

**Österreichische HOLZgespräche 2021, FHP Forst Holz Paper,
online, 25 November 2021**

Uns mit Holz aus der Klimakrise herausbauen

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Gründer und Co-Geschäftsführer, Bauhaus der Erde gGmbH*



Das Pariser Abkommen

Nations Unies
Conférence sur les Changements Climatiques 2015

COP21/CMP11

Paris France



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

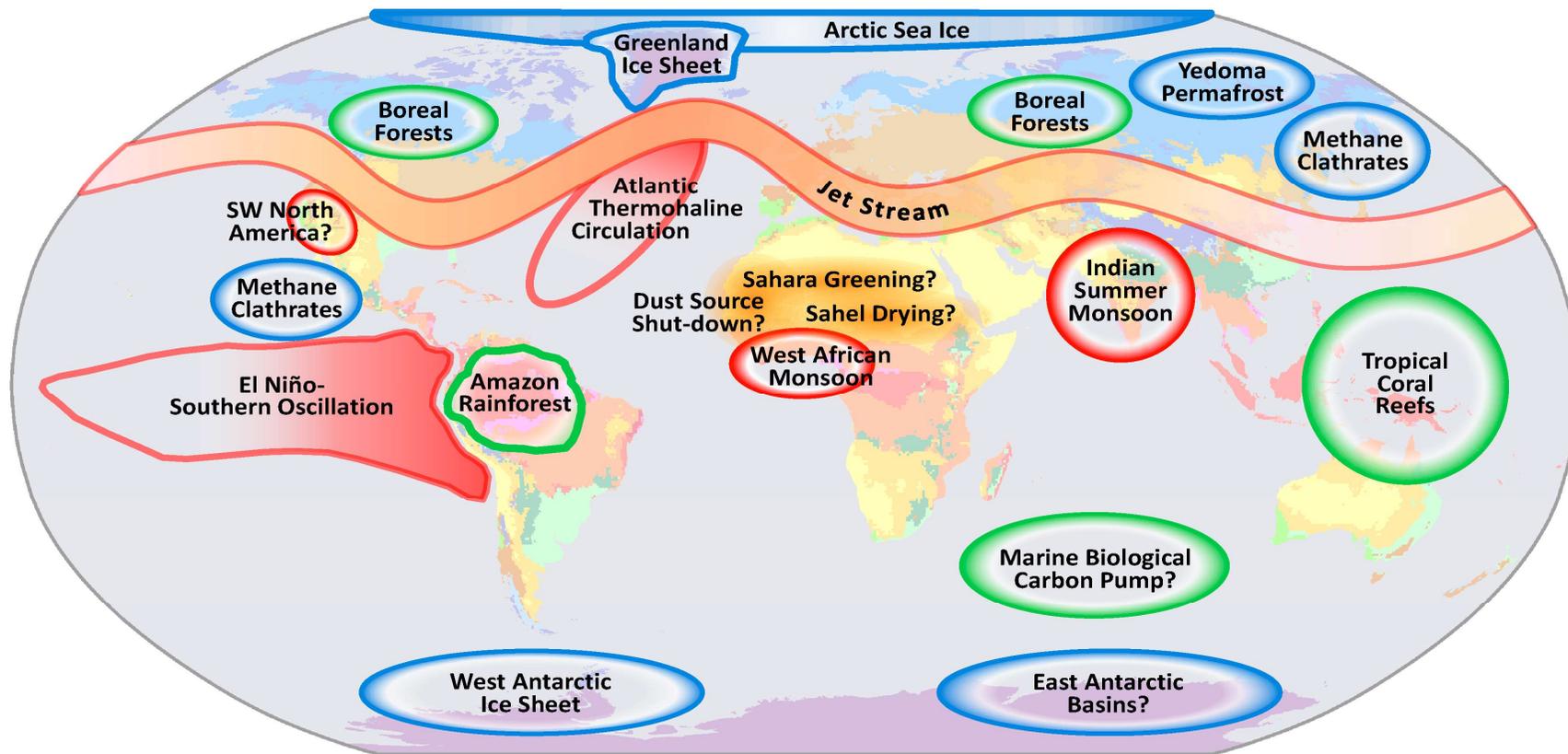
Beschränkung der
Erderwärmung auf
“weit unter” 2 Grad Celsius

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



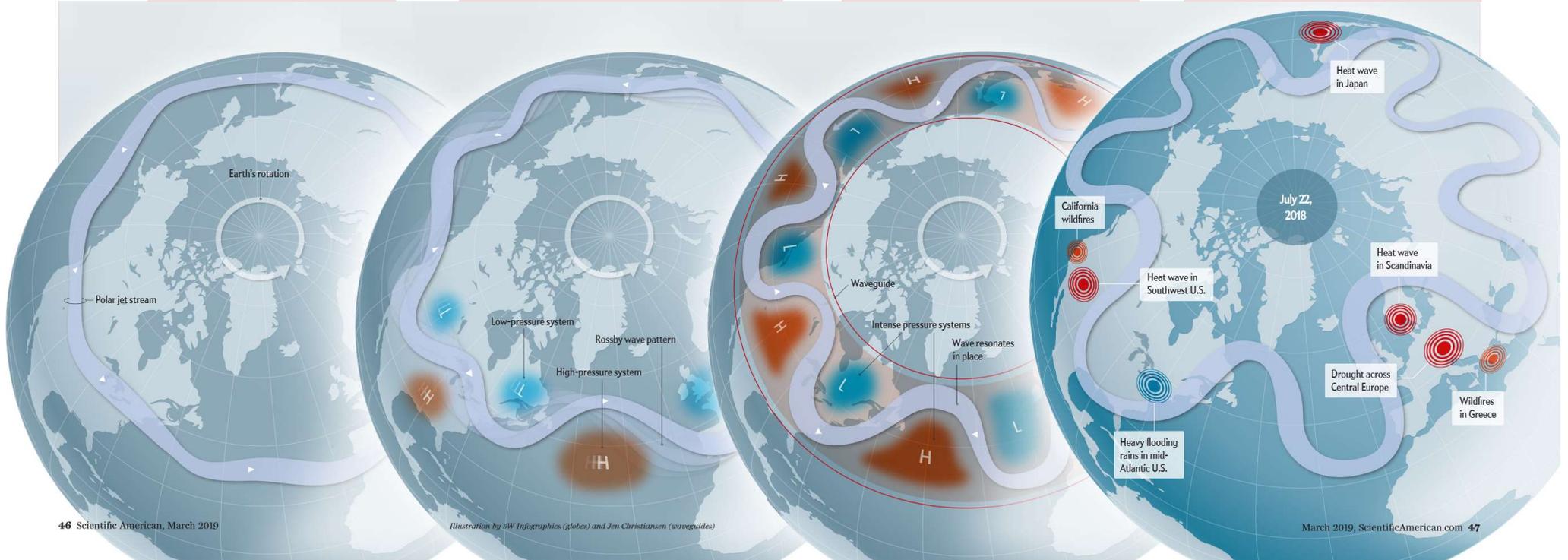
- Cryosphere Entities
- Circulation Patterns
- Biosphere Components

Köppen Climate Classification



Petoukhov-Effekt: Wetterextreme durch stehende Rossby-Wellen

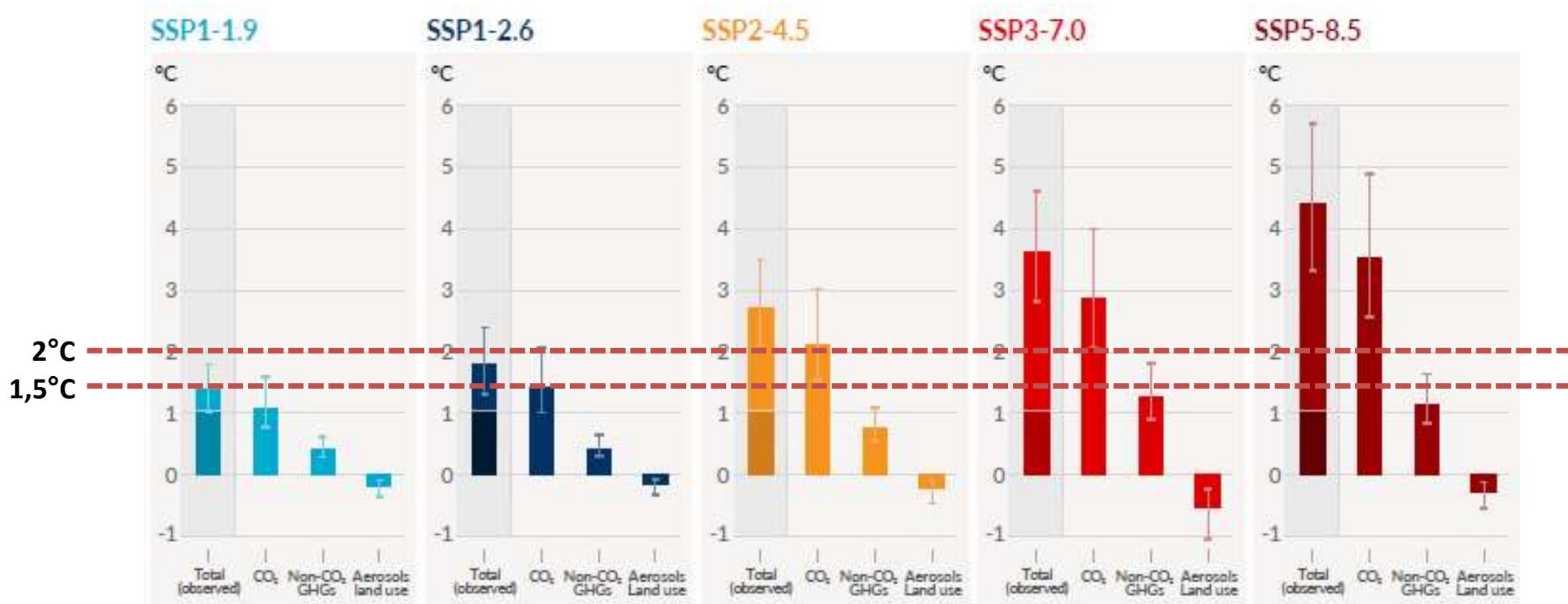
Polarer Jetstream **Krümmung evoziert Hoch- und Tiefdruckgebiete** **Bildung von stehenden Rossby-Wellen** **Extreme Wetterereignisse (Bsp. 2018)**



