Transforming environmental science for justice and pluralism

INBO studiedag

Brussel

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Section of Knowledge, Transformation, and Society (KiTeS)
University of Twente

About me….

- Science-policy-society relations
- The politics of knowledge
- Biodiversity and nature conservation
- Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES)

KNOWLEDGE, TRANSFORMATION & SOCIETY

The KiTeS group is dedicated to analysing and improving the contribution of Knowledge to Transformations in Society to address intersecting societal and environmental challenges, including growing disparities and inequities, climate change, and biodiversity loss. These transformations will involve deep changes in political, economic, and cultural institutions and structures and the paradigms, values, and knowledge systems that underpin them.

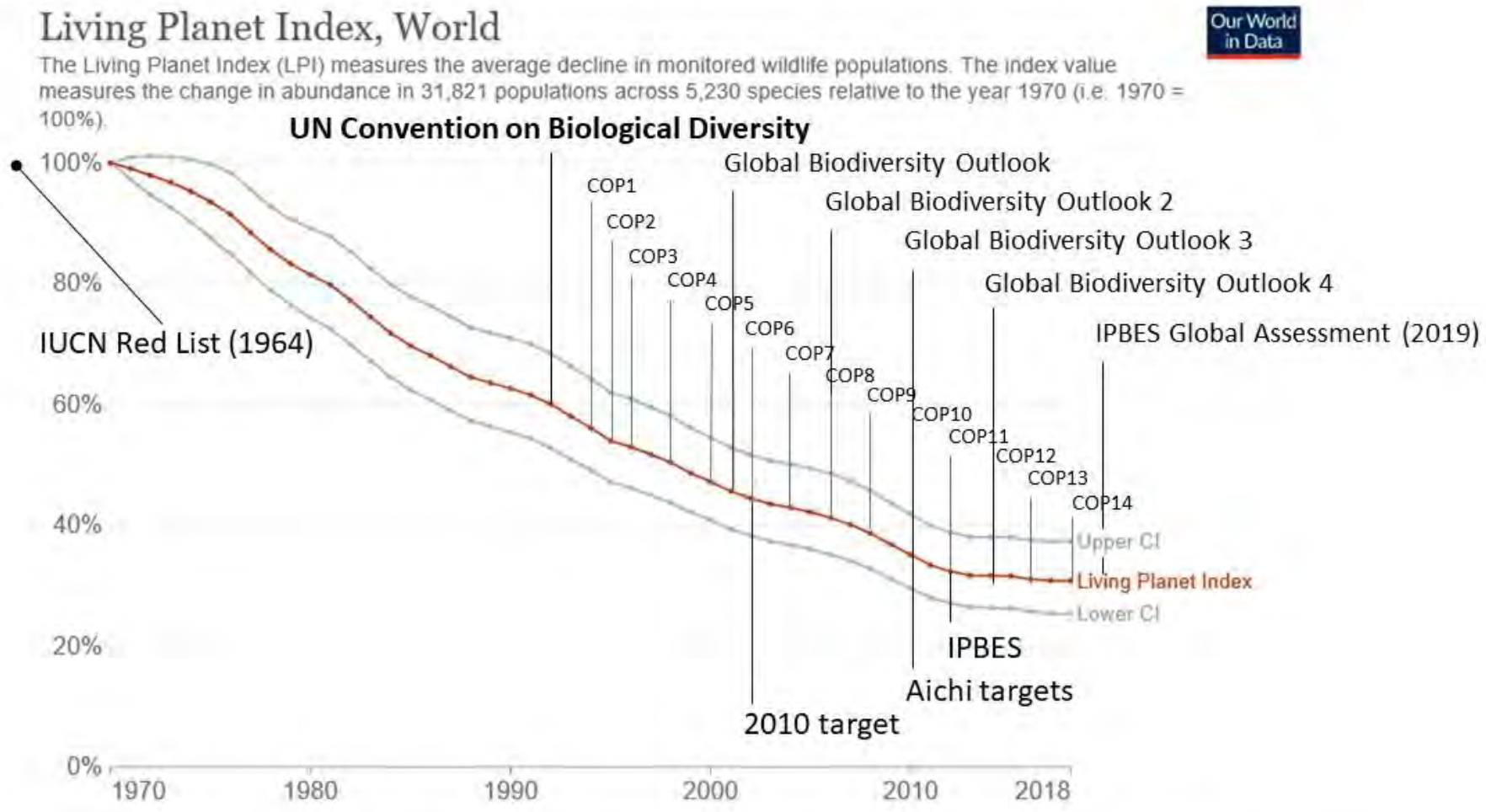
Knowledge practices, including science, education, technology, and design, can play an important role in supporting these needed transformations. Nevertheless, we see that dominant knowledge practices can often support the status quo and can even block change. For example, when innovation systems serve vested economic interests, when education trains students to be effective in unsustainable societies, or when science excludes alternative paradigms and ways of knowing. Therefore, understanding and supporting societal transformations, requires critical examination and transformation of these knowledge practices.

