

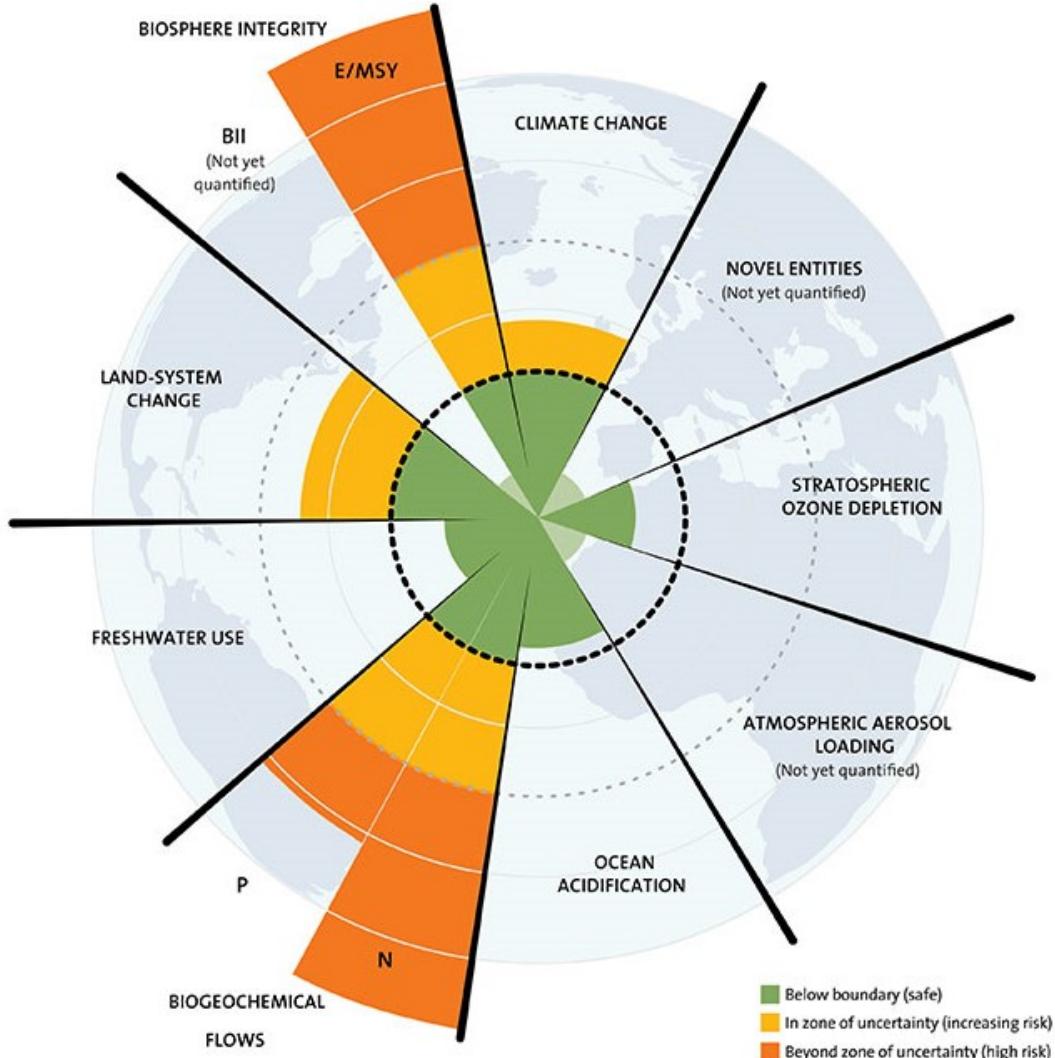
Klimaschutz und Klimawandelanpassung

**SDG Dialogforum Österreich  
„Building forward better mit der Agenda 2030“**

Sigrid Stagl

28 September 2021