Petoukhov et al., PNAS, 2013
Graphik: Mann, M., Scientific American, 2019

IPCC AR6 WGI 2021

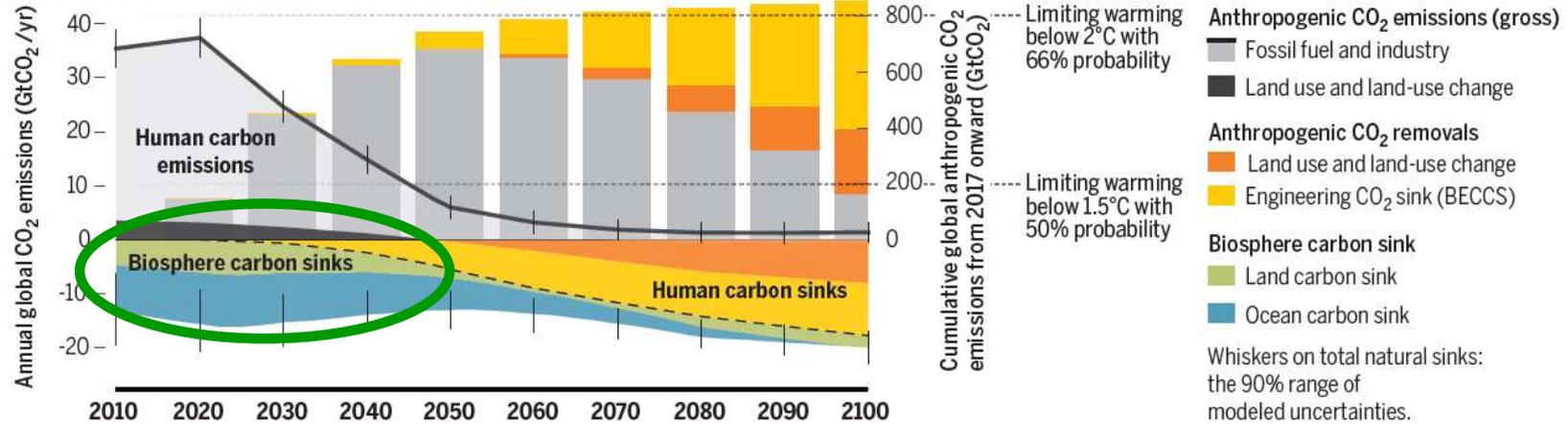
Zunahme der globalen Oberflächentemperatur Szenarien 2081-2100 (relativ zu 1850-1900)



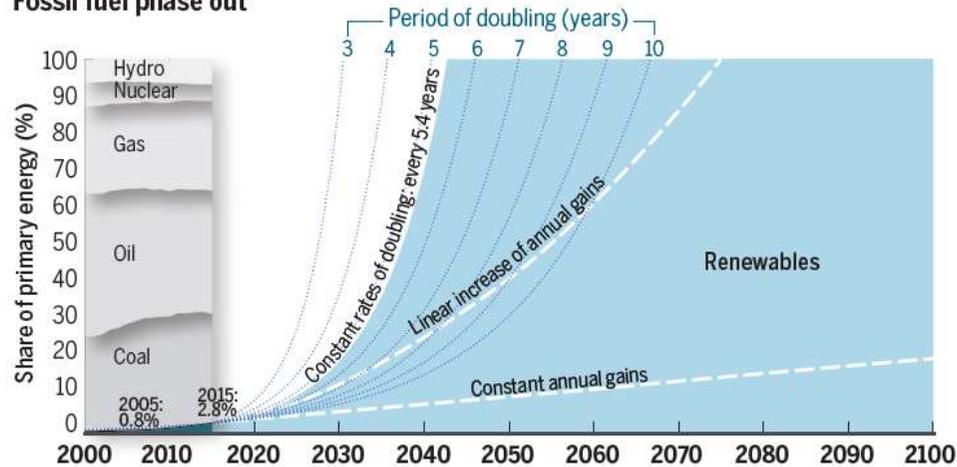
1°C (dunkler) entspricht bereits den beobachteten Messungen heute

Der Fahrplan für die Transformation

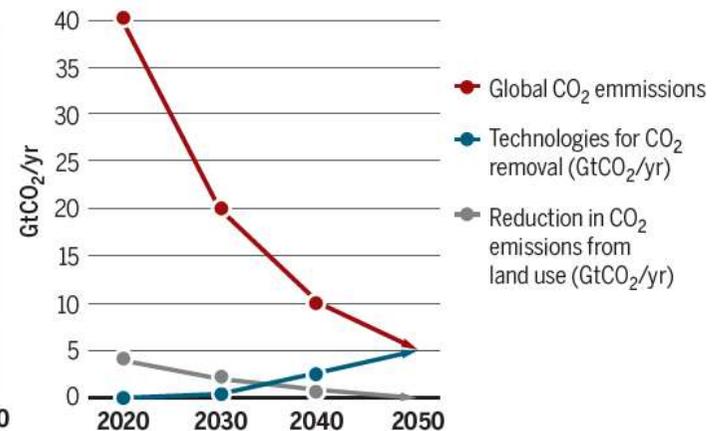
Decarbonization pathway consistent with Paris agreement



Fossil fuel phase out



Global carbon law guiding decadal pathways



Radical transformation pathway towards sustainable electricity via evolutionary steps

Dmitrii Bogdanov¹, Javier Farfan¹, Kristina Sadovskaia¹, Arman Aghahosseini¹, Michael Child¹, Ashish Gulagi¹, Ayobami Solomon Oyewo¹, Larissa de Souza Noel Simas Barbosa² & Christian Breyer¹



Full article: [here](#)

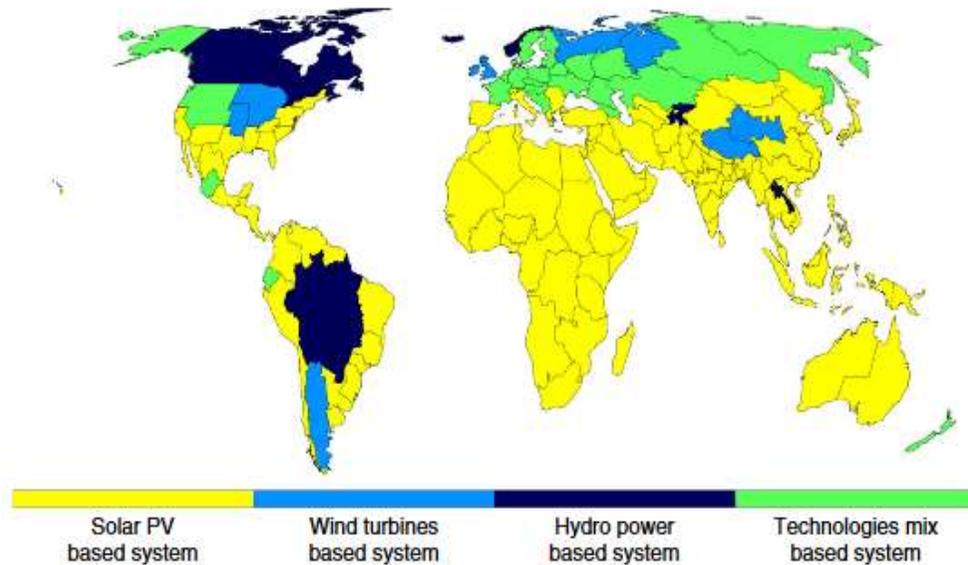


Fig. 1: Main types of 100% renewable electricity systems based on their main source of electricity (>50% share of electricity generation). If none of the technologies have a share exceeding 50% defined as “Technology mix-based system”