The KiTeS group works across diverse disciplines and scholarly fields and draws on critical, historical, participatory, design-oriented, and arts-based methods and approaches. We work in different domains such as science and innovation policy, higher education, and environmental governance and we collaborate closely with policy makers, social movements and grassroots organisations, cultural institutions, scientists and engineers, and business and financial institutions. Guided by values of justice, pluralism, sustainability, and care, our work is aimed at creating spaces for collaboration, critical analysis, reflection, and learning.

https://www.utwente.nl/en/bms/kites/#

A global polycrisis of intersecting environmental and social problems

Conservation is not saving nature



Sources: IUCN, CBD, IPBES

Image credit: Jerry van Dijk

The proliferation of stopgap measures

- We become ever more effective at mopping the floor
- But we do not close the tap
- And we even allow the tap to grow

Why are we not making (more) progress?

IOP Publishing Environ. Res. Lett. 16 (2021) 025008 https://doi.org/10.1088/1748-9326/abdcf0

ENVIRONMENTAL RESEARCH
LETTERS

CrossMark

LETTER

How norms, needs, and power in science obstruct transformations towards sustainability

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Abstract

After decades of inadequate responses to scientists' warnings about global environmental threats, leading analysts of the science-policy interface are seeking an important shift of research focus. This switch is from continued modeling and diagnoses of biogeochemical conditions in favor of enhanced efforts to understand the many socio-political obstacles to achieving just transformations towards sustainability, and how to overcome them. We discuss why this shift continues to prove elusive. We argue that rarely analyzed mutually reinforcing power structures, interests, needs, and norms within the institutions of global environmental change science obstruct rethinking and reform. The blockage created by these countervailing forces are shielded from scrutiny and change through retreats behind shields of neutrality and objectivity, stoked and legitimated by fears of losing scientific authority. These responses are maladaptive, however, since transparency and reflexivity are essential for rethinking and reform, even in contexts marked by anti-environmentalism. We therefore urge greater openness, self-critique, and power-sharing across research communities, to create spaces and support for conversations, diverse knowledges, and decisions conducive to sustainability transformations.

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Transforming environmental research to avoid tragedy

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ABSTRACT

According to a recent article in this journal, the failure of policy action on climate change despite scientific consensus points to a broken science–society contract. To avoid this 'tragedy of climate science', the authors call for a moratorium on its production. As scholars of, and participants in, global science–policy interfaces, we recognize the authors' assumptions and reasonings but also see an urgent need for a deeper understanding of the current limitations of environmental research, and the challenges of connecting knowledge to policy and society. Rather than a blanket moratorium, we argue that what is needed is a profound transformation of environmental research. This entails a shift in research priorities towards currently marginalized approaches in social sciences, humanities and participatory research, to generate a much-needed understanding of obstacles to action and just and equitable strategies for overcoming them with due consideration of issues of justice and equity. We also propose a new science–society contract that recognizes the politics of environmental knowledge. This is necessary to enable critical reflection on what interests environmental research serves whose knowledge needs are excluded, and with what consequences. We recognize that our proposal can be uncomfortable and that it challenges deeply held beliefs in the neutrality of science. However, deep reprioritization in environmental science and science policy are urgently needed to strengthen the contribution of environmental research to the transformative changes that it calls for.

Norms and values that govern research

- Neutrality
- Evidence
- Relevance
- Effectiveness
- Efficiency

- Turnhout, E. 20204 A better knowledge is possible: transforming environmental science for justice and pluralism. Environmental Science & Policy
- Turnhout, E. & Lynch, C.R. 20204. Raising the carbonised forest: science and technologies of singularisation. Environmental and Planning F: Philosophy, Theory, Models and Practice.