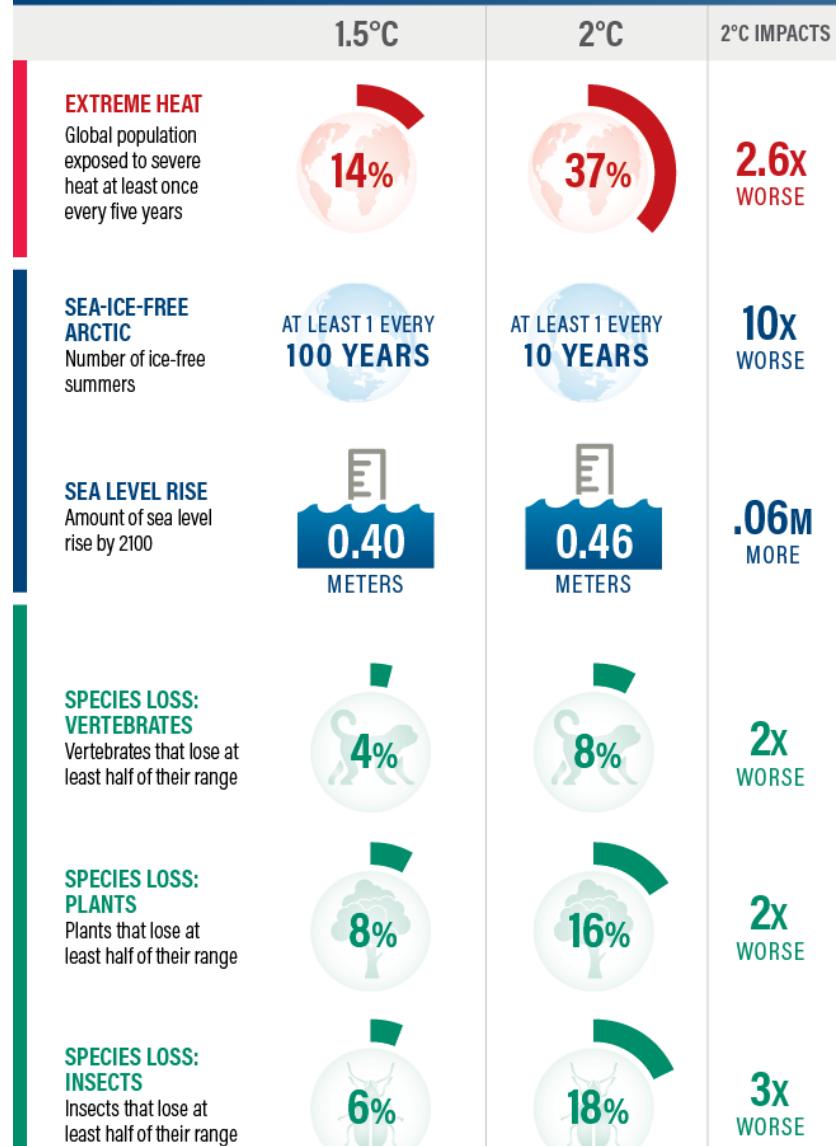
# Mehrere Planetarische Grenzen



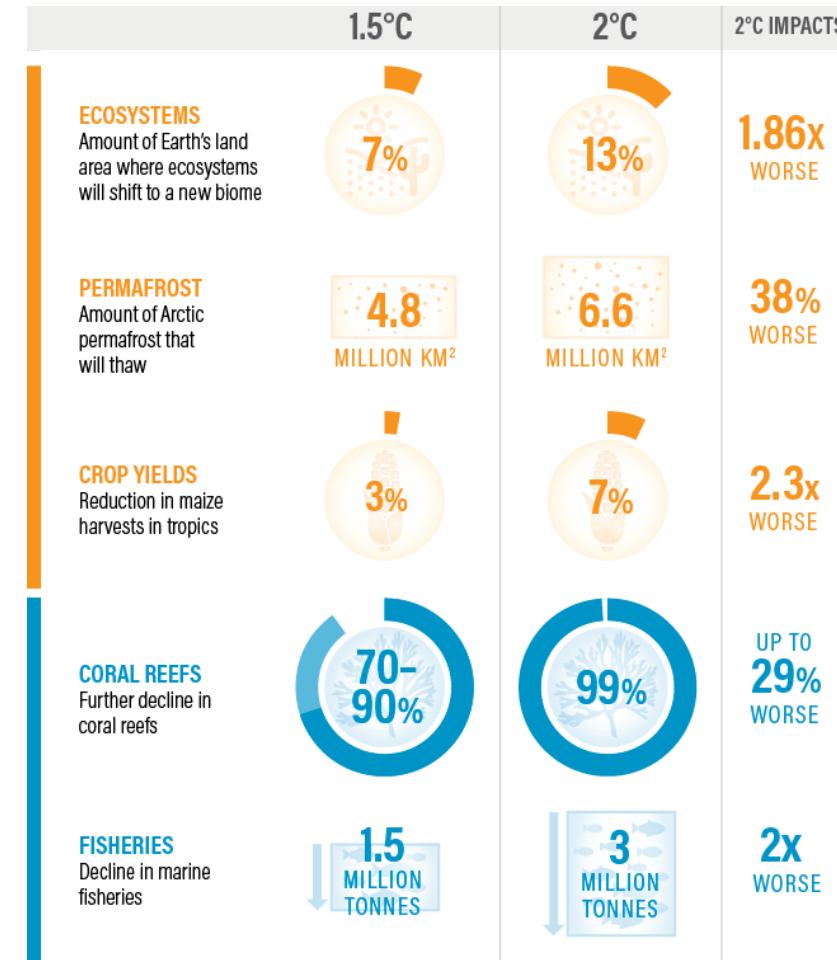
Source: Steffen et al. 2015

# HALF A DEGREE OF WARMING MAKES A BIG DIFFERENCE:

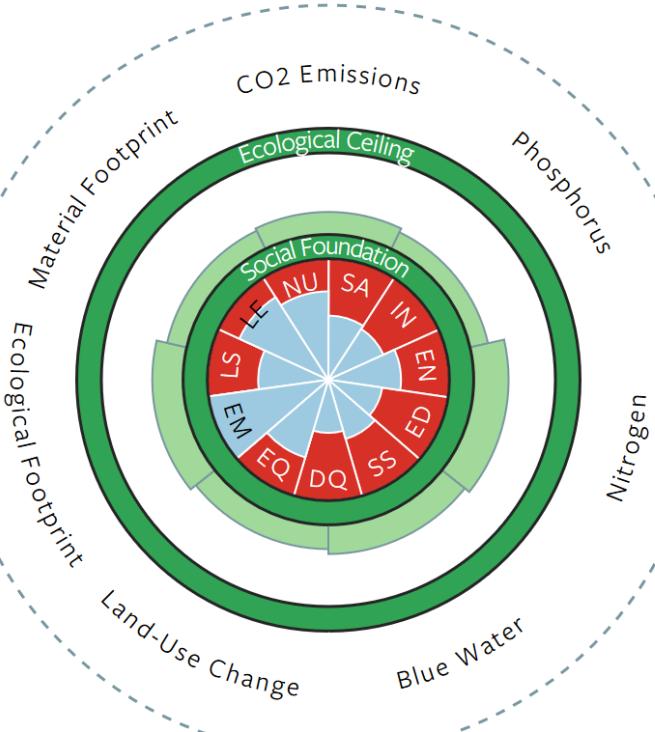