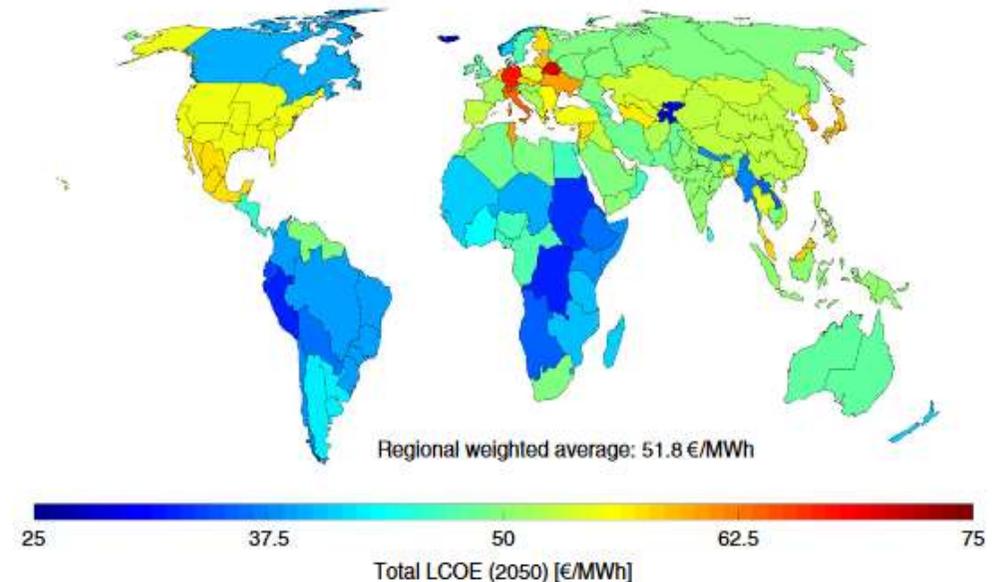
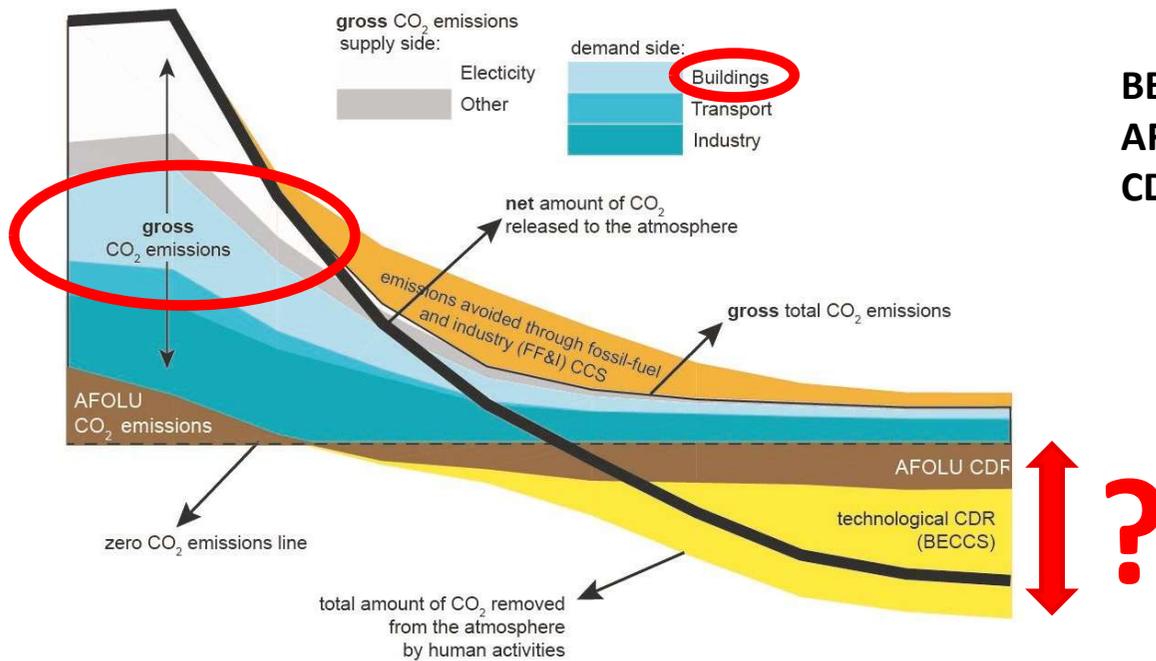


Fig. 2: Levelized cost of electricity for 100% renewable electricity systems in 2050. Numbers are calculated based on the generation mix for 2050 and financial and technical assumptions for all electricity system components.

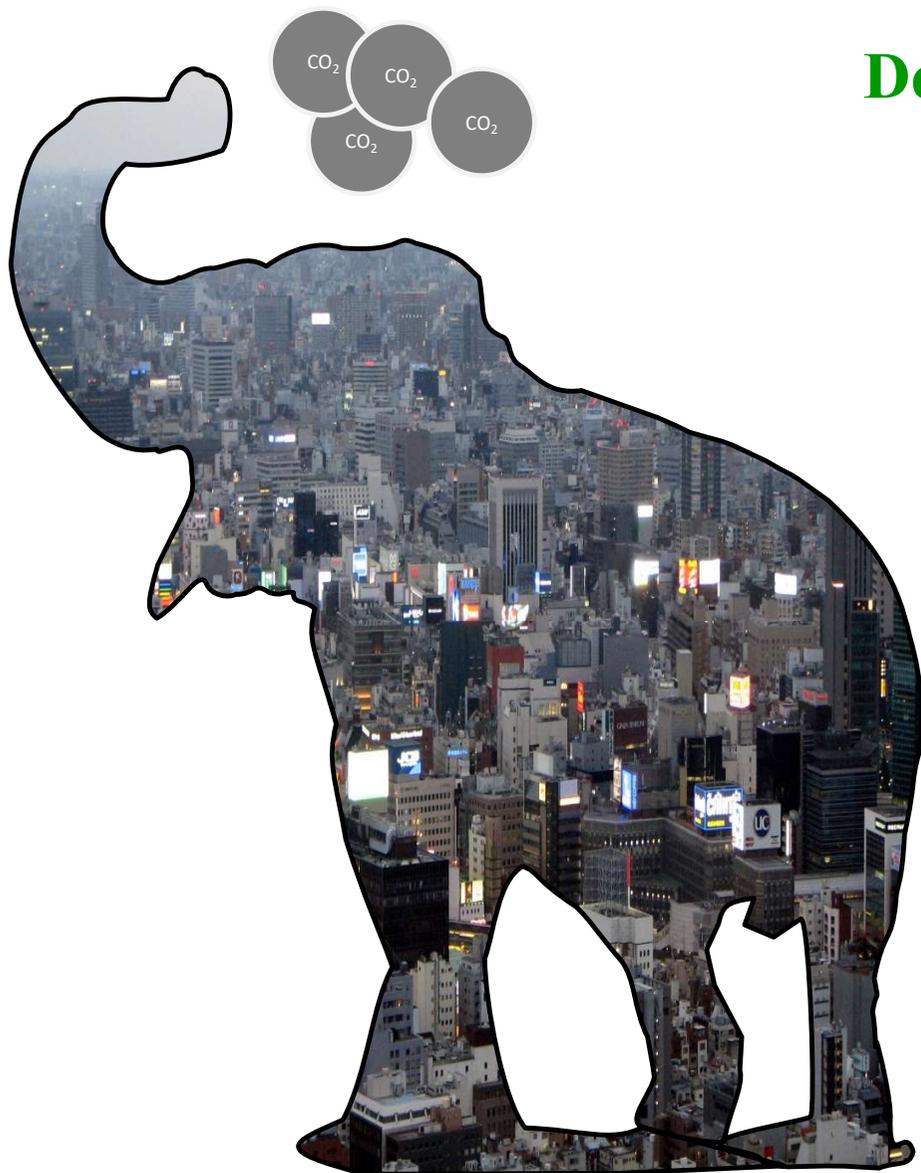
Woher kommen die negativen Emissionen?

IPCC 1,5°C Report von 2018 [here](#)

LEGEND: EMISSION CONTRIBUTIONS



BECCS = Bioenergy with Carbon Capture and Storage
AFOLU = Agriculture, Forestry and Other Land Use
CDR = Carbon Dioxide Removal