The dangerous illusion of neutrality

..within these (IPCC) models we have entire things like imaginary technologies like carbon removal from the atmosphere that are only in the models in order to protect existing powerful industries. And when we're told within the IPCC "Oh, you shouldn't be political, you shouldn't be policy prescriptive". But we are acting in a politicised domain. Climate change has been politicized by these industries ...we have to give ourselves the right to not just observe.... If we don't fight to expose these interconnections.....we will reproduce it and we will constantly be contributing to make things worse..

(Steinberger https://youtu.be/j9LzajO1sWw)

The dangerous illusion of neutrality

“Washing one’s hands of the conflict between the powerful and the powerless means to side with the powerful, not to be neutral.” Paulo Freire

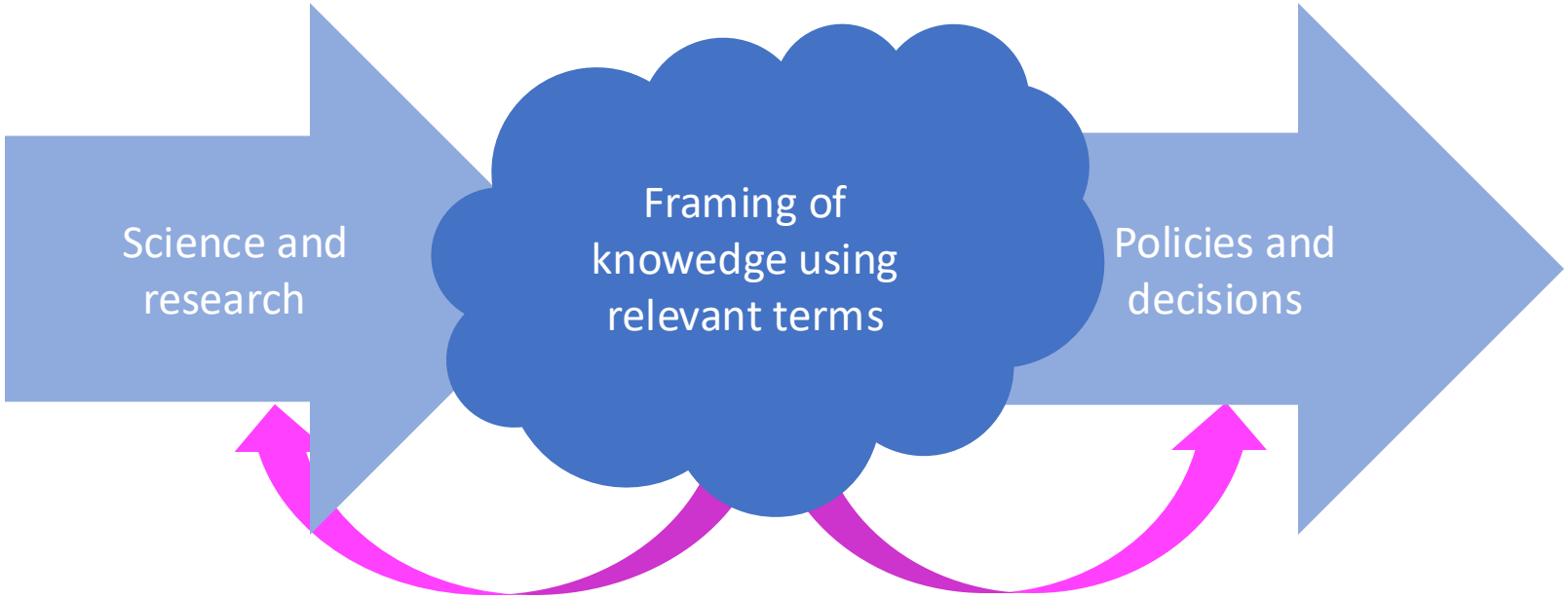
“The hottest places in hell are reserved for those who in a period of moral crisis maintain their neutrality. There comes a time when silence becomes betrayal.” Martin Luther King

“We must always take sides. Neutrality helps the oppressor, never the victim. Silence encourages the tormentor, never the tormented” Elie Wiesel

