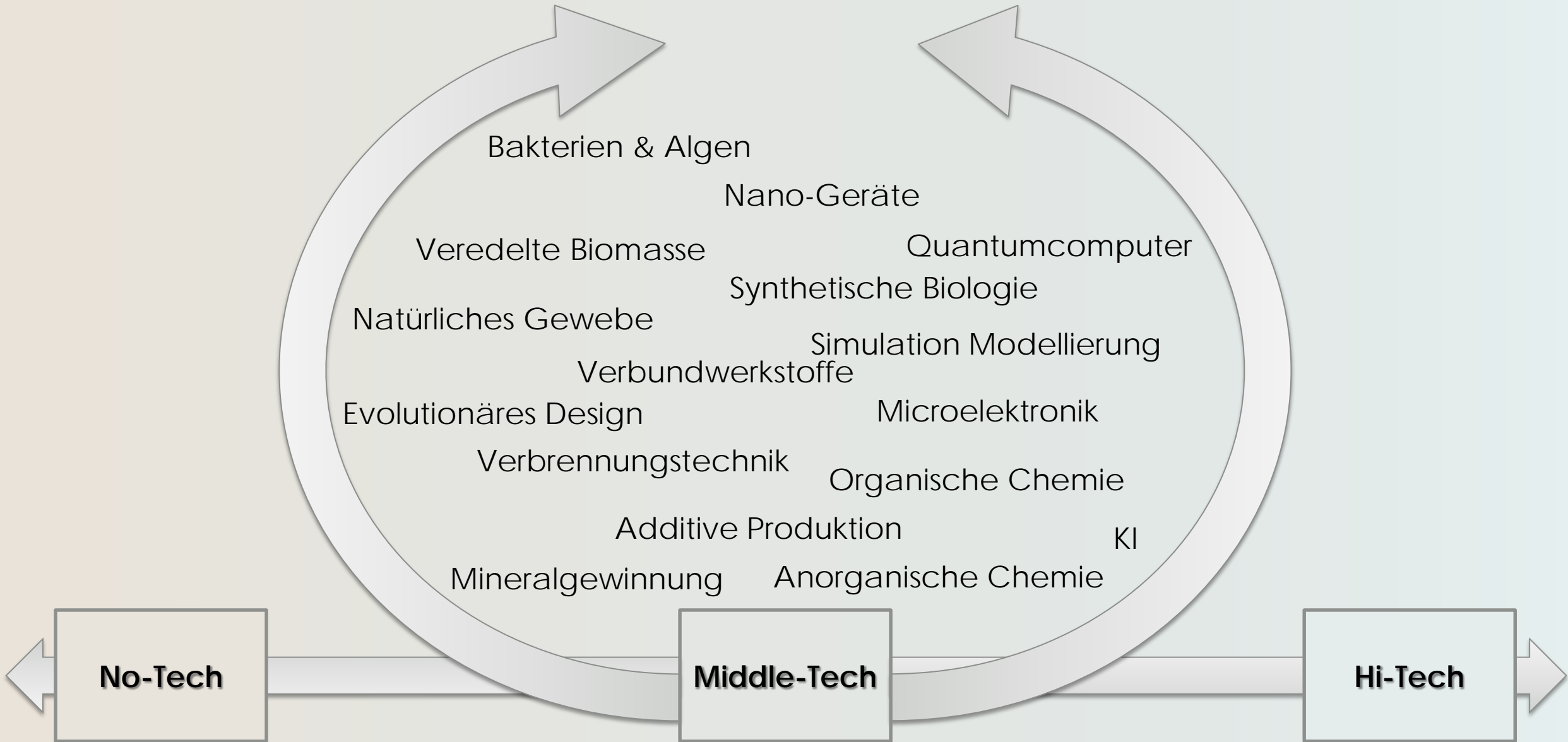
in the context of climate resilient buildings  
and cities

