

# STRN Newsletter





## Newsletter 52 – June 2024

### Content

- Editorial – p. 2
- EIST Journal – p. 4
- STRN Events – p. 4
- News Thematic Groups – p. 6
- New Projects – p. 6
- Past Events – p. 7
- Publications – p. 8

### About

The STRN newsletter is published four times a year in March, June, September & December

Cover picture:  
Impressions from IST2024

## Editorial

by Florian Kern



Hi! Instead of Jochen Markard, it is now my turn to write this Newsletter editorial for the first time in my new role as STRN chair (if you have hitherto missed this news, please see [here](#)). It is a great pleasure and honour that the steering group and the board have elected me to this role. I would like to wholeheartedly thank Jochen for his great service to our community as chair over the last years and as a board member and steering group member even before that (since 2012). He has played a tremendous role in the development of our community and has put a lot of energy and heart into it. Thank you for that Jochen!

I have been a member of the steering group since 2016, so I am ‘up to speed’ with most of the recent developments, projects and activities, and have informally attended several of the recent board meeting as a kind of hand-over phase. One of the biggest achievements of STRN over the last few years has been the process of professionalisation, where we now have a secretariat and a set of institutional members who support the network through their advice as well as financially. One of my important tasks over the next few months and years will be to help develop further the internal processes (e.g. cycles of budgeting and reporting, recruiting a comms person, etc) and develop priority projects together with fellow board members Katharina Schiller and Wouter Boon, steering group members as well as the secretariat.

I really think we have achieved a lot in terms of nurturing junior scholars in our community, together with the NEST (PhD and early career researcher) network, through for example establishing the NEST conference, the methods school and the upcoming transitions PhD school. This could only be achieved because of the active role steering group and NEST members play in developing these activities. They dedicate a lot of time to these activities which is wonderful and shows our strengths as a team and community.

In addition to continuing the activities aimed at early career researchers, thematic groups can play an important role in stimulating collaborative, taking stock of what has been achieved, thinking about new research questions or methods, or establishing new research topics. Some of the groups are very active and develop many activities for interested scholars which is great. We see them as a great resource for the community and will therefore soon publish a call for new thematic groups. So do have a think whether this is an activity you would like to get involved with and what themes you would like to see developed.

One topic is very close to my heart personally, but has also been an ambition of the STRN community at large for a long time: to promote transition perspectives in policy and practice. Many transition scholars are of course actively involved in this endeavour, be it at the local level, working with cities, trying to influence regional transition strategies, advising national governments or international organisations or by getting involved in the IPCC process. However, as an STRN network we should probably be more active in this regard, given the difficult political and societal developments around us. I think that working more closely with relevant policymakers and societal actors is essential in promoting sustainability transitions. This is an area of activity which I would like to strengthen over the next years.

Finally, I would like to express my immense thanks to the organisers of the 15<sup>th</sup> IST conference held in Oslo a few weeks ago. The conference was extremely well organised, took place in a nice venue, had interesting arts elements and a wonderful conference dinner in the harbour area and most of all, had a buzz of academic exchanges and a meeting of old and new colleagues and friends. I felt rejuvenated and full of energy after experiencing such a vibrant conference. I can't wait to see everybody again in Lisbon, Portugal at the next IST conference which will be held in June 2025.

All the best,  
Florian

## EIST Journal

We are happy to introduce the most recent issue of EIST, published in [Volume 51](#). The full list of papers is featured in the publication section of this newsletter.

Bernhard Truffer, Editor-in-chief

## STRN Events



### **University of Oslo hosted 500 sustainability transitions scholars at this year's IST conference.**

From 16<sup>th</sup> to 19<sup>th</sup> of June, 500 sustainability transitions scholars gathered in Oslo for the 15<sup>th</sup> International Sustainability Transitions conference. The conference kicked-off with a welcome day for newcomers and early career scholars in the House of Climate in the Botanical Gardens in Oslo on Sunday afternoon.

The main conference was held in the beautiful University Library at the University of Oslo main campus. The conference theme this year was Sustainability Transitions and Nature – a topic that was addressed in different ways by the two keynote speakers - Dr. Per Olsson from Stockholm Resilience Centre at University of Stockholm had a keynote address on the theme “Navigating social-ecological system transformations in times of turbulence and backlash”. Dr. Anabel Marin from Institute of Development Studies at University of Sussex spoke about “Civic Power in Just Transitions: Blocking Change or Protecting Nature for Future Advancement?”. Dr. Steve Williams aka Drusnoice performed sound art compositions exploring the conference theme of ‘sustainability transitions and nature’ in the opening and breaks in the Library Main Hall.

The conference explored a large variety of themes with close to 400 different papers, speed talks and posters, as well as 13 dialogue sessions. This year, it was possible to submit contributions to 20 preselected conference tracks.

The tracks with most contributions presented was the tracks on “acceleration of sustainability transitions”, “governing transitions” and “reimagining agri-food” and “geography of transitions”. The conference also had tracks for more emerging topics such as “arts and sustainability transitions”, “carbon economy” and “sustainability transitions and geo-politics”, but also many other themes including justice, digitalization, transitions in the global south and many more.

IST 2024 also had several dialogue sessions focusing on developing new networks between research traditions in sustainability transitions research or between research, policy and practice. For instance, a panel discussion on the topic of “Exploring transformative change in systems-based integrated assessments of environmental policy organisations and initiatives” was organized by the European Environmental agency. Another panel explored similar topics on policy relevance with the title “Science-policy dialogue: How can transitions research be relevant for policymaking?”

The conference program is really a testament to the vibrant and diverse research communities that make up the STRN network today, with participants from all over the globe and from different research institutions and academic disciplines.



### **ECR Activities at IST**

This year's IST included a variety of events for early career researchers. On Sunday, there was a welcome day gathering and reception for early career scholars and newcomers to the community, organised by Kejia Yang and Amir Mirzadeh Phirouzabadi. The event, attended by over 80 ECRs, began with a guided morning city walk followed by the official program at The Climate House in the Botanical Gardens in Oslo. The program included short presentations by leading scholars Lars Coenen, Katharina Schiller and Adrian Ely, a Q&A session, group work, and discussions with senior researchers, culminating in a social gathering with pizza and drinks at the NIFU rooftop terrace.





Additionally, NEST arranged a Paper Development Workshop on the Thursday following IST. The motivation for this workshop was to provide ECRs with limited publishing experience with a platform to enhance the quality of their manuscripts through detailed feedback and constructive discussions. 40 participants had the opportunity to discuss their work-in-progress manuscripts in smaller groups. We extend a special thank you to STRN, who supported this event throughout and the senior scholars who attended the event and provided invaluable feedback on the participants' submissions: Anna Bergek, Anton Sentic, Bernhard Truffer, Bipashyee Ghosh, Markus Steen, Wouter Boon, and Ingrid Mignon.