“If you are neutral in situations of injustice, you have chosen the side of the oppressor. If an elephant has its foot on the tail of a mouse and you say that you are neutral, the mouse will not appreciate your neutrality.” Archbishop Desmond Tutu

The problem of relevance

Measurementality



Turnhout et al.2014 Environment and Planning

The problem of relevance

"There is a problematic circularity at work here: scientific knowledge and its attendant political rationality defines the object of climate and biodiversity governance. The same forms of global knowledge, now under demand for ever-greater precision, are then used by new global governance systems to regulate the planet to this end. Knowledge and power embrace tightly as globalized knowledge conditions the political imaginary of global environmental governance and vice versa: how one knows constrains how one governs and how one governs shapes what one needs to know".

Turnhout, Hulme and Dewulf 2016, COSUST

Solutionism and its problems

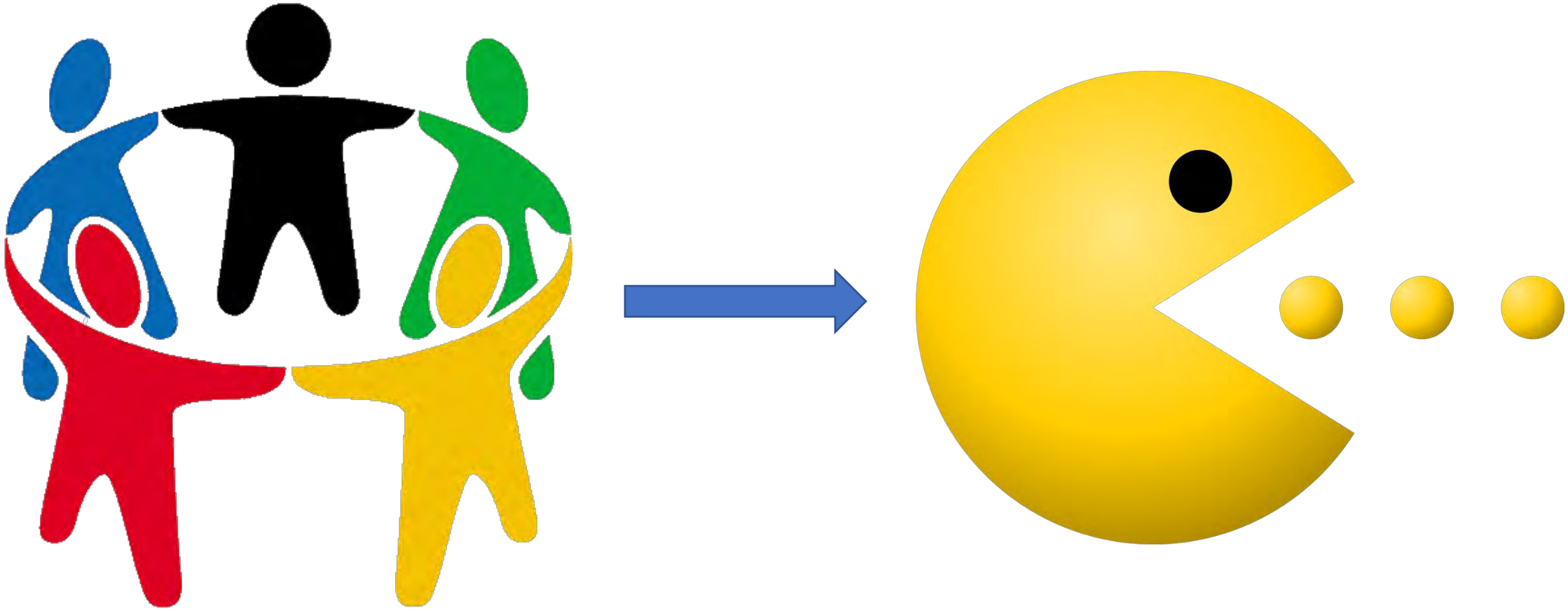
- Strong preference in research, policy, and society for addressing problems with clear causal narratives
- They enable discrete and isolated ‘solutions’ whose effectiveness can be assessed in an evidence-based way
- Relevance and efficiency justify the exclusive focus on these solutions and the evidence they require
- Neutrality prevents the open questioning of these frames
- This marginalizes actions that are not seen as rational or feasible and that do not have a strong evidence base. Because they are not taking place, because research about these actions is underfunded, or because their cause effect relations are difficult to quantify