BARBARA WIDERA PhD DSc  
Wrocław University of Science and Technology, Poland



## Mittel & Methoden für Zivilisation

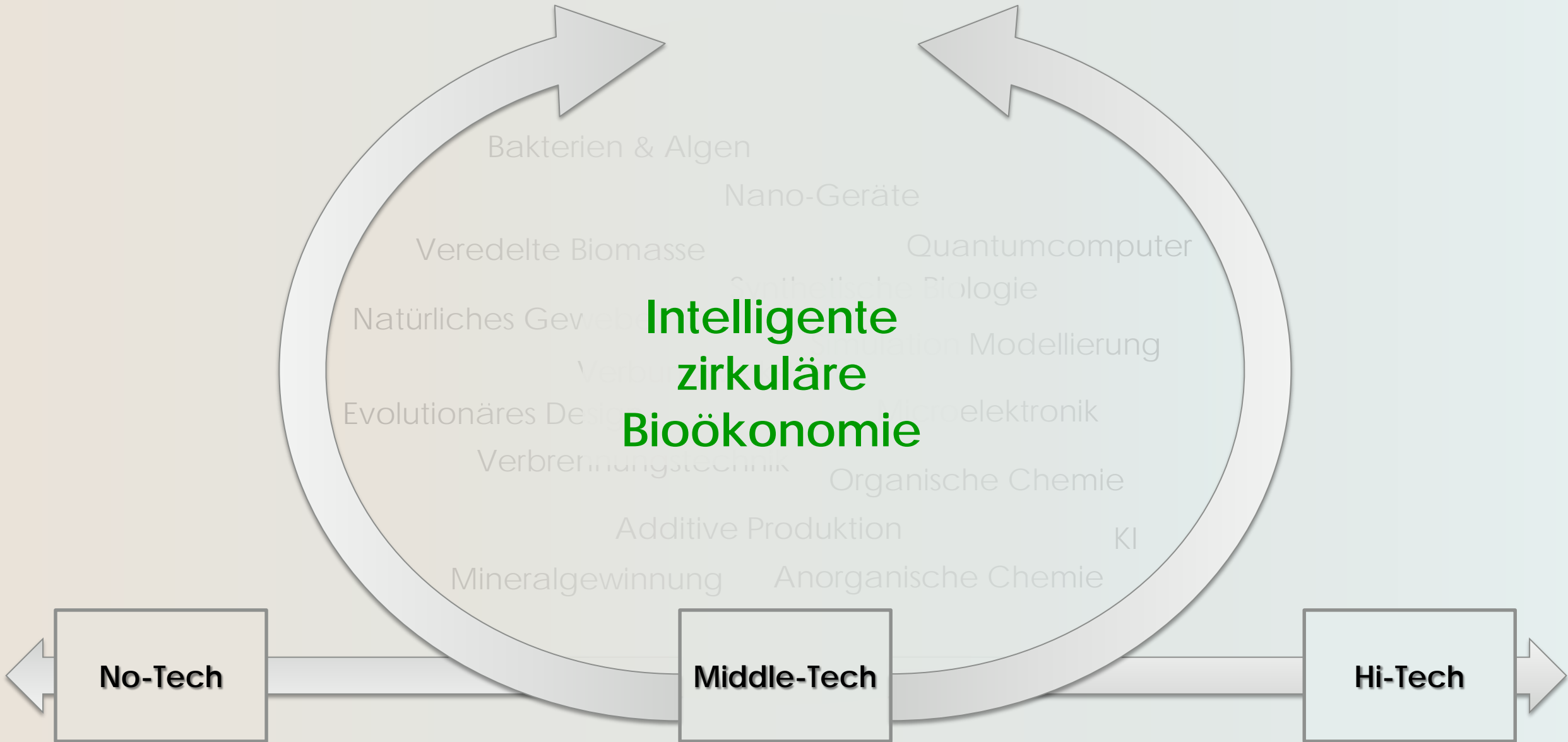
# No-Tech trifft Hi-Tech!



## Mittel & Methoden für Zivilisation



# No-Tech trifft Hi-Tech!



Mittel & Methoden für Zivilisation

# THE PRINCE OF WALES



## HARMONY

A NEW WAY OF LOOKING AT OUR WORLD

WITH TONY JUNIPER AND IAN SKELLY

---

”

**T**his is a call to revolution. The Earth is under threat. It cannot cope with all that we demand of it. It is losing its balance and we humans are causing this to happen.

‘Revolution’ is a strong word and I use it deliberately. The many environmental and social problems that now loom large on our horizon cannot be solved by carrying on with the very approach that has caused them. If we want to hand on to our children and grandchildren a much more durable way of operating in the world, then we have to embark on what I can only describe as a ‘Sustainability Revolution’ – and with some urgency. This will involve our taking all sorts of dramatic steps to change the way we consider the world and act in it, but I believe we have the capacity to take these steps. All we have to see is that the solutions are close at hand.

The Earth’s alarm bells are now ringing loudly and so we cannot go on endlessly prevaricating by finding one sceptical excuse after another for avoiding the need for the human race to act in a more environmentally benign way – which really means only one thing: putting Nature back at the heart of our considerations once more. But that is only the start of it. We must go much further. ‘Right action’ cannot happen without ‘right thinking’ and in that simple truth lies the deeper purpose of this book.

---

“

## Connecting the dots

The Alliance was established in 2020 by His Majesty King Charles III (formerly His Royal Highness The Prince of Wales). It provides knowledge-informed support as well as a learning and networking platform to connect the dots between investors, companies, governmental and non-governmental organizations and local communities to advance the circular bioeconomy while restoring biodiversity globally.

***“We need to restore balance and put Nature back at the centre of our economy”***

## The Circular Bioeconomy Alliance

aims to accelerate the transition to a circular bioeconomy that is climate neutral, inclusive and prospers in harmony with nature.