COUPLED

OPERATIONALISING TELECOUPLINGS FOR
SOLVING SUSTAINABILITY CHALLENGES FOR LAND USE

Deliverable D6.1

Report on Second Synthesis Workshop on typology of telecoupled land systems

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Project

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About COUPLED

Human consumption of food and agricultural products has a significant impact on the environment and the societies in the regions where they are produced. Different sectors, consumers, businesses and politicians are increasingly demanding more environmental and social sustainable land-use both inside and outside Europe. Yet, there is increasing recognition of the limitations of current research approaches to adequately understand and address the increasing complexity of land system dynamics, which are often characterized by strong non-linearity, feedback mechanisms, and local contexts, and where places of production, trade, and consumption of land-based products are increasingly separated.

Coordinated by the Humboldt-Universität zu Berlin, COUPLED is a European training network in order to better integrate research, innovation and social responsibility framed around the concept of telecouplings.

COUPLED trains Early Stage Researchers capable of:

- Understanding processes and actors that influence land-use in an increasingly interconnected world
- Considering distant, unexpected feedbacks and spillovers and to account for their social and environmental impact
- Fostering new and enhanced governance measures that can shape land-use couplings to deliver more sustainable outcomes of land use decisions

For more information see www.coupled-itn.eu

Executive Summary

This deliverable (D6.1) reports on the second synthesis workshop of the COUPLED projects. It describes the planning process for the event as well as the design of the format and the outcomes of the workshop. Another deliverable (D6.3) reports on the first synthesis workshop and is handed in separately.

COUPLED is an Innovative Training Network that puts the Telecoupling approach into action in research aiming at a better understanding of processes and actors that influence land use in an increasingly interconnected world. Fourteen individual research projects, led by early-stage researchers (ESRs), are working on overarching, interrelated research questions:

1. Processes: How inter-dependent are land and resource systems in today's world, and what are new or unexpected actors and processes creating the telecouplings that produce these dependencies?

2. Distance: How is sustainability governance of land use and land-based products affected by differences in the type of linkages and telecouplings and the scale at which they operate?

3. Impacts: Which enabling conditions are required to generate opportunities for a more sustainable allocation of resources in a telecoupled world?

Along their individual research projects, all ESRs participated in a virtual synthesis process. This process stimulated networking and knowledge exchange for innovative research across the different projects. All researchers continuously contributed to the synthesis activities within six Virtual Meeting Series (VMS). Towards the end of the COUPLED project, two synthesis workshops were carried out. Both workshops drew on the empirical and conceptual findings of the individual ESR and VMS projects. The two workshops built on one another.

The first COUPLED Synthesis Workshop (Horizon Scanning Workshop) took place 27-28 October 2020. The Horizon Scanning Workshop identified first themes for discussion. A major aim was to identify topics that spanned many (most) projects. These were then further discussed and developed during the Second Synthesis Workshop (Typology Workshop) that took place 08-12 February 2021. Initially, the Horizon Scanning Workshop was planned to be the second of the two COUPLED Synthesis Workshops with the Typology Workshop as the first one. However, it was decided later to change the order of the workshops and place the Horizon Scanning first because it had the aim to identify emerging issues in the context of sustainability challenges and opportunities in telecoupled land systems. These insights fed directly into the Typology Workshop that explored plausible scenarios of how archetypical telecouplings may change in the future, in particular in regards to actors and flows, distance and mismatches, and trade-offs. The final outcomes of the Synthesis Process will be three scientific papers in peer-reviewed journals (D3.3, D4.3, D5.3), a set of Practitioner Summaries (D7.1) and a Policy White Paper (D7.2) followed by dissemination events.

Table of contents

1. Introduction

COUPLED is an Innovative Training Network that puts the approach of telecoupling into action for contributing to a better understanding of processes and actors that influence land use in an increasingly interconnected world. Fifteen research projects, led by fourteen early-stage researchers (ESRs) and supported by an experiences network of supervisors within universities, companies and NGOs, are working on overarching, interrelated research questions:

- Research Question 1. **Processes**: How inter-dependent are land and resource systems in today's world, and what are new or unexpected actors and processes creating the telecouplings that produce these dependencies?
  - 01: Understanding conservation telecouplings
  - 02: Social-ecological metabolism approaches to analyse telecouplings related to international trade
  - 03: How can private companies promote sustainable land use through their supply chains
  - 04 Impacts of changing lifestyles and ecosystem service demands
  - 05: Measuring the effectiveness of corporate zero deforestation commitments in South East Asia