EXPLAINING IPCC'S 1.5°C SPECIAL REPORT



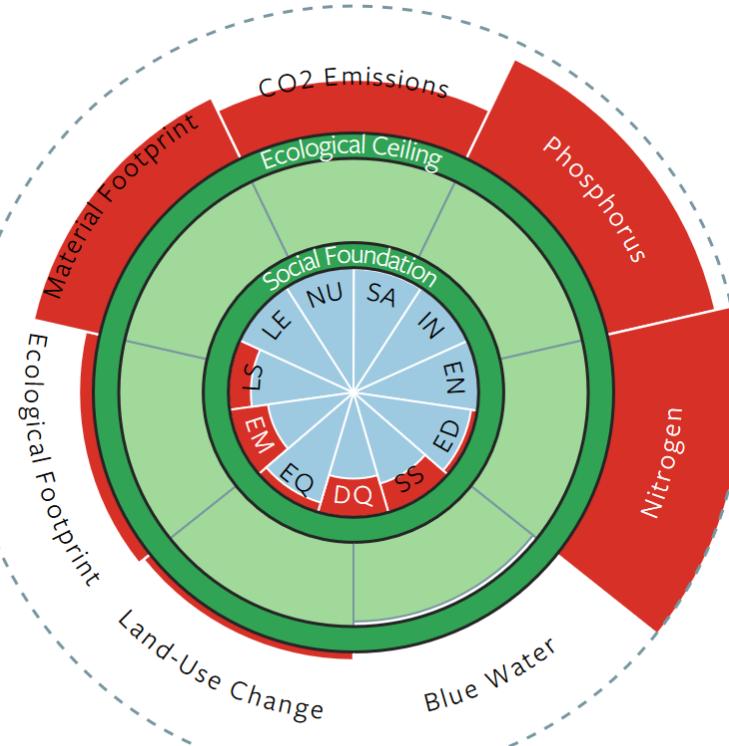
In May the G7 group of nations pledged to aim for a maximum rise of 1.5C, in a shift from the 2015 Paris