A few selected impressions ECRs that participated in the workshop follow:

*"Access to the insights of senior scholars was incredibly valuable, in part because of the amount of time we had dedicated to a single paper, and because feedback was specific and actionable. I left the session with a good grasp of what I need to do moving forward, and also where my skills and strengths currently lie. Thanks so much to the team for arranging this!"*

*"Joining the PDW was a great way for me to conclude my very first participation at a conference. Not only did I receive great and detailed feedback that really gave me some good ideas on how to improve my paper but I also got the chance to look more deeply into other PhD students' papers who are working with similar issues. In the small groups, I could learn how to both give and receive more detailed feedback than usual. Overall a very very giving experience that I hope to repeat next year. A big thank you to the organisers and senior researchers who have made this possible!"*

*"The workshop was valuable, as I shared common pitfalls with fellow researchers and senior scholars. It was fascinating to see how others interpret and critically read your paper, posing insightful questions in response."*

## STRN / NEST Method School, Rotterdam July 8 – 12, 2024

From July 8th to 12th, the Design Impact Transition (DIT) platform and the Dutch Research Institute for Transitions (DRIFT) will be hosting the 2024 Method School: Transformative Research Unlocked.

The response to our call for applications was overwhelming, with over 100 submissions from around the globe. We have selected a diverse group of 36 participants, with around 30% of researchers coming from institutions outside Europe. Their research areas include energy transitions, food systems, urban development, mobility, and design. Participants will engage in an intensive week-long program featuring lectures and workshops centred around the question, "What is my role as a researcher in just sustainability transitions?" We are looking forward to welcoming all participants and speakers to Rotterdam.

Read more by visiting [this link](#)

## NEST Conference, September 6 – 7, 2024



The Network for Early Career Researchers in Sustainability Transitions (NEST) is organizing the 9th NEST Conference 2024 on the theme **"Addressing Inequality and Sustainability Transitions."** The conference will take place on the 6-7 of September 2024 in an unique hub format

Please check the [NEST website](#) for further details.

## STRN PhD School, February 3 -7, Gothenburg

We are extremely excited to announce that the first STRN PhD school on sustainability transitions "Systems, Theories, Policies and Practices: An Introductory PhD Course in Sustainability Transitions Research" will be hosted by Hans Hellsmark and colleagues from [Chalmers University of Technology](#), Sweden from Feb. 3-7, 2025.

The course will be free of charge and it will be possible to get ECTS points.

Applications will be open from mid-August to mid-September. More information to follow!  
[Visit our website regularly for updates](#)

## News Thematic Groups

### Agri-food transitions (AF-TN) thematic group

Our main activities over the past months concerned an international workshop on AF transitions that we organise under the auspices of STRN, to be held at the University of Kassel, Germany, from 7-9 October 2024. We have selected about 25 participants based on submitted abstracts who should submit their full papers by 1 July. Furthermore, we will invite 10 practice actors to foster a true transdisciplinary exchange at the workshop.

A second activity is to organise monthly on-line seminars on AF transitions under the term 'Bridges'. The aim of these seminars is to bring closer the transition studies community that works on AF transitions with other research fields. The seminar series is planned to start in the fall and will initially run until the summer of 2025. The programme will be posted in the coming months.

A third activity is that we will set up exchange on teaching on AF transitions, to foster the circulation of ideas and scholars among research groups and graduate programs. More to come this fall.

For further information and suggestions contact:

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Marc Barbier, LISIS / INRAE (France): [marc.barbier@inrae.fr](mailto:marc.barbier@inrae.fr)

### Geography of sustainability transitions (GeoST) thematic group

The GeoST track at the 2024 IST conference was a great success. The five paper and speed talk sessions were very well attended and the presentations covered an impressive breadth of conceptual approaches and empirical applications. The discussions at the conference have shown that with the spatially increasingly uneven distribution of the benefits and challenges related to transition processes, exploring the geographies of sustainability transitions is a more salient research theme than ever. The GeoST track also comprised a dialogue session, in which a commentary paper on the state of the art and potential future research directions for the GeoST sub-field and the future development of the thematic group were discussed. We have decided to continue developing the group in an integrative and lean way.

Next steps will be the launch of a GeoST mailing list and compiling a reading list that outlines key publications in the broad thematic scope of the GeoST theme. The Global Conference on Economic Geography in Worcester 2025 and next year's IST conference will provide great opportunities to continue the inspiring exchanges initiated in Oslo.



For further information please get in touch with [christian.binz@eawag.ch](mailto:christian.binz@eawag.ch)

### Call for New Thematic Groups

We are reaching out to the community to propose new Thematic Groups. [Thematic Groups](#) (TGs) are self-organized spaces to foster collaboration and knowledge pertaining to a particular theme related to sustainability transitions.

We seek to accommodate emerging themes with which the transitions community wants to engage. Therefore, we intend to have a regular call for new thematic groups.

If you are interested in setting up a new TG, visit the [STRN website](#) for more information and the application procedure.

## New projects

### Form follows Life

This project is meant to help us rethink cities, with a focus on transitioning from 'nature and the city frames', to cities becoming one with all forms of life: "Form follows Life".

A first step will be to crowdsource ideas and imaginaries of transition through 3 scenarios: two intermediate ones for the years 2030 (short-term) and 2050 (mid-term); and the final one for 2080. We challenge participants to reimagine urban spaces through the lens of life (including human, plant and animal). Proposals should develop an approach to shape cities as systems supporting life and enhancing its relational qualities, rather than as productive and efficient 'machines'. Participants are invited to submit designs that showcase the transformation of urban spaces into thriving ecosystems that respect and reflect the complex interdependencies of life. The designs should explore radical approaches towards the rethinking and designing of urban spaces. Over the last two centuries many urban areas have evolved under the heavy influence of industrial and economic priorities, leading to a significant division between human constructions and natural environments.

This historical context sets the stage for our challenge: to bridge this divide through innovative urban design that respects, reflects and enhances the dynamic relationships of all living forms - human, plant, and animal; to imagine a city that cares, heals, and grows with all living forms by asking "what are the qualities of life and how can we harness them as shaping forces for cities?"

This competition seeks to create space for a paradigm shift in the way we think, plan and live in cities towards FORM FOLLOWS LIFE

[More information and how to register](#)

### **Online-course on narratives in sustainability transitions!**

The tdAcademy Fellow Group "Promoting Inclusion and Transformative Action through Narratives in Transdisciplinary Processes" has developed an extensive collection of teaching and learning materials on the importance of narratives in sustainability transitions. The course provides an overview of research and the role of narratives in transitions. The teaching and learning materials include videos with theoretical inputs, interviews with practitioners, and two case studies.

[Further information](#)

crises.

Further information:

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## **Past events**

### **Workshop on sustainability transitions, security and geopolitics (May 20-21, Helsinki, Finland)**

Finnish Environment Institute (Syke) welcomed a group of sustainability transition scholars to engage in conversation with other academics interested in the role of geopolitics, conflict, war and security in sustainability transitions. The 20-participant workshop ended with an open seminar organised by the project IDEALE: Interplay between National Defence, Security and Low-Carbon Energy Policies: a Sustainability Transitions Perspective.