- Research Question 2. **Distance**: How is sustainability governance of land use and land-based products affected by differences in the type of linkages and telecouplings and the scale at which they operate?
  - 06: Sustainable sourcing of agricultural commodities, spill-over effects, and global-local relations
  - 07: Environmental impact assessments in a telecoupled world
  - 08: Justices and injustices in the soy value chain
  - 09: Characterisation and visualization of telecouplings in Large Scale Land Acquisitions
  - 10: The Stickiness or Geographic Sourcing Patterns in the International Trade of Agricultural Products

- Research Question 3. **Impacts**: Which enabling conditions are required to generate opportunities for a more sustainable allocation of resources in a telecoupled world?
  - 11: Global flows and local ventures in artisanal and small-scale gold mining
  - 12: Governance institutions for sustainability in globally telecoupled systems
  - 13: Land use impacts of the clean development mechanism in a telecoupled world
  - 14: Telecouplings, supply chain analysis and transparency
  - 15: Disentangling the links between global conservation discourses and local land-use practices in protected area governance

2. Setting the scene: The COUPLED Synthesis Workshops

Along their individual research projects, all ESRs participated in a virtual synthesis process right from the start. This process stimulated networking and knowledge exchange across the different projects. All researchers continuously contributed to the synthesis activities within six Virtual Meeting Series (VMS) on:

VMS1. Methods to Measure Flows

VMS2. Mapping Actors and Land System Data

VMS3. Measuring Different Types of Distances

VMS4. Detecting and Rectifying Mismatches

VMS5. Approaches for Imputing Causality

VMS6. Methods to Analyse Trade-offs

Towards the end of the COUPLED project, two synthesis workshops were organized and carried out. Both workshops built upon the empirical and conceptual findings of the individual ESR and VMS projects (Figure 1).

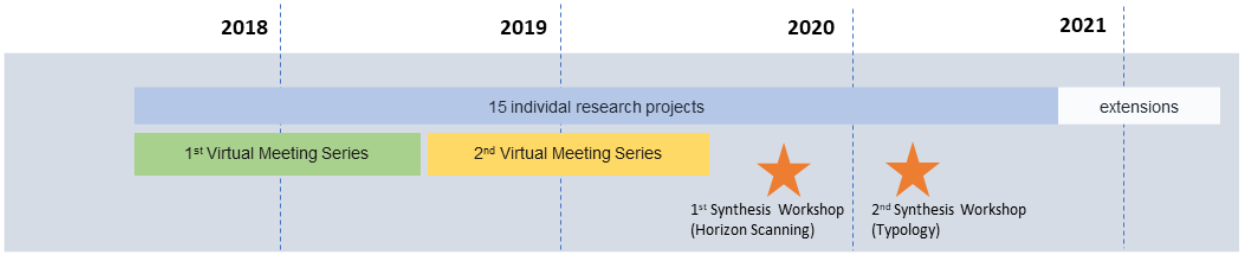

Figure 1: COUPLED timeline with regards to synthesis work.

Due to the Covid-pandemic, both synthesis workshops took place online. The preparation for the workshops was carried out within a small planning committee consisting of two ESR representatives, the coordinator and the project manager. Topic-related themes were pre-identified and individual contributions prepared, collected and distributed prior to the workshops. In between workshops, ideas were clustered and further individual contributions collected.

The first Synthesis Workshop was a Horizon Scanning Workshop and took place 27-28 October 2020. A major aspect of the First Synthesis Workshop was to identify topics that spanned many (most) projects. These were then further discussed and developed during the second workshop (Typology Workshop) that took place 08-12 February 2021. The final outcome will be three scientific papers in peer-reviewed journals, a Policy White Paper and a set of Practitioner Summaries followed by dissemination events (Figure 2).