accord headline goal of keeping temperatures at “well below 2C”.



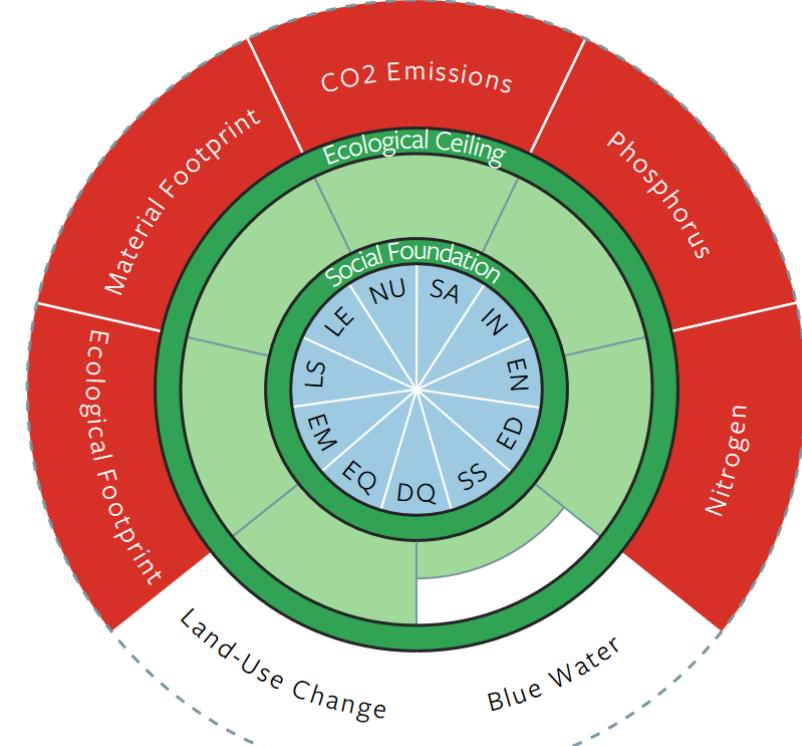
# Problem: no country fulfills needs of its population & stays within biophysical boundaries