The event delved into the intricate interplay between transitions and global crises, focusing on the impact of wars and emergencies on the trajectory of sustainability initiatives and how transition studies could better account for security-related issues. The presentations examined how security-related disruptions influence policy responses, technological innovations, and societal transformations, considering factors such as power dynamics, equity considerations, peace, and governance structures. By fostering dialogue and collaboration, the event encouraged thinking towards a more resilient and sustainable future amidst the complexities of global



## Publications

### *PhD Theses*

Coenen, T.B.J. (2024)

#### **Governing the mission-oriented transition towards a circular infrastructure sector: From ideals to new socio-technical systems**

University of Twente, the Netherlands

[Link](#)

Circularity has become a central approach to making the infrastructure sector more future proof. As such, circularity is positioned as a transformative mission. However, the socio-technical transition required to achieve this mission is steeped in complexity, uncertainty, and contestation, making its governance a tricky exercise. This PhD dissertation delves into the systemic barriers to the mission-oriented transition and offers various ways to deal with those on a sectoral, organizational, and inter-organizational level. By doing so, this dissertation aims to equip scholars and practitioners with the tools to effectively steer and support the transition towards a circular infrastructure sector. The first study identifies three causal cycles that act as systemic barriers to the transition: one regarding the contestation of the circularity concept, one regarding learning and upscaling, and a final cycle on rigid procurement approaches that hamper radical innovations. The first cycle, regarding the contestation of circularity, is examined in more detail in the second study as it forms the most deeply-rooted barrier. The third study presents a governance approach to steer mission-oriented transitions, acknowledging their inherently complex, uncertain, and contested nature. How organizations deal with the external pressures caused by the circularity mission is investigated in the fourth study within the Dutch infrastructure system. Finally, the fifth study explores how the innovation ecosystem approach can help the circularity transition by introducing long-term oriented forms of collaboration to support innovation beyond single infrastructure projects.

Garzón, J. (2023)

#### **Transmodern transitions to buen vivir in early 21st century Andean seed systems.**

University of Technology Sydney, Australia

[Link](#)

This research explores seed system transitions in Colombia, Ecuador, and Venezuela through a decolonial lens. In these processes, grassroots niches guided by alternative visions to Western development played a key transformative role. Aligned with macrotrends like the crises of modernity, neoliberalism, and the global agrifood regime (and aided by a rise in ICTs) the niches

configured novel state-society relations leading to change in a highly heterogeneous regime.

Hybrid seed regimes hold disparate (and often opposing) values, narratives, practices, rules, and technological assemblages stemming from modern and non-modern worldviews. The persistence of coloniality informalizes non-industrial practices, maintaining power asymmetries and perpetuating multiple injustices. Tensions within the regime manifest mainly at epistemic level between technoscientific and traditional knowledge, and in law arising from what is considered legal, illegal, and what is kept in a non-legal space. In the early 21st century, 'seed guardian networks' emerged as a response to landscape pressures and regime injustices. This niche connected diverse actors to reframe native seeds as appropriate technologies developed by grassroots knowledge-holders. Local niches went on to connect trans-locally at national and international scales to form vast virtual networks. This research argues that processes of translation between the modern and non-modern led to the creation of transmodern laws and institutions. Process intermediaries expanded the parameters that define authorship, intelligibility, and purposefulness of knowledge, innovation, and technology to kickstart a transition. Epistemic justice was central to this process as the concealment and erosion of non-modern epistemes gives way to a mosaic solidarity epistemology

Hendriks, A. (2024)

#### **Imagined circularities: understanding the politics of transitions to a circular economy**

University of Groningen, the Netherlands

[Link](#)

This dissertation explores how the circular economy is envisioned as a desirable future. The circular economy, as opposed to the linear economy, is an approach where loops are closed, and resources are preserved. The concept evolves continuously and is interpreted within various social and material contexts, with future visions being politically charged and influencing current behavior and political decision-making. In this dissertation, I employ the concept of sociotechnical imaginaries, which are collective future visions that are somewhat stable and also put into concrete practice, thus legitimizing and shaping current actions. However, there is little understanding in the literature of how these future visions are stabilized. The dissertation investigates the development of future visions of the circular economy in different regions, including Fryslân and Het Groene Hart, and analyzes the role of time in shaping these future visions. The dynamics of community engagement with the circular economy concept are also examined, including shifts in discourse and interpretations of the concept. The research advocates for a critical approach to future visions, where humility and wonder are crucial attributes. By prioritizing uncertainty and combining utopian dreams with pragmatic action, paths to a more sustainable future can be forged.



Lähteenoja, S. (2024)

**Advancing Sustainability Transformations - Co-design for Sustainable Development Policies**

Aalto University, School of Arts, Design and Architecture, Finland

[Link](#)

Co-design for transitions, or transition co-design, is an emerging area, bringing together the scholarships of collaborative design and transition management. More empirical studies are needed on what transition co-design actually means and what it can offer for sustainability transformations, especially in the governance and policy contexts. This dissertation contributes to this research gap by empirically studying sustainable development policies and the possibilities for co-design to advance them. The research consists of four case studies approaching the topic from different angles, ranging from national to local SDG implementation, as well as from broad, systemic sustainable development topics to the narrower target of increasing renewable energy production in housing companies. The research consists of five interrelated articles.

The research introduces a policy edition of the transition arena, wherein some of the earlier assumptions have been readjusted to cope with policy realities, thus enabling the tools' closer integration into official policy processes. The policy edition was developed and tested during the creation of the national sustainable development strategy, led by the Prime Minister's Office, Finland. According to the results, this method can provide a safe space for facilitated discussion on difficult topics with conflicts of interests. After co-designing positive future visions and mid-range transition pathways, the participants of transition arenas experienced increased understanding of complex systemic changes and better understood the agency of different actors in sustainability transformations. The final strategy raises difficult, transformative topics as being important for further work. While there is a need for more empirical studies on the topic, the research recommends utilising transition co-design methods in the agenda-setting phase of complex sustainability-related policy processes.

Libertson, F. (2024)

**The Stories of User Flexibility: An Exploration of Flexibility Capital for a Just Energy Transition**

International Institute for Industrial Environmental Economics, Lund University, Sweden

[Link](#)

This thesis aims to understand the potential energy justice pitfalls of user flexibility by looking at the ways in which it affects certain aspects of everyday life. Overall, the findings display a discrepancy between how user

flexibility is characterized publicly (by the media, industry experts, and electric vehicle users) and how it is characterized by the energy justice literature. User flexibility is commonly associated with decarbonization and sustainability in the media, and industry experts and electric vehicle owners tend to characterize user flexibility as a means of increasing the share of renewables in the energy mix, a more economical option for building new infrastructure, a means of facilitating more efficient uses of the existing infrastructure and for balancing the system, and a more democratic form of electricity consumption. Concurrently, analyzing user flexibility from an energy justice perspective, this thesis identifies several potential energy justice implications: 1) an unequal redistribution of wealth, 2) a redistribution of economic responsibility to the end-users, 3) unequal terms of participation, 4) already affluent users to benefit, 5) increased complexity in a manner that is particularly disadvantageous for non-involved users, and 6) diluted transparency and accountability. The gap between the depiction of user flexibility among stakeholders vis-à-vis the scientific literature on energy justice provides further evidence for how energy policies are primarily informed by economics and technology. In conclusion, the findings of this thesis showcase the need for integrating more social perspectives in energy policy in order to avoid potential energy justice pitfalls.

*Books*

Bose Styczynski, A. (2024)

**India's Energy Revolution. Insights into the Becoming of a Global Power**

Routledge India

[Link](#)

India is the third largest emitter of Greenhouse Gases which makes it an important player whose climate mitigation actions and inactions are closely scrutinised. This book is about developments in India's energy system from a governance perspective. It presents a unique compilation and synthesis of research findings that captures achievements, shortcomings, and persistent and transient challenges of India's transition towards a net-zero economy by 2070. The book grounds its analysis in domestically formulated goals and reflects on dynamics at the structural level of India's multi-scalar innovation system by highlighting the influencing factors of energy system status and change. It presents the perspectives and positions of different actor groups, studies the market and business, and discusses cases influenced by existing or changing institutions across the whole spectrum of energy resources from fossil to non-fossil fuels and respective technologies.