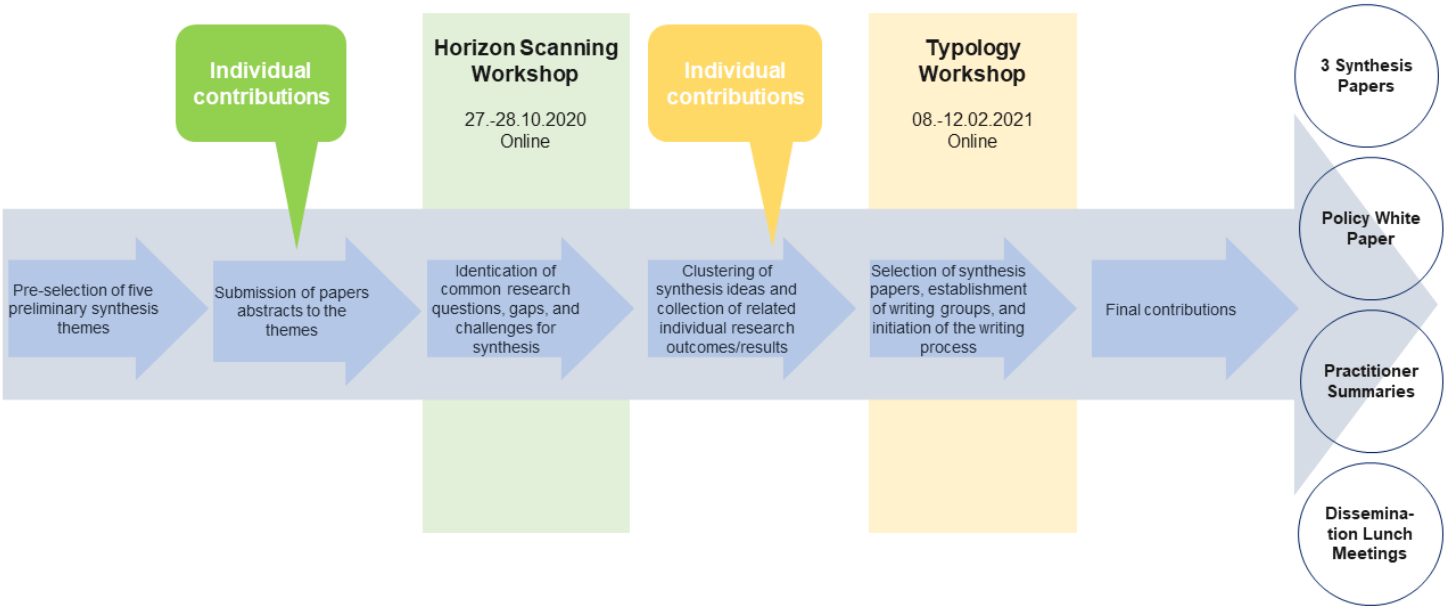

Figure 2: Planning of the synthesis workshops, including the outcomes.

Initially, the Horizon Scanning Workshop was planned to be the second of the two COUPLED Synthesis Workshops with the Typology Workshop as the first one. However, it was decided to change the order of the workshops and place the Horizon Scanning first because it has the aim to identify emerging issues in the context of sustainability challenges and opportunities in telecoupled land systems. These insights fed directly into the Second Synthesis Workshop (Typology Workshop) that explored plausible scenarios of how archetypical telecouplings may transform in the future, in particular in regards to actors and flows, distance and mismatches, and trade-offs.

In the two virtual workshops, the participants used Zoom and a digital whiteboard as visual collaboration tool, Mural. A high level of efficiency, collaborative thinking, constructive discussions, structuring of ideas, and collection of data sources were achieved allowing for identification of common ideas and themes. Note takers were assigned, but all participants made extensive use of Mural during and after the workshop.

Digital whiteboards templates were prepared in advance for both workshops, both for the presentations and the notes as well as collection of ideas and data and literature sources. There was an opportunity to familiarize oneself with the digital whiteboard beforehand. For every session, there was a designated chair and note taker. Each whiteboard had a designated area for these notes to be written up. In addition, every participant had the opportunity to add own ideas and notes and data and literature sources (Figure 3).