Bangladesch



Albanien



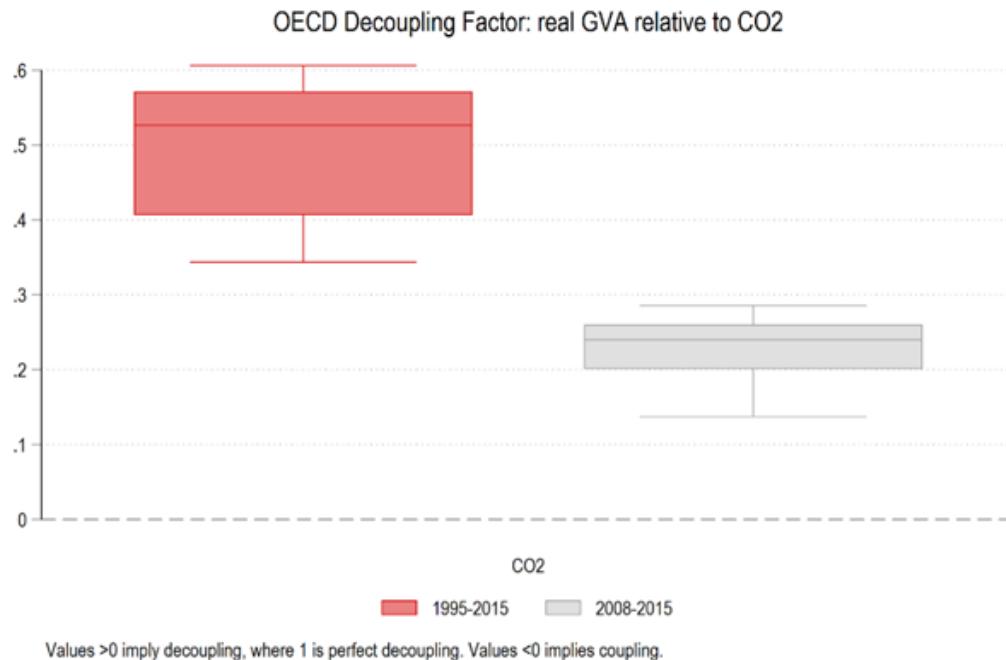
Österreich

LS - Life Satisfaction	ED - Education
LE - Healthy Life Expect.	SS - Social Support
NU - Nutrition	DQ - Democratic Quality
SA - Sanitation	EQ - Equality
IN - Income	EM - Employment
EN - Access to Energy	

# **Decoupling myth**

# Green Growth & Recoupling

- OECD decoupling factor (>0 is decoupling, 1 is perfect decoupling, <0 is coupling)
- From 1995-2015 there are strong signs of decoupling, relative to 1995, across the provinces although some are decoupling more than others.
- This is due to climate policies implemented around 1995 and 2000 that managed to reduce emissions while keeping the growth path up.
- But if we look at the data from 2008-2015 after the financial crisis, all provinces are worse off indicating a slowdown of the decoupling measure.
- This is primarily driven by weakening of climate policies in favor of pro-growth policies post-2008.



# Green Growth & Recoupling

OECD Decoupling Factor: real GVA relative to various emissions



Values >0 imply decoupling, where 1 is perfect decoupling. Values <0 implies coupling.