**EIST Volume 51**

L. Hundscheid, C. Voigt, D. Bergthaler, C. Plank, M. Wurzinger, A.H. Melcher

[Policy mix for the sustainable protein transition in Austria - Addressing repercussions of regime shifts as a prerequisite for acceleration](#)

Jonatan Godinez Madrigal, Nora Van Cauwenbergh, Heliodoro Ochoa-Garcia, Pieter van der Zaag

[Can grassroots movements in water conflicts drive socio-technical transitions in water management systems?](#)

Vigya Sharma, Julia Loginova

[Just transition out of coal-fired power: Policy lessons from Australia's automotive sector closure](#)

Renée Scharnigg

[Implicit negotiations in niche-regime interactions: Relational aspects of agency, accountability, and anticipation in transition studies](#)

Churchill Agutu, Bjarne Steffen, Tobias S. Schmidt

[How do technology-inherent characteristics affect valuation processes in innovation systems?](#)

Morteza Mahmoudi, Yadollah Saboohi, Jonathan Köhler

[Facilitating the transition to sustainable propulsion in the shipping industry: An agent-based modelling analysis of retrofitting](#)

David J. Hess

[Microgrids and the politics of sustainability transitions: A sociotechnical, multi-coalition perspective](#)

Denise Misleh, Juliane Dziuila, María De La Garza, Edeltraud Guenther

[Sustainability against the logics of the state: Political and institutional barriers in the Chilean infrastructure sector](#)

Jieshu Wang, José Lobo, Shade T. Shutters, Deborah Strumsky

[Fueling a net-zero future: The influence of government-funded research on climate change mitigation inventions](#)

Alexander Nordt, Rob Raven, Shirin Malekpour, Darren Sharp

[Decarbonising industry supply chains: Incumbent-oriented transition intermediation for industry energy transition](#)

Stefano Basilico, Nils Grashof

[Accelerating the sustainability transition of brown regions: Unlocking the speed factor](#)

Gloria Wenting Luo, Viktória Döme, Weronika Cycak, Kira JM Matu

[Innovation policy for sustainability transitions in small economies: Energy technology innovation in Hong Kong](#)

Subina Shrestha, Håvard Haarstad, Rafael Rosales

[Power in urban logistics: A comparative analysis of networks and policymaking in logistics sustainability governance](#)

Andrea Käsbohrer, Teis Hansen, Hans-Martin Zademach

[Multi-system interactions and institutional work: Actor interactions at the interface of residential storage systems and electric vehicles in Germany](#)

Yuan Peng, Xuemei Bai

[Identifying social tipping point through perceived peer effect](#)

Vincent Vindevoghel

[Rethinking the geography of sustainability transitions by considering human-nature connections in rural areas](#)

Dan Bailey

[The comparative political economy of sustainability transitions: Varying obstacles, accelerants and power in national capitalisms](#)

Benjamin K. Sovacool, Kyle S. Herman, Marfuga Iskandarova, Jeremy K. Hall

[“Oh Yes! Net-Zero”: Sociotechnical capabilities and regional innovation systems for British industrial decarbonization](#)

Hella Hernberg, Sampsa Hyysalo

[Modes of intermediation: How intermediaries engage in advancing local bottom-up experimentation](#)

Alexandra Bussler, Francesco Vittori, João Morais



Mourato

[Fruta Feia cooperative: Examining the influence of income on sustainability value and agency among alternative food network consumers](#)

#### *Perspectives*

Yannick Schöpper, Claas Digmayer, Raphaela Bartusch, Ola Ebrahim, Sarah Hermens, Razieh Nejabat, Niklas Steireif, Jannik Wendorff, Eva-Maria Jakobs, Frank Lohrberg, Reinhard Madlener, Susanne Mütze-Niewöhner, Christa Reicher, Stefan Bösch

[Towards niche readiness: Achieving socio-economic maturity in the bottom-up transition to DC power systems](#)

Karlijn L. van den Broek, Simona O. Negro, Marko P. Hekkert

[Mapping mental models in sustainability transitions](#)

#### *Review article*

Johnn Andersson, Thomas Taro Lennerfors, Helena Fornstedt

[Towards a socio-techno-ecological approach to sustainability transitions](#)

Ahamed, S., Galford, G. L., Panikkar, B., Rizzo, D., Stephens, J. C. (2024)

**Carbon collusion: Cooperation, competition, and climate obstruction in the global oil and gas extraction network**

Energy Policy

[Link](#)

While publicly-available datasets often document how much fossil fuel is extracted within oil-producing countries, they do not generally indicate who is responsible. To address this gap, we constructed the Global Oil and Gas Extraction Network, a dataset containing the extraction sites of the 26 largest oil and gas companies, and the quantities extracted annually from 2014 to 2018, accounting for 67% of total production. Using this dataset, we present a first-of-its-kind network analysis of global oil and gas extraction. We find fifty-eight percent of operations involved joint ownership across companies, demonstrating growing interdependence after industry-wide losses in 2016. Countries in which National Oil Companies (NOCs) were active were less likely to host Hybrid state-investor companies, and even less likely to host Investor-Owned Companies (IOCs), while certain Hybrids and IOCs tended to operate in the same countries; both trends became more pronounced between 2014 and 2018. Reflecting colonial legacies, the seven Big Oil companies, headquartered in either the US or Europe, extracted oil and gas from the most countries. These findings reveal a complex global network of strategically aligned actors, indicative of tacit and explicit transnational industry-state collusion to obstruct climate policies. These findings additionally underscore the need for comprehensive data to support a managed fossil fuel phaseout

Alkemade, F., de Bruin, B., El-Feiaz, A., Pasimeni, F., Niamir, L., & Wade, R. (2024)

**Social tipping dynamics in the energy system**

Earth System Dynamics, 15(2)

[Link](#)

This paper reviews evidence on how the fast growth in renewable energy technologies can trigger social tipping dynamics that potentially accelerate a system-wide energy transition. It does so by reviewing a variety of literature across several disciplines addressing socio-technical dimensions of energy transitions. The tipping dynamics in wind and solar power create potential for cascading effects to energy demand sectors, including household energy demand. These most likely start with shift actions and adoption of household-scale batteries and heat pumps. Key enablers are strong regulations incentivising reductions in demand and setting minimum efficiency levels for buildings and appliances. While there is evidence of spillovers to more environmentally friendly behaviour, the extent of these and the key leverage

points to bring them about present a knowledge gap. Moreover, these behavioural feedback loops require strong additional policy support to “make them stick”. Understanding the economic and social tipping dynamics in a system can empower decision-makers, fostering realistic energy transition policies. This paper highlights energy communities as a promising niche for leveraging tipping dynamics. Ultimately, bridging the gap between these tipping dynamics and institutional reforms is crucial for unlocking the full potential of sustainable energy systems.