Der Elefant im Klimaraum: Gebaute Umwelt

~ **40%** der globalen
Treibhausgasemissionen

~ **55%** der Abfälle in den
entwickelten Ländern

Städte in der Evolution des Kohlenstoffkreislaufes

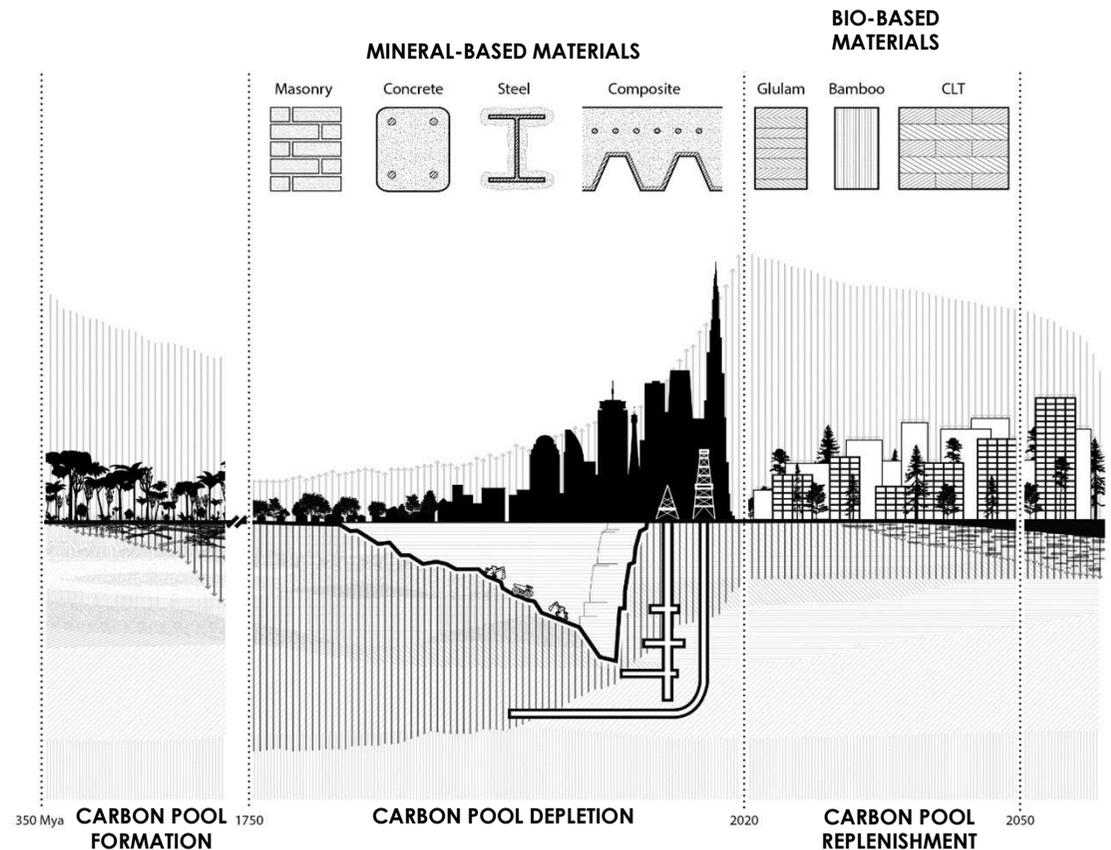
nature
sustainability

Perspective | Published: 27 January 2020

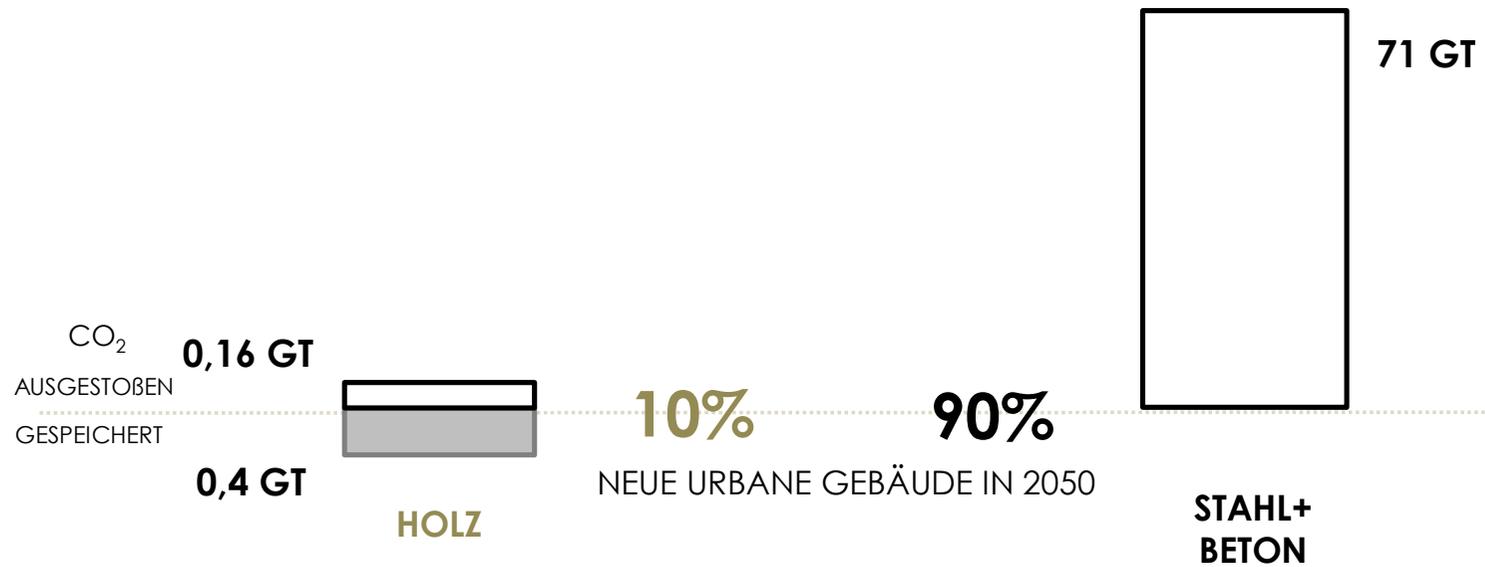
Buildings as a global carbon sink

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

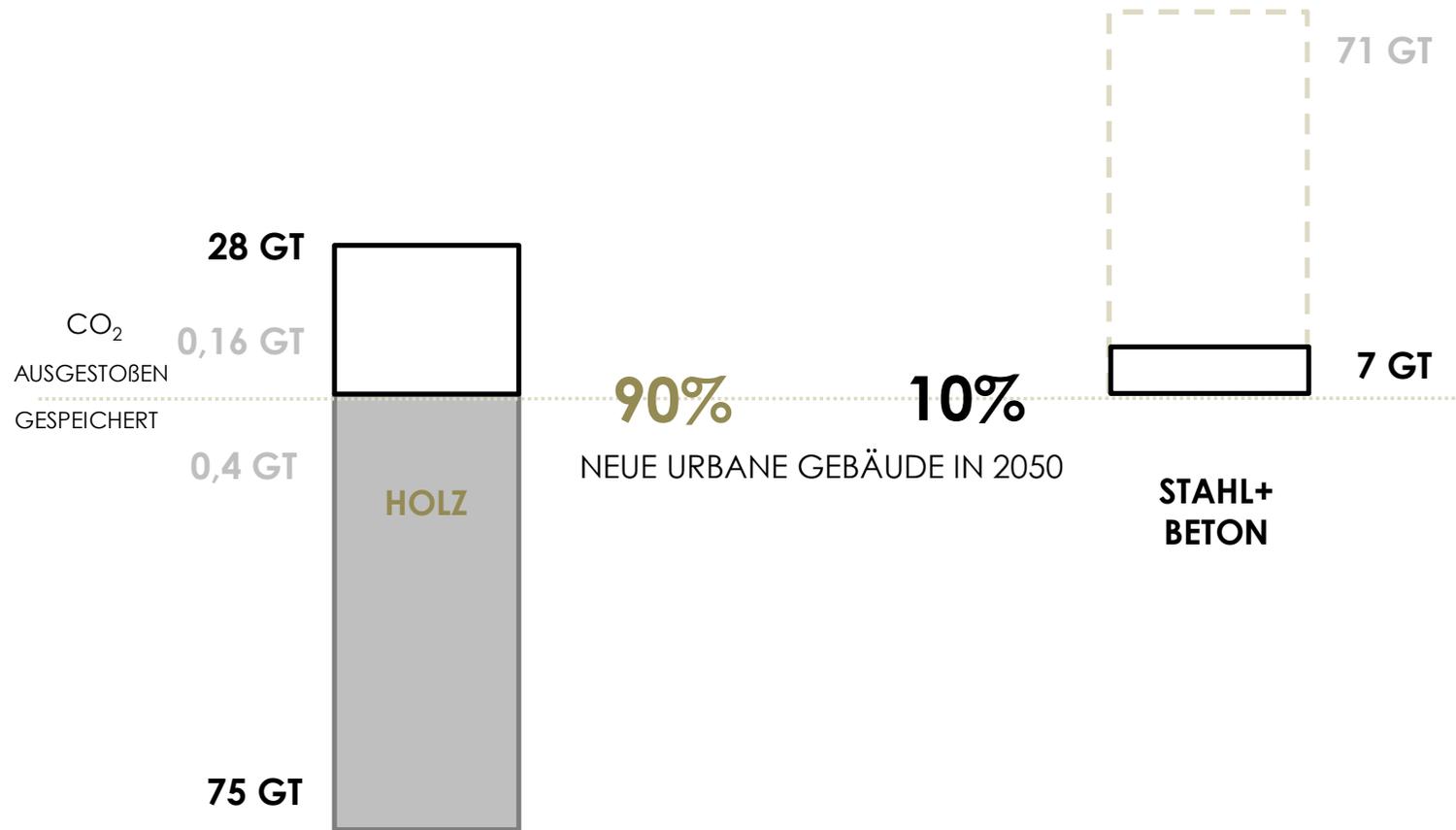
<https://doi.org/10.1038/s41893-019-0462-4>