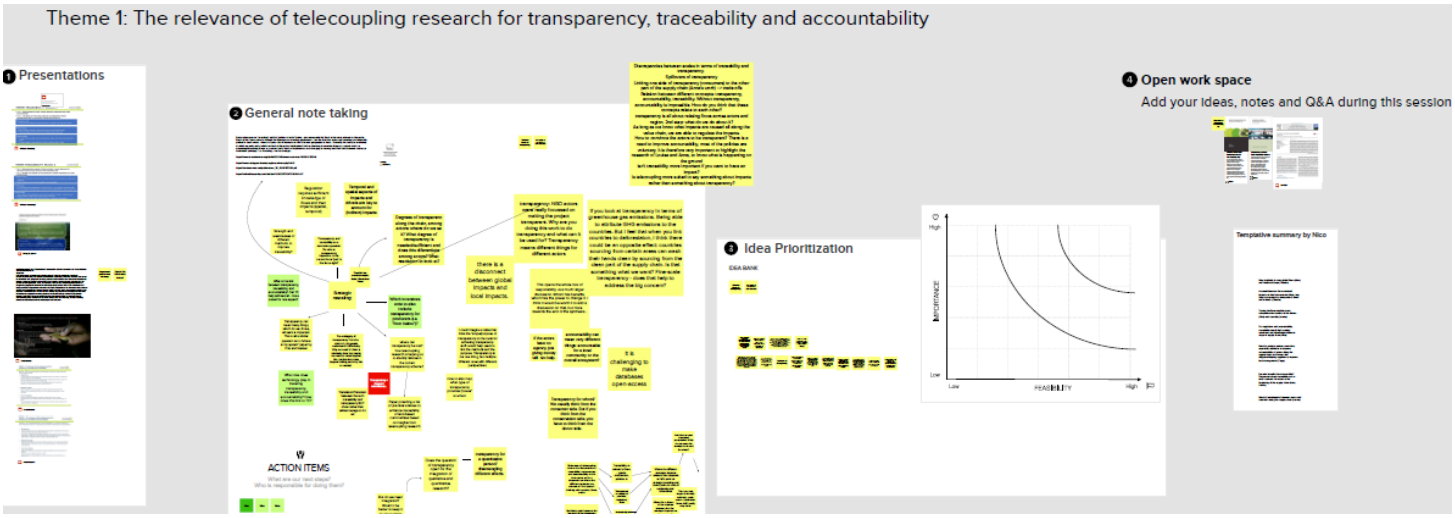

Figure 3: Example of a digital whiteboard during a thematic discussion of the Horizon Scanning Workshop (using the software Mural).

This deliverable (D6.1) reports on the second synthesis workshop of the COUPLED projects. It describes the planning process for the event as well as the design of the format and the outcomes of the workshop. Another deliverable (D6.3) reports on a first synthesis workshop and is handed in separately.

3. Typology Workshop

The two COUPLED synthesis workshops had the purpose to bring together the different research results from the individual research projects and the joint Virtual Meeting Series (see above). They were a collaborative effort of all early-stage (ESRs) and senior researchers of COUPLED (Appendix A: List of participants).

The Typology Workshop took place on 08-12 February 2021 and built upon the results from the Horizon Workshop where the following five paper ideas were developed:

1. Barriers and enabling conditions for bridging the gap between transparency and agency

More information than ever before is available about global value chains and flows. A suite of information-based “transparency” initiatives exist, and these have been mobilized in different forms and by different actors to promote sustainability. But what has been the role of smallholders in contributing to these initiatives, and how such transparency efforts benefited them? With this paper, the authors could look at some case studies where transparency efforts play a major role in the organisation of the correspondent value chain. They might examine how smallholders understand transparency, relate to it, and whether transparency contributes to their development needs. Specifically, they could be able identify which aspects of smallholders would be keen to know about and how these contribute to an understanding of sustainability that puts social justice at the centre. Attention will be paid also to the barriers that smallholders face to transform transparency efforts in specific actions that lead to fairer and ecologically sound terms of production and trade, and which role other non-local actors could take to facilitate this transition.

2. Governing telecouplings

Governance was a major topic during the workshop. Does existing governance mechanism fail to address telecoupled interactions? Can telecoupling research facilitate governance? A synthesis paper could focus on what we have learned as a project on governing/governance. This paper could focus on 'governance' or 'governing telecouplings' based on the results/findings/insights from the research done by COUPLED project members (ESRs, PIs, etc.). One aim is to understand how flows are governed (e.g. supply chains), including immaterial flows. Another aim might be to understand governance mechanisms related to all elements in a telecoupled land system that are influenced by distal links.

3. Immaterial flows are neglected when assessing sustainability challenges related to land use

The globalization of land use is often captured by material measurement and tracing of flows of land-based products such as food, feed, fibre, and energy across spatial distance. The connections between production and consumption of land-based products have in this way been identified and quantified. Less well known is how these material flows are often created, facilitated, negated or opposed by immaterial flows. In a paper, we could define immaterial flows in the context of land use, show there is a research gap within land system science concerning immaterial flows, illustrate that immaterial flows are central for understanding land use changes, identify typical combinations of immaterial and material flows, suggests approaches and methods to capture immaterial flows, and discuss the implications of better understanding immaterial flows for sustainable land use. Data from case study research focusing on land use change across the globe could be used. This data can highlight how values, discourses, personal networks and historical relations initiate and shape flows of land-based products across spatial distance. Understanding how land use change is systemically connected across space, therefore requires a much closer attention on immaterial enabling or restraining flows.