Science’s role has been reduced to the accountant of destruction and it has become an obstacle for the transformations it continues to call for

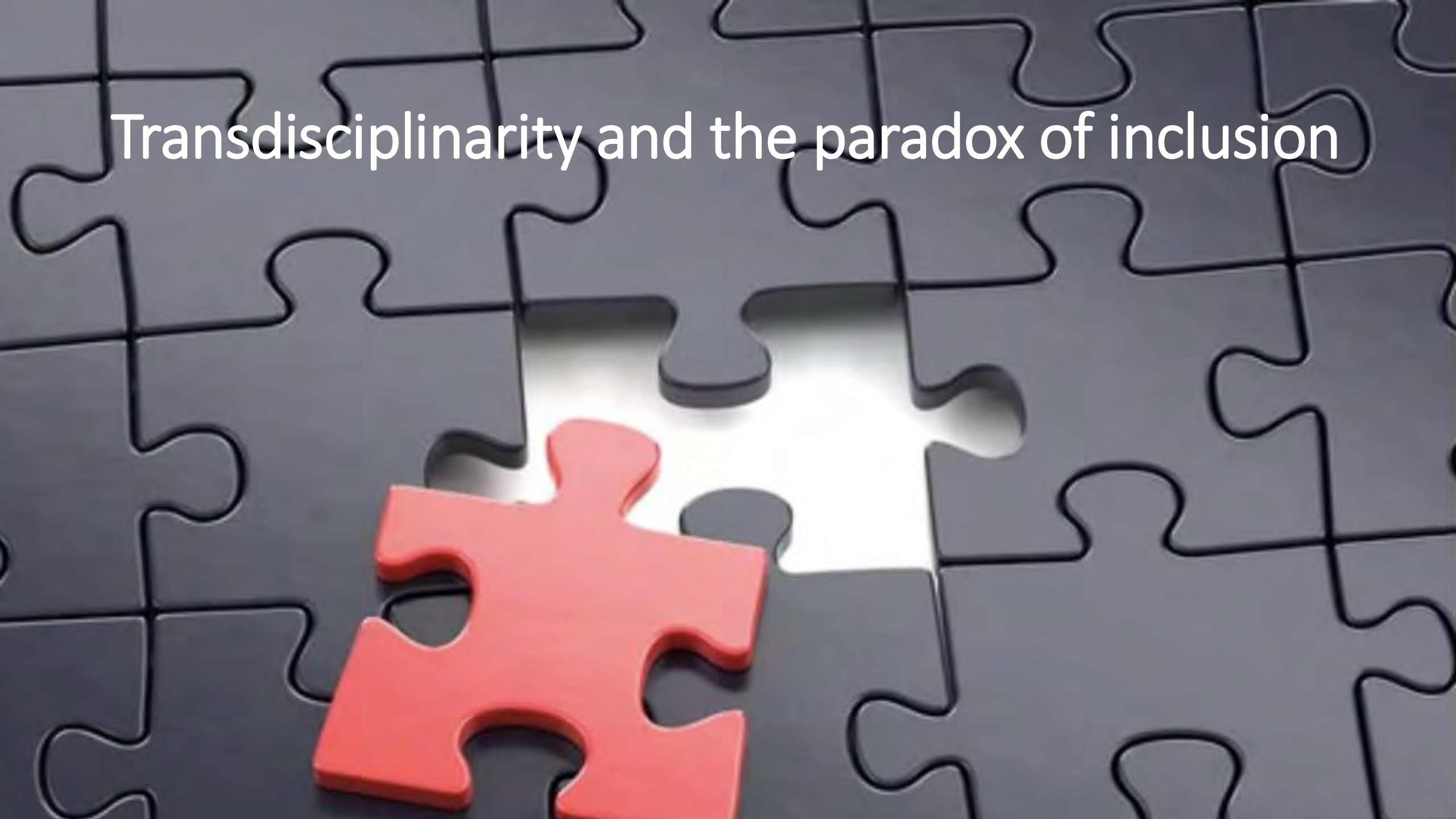
Michler:https://www.dailymaverick.co.za/article/2020-05-26-neoliberalism-and-sustainable-use-are-cut-from-the-same-paradigm/