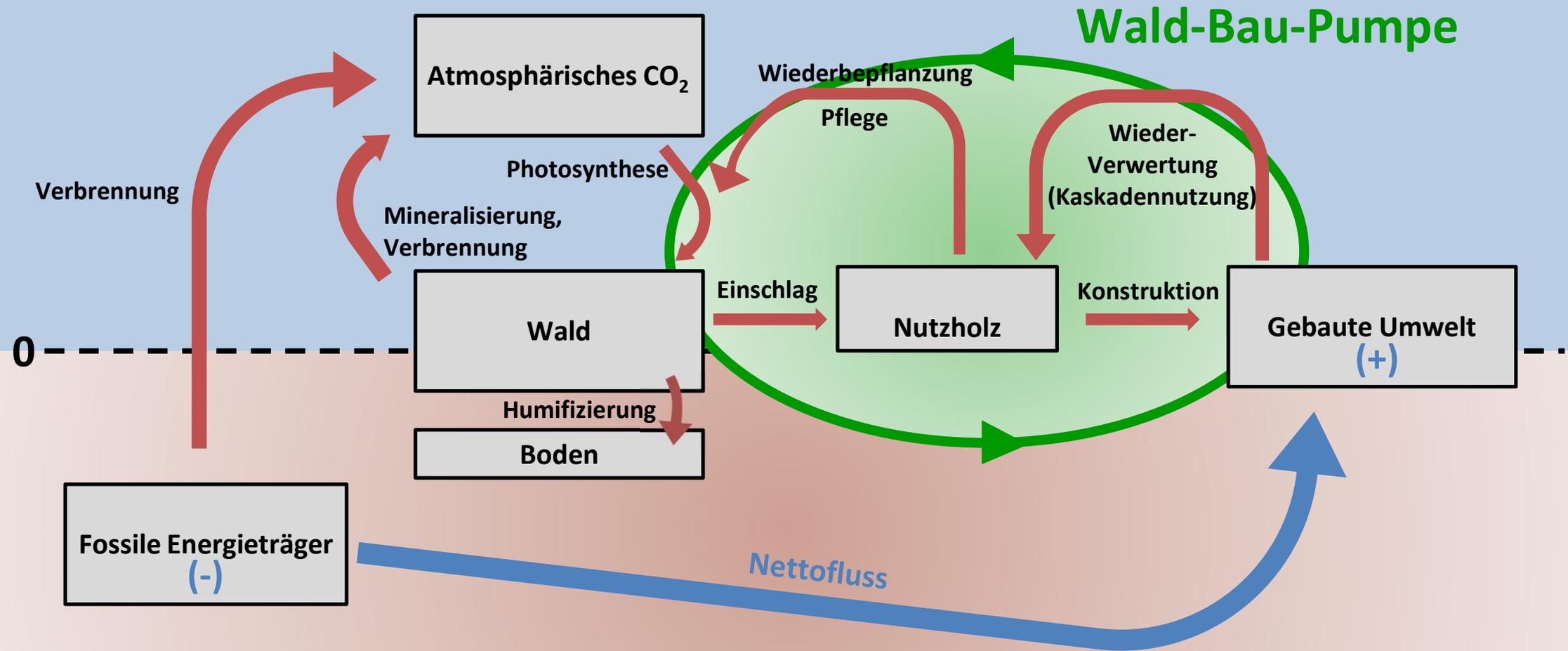
Gebäude als globale Kohlenstoffsenke



Gebäude als globale Kohlenstoffsenke

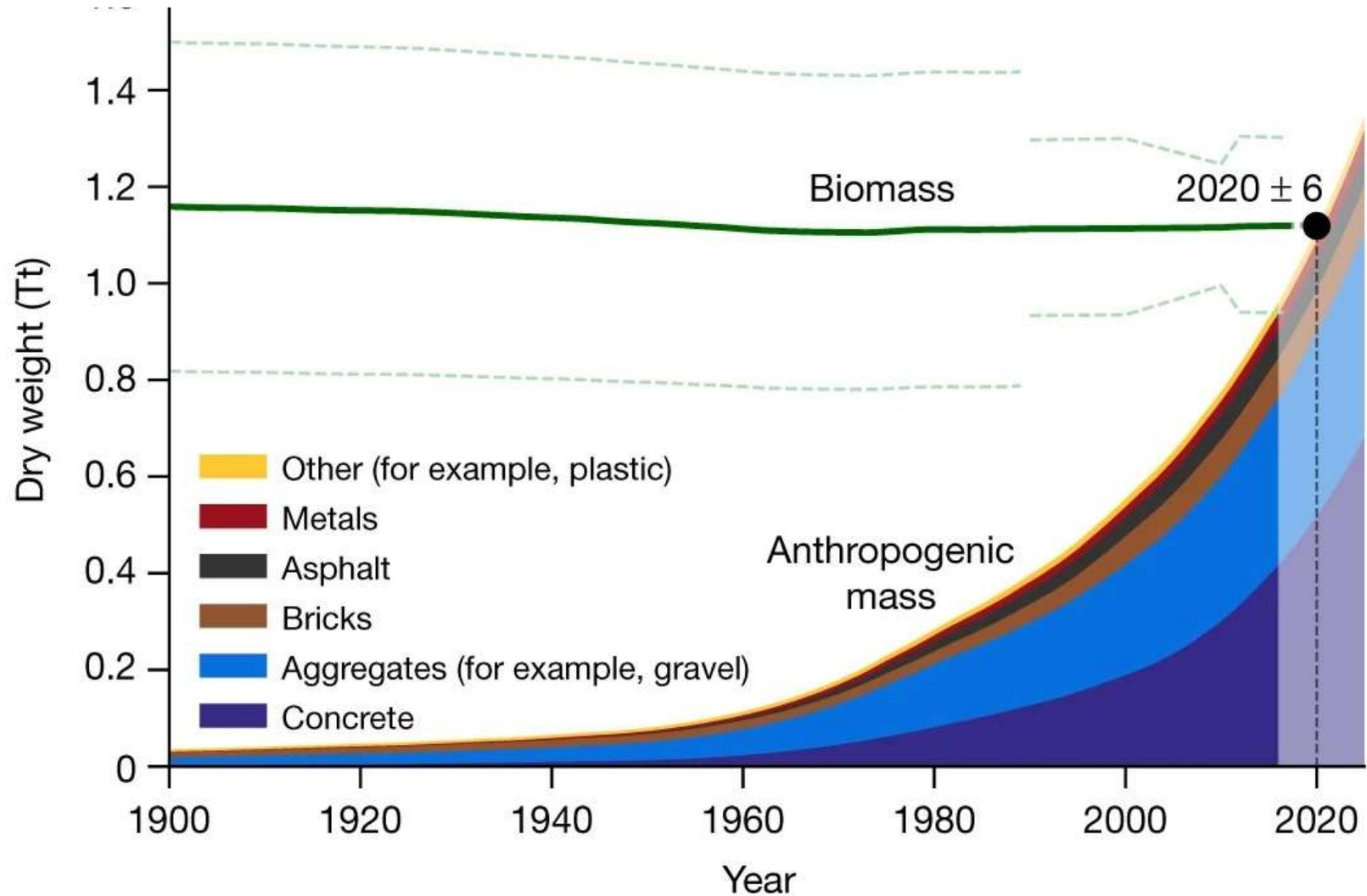


Anthropogen gestörtes / gesteuertes System



nature

Biomasse und Anthropogene Masse im Verhältnis



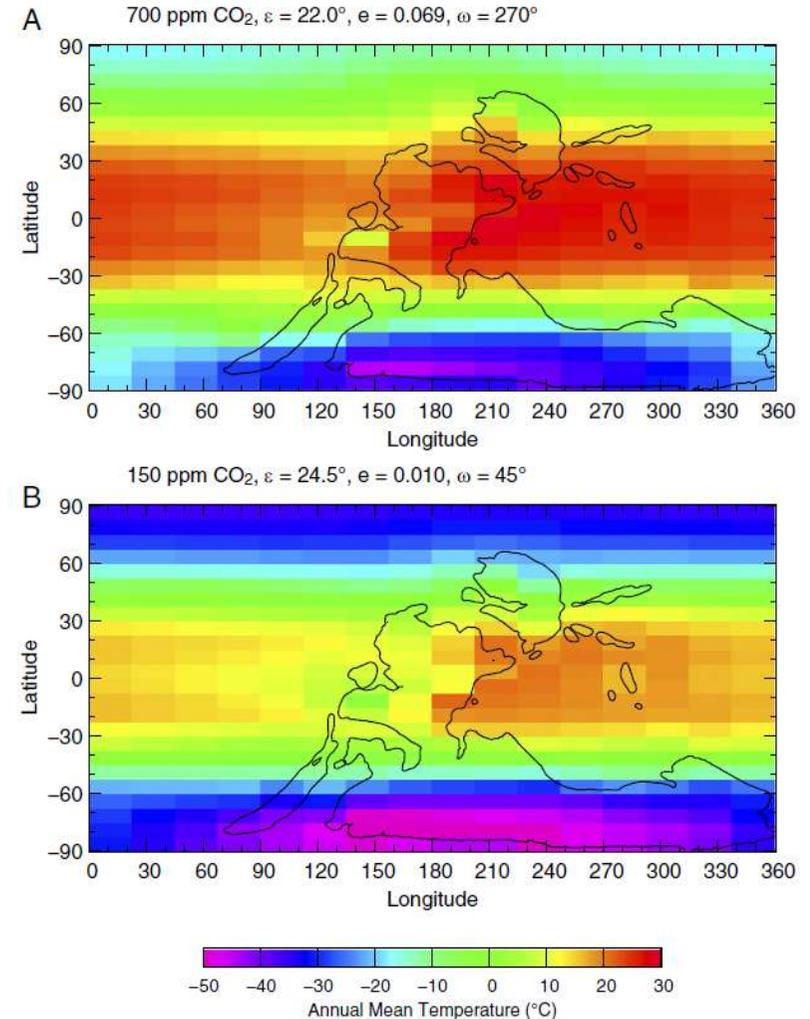
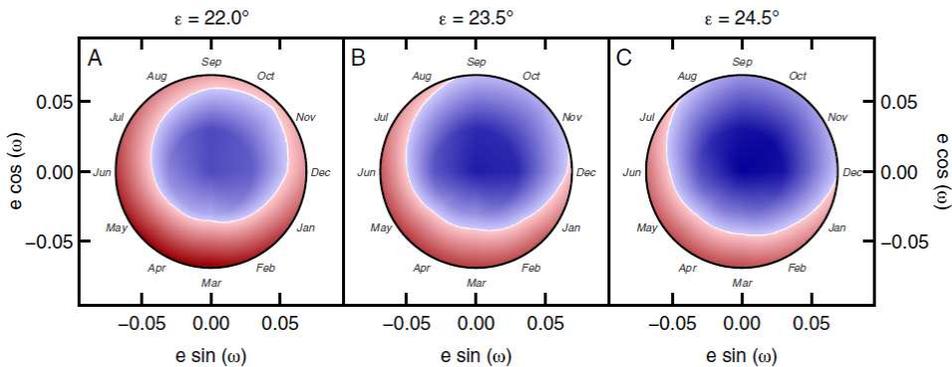
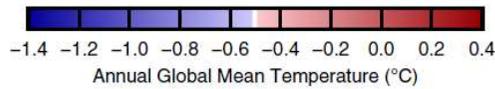
Karbon/Perm: Kohlebildung und Kühlung der Erde