4. Transdisciplinarity in the making: Challenges and opportunities for sustainable land use change

The policy-business-science interface is increasingly emphasised in questions concerning sustainability. In land-use and cover change, sustainability questions concern the production and use of land-based products for food, feed, fibre, and energy. Despite the emphasis on transdisciplinary collaboration to address sustainability challenges little is known about how transdisciplinarity plays out in practice. In this paper, we could reflect on the policy-business-science interface within 14 PhD projects placed exactly at this interface and within a project explicitly focusing on sustainable land use. Key challenges and opportunities are to be highlighted, as are ways forward. Attention will be given to project design, implementation and internal collaboration, aspects often highlighted as key to achieve transdisciplinarity. Support for this is found, but insights pertaining different ambitions, normative goals, procedures of knowledge communication and sharing, and daily working habits between the partners within the project are highlighted as barriers that need to be dealt with if the policy-business-science interface is to fulfill the aim of enabling sustainability.

5. Overarching outcomes of relevance for Land System Science/Sustainability Science

The last idea is to look further into what we have learned as a project, based upon the individual projects. The focus lies on 'outcomes' or results from the research done and to see if we can integrate general, overarching findings of relevance for Land system science/Sustainability Science. This will be work in progress and be done mainly bottom-up and iterative.

The expected outcomes of the five-day event were to develop these various and preliminary ideas further into:

a) Defining at least three Synthesis Papers: Identify authors, develop abstracts and outlines, allocate writing tasks and define timelines

b) Contextualising and integrating research findings into a Policy White Paper: Identify the topic, develop outline and identify authors

c) Contextualising and integrating research findings into a set of Practitioners Summaries: Identify the topics, develop outlines and identify authors

Workshop Preparation

Due to the pandemic, the synthesis workshop took place online. The preparation was carried out within a small planning committee consisting of the ESR representatives and the coordinator and project manager.

For preparation, five shared Google Doc files were set up to frame the paper ideas and collect systematically individual input from the ESRs and their individual research projects. For instance, tables were prepared for each paper idea that asked for empirical and theoretical findings, new datasets produced, or new concepts and methods developed (Table 1).

Table 1: Example of a table collecting individual input for paper idea "Barriers and enabling conditions for bridging the gap between transparency and agency".

Question A: Empirical insights on transparency and traceability emerging from your research		
ESR	*Response*	*Reference (if relevant)*
ESR 07	There is very little understanding in cocoa farmers about certifications and all sorts of sustainability standards, including traceability and transparency.	Interviews with cocoa farmers in Cote d'Ivoire
ESR 07	Transparency and traceability are of little help if we can do nothing with them. At the corporate level there is so much diversity in the way impacts are accounted for that transparent data alone is not enough to improve company's practices. The push for transparency and traceability should emphasize the need to homogenise accountability frameworks. We should start questioning then what is the role of governments in these processes, since they are little mentioned in these debates.	Paper 1 and 2.
ESR 07	The high consolidation of markets can have trade-offs for sustainability action regarding transparency and traceability. Fewer larger actors could facilitate homogenization of strategies, but the logistics involved can be more complex to tackle to achieve transparency and traceability. The opposite happens for the abundant number of small traders.	In process.
ESR 11	The artisanal and small-scale gold miners in Tanzania do not know what happens to the gold they excavate, and most of them do not consider increased value chain transparency a game changer. They are still depending on money from brokers and thus continue to be entangled in webs of dependencies. This makes it difficult for them to reach other markets or prosper economically, even if they had full access to market information. That said, many have, to some extent, benefitted from access to world market price information.	Preliminary findings (qualitative data, mainly semi-structured interviews)