Source: Naqvi, A. & Zwickl, K. (2020) – Working Paper Ecological Economics

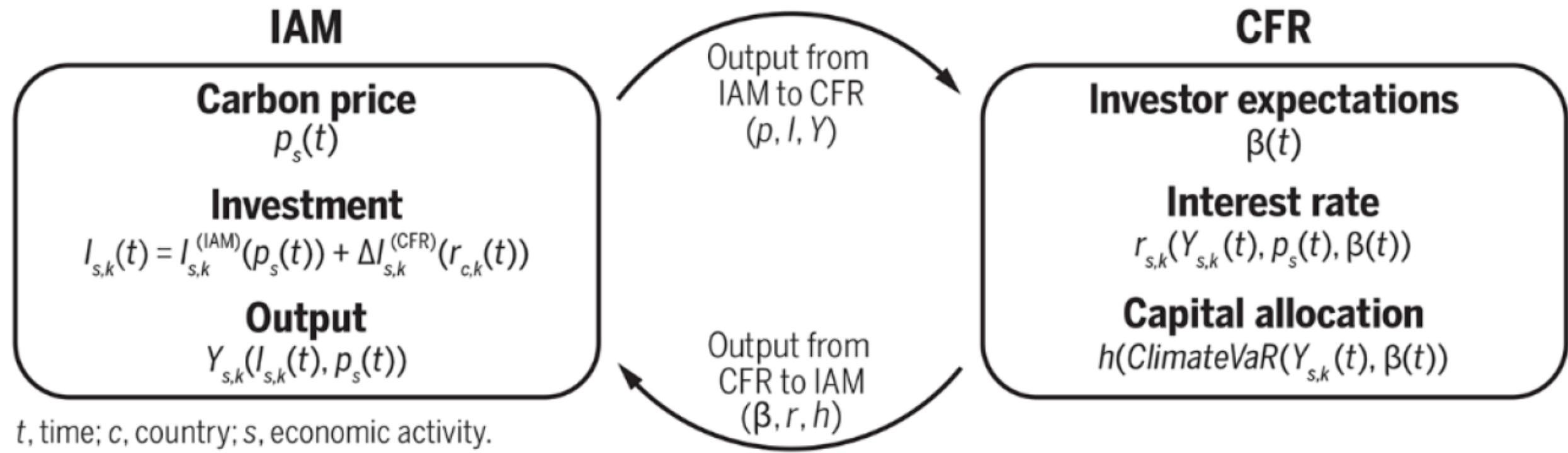
# **Sustainable finance**

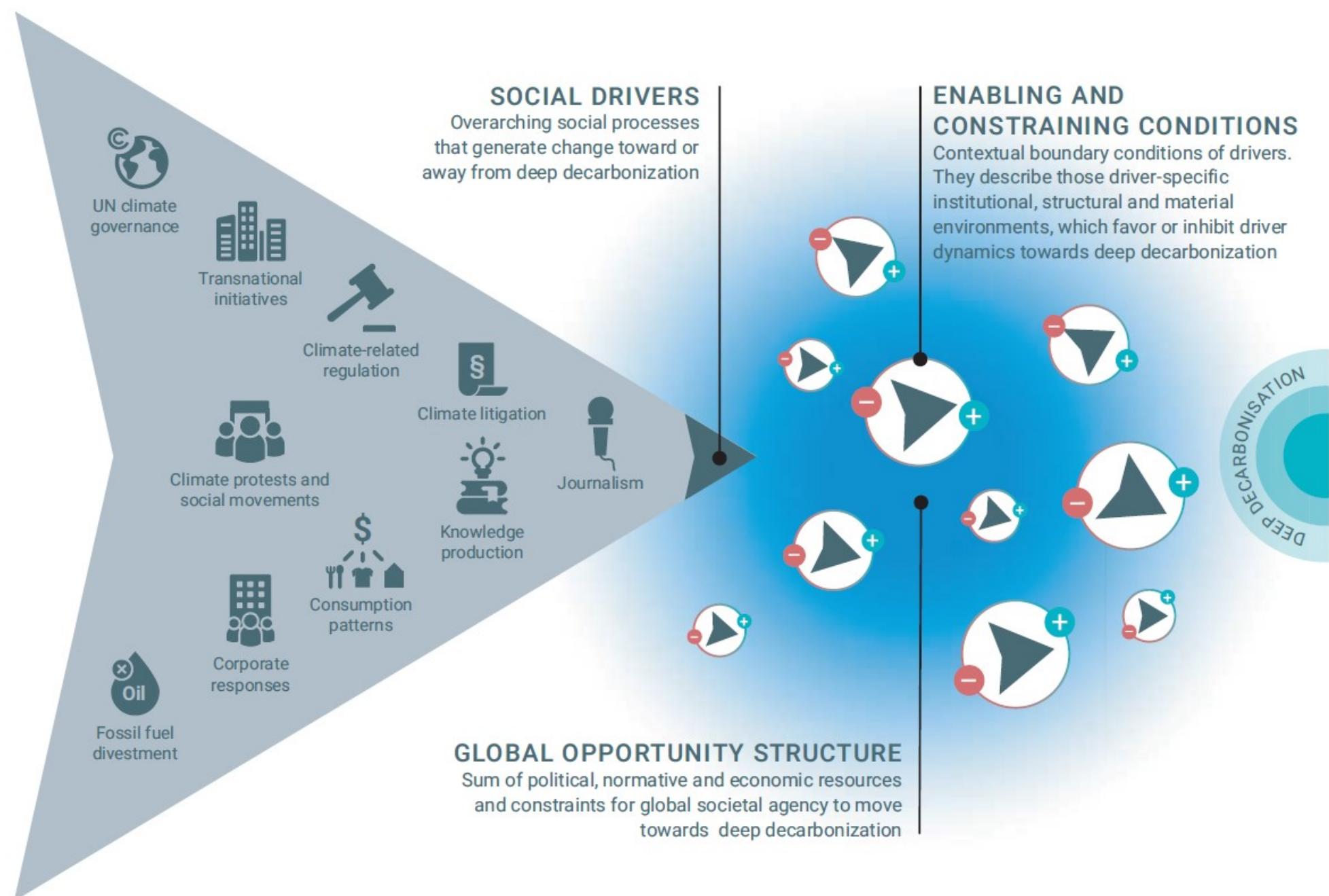
# Enabling or hampering role?