Formation of most of our coal brought Earth close to global glaciation

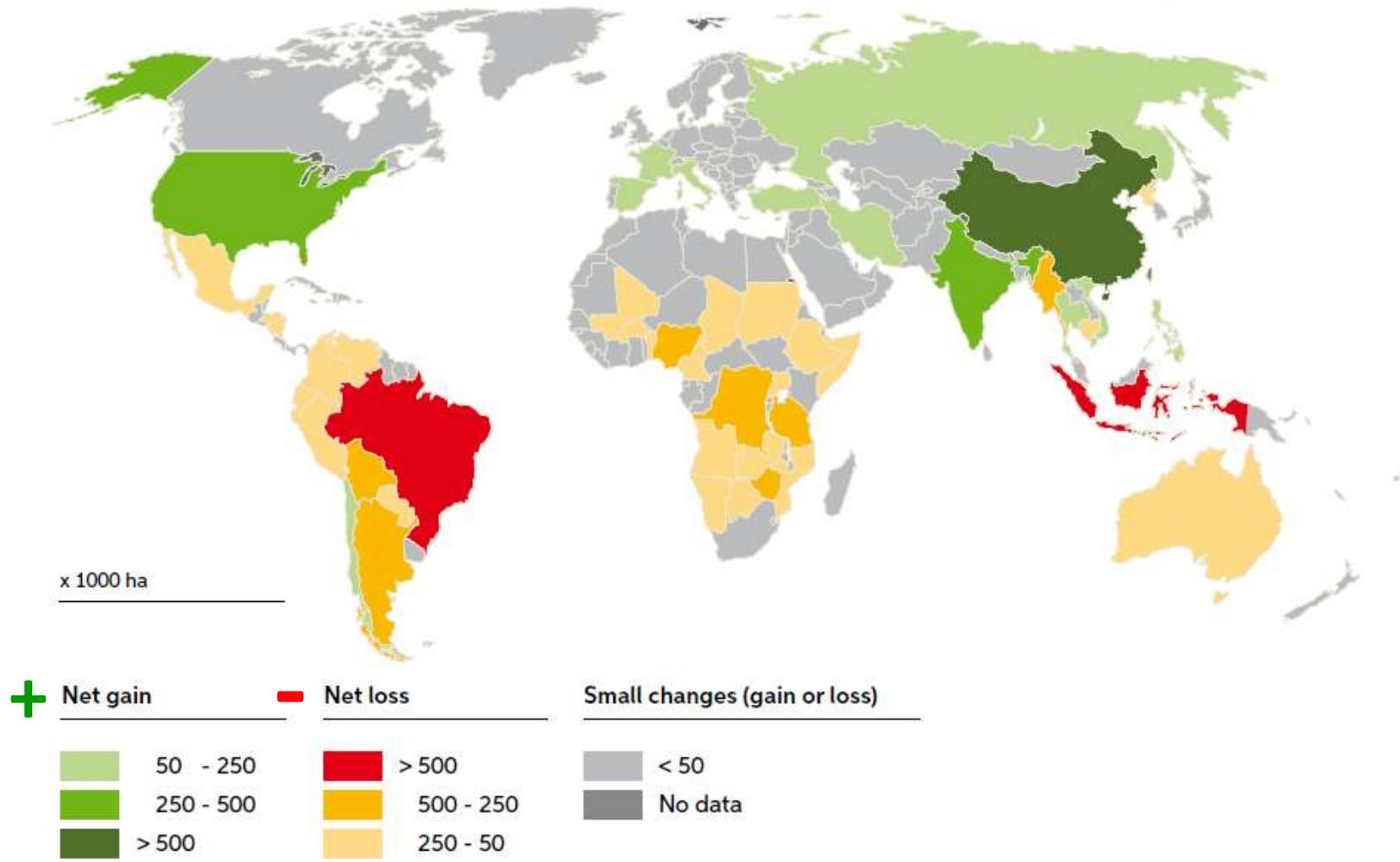
Georg Feulner^{a,1}

The bulk of Earth's coal deposits used as fossil fuel today was formed from plant debris during the late Carboniferous and early Permian periods. The high burial rate of organic carbon correlates with a significant drawdown of atmospheric carbon dioxide (CO₂) at that time. A recent analysis of a high-resolution record reveals large orbitally driven variations in atmospheric CO₂ concentration between ~150 and 700 ppm for the latest Carboniferous and very low values of 100 ± 80 ppm for the earliest Permian. Here, I explore the sensitivity of the climate around the Carboniferous/Permian boundary to changes in Earth's orbital parameters and in atmospheric CO₂ using a coupled climate model. The coldest orbital configurations are characterized by large axial tilt, small eccentricities of Earth's elliptical orbit, whereas the warmest configuration occurs at minimum tilt, maximum eccentricity, and a perihelion passage during Northern hemisphere spring. Global glaciation occurs at CO₂ concentrations <40 ppm, suggesting a rather narrow escape from a fully glaciated Snowball Earth state given the low levels and large fluctuations of atmospheric CO₂. These findings highlight the importance of orbital cycles for the climate and carbon cycle during the late Paleozoic ice age and the climatic significance of the fossil carbon stored in Earth's coal deposits.

paleoclimate | Carboniferous | Permian | glaciation | coal



Jährliche Veränderung der Waldfläche (1990-2015)



TECHNICAL COMMENTS

Comment on “The global tree restoration potential”

 Pierre Friedlingstein^{1,*},  Myles Allen²,  Josep G. Canadell³,  Glen P. Peters⁴,  Sonia I. Seneviratne⁵

TECHNICAL COMMENTS

Comment on “The global tree restoration potential”

 Joseph W. Veldman^{1,2,*},  Julie C. Aleman^{1,3},  Swanni T. Alvarado^{4,5},  T. Michael Anderson⁶,  Sally Archibald

TECHNICAL COMMENTS

Comment on “The global tree restoration potential”

 Simon L. Lewis^{1,2,*},  Edward T. A. Mitchard³,  Colin Prentice⁴,  Mark Maslin¹,  Ben Poulter⁵

TECHNICAL COMMENTS

Comment on “The global tree restoration potential”

 Alan Grainger^{1,*},  Louis R. Iverson²,  Gregg H. Marland³,  Anantha Prasad²

TECHNICAL COMMENTS

Comment on “The global tree restoration potential”

 Andrew K. Skidmore^{1,2,*},  Tiejun Wang¹,  Kees de Bie¹,  Petter Pilesjö³



World Visions „Waldmacher“ für Lebenswerk ausgezeichnet

Alternativer Nobelpreis für Tony Rinaudo

2018

Kleinbauern begrünen mithilfe von FMNR (farmer managed natural regeneration) die Sahelzone