Nikofurik: https://thetyee.ca/Opinion/2019/05/28/Stop-Battle-Against-Biodiversity

Transdisciplinarity and the paradox of inclusion

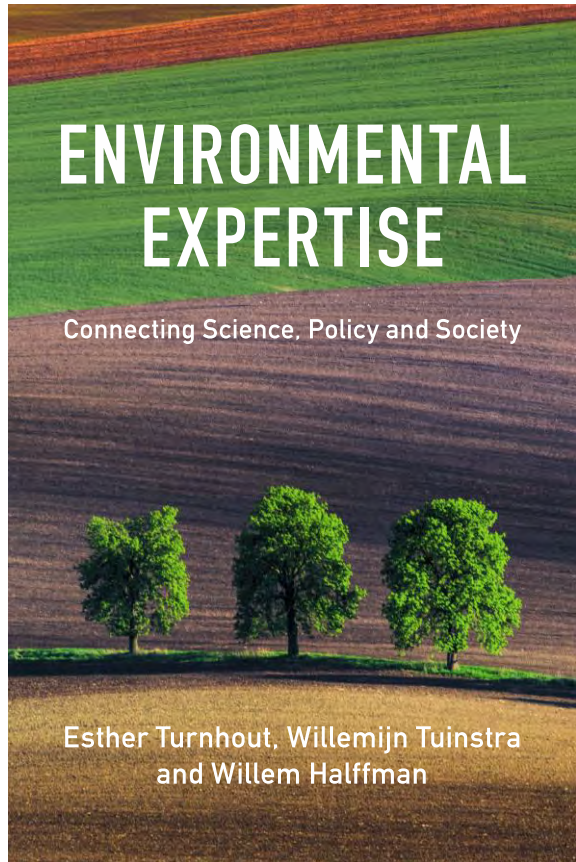


Transdisciplinarity and the paradox of inclusion



Framing and its consequences

- Framing is inevitable. Research and policy derive from frames that define what the problem is
- These problem frames shape what solutions are seen as feasible and rational and what knowledge is needed
- Inequities between knowledge systems, worldviews, or modes of governance lead to certain frames gaining dominance over others
- Dominant frames will become normalized; they will be seen as reality and rationality
- And this justifies the exclusion and marginalisation of alternative frames, knowledge, and solutions as unrealistic, irrelevant, ineffective, inefficient, irrational, anti-scientific, and political



Knowledge inequities

Contents lists available at ScienceDirect

Energy Research & Social Science

journal homepage: www.elsevier.com/locate/erss

Perspective

The misallocation of climate research funding

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ABSTRACT

The window of opportunity for mitigating climate change is narrow. Limiting global warming to 1.5 °C will require rapid and deep alteration of attitudes, norms, incentives, and politics. Some of the key climate-change and energy transition puzzles are therefore in the realm of the social sciences. However, these are precisely the fields that receive least funding for climate-related research. This article analyzes a new dataset of research grants from 333 donors around the world spanning 4.3 million awards with a cumulative value of USD 1.3 trillion from 1950 to 2021. Between 1990 and 2018, the natural and technical sciences received 770% more funding than the social sciences for research on issues related to climate change. Only 0.12% of all research funding was spent on the social science of climate mitigation.

EDITORIAL | 12 April 2022

The war in Ukraine is exposing gaps in the world's food-systems research

The research challenge

Each of these measures will have associated costs, and the trade-offs must be assessed, which is why research is crucial. Some areas of this research are patchy. An analysis of published agricultural science (a project called Ceres2030) found that less than 5% was relevant to the needs of smallholder farmers (see go.nature.com/3rjkwiw). Moreover, the major funders of agricultural research overwhelmingly finance research into the staple cereal crops[2]. Esther Turnhout, chair of science, technology and society at the University of Twente in the Netherlands, says: "Something is going wrong here in how we understand food systems, and part of the problem lies in how we do research into food systems."

The imperative of transformation

- Not just ‘doing things better’ but ‘do better things’
- Elevate alternative frames that put the spotlight on the root causes of the problem
- Challenge dominant frames and dismantle the power structures and interests (in science, policy, and society) that keep these in place
- A key step is to change research programming and priorities towards pluralism and justice: equal power relations between diverse paradigms, norms and conceptions of what good research is and how it should relate to policy and society

Thank you