ESR 13	Decision-making and information on project development is kept at higher management levels in many international development projects - in this case a World Bank-financed project in Salta, Argentina. Project restructuring and prioritization of activities is decided by the funding agency and the ministries and government institutions (official project owners) and not the actors implementing the project on the ground (e.g., NGO actors) or actors making up the official target group (e.g., local community members). These latter two actor groups experience a lack of transparency in the project scheme which makes it difficult for them to play an active role in defining means and ends for the project.	Fieldwork in Salta, Argentina (Busck-Lumholt et al. 2020, in review)
ESR 03	Implementation of blockchain and other technological innovations in coffee supply chains can help address traceability and transparency issues, but have little impact on overall sustainability	Bager (2021) Blockchain and coffee, In process
ESR 03	Not all actors stand within the coffee supply chain to benefit equally (or at all) from implementation of technological innovations, such as blockchain	Bager (2021) Blockchain and coffee, In process
ESR 03	Opaque supply chains, traceability challenges, and lack of transparency present concrete barriers for companies to implement and meet zero-deforestation commitments	Bager (2021) ZDC implementation, In process
ESR 09	Insights on the coverage of voluntary sustainability standards (i.e., which potential impacts they cover - or leave out) and the standard setting procedures (e.g. who is involved)	In process

Furthermore, digital whiteboards were prepared in advance for each paper idea, including the sessions on Practitioners Summaries and the Policy White Paper. These boards were used for the length of the entire workshop, both for the presentations and the notes as well as collection of ideas and data and literature sources. There was an opportunity to familiarize oneself with the digital whiteboard beforehand. Each whiteboard had a designated areas for the presentations, the notes and brainstorming ideas as well as data and literature sources.

Synthesis Papers

The workshop started with an introduction to the aims of the workshop and the technical and practical procedures. The first three workshop days were used to work on the scientific Synthesis Papers. It started with an overview of the individual inputs to the five paper ideas and the results from the six VMS reports (see above). It was decided to spend the following two days mainly on working on the three topical paper ideas:

1. Governing telecouplings
2. Telecoupled land-use change and the importance of non-material flows and processes
3. Balancing traceability and transparency

The participants separated into the writing groups and reported back regularly to incorporate feedback from the plenum (Figure 4 and 5). After discussing the main framing, arguments, content as well as identifying leading authors, paper abstracts and outlines were drafted. Part of this process was also the identification of potential journals.

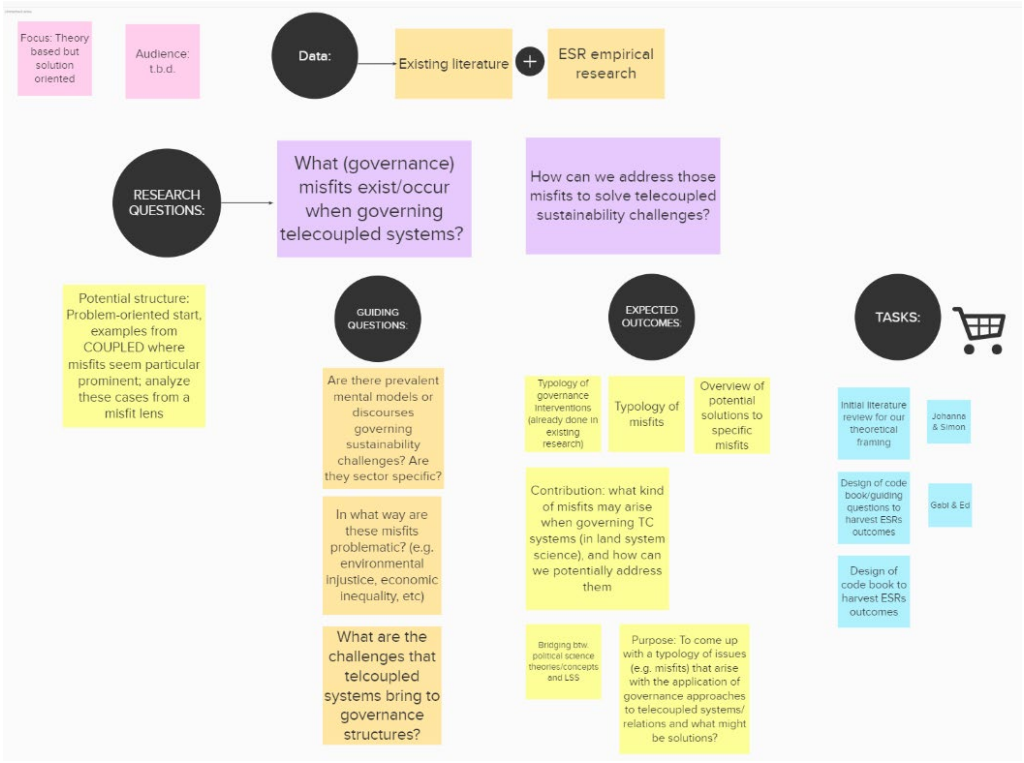

Figure 4. Example of one plenum presentation, prepared by Writing Group 1 (Governing telecouplings) using the software Mural.