Bis 2004 bereits 200 Millionen Bäume im Niger wachsen lassen

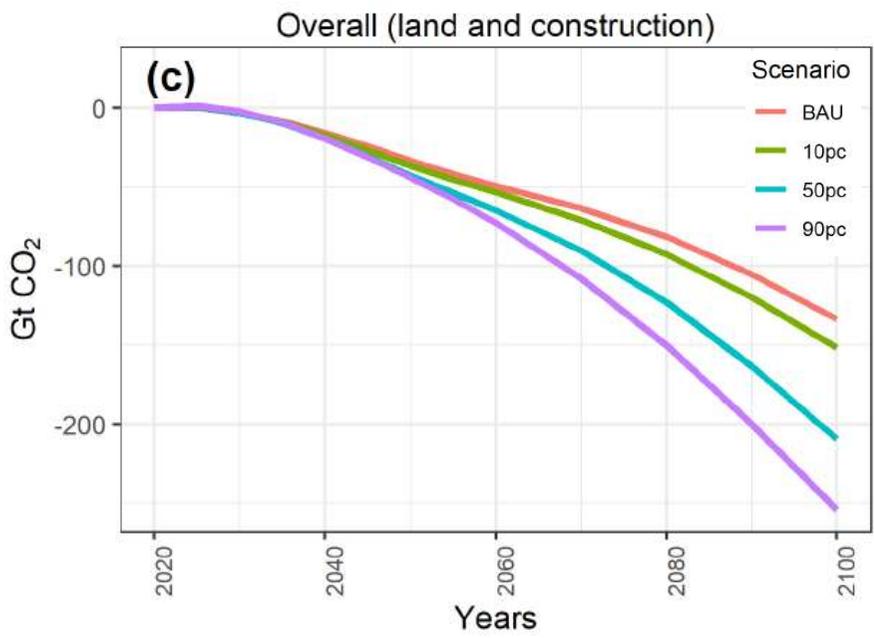
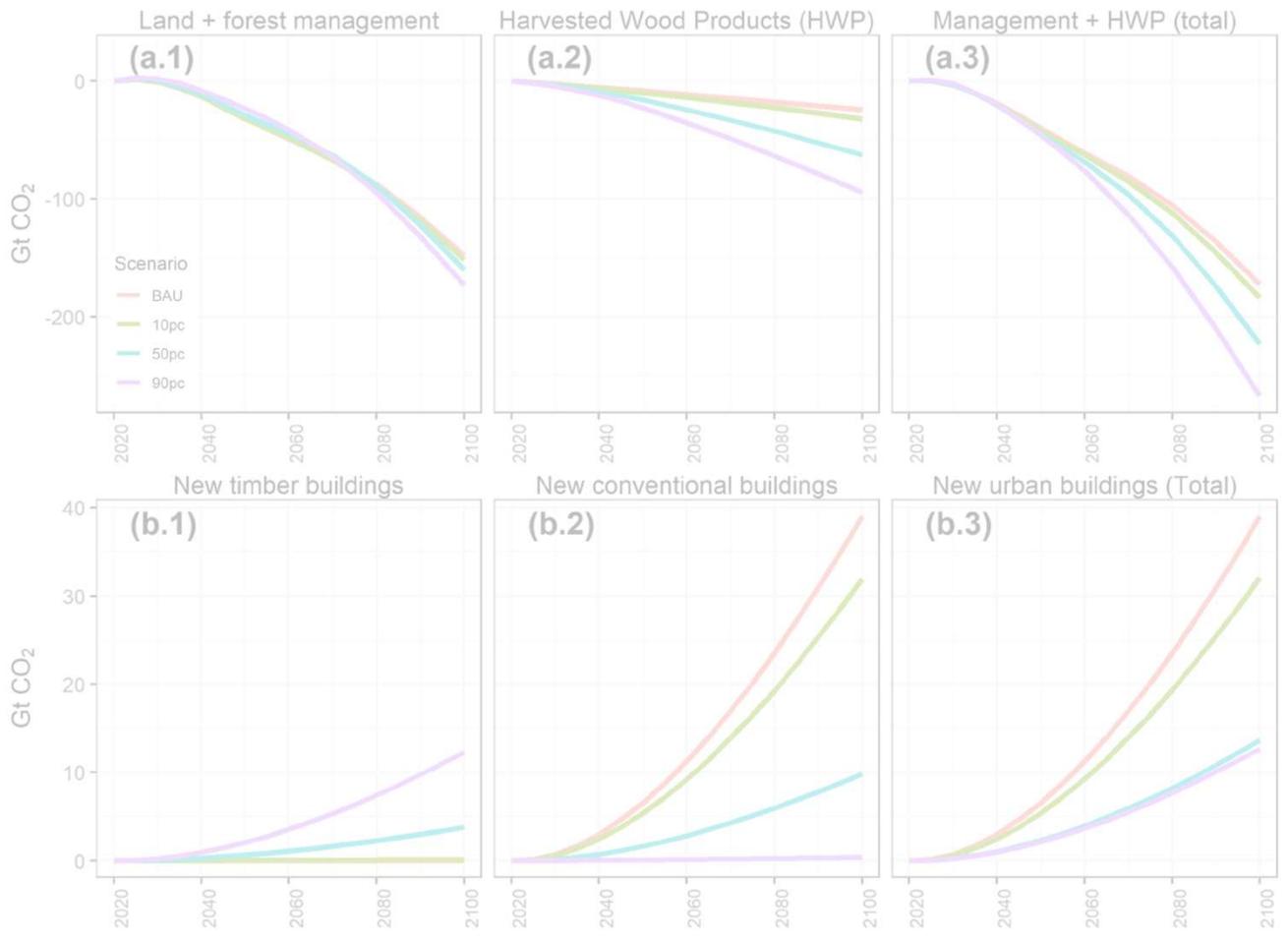
FMNR wird in 124 Ländern weltweit betrieben



Timber cities in the 21st century: sufficient wood can be produced within climate and land constraints

Abhijeet Mishra^{1,2,*}, Florian Humpenöder¹, Galina Churkina¹, Christopher P.O. Reyer¹, Felicitas Beier^{1,2}, Benjamin Leon Bodirsky¹, Hermann Lotze-Campen^{1,2}, and Alexander Popp¹, Hans Joachim Schellnhuber

Negative Emissionen durch Holzkonstruktionen

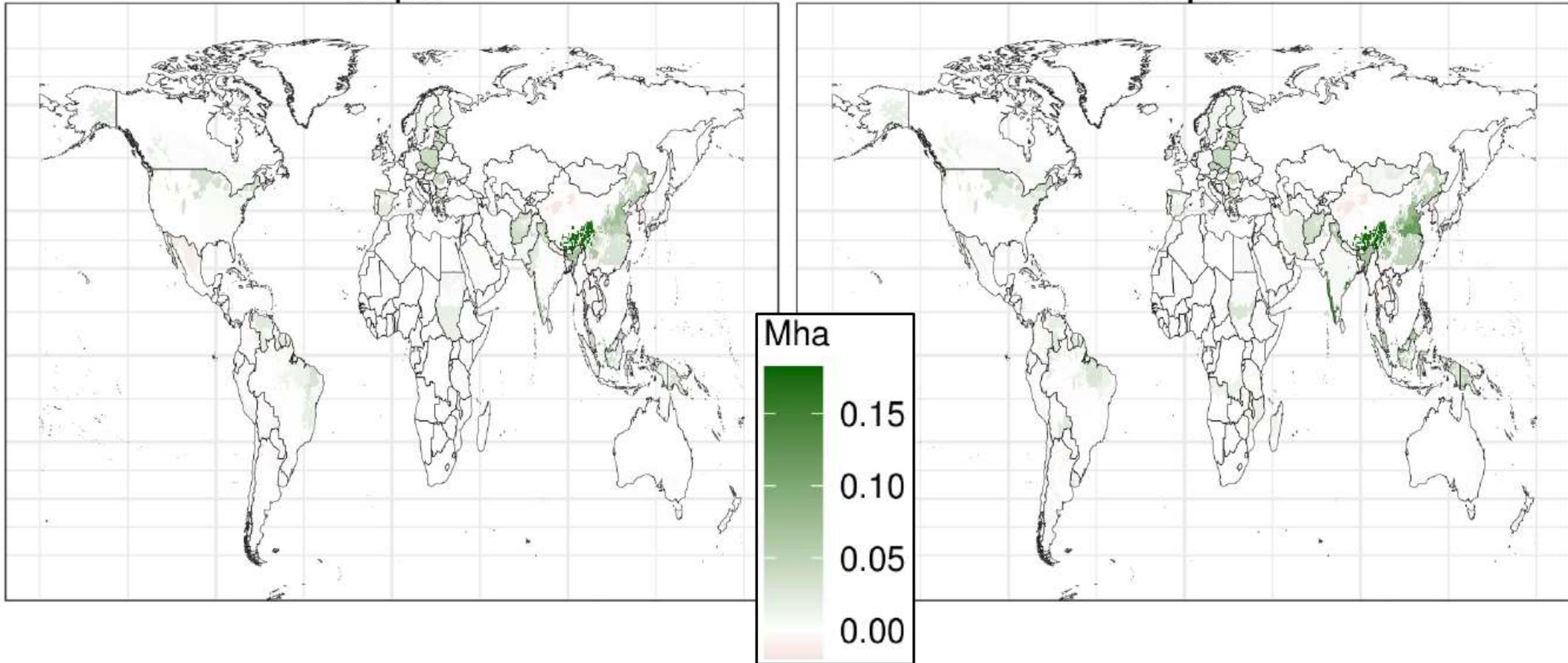


Mishra et al. (2021, unveröffentlicht)

Entwicklung von Waldplantagen 2020-2100

50pc

90pc



FOREST POLICY BRIEFING NOTE

Newly planted commercial forest can achieve 269% greater climate change mitigation than semi-natural alternatives

Prepared by:

Gary Newman (Woodknowledge Wales);
John Healey, Eilidh Forster and Dave Styles (Bangor University)
Caren Dymond (Government of British Columbia)

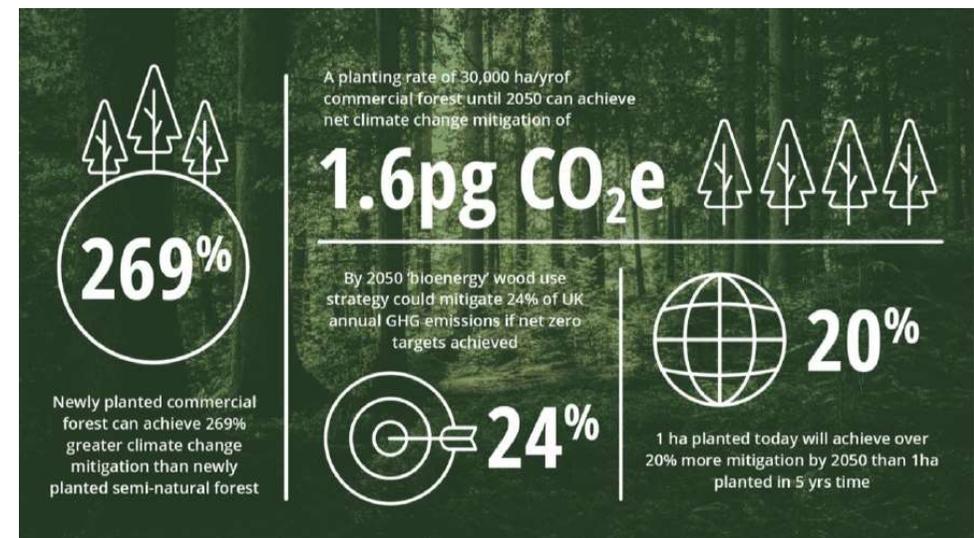
Prepared on:

22nd June 2021

Full report: [here](#)

Key findings

- Climate change mitigation from harvested stands surpasses unharvested stands 100 years after planting.
- Newly planted commercial forest can achieve 269% greater climate change mitigation than semi-natural alternatives
- A planting rate of 30,000 ha/yr of commercial forest until 2050 can achieve net climate change mitigation of 1.6 PgCO₂e over 100 years



Frankfurter Allgemeine

ZEITUNG FÜR DEUTSCHLAND

Feuilleton

DONNERSTAG, 22. APRIL 2021 · NR. 93 · SEITE 9

Bauhaus für die Erde

Ein bescheidener Vorschlag zur Rettung der Welt: Wenn wir unsere Städte aus Holz statt aus Beton bauen, bleibt uns das Schlimmste erspart.

Von Hans Joachim Schellnhuber

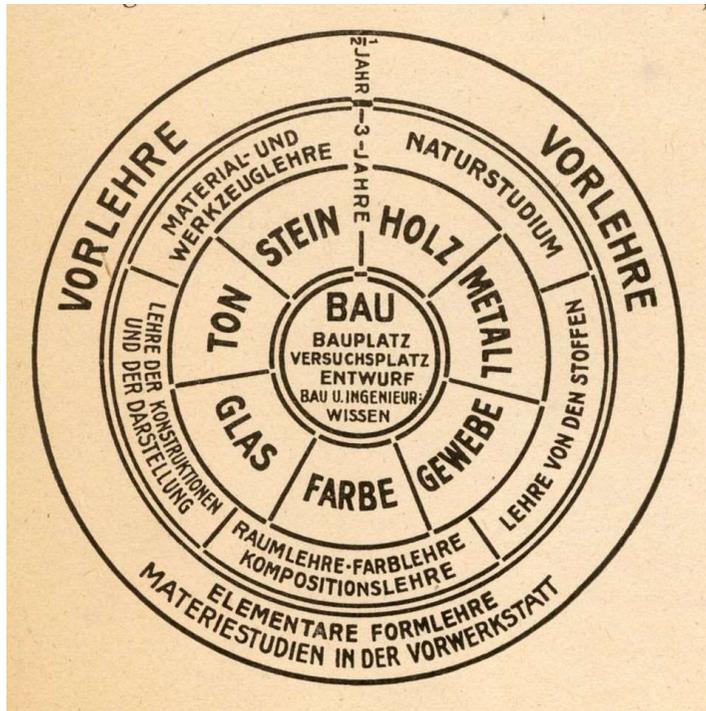
Original Artikel: [hier](#)



Ein Hochhaus aus Holz: das Hoho in Wien

Foto Maurizio

Unter einem Dach: Leben, Handwerk & Kunst



Schema zum Aufbau der Lehre am Bauhaus, Gestaltung: Walter Gropius, 1923. © VG Bild-Kunst Bonn, 2016.



Die Bauhausmeister: Josef Albers, Hinnerk Scheper, Georg Muche, László Moholy-Nagy, Herbert Bayer, Joost Schmidt, Walter Gropius, Marcel Breuer, Wassily Kandinsky, Paul Klee, Lyonel Feininger, Gunta Stölzl, Oskar Schlemmer, 1926

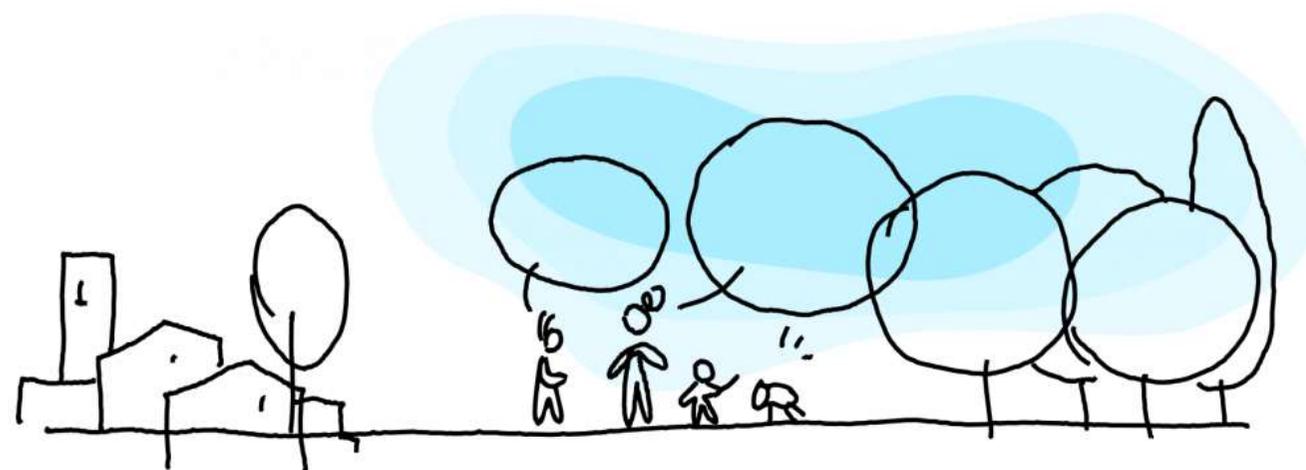
State of the Union Address by President von der Leyen at the European Parliament Plenary

Original Speech:
[here](#)

Brussels, 16 September 2020

Shaping more beautiful, sustainable and inclusive forms of living together

#neweuropeanbauhaus



New European Bauhaus
beautiful | sustainable | together

QUARTZ AFRICA

By Lily Kuo July 24, 2017

A minimalist Japanese architect is designing homes for refugees that they can build themselves

Original article: [here](#)



Shigeru Ban



SHIGERU BAN ARCHITECTS

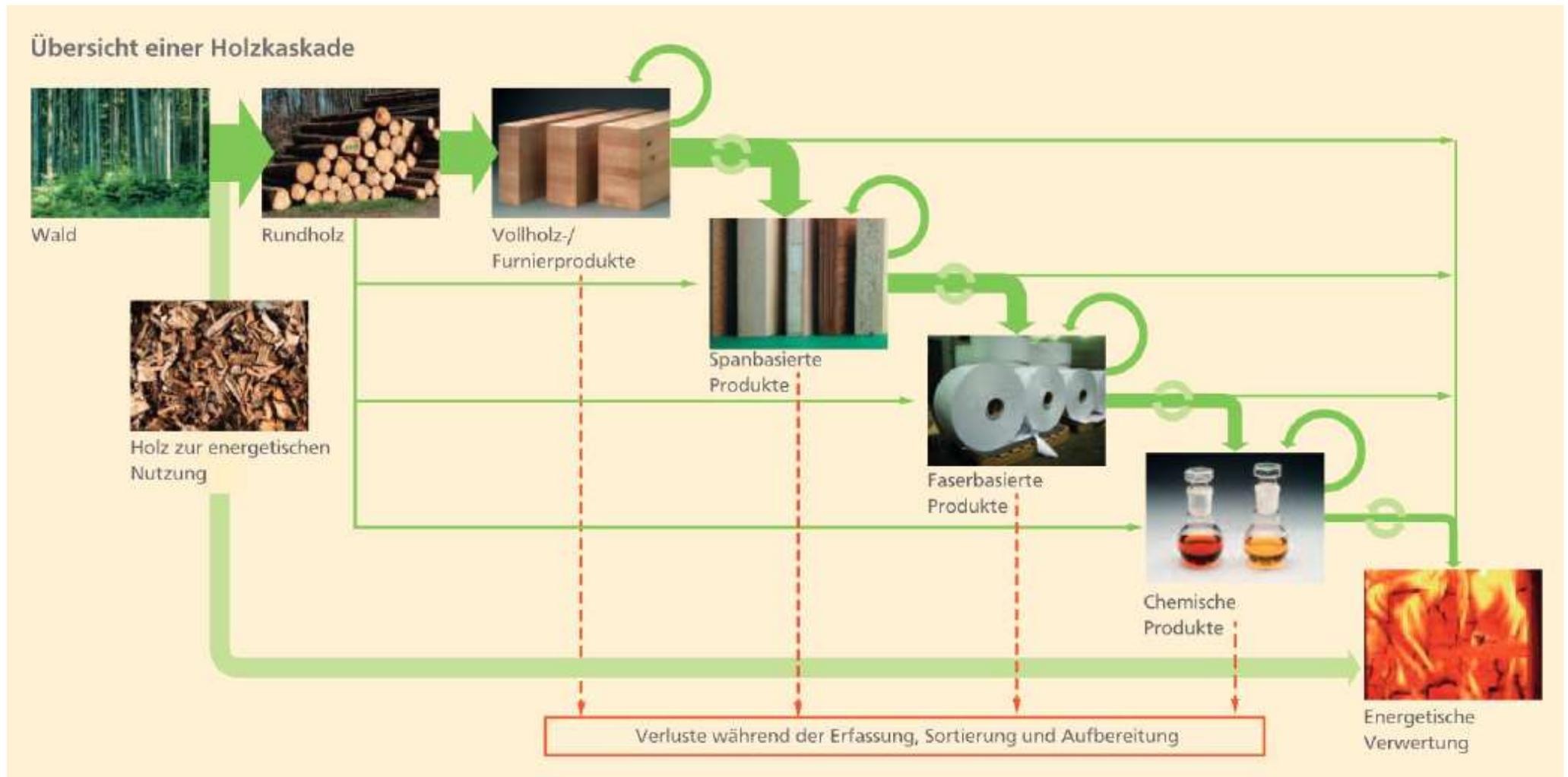
After a 2011 earthquake in Christchurch, New Zealand, Ban designed a temporary replacement for the church made out of cardboard.



SHIGERU BAN ARCHITECTS

Ban's houses for victims of the Nepal 2015 earthquake use wood as the main frame of the shelter. Bricks are used for the enclosure.

Kaskadennutzung von Holz



Quelle: Höglmeier, K., Weber-Blaschke, G., Richter, K. (2016)

Original Artikel: [hier](#)

Landwende im Anthropozän: Von der Konkurrenz zur Integration



Gutachten: [here](#)