Baatz, A., Ehnert, F., Reiß, K. (2024)

**Sites for sustainability transitions: the interplay of urban experiments and socio-spatial configurations in transforming habits**

Urban Transformations 6, 3

[Link](#)

Urban experiments intervene in selected sites to initiate transition processes. But how do the socio-spatial characteristics of these sites affect urban experiments and vice versa? We address this question by focusing on everyday habits and their reciprocal relationship with the socially produced space that surrounds them. Using conceptual analysis and by means of empirical examples, we consider which socio-spatial narratives, infrastructures and regulations facilitate or hinder urban experimentation. Rather than treating space as a pre-determined neutral stage, we conceptualise it as socially produced configurations that both affect interventions and are shaped by them. The transactional pragmatist perspective allows us to conceptualise how everyday habits can be disturbed and transformed in experimental processes. This notion is enriched by a socio-spatial categorisation of three aspects that co-constitute space. On this basis we develop an analytical framework to outline four possible dynamics arising from urban experimentation and the changing relations between actors and spaces. Empirical examples from the transdisciplinary research project Dresden – City of the Future: Empowering Citizens, Transforming Cities! illustrate the applicability of the framework. Our conceptual contribution provides a tool for analysing the socio-spatial dynamics of urban experiments. This sheds light on the agency of actors by conceptualising how they engage with socio-spatial configurations. We argue that further research on the role of space in urban experimentation is required to better explicate underlying socio-spatial understandings, while drawing on empirical data to test which socio-spatial concepts provide explanatory power for transition dynamics.

Blina O, Baptista MD, Pereira MM, et al. (2024)

**Exploring desired urban futures: the transformative potential of a nature-based approach**

Futures

[Link](#)

Amidst multiple crises and calls for transformative change, the demand to reassess human-nature relationships has increased. Rethinking the future of cities is vital in this process, yet positive urban visions prioritizing nature beyond human-centred perspectives are lacking. To address this gap, we propose a “nature-based desired futures” approach for envisaging and building collective discussion around transformative change. We explore four concepts underpinning (i) why such alternative urban futures are needed (human-nature disconnect and changing urban imaginaries) and (ii) how they might be approached (transformative change and leverage, and the ‘education of desire’). This provides the basis for a participatory approach that adapts the Three Horizon method to explore desired urban futures for nature in 2050. Six workshops involving 111 participants linked to ‘Conexus’, a project on nature-based solutions in European and Latin American cities, explored emerging desired futures, evolving ideas of nature, human-nature relationships, and agency. The approach offers space for reflection creative exploration, and weaving together of new, hopeful, caring, emancipatory stories. Its effectiveness hinges on the mutually reinforcing power of deep leverage, and of structural, systemic, and enabling approaches, to give purpose and direction to the exploration of desired futures.

Bloomfield, J., Steward, F. (2024)

**The New Transition politics of Net Zero**

The Political Quarterly

[Link](#)

The net zero transition requires concurrent and rapid decarbonisation in five major consumption-production systems—transport, housing, industry, food and power. These systems differ in their public visibility and institutional makeup, as well as in their technologies. Transition politics needs dexterity to facilitate transformation of these multiple systems. Yet, there remain big contrasts in the rate of change of different systems. These are shown by the variation in the fulfilment of the 2020 system targets which were set in the 2009 UK Low Carbon Transition Plan. Comparison of the transition pathways of renewable electricity production and home insulation indicates that current UK net zero transition politics is poorly suited to the transformation of household energy use. A more proactive state and wider public participation are needed for a more effective place-based approach. Environmental activism and populist backlash have focused attention on everyday transformative change. A new type of transition politics which engages with multiple systems is needed to rise to this urgent climate challenge.

Campos, I., Korsnes, M., Labanca, N., Bertoldi, P.



(2024)

**Can renewable energy prosumerism cater for sufficiency and inclusion?**

Renewable and Sustainable Energy Reviews, Volume 197

[Link](#)

By asking how renewable energy sources (RES) prosumerism, integrates sufficiency and inclusivity concerns and/or practices, the study presents the results of a narrative literature review of RES prosumerism research. The review focuses on how these concerns and/or practices emerge across the socio-technical narratives that characterise RES prosumers' research. The study takes stock of a machine-learning topic model and a qualitative thematic coding to identify and discuss key topics, themes, and narrative elements related to sufficiency and inclusivity in RES prosumerism. The results show a crosscutting narrative from early discussions (2005–2018) on energy citizenship, grassroots initiatives, and collective prosumer initiatives, to regulated and institutionalised energy communities (2019–2023). The narrative highlights the relational and systemic dynamics of prosumer projects, embedded in local socioeconomic, sociopolitical, and cultural contexts, and shows that inclusivity and sufficiency have not always been major concerns. However, there are exceptions found in research into “energy commons” and “grassroots innovations”. These findings are discussed in relation to the role of new policy options for sustainable RES prosumerism. The study's conclusions offer therefore policy directions for sustainable energy systems, guided by sufficiency and inclusivity principles.

Fritz, L., Baum, C. M., Low, S., Sovacool, B. K. (2024)

**Public engagement for inclusive and sustainable governance of climate interventions**

Nature Communications 15, 4168

[Link](#)

The need for public engagement is increasingly evident as discussions intensify around emerging methods for carbon dioxide removal and controversial proposals around solar geoengineering. Based on 44 focus groups in 22 countries across the Global North and Global South (N = 323 participants), this article traces public preferences for a variety of bottom-up and top-down engagement practices ranging from information recipient to broad decision authority. Here, we show that engagement practices need to be responsive to local political cultures and socio-technical environments, while attending to the global dimensions and interconnectedness of the issues at stake. Establishing public engagement as a cornerstone of inclusive and sustainable governance of climate-intervention technologies requires (i) recognizing the diversity of forms and intensities of engaging, (ii) considering

national contexts and modes of engagement, (iii) tailoring to technological idiosyncrasies, (iv) adopting power-sensitive practices, (v) accounting for publics' prior experience, (vi) establishing trust and procedural legitimacy and (vii) engaging with tensions and value disagreements.

Hodgson, S., Piscicelli, L., Frenken, K., Williams, I. (2024)

**Circular economy beyond manufacturing: Exploring the challenges and opportunities for circularity in the hairdressing industry**

Sustainable Production and Consumption, 46, 512–521

[Link](#)

The emergence of the circular economy (CE) as a transformative paradigm to achieve sustainable development has predominantly centred on manufacturing, leaving a significant void in exploring its applicability to service-based industries. Understanding the challenges and opportunities for implementing CE strategies in these contexts is crucial, as service businesses differ in their operations and often face unique challenges. This study utilises the hairdressing industry as a contextual lens to investigate the multifaceted manifestations of circularity within services. We conducted a systematic literature review of both academic and grey literature to examine CE approaches, including reducing, reusing, recycling, and recovery strategies, while emphasising their interconnections with environmental quality, economic prosperity, and social equity. Our results point to a bias toward recycling strategies with little attention being given to R-strategies like reduce, reuse and recover. We highlight a critical need to broaden circularity initiatives by coordinating resource efficient practices with waste management strategies. Additionally, we reveal a web of interrelated circularity and sustainability aspects that demonstrate both synergies (mutually beneficial interactions) and trade-offs (compromises) across and between these aspects. Our findings stress the importance of taking a systems perspective when examining CE initiatives, calling for thoughtful consideration of diverse pathways to achieve sustainability alongside careful evaluation of trade-offs against potential gains. The insights gleaned from this exploration in hairdressing hold promising implications for promoting integrated and socially equitable CE strategies in diverse service-based industries.