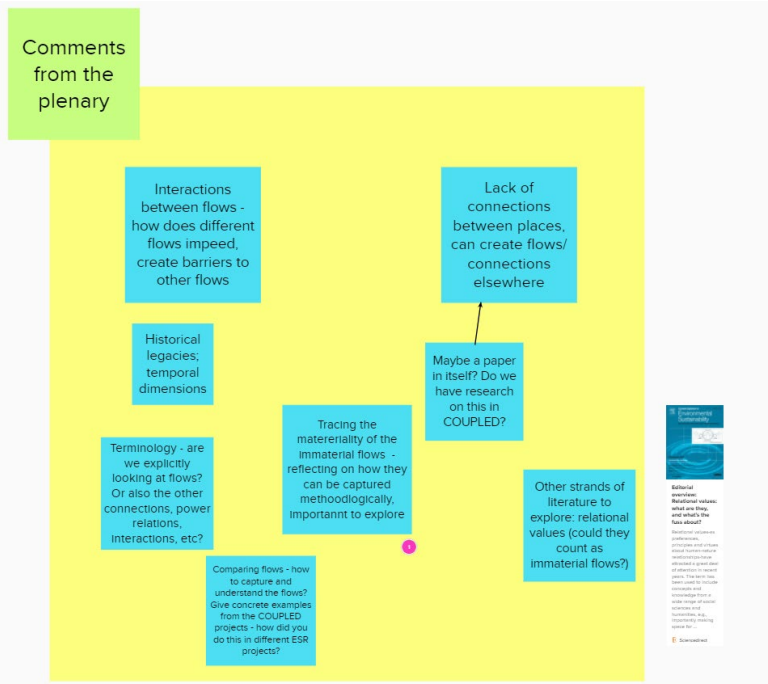

Figure 4. Example of one plenum feedback, given to Writing Group 2 (Telecoupled land-use change and the importance of non-material flows and processes) using the software Mural.

The first part of the Typology Workshop concluded with the consolidation of three synthesis paper ideas that will be published as COUPLED Deliverables 3.3, 4.3 and 5.3 and later be submitted to peer-reviewed journals. The following sub-sections present the main objectives and ideas of these three paper ideas. From the original three, two was decided upon while the paper on *Balancing traceability and transparency* was left for further consideration due to still to come data from individual ESR datasets. This was replaced by a paper based upon insights on land for sustainability and is entitled *Ten facts about land systems for sustainability*. This is a wider collaborative paper based upon collaboration between the Global Land Programme (glp.earth), COUPLED and a further group of key scholars in land system science.

Immaterial flows are neglected when assessing sustainability challenges related to land use

The globalization of land use is often captured by material measurement and tracing of flows of land-based products such as food, feed, fibre, and energy across spatial distance. The connections between production and consumption of land-based products have in this way been identified and quantified. Less well known is how these material flows are often accompanied by immaterial flows. In this paper, we define and explore immaterial flows in the context of land use. We show there is a research gap within land system science concerning immaterial flows, we illustrate that immaterial flows are central for understanding land use changes, we identify typical combinations of immaterial and material flows, we suggests approaches and methods to capture immaterial flows, and we discuss the implications of better understanding immaterial flows for sustainable land use. Data from case study research focusing on land use change across the globe is used. This data highlight how flows of values, discourses, personal networks, planning and historical relations initiate and shape land use. Understanding how land use change is systemically connected across space, therefore requires a much closer attention on immaterial flows.

Fit for purpose? Scale-sensitive sustainability governance of global flows

In this article, we outline different types of misfits that can arise in governing global flows, and consider what might be required to address them. Existing research has mostly analysed the problem of fit from a socio-ecological systems perspective. We build upon this work, but focus in particular on telecoupled systems, which we conceptualise as comprising two or more socio-ecological systems that are linked through global material and non-material flows across large distances. A telecoupling lens is helpful for exploring governance implications of globalisation, as it offers an analytical perspective that brings focus to specific flows and interconnected places or systems, rather than confronting globalisation as a diffