WELCOME TO THE TRA 6 LECTURE SERIES INNOVATION PATHWAYS TO SUSTAINABILITY

„MANAGING LAND USE AS KEY CHALLENGE OF THE TRANSFORMATION TO SUSTAINABILITY“

PROFESSOR SABINE SCHLACKE, INSTITUTE OF ENVIRONMENTAL AND PLANNING LAW, UNIVERSITY OF MÜNSTER

MODERATOR: WOLFGANG DURNER, MEMBER OF THE TRA STEERING COMMITTEE, PROFESSOR AT THE INSTITUTE OF PUBLIC LAW AND THE INSTITUTE OF WATER AND WASTE MANAGEMENT LAW, UNIVERSITY OF BONN
Rethinking Land in the Anthropocene

Prof. Dr. Sabine Schlacke
Münster University

Five good news and five difficult news
Summary

Rethinking Land in the Anthropocene: from Separation to Integration

FROM TRILEMMA TO INTEGRATION

MULTIPLE-BENEFIT STRATEGIES FOR SUSTAINABLE LAND STEWARDSHIP

TRANSFORMATIVE GOVERNANCE FOR SOLIDARITY-BASED LAND STEWARDSHIP

Source: WBGU
“Trilemma“ of Land Use

Climate protection

Biodiversity conservation

Food security

Source: WBGU
Land and climate

Change needed in our approach to land

- Land can contribute to climate protection, but cannot solve the problem and is itself dependent on climate protection.
Land and the **Biodiversity Crisis**

**Humans are causing worldwide mass extinction**

- Extinction rate today 100-1000x compared to pre-human times

- Biggest drivers: changing land use, overexploitation, climate change, pollution, invasive species

- Loss of invaluable ecosystem services
Land and the Food Crisis

Today's food system is not sustainable

- Although sufficient production quantitatively, but
  - ... not accessible to all,
  - ... often unhealthy (high calorie, low micronutrient)
- About a quarter of humanity has too little
- Another quarter suffers from overconsumption
- Food production has significant environmental externalities
“Trilemma“ of Land Use

Climate protection

Biodiversity conservation

Food security

Source: WBGU
Implementation of multi-benefit strategies in the context of the integrated landscape approach

- Multifunctionality and multiple benefits
- Participation and reciprocity of stakeholders
- Shared framework for monitoring and evaluation
- Adaptive management
Five multiple-benefit strategies

- Ecosystem restoration
- Protected-area systems
- Diversified agriculture
- Changing dietary habits
- Timber-based construction

Source: WBGU
Restoration can make land-based CO$_2$-removal synergistic
2 – Expand and upgrade protected-area systems

> **An effective protection** of 30% of the global land area is vital for overcoming the biodiversity and climate crises
3 – Diversify farming systems

A diversified, **ecologically intensive agriculture** can secure food, protect the climate, enable landscape resilience and maintain biodiversity

Source: WBGU
4 – Transform **dietary habits**
5 – Shape the **bioeconomy** responsibly and promote **timber-based construction**

> **Sustainable bioeconomy** needs a limiting framework and prioritises material use cycles, e.g. timber-based construction.

Source: WBGU
Five governance strategies

- European Union
- Proactive state
- Change agents
- International cooperation
- New cooperation alliances

Source: WBGU
1 – Support change agents

> Numerous examples of individual and institutional change agents employing new land-related practices

> BUT: the right framework conditions are needed to support such pioneering activities

(Project © TU Dresden, IWD Manuel Wewer) (Photo by Andréia Martins/AMLD)
2 – Set national political framework conditions

> States should **pro-actively** ensure
> > that **negative impacts** of their land-related actions are taking into account
> > that **positive contributions** are rewarded

> **Consistent, whole-government approaches** help, incl.:
> > (sectoral) **incentive and pricing instruments**
> > (sectoral) **sustainability standards**
> > enhanced spatial and **landscape planning**
> > improved **indicators and monitoring**

Source: WBGU
Instruments and processes of the proactive state

(National) policy mix

Sectoral **incentive and pricing instruments** *(Section 4.2.1)* for sustainable land stewardship

Sectoral **sustainability standards** *(Section 4.2.2)* for sustainable land stewardship

Further develop **spatial and landscape planning** in the sense of the integrated landscape approach *(Section 4.2.3)*

Improve **indicators and monitoring** *(Section 4.2.4)*

**Consistent system** made up of frameworks, trade and distribution policy *(Section 4.2.5)*
Instruments and processes of the proactive state

Further develop spatial and landscape planning in the sense of the integrated landscape approach (Section 4.2.3)
Instruments and processes of the proactive state

Further develop spatial and landscape planning in the sense of the integrated landscape approach (Section 4.2.3)

Spatial planning (ROG)

• From coexistence to integration on the land
• Strengthening the possibility of multifunctional land use in planning law
• Tie regional planning to climate protection goals
• Designate priority and reserved areas for the protection and of climate protection or multifunctional ecosystem services
Instruments and processes of the proactive state

Further develop **spatial and landscape planning** in the sense of the integrated landscape approach *(Section 4.2.3)*

<table>
<thead>
<tr>
<th>Landscape planning (BNatSchG)</th>
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<tr>
<td>• Strengthen the weight of landscape planning in relation to other planning activities</td>
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<tr>
<td>• Strengthen the weighing directives in favor of biodiversity conservation, climate protection and ecosystem services</td>
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<tr>
<td>• Tie regional land use planning to landscape planning</td>
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Instruments and processes of the proactive state

Further develop *spatial and landscape planning* in the sense of the integrated landscape approach (*Section 4.2.3*)

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<td>• Tie to landscape planning</td>
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<td>• Use land use plan + development plan for citywide protection of ecosystem services</td>
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3 – Tackle land-use transformation in the EU

> EU and comparable state coalitions are particularly well suited for land-use transformation over a large area and scaling up activities

> Agriculture and forestry policies should promote ecology and sustainability more broadly – e.g. the EU’s Common Agricultural Policy should become a Common Ecosystem Policy

> The EU and other comparable state coalitions are key to integrate the protection of global commons in international negotiations and trade policies
4 – Strengthen international cooperation

> A joint conference of the Rio Conventions and a strong CBD post-2020 framework can promote the land transformation

> Two new binding protocols for the CBD on conservation and sustainable Use
5 – Establish new cooperation alliances

Regional alliances that aim for the cross-border implementation of integrated landscape approaches

Supranational alliances that unite countries to jointly pursue sustainable land stewardship and agree on common values and regulation to achieve this aim

Global conservation alliances that aim at conserving and restoring valuable ecosystems of special relevance

Source: WBGU
Conclusion: Towards a global land-use transformation

SYSTEMIC
INTERRELATIONS AS A KEY TO GLOBAL SUSTAINABILITY

SYNERGISTIC
INTERACTION: FROM SEPARATION TO INTEGRATION

SOLIDARITY-BASED
ASSUMPTION OF RESPONSIBILITY
Many thanks for your attention

German Advisory Council on Global Change (WBGU)
Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (WBGU)

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