Klusken, N., Alkemade, F. & Höffken, J. (2024)

**Beyond a checklist for acceptance: understanding the dynamic process of community acceptance**

Sustainability Science 19, 831–846

[Link](#)

Community acceptance is considered a prerequisite for successful energy transitions and the uptake of renewable energy technologies (RET). While policy and research often focus on acceptance as an outcome, the process of acceptance remains a black box, especially in uncontested RET implementation contexts. We study the dynamic process of community acceptance where (1) different actor groups can have (2) different roles and (3) different active and passive responses towards (4) different objects of acceptance within the RET project implementation. Results show that community acceptance occurs over time and goes beyond citizen or resident acceptance alone. By unpacking different dimensions of acceptance, we show that even in uncontested cases, acceptance is ambiguous and includes various responses toward various objects. Furthermore, we see that roles can influence and interact dynamically with responses and that preferences for roles are heterogeneous. To move beyond acceptance as a merely coincidental outcome, but a widely embraced and intentional process, this process should meet the participatory needs of different actors.

Kim, J., Sovacool, B. K., Bazilian, M., Griffiths, S., Yang, M. (2024)

**Energy, material, and resource efficiency for industrial decarbonization: A systematic review of sociotechnical systems, technological innovations, and policy options**

Energy Research & Social Science, Volume 112

[Link](#)

Efficiency stands out as one of the most important options for achieving industrial decarbonization. In addition to carbon emissions reductions, improving energy, material and resource efficiency can bring many desirable benefits, such as cost savings, increased energy and resource security, and higher productivity. However, despite these clear benefits being understood for decades, the adoption of efficiency practices still lags far behind its potential, and commercial liftoff remains a challenge. To understand these gaps, we conducted a comprehensive and systematic review through a socio-technical lens of more than 2.8 million references and 380 selected studies on industrial decarbonization. This research uses a socio-technical lens across the industrial supply chain and delves into the classes of raw materials and feedstocks, pre-processing, manufacturing, and waste and recycling. The paper also clarifies the barriers to decarbonization efforts, which include economic, organizational, and behavioral challenges, and highlights policy measures to address these barriers. It concludes by outlining areas for further research.

Malekpour, S., Raven, R.P.J.M., Allen, C., Moallemi, E., Ningrum, D., Cuesta-Claros, A., Grainger-Brown, J., Trundle, A., Kestin, T., Coy, D., Dechrai,

I., Walters, J., Bryan, B. (2024)

**Transformative localisation to accelerate the 2030 Agenda**

Nature Sustainability, 7, 516–518

[Link](#)

To get the Sustainable Development Goals (SDGs) back on track we need to reshape our approaches to implementation, including localization. Localization done differently involves progressing beyond symbolic piecemeal efforts, prioritizing the SDGs with the greatest gains, and pluralizing interpretations and pathways for actions.

Minas, A. M., García-Freites, S., Walsh, C., Mukoro, V., Aberilla, J. M., April, A., Kuriakose, J., Gaete-Morales, C., Gallego Schmid, A., & Mander, S. (2024)

**Advancing Sustainable Development Goals through energy access: Lessons from the Global South.**

Renewable and Sustainable Energy Reviews, 199

[Link](#)

Under the banner of the United Nations' Sustainable Development Goal 7 (SDG 7), governments, industry, and civil society organisations have supported many energy access projects since 2015. Notably, funding and investments allotted to renewable energy are regarded not only to provide 'energy for all' but also support the delivery of other SDGs related to climate change, food security, health, and poverty reduction, among others. With less than 10 years left to meet the SDG 7 targets, it is timely to take stock and examine how the provision of access to energy is driving development initiatives, impacting local communities, and influencing governance processes. This paper offers a critical review and analysis of the impact of access to energy projects based on empirical work from eight country case studies across Africa, Asia, and Latin America. It interrogates how these projects contribute towards achieving SDG 7 and other sustainable development goals, highlights challenges, and then draws lessons for research, policy, and development practice. To advance SDGs, it recommends action in four areas: addressing rural-urban disparities, ensuring that energy is linked to sustainable outcomes, balancing top-down and bottom-up agendas, and appraising implications of techno-economic factors.

Ningrum, D., Malekpour, S., Raven, R., Moallemi, E. A., Bonar, G. (2024)

**Three perspectives on enabling local actions for the sustainable development goals (SDGs).**

Global Sustainability

[Link](#)

Local governments worldwide are taking the initiative to



engage with sustainable development goals (SDGs) despite the absence of a globally coordinated guideline on local SDGs actions. With less than a decade until its 2030 deadline, a more targeted and nuanced approach to enabling local SDG actions is needed. In this paper, we argue that there is a need to look at local SDG actions as an actor-driven process where agency, contexts, purpose, and dynamics co-evolve and shape the outcome of the process. Using Q-methodology, we explore different perspectives on what enables local SDGs actions in nine local govern- ments in Australia. Three perspectives in enabling local SDG actions emerged from the study: (1) ‘Enablers should support institutional embeddedness of the SDGs’, (2) ‘Enablers should support stakeholder coordination for the SDGs’, and (3) ‘Enablers should support community engagement for the SDGs’. Each perspective has preferred enablers, contextua- lized within certain ways of engaging with the SDGs, certain views of the SDGs, and specific local contexts and capacities. This study provides insights to contextualize knowledge in cur- rent literature to enable local SDG actions.

Noll, D., Petridis, P., Gingrich, S., Skoulikidis, N., Singh, S. J., Jongen, M., Papaioannou, G., Fischer-Kowalski, M. (2024)

### **Insights into 15 Years of Transdisciplinary Research on a Small Greek Island**

GAIA - Ecological Perspectives for Science and Society 33 (1)

[Link](#)

This article introduces a long-term transdisciplinary research process on the Greek island of Samothraki, aiming at sustainability solutions that are not only scientifically sound, but also co-designed, well received and adopted by the local community. We reflect on 15 years of socioecological research by utilizing the conceptual lens of real-world laboratories (RwLs). We present the research approach pursued on the island, based on a sociometabolic understanding of society-nature interaction, by relating local natural resources (and their self-regenerating capacities to their social utilization and the resulting environmental pressures. We reflect on the research activities by using an established evaluation framework based on the three RwL principles: the “lab context”, “experiments”, and “interventions”. We describe success and setbacks by integrating, as objects of evaluation, the research process, its outputs, outcomes, and impacts. While we can certainly showcase success in terms of research design, scientific outputs, and institutional outcomes, gauging potential impacts poses a more challenging task.

Nordt, A., Raven, R.P.J.M., Malekpour, A., Sharp, D., (2024)

### **Actors, agency, and institutional contexts: transition intermediation for low-carbon mobility**

### **transition**

Environmental Science & Policy, Volume 154

[Link](#)

Transition intermediaries are recognized as key actors in sustainability transitions. While the structural embeddedness of intermediaries has been explored in innovation studies and economic geography literature, few transition studies have systematically examined how the agency of transition intermediaries is affected by institutional contexts. Without a deeper understanding of this interplay, the literature risks a naive perception of transition intermediaries as free agents. This study investigates transition intermediation in diverse institutional contexts using a typology of organizational fields that draws on institutional theory. Cases of local government commitments to fleet electrification and cycling infrastructure show that crises allow incumbent organizations to diverge from existing institutional arrangements and intermediate for systems change. Findings also indicate that the social position of transition intermediaries in a field can mute the enabling effect of crises on transition intermediation. Similarly, findings show that transition intermediaries can legitimize their visions for systems change by using collective action framing to draw attention to conflict between existing institutions to diverge from existing institutional arrangements. As such, this study provides new insight into conditions affecting the agency of transition intermediaries for low-carbon mobility transition.