- Climate change poses new risks for citizens' investments and savings
- The financial system can play an **enabling role in climate mitigation** pathways to a low-carbon transition or it can play a **hampering role**, e.g., if investors' perceptions of low risk from a missed transition and low opportunities from a transition fail to trigger a reallocation of capital into low-carbon investments.
- Battiston, Monasterolo et al 2021 developed a macroeconomic framework to capture the interdependence between investors' perception of future climate risk, depending on the credibility of climate policies, and the allocation of investments in the economy.

# Linking climate mitigation pathways and the financial system

An integrated assessment model (IAM) generates economic output trajectories under climate policy scenarios. A climate financial risk (CFR) model uses IAM output to compute interest rates for firms using different energy technologies ( $k$ ). Investors' expectations and climate value-at-risk (*ClimateVaR*) determine capital allocation across technologies. The IAM updates to reflect diversity in financing costs.





Source: Stammer, Detlef; Anita Engels; Jochem Marotzke; Eduardo Gresse; Christopher Hedemann; Jan Petzold (eds.); 2021. Hamburg Climate Futures Outlook 2021. Assessing the plausibility of deep decarbonization by 2050. Cluster of Excellence Climate, Climatic Change, and Society (CLICCS). Hamburg, Germany.

## Interplay between the financial system and climate policy timing

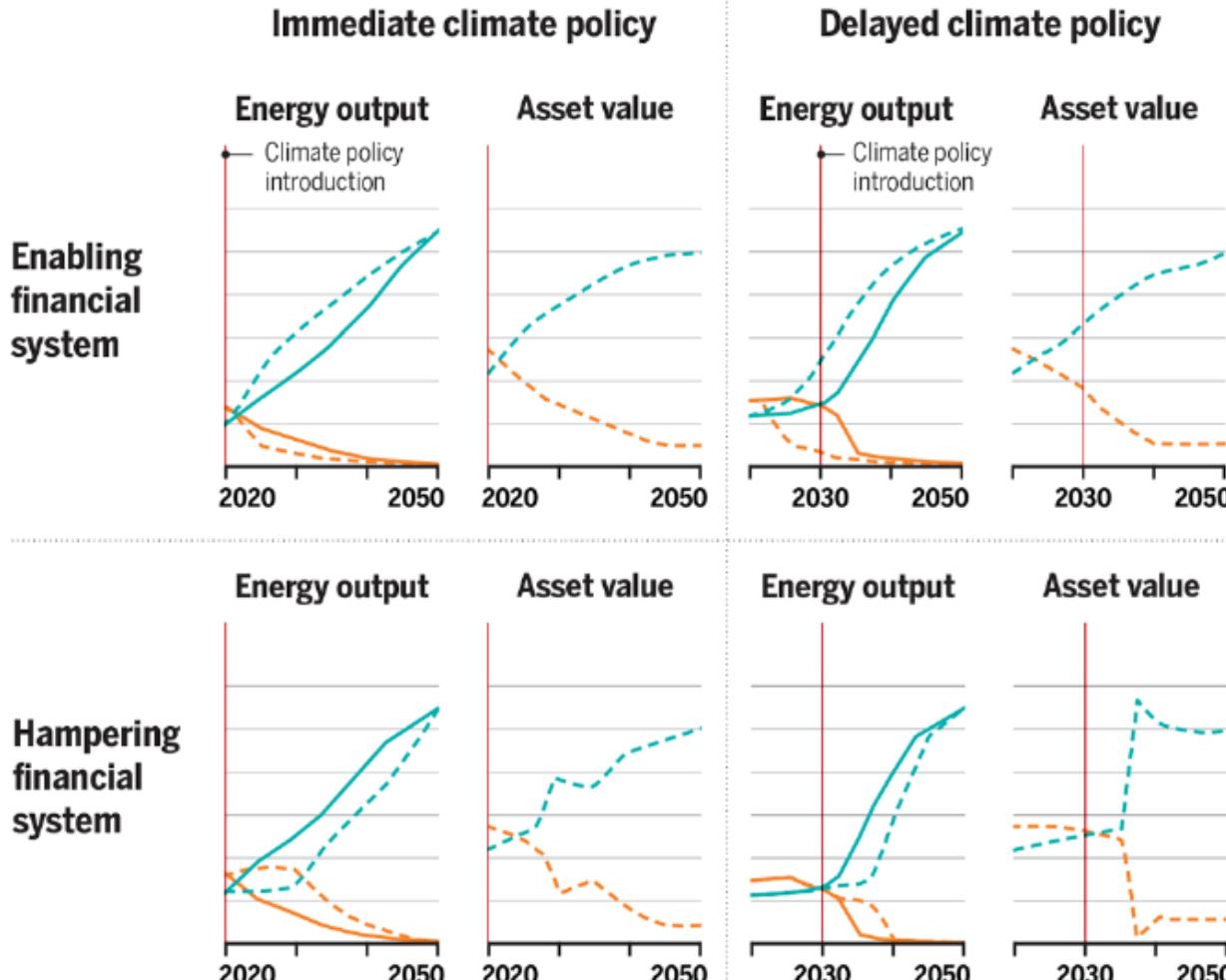
Four main climate transition scenarios are shown. Solid curves are the same in top and bottom panels and represent stylized trajectories from existing integrated assessment model (IAM) scenarios of electricity production from coal or renewable energy. Dashed curves represent stylized trajectories from the IAM-climate financial risk (CFR) framework of electricity production and asset values. The difference between solid and dashed curves is the effect of accounting for the role of the financial system.

Trajectories from IAM scenarios

Renewable energy      Coal

Trajectories from IAM-CFR framework

Renewable energy      Coal



# Die Rolle des Finanzsystems

- Unterstützung der Finanzbehörden bei der Förderung der Bewertung klimabezogener finanzieller Risiken durch Investoren.
- Könnte die Reihenfolge von Kosten und Nutzen von Klimaschutzmaßnahmen umkehren, die derzeit durch die Nichtberücksichtigung des Finanzsystems verzerrt ist.
- Integrierte Szenarien würden die Unterschätzung des Finanzrisikos bei Klimastresstests begrenzen.
- Auswirkungen auf die Kriterien, die von Zentralbanken verwendet werden, um zulässige Vermögenswerte in ihren Sicherheitenrahmen und Ankaufsprogrammen zu identifizieren.
- Notwendigkeit für die Finanzbehörden, das mögliche moralische Risiko des Finanzsystems in der Dynamik des kohlenstoffarmen Übergangs zu überwachen und zu bändigen.

# Literatur

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