Rogge, K. S., & Goedeking, N. (2024)

### **Challenges in accelerating net-zero transitions: insights from transport electrification in Germany and California**

Environmental Research Letters, 19(4), 044007

[Link](#)

Addressing the climate crisis necessitates accelerating transitions towards climate-neutral systems of production and consumption, with electrification emerging as a crucial decarbonisation strategy. The acceleration of such net-zero transitions across multiple systems faces significant resistance and contestation. In this paper, we propose an extended list of challenges unique to the acceleration phase of socio-technical transitions: we introduce ‘expansion and contestation’, ‘justice’, and ‘international dynamics’ as additional challenge types to complement the already acknowledged challenge types of ‘whole systems change’, ‘interaction between multiple systems’, ‘decline and resistance’, ‘consumers and social practices’, and ‘governance’. We apply this extended analytical framework to the electrification of private-passenger vehicles and investigate the unfolding transition to e-mobility with evidence from 35 expert interviews in Germany and California. We uncover over 50 real-world challenges associated with these net-zero transitions at

the beginning of the acceleration phase. Most challenges fall within the categories of 'expansion and contestation' and 'governance'. While Germany and California share many real-world challenges, we also find significant variation between both jurisdictions, which we attribute to differences in their automotive incumbency, transition governance approaches, and institutional contexts. We discuss implications for future research, arguing for greater attention to the dual politics of acceleration during net-zero transitions: political conflict not only centres around the decline of old industries and future losses, but also around the expansion of the new system and associated future gains.

Schippl, J. (2024)

**Technology assessment and the governance of automated vehicles: a Collingridge-dilemma or a lack in normative orientation?**

Journal of Responsible Innovation, 11(1).

[Link](#)

It is often assumed, at least implicitly, that responsible governance of automated vehicles (AVs) requires more knowledge about the future development of the innovation and its potential consequences. In this context, technology assessment (TA) studies often refer to the so-called Collingridge-dilemma. This paper argues that, at least in the German case, a lack of knowledge in the sense of the Collingridge-dilemma is not the central challenge for the governance of AVs. The argument is developed on the basis of different types of knowledge for TA recently introduced by Armin Grunwald. The paper shows that responsible governance of AVs requires more normative and hermeneutic knowledge to better understand the directionality of the current system. More important than focusing on the possible consequences of AVs is a better understanding of how to overcome existing obstacles to the development of a broadly shared vision with effective goals for the German mobility sector.

Schlaile, M.P., Friedrich, J., & Zscheischler, J. (2024)

**Rethinking Regional Embeddedness and Innovation Systems for Transitions Towards Just, Responsible, and Circular Bioeconomies**

Journal of Circular Economy, 2(1)

[Link](#)

Few studies have explicitly explored regional embeddedness and both the inconsistencies and injustices of circular bioeconomy (CBE) innovations. To better navigate the normative dimension of these innovations and CBE transitions in general, our article presents a threefold argument for the relevance of the regional level of analysis. First, CBE innovations are influenced by and affect regional metabolisms and actor constellations, assets, and (biophysical) resources

within *regional innovation systems* (RIS). Second, thoroughly exploring these dimensions of regional (un)embeddedness can reveal ethical concerns, including potential "dark sides" and injustices, such as exclusivity and exploitation. Third, to address these concerns in CBE research and governance, we outline four facets: complementing RIS as a framework and policy approach, balancing creative and destructive measures, addressing the need for more inclusive regional CBE policies, and establishing dedicated intermediaries to better govern regional CBE transitions. In summary, this conceptual article provides starting points for further research and proactive measures that help govern the normative dimension and the design of CBE transitions at the regional level, promoting inclusivity, justice, responsibility, and legitimacy for both innovation and exnovation.

Simoens, M. C. (2024)

**Unpacking pathways to a circular economy: A study of packaging innovations in Germany**

Sustainable Production and Consumption, 47

[Link](#)

Industry actors are taking a leading role in the design and implementation of a sustainable circular economy for packaging in Germany. However, while the goal is clear the pathway towards this goal remains contested. Using narrative analysis, this study answers the following research question: "What are the transition pathways towards a circular economy for packaging proposed by German industry actors and how transformative is their directionality?". To do so, the study presents a comprehensive overview of the packaging innovations currently being developed in the German packaging industry as well as an analysis of the transition pathway narratives underpinning these innovations. Additionally, the study offers a discussion of the overlaps, tensions, shortcomings, and potential of these pathways for a sustainable circular economy. The study highlights that packaging industry actors use various forms of discursive legitimacy to enhance their agency and envisioned pathway, however, fail to engage with the variety of alternative visions among them. Additionally, packaging industry actors engage insufficiently with the deep and disruptive changes necessary to achieve a sustainable circular economy. Consequently, new governance arrangements are necessary to make the transition happen.

Sommer, P., Leonard, F. (2024)

**Peatland rewetting as drainage exnovation – A transition governance perspective**

Land Use Policy 143

[Link](#)

In the European Union, peatlands are largely drained for agriculture resulting in significant environmental damage

and CO<sub>2</sub> emissions. Rewetting is seen as an effective tool to reduce CO<sub>2</sub> emissions, but drainage-based agricultural practices are locked-in. Instead of describing the scaling up of agriculture on wet peatlands, this paper examines the termination of drained peatlands use as an exnovation problem. Drawing on sustainability transitions research, we suggest exnovation as a conceptual perspective on the systemic changes towards sustainable agriculture. We propose a perspective on exnovation governance based on four dimensions: discourse, policy instruments, agency, and justice. We assess existing recommendations and government policy for peatland rewetting in Germany in terms of exnovation governance, and highlight strengths and omissions. The exnovation approach provides a new perspective for decision-makers, while peatland also offers a promising avenue for further research within this framework

Sovacool, B. J., Baum, C. M., Low, S., Fritz, L. (2024)

**The sociotechnical dynamics of blue carbon management: Testing typologies of ideographs, innovation, and co-impacts for marine carbon removal**

Environmental Science & Policy, Volume 155

[Link](#)

Efforts to halt the precipitous decline of marine ecosystems are taking on additional importance in relation to discussions of climate change and carbon removal. Out of all biological carbon captured in the world, more than half is stored by marine living organisms, and the oceans represent the largest long-term sink for carbon. Blue carbon, the preservation and enhancement of marine and coastal ecosystems for carbon removal, is treated as a potentially cost-effective way to capture and store carbon, generate community co-benefits, and implement conservation and climate agendas. However, blue carbon ecosystems are among the most unproven climate intervention options, in part given their status as highly threatened systems which moreover have critical connections to planetary health and food security. Based on extensive place-based field research and document analysis, this study examines three blue carbon innovations: coral reef preservation in Australia, seagrass restoration in the United Kingdom, and macroalgae (seaweed) cultivation and deep ocean storage in the United States. Empirically, it utilizes an extensive, original dataset of expert interviews (N=46), site visits (N=38) and document analysis undertaken over late 2022 and 2023. Conceptually, it advances our understanding of typologies related to narratives and ideographs, innovation and technological styles, and community co-impacts. It thus offers comparative case study work across three locations and blue carbon approaches with original mixed-methods data aimed at novel theoretical triangulation across three typological

frameworks.

Spatan, S., Peter, D., Thiele, G., Wolfram, M., Ehnert, F., Scherbaum, S., Schulz, M., Surrey, C. (2024)

**Epistemic outsiders: Unpacking and utilising the epistemic dimension of disruptive agency in sustainability transformations**

PLOS Sustain Transform 3, e0000097

[Link](#)

Disruptions (systemic disturbances) are crucial to initiate and accelerate sustainability transformations of large-scale social systems (be they socio-ecological, socio-technical, or socio-institutional). Their emergence, characteristics and effects strongly relate to the role of agents who aim to disrupt and transform the status quo, and which thus possess what we call disruptive agency. In this paper, we highlight the epistemic dimension of disruptive agency in social transformations, first by conceptualizing disruptive agents as epistemic outsiders with respect to the social system that they intend to disrupt and transform, and second by connecting this conceptualization to notions of belief, social practices, social networks, discourses, or institutions. We identify five advantages of this approach. Firstly, it informs and conceptually enables various promising interdisciplinary avenues to explore and potentially influence transformative change towards sustainability. Secondly, an epistemic conception of disruptive agency offers a key for an integrated analysis of the individual and collective levels of agency involved in sustainability transformations. Thirdly, the notion of epistemic outsiders conceptually connects agent positions across system boundaries that are understood to be of crucial importance for sustainability transformations respectively (e.g., “niche innovators” or “regime intermediaries”) but which lack an integrated understanding. Fourthly, an epistemic perspective additionally highlights the changing requirements and challenges resulting in two principal stages of transformations unfolding over time, namely before/after a new epistemic layout is shared by a majority of agents. Finally, the above features allow to derive and conceive of new intervention formats and strategies.

Stephens, R. J. S. (2024)

**Alternative Food Networks and agri-food regime transitions: evolution of institutional knowledge on local food from the fruits and vegetables sector in France**

Sustainability Science, 1-15.

[Link](#)

Local food initiatives that shorten producer-consumer relations, often conceptualized as Alternative Food Networks – “AFNs” (Goodman et al., 2012; Tregear, 2011), may be incorporated into the Multi Level



Perspective (Geels, 2002) as innovative “niches” that pressure the dominant agri-food regime towards more localized forms of food provisioning. Other food niches have been thus incorporated (El Bilali, *Agriculture* 9:74, 2019), but more empirical evidence is needed. This case study research contributes to filling this gap by providing evidence of AFN/regime frictions through the study of a key institution for innovation in the fruits and vegetables sector in France, the CTIFL (*Centre Technique Interprofessionnel des Fruits et Légumes*). We apply quali-quant methods by conducting lexicometric analysis to study the 30-year evolution of the institution’s repository of articles which relate to local food. Specifically, we map out the structure and timeline of the institution’s base of knowledge on AFNs thanks to the lexical classification tools of the *Iramuteq* software. Our study shows that (i) this institution’s concern with local food has gathered pace in the past decade, (ii) its perspective is now more interdisciplinary and systemic because it incorporates works from the social sciences, (iii) territorial scales are considered increasingly relevant for food transitions, and (iv) CTIFL acknowledges the wide diversity of models that coexist within the booming local food scene. Studying the 30-year evolution of the “library” of this core component of the food provisioning regime helps characterize internal regime questionings related to local food, and more generally, to growing food system complexities.

Sundqvist, H., Åkerman, M. (2024)

**Creating conditions for sustainability transformation through transformative governance – The case of plastic food packaging in Finland**

*Journal of Cleaner Production*, Vol. 434

[Link](#)

Transformative governance is an emerging approach to addressing major sustainability challenges. Despite the mounting research on this topic, there is still limited understanding on how to create conditions for transformation in practice. Through an analytical frame of transformative governance, in this qualitative case study we investigate how policies and governance in Finland have created conditions for sustainability transformation in food packaging, a key source of plastics pollution, and how the joint implementation of different transformative approaches affects their power to induce systemic change. Our results, based on policy mapping and stakeholder interviews, show that applying principles of transformative governance is necessary but not yet effective enough for creating conditions that encourage and motivate key actors to advance in sustainability transformation. Joint implementation of different transformative approaches and modes of governance can be beneficial, but it is also challenging and may in the worst case even weaken the transformative power and slow down progress. The current governance has

fostered packaging waste recycling but does not effectively solve the root cause of unsustainability: mounting consumption of single-use packaging, despite current policy targets and active use of transformative approaches. To reduce packaging consumption and create favourable conditions for packaging reuse, more emphasis is needed on transformative innovation policies, as well as setting more ambitious and proactive measures such as implementing tighter legislation and carrying out ex-ante impact evaluations when designing new policies and regulation. Integrative governance should also be strengthened to improve directionality and policy coherence.

Weiss, D., Ashari, P. A., Blind, K. (2024)

**Exploring the fuel-cell technological innovation system: Technology interactions in the mobility sector**

Transportation      Research      Interdisciplinary  
Perspectives 25

[Link](#)

With the rise of alternative sustainable powertrain technologies, the mobility paradigm has undergone fundamental changes in recent years. In the wake of the ongoing transition of the road-vehicle sector, fuel-cell vehicles (FCVs) have received increased political attention. However, they constitute only a tiny fraction of total road vehicles nowadays and still face competition from other powertrain technologies. Therefore, this study specifically focuses on how the focal technological innovation system of FCVs is influenced by the emerging electric vehicles (EVs) and established internal combustion engine vehicles (ICEVs) as its context structures. To this end, our time-series vector error correction models analyze the short- and long-run causalities between our focal TIS and its context structures. Using publications, patents, and standards as quantitative TIS indicators, we analyze the modes of technology interaction between FCVs and EVs and FCVs and ICEVs to determine the life-cycle phase of our focal FCV-TIS in more depth. Our results demonstrate that the FCV-TIS is in its formative phase based on the dominance of the EV and ICEV context structures. As policy implications, we derive application-sensitive technology policies that combine the benefits of each mobility technology toward the sustainable transition of the mobility sector.

Yalçın, N. G., Ampe, K., & Simoens, M. C (2024)

**Closing-down the debate instead of the loops? A nuanced consideration of established actors in the circular economy**

*Resources, Conservation and Recycling*, 203

[Link](#)

Yuana, S. L., Wiliyanto, W., Hadiyantono, T. A., Figueroa, M. J., Hapsari, M., & Pinem, M. L. B (2024)

**Mundane circular economy policy: Mainstreaming CE education through the agency of schools**

Journal of Cleaner Production, 440, 140847

[Link](#)

This study examines the ways in which the implementation of Circular Economy (CE) principles in basic education in Indonesia contribute to advancing sustainability transitions. The research addresses two key questions. First, how can the disparity between CE principles and their application in everyday practices within educational institutions be effectively bridged? And second, to what extent does this bridging process facilitate the transformation of schools toward the CE paradigm? Employing technologically enabled multi-criteria mapping methods, this study implements an action-based approach which include school principals on Java Island, Indonesia, from 2022 to 2023. The research reveals the significance of using practical mapping tools, specifically (1) mundane circular school decision mapping, (2) mundane decision prioritization map, and (3) transformative pathways for CE transition, for bridging the gap between CE principles and practical application. These outputs, which were collaboratively produced by researchers and school principals, draw insights from current practices and reflections on the Indonesia Green Principal Awards (IGPA) program, which fosters circular transformation in educational institutions. This research contributes to the introduction of mundane circular economy policy concept which illustrate the everyday dimension of circular economy practices at the grassroots level by integrating CE principles into basic education, contributing significantly to the broader global sustainability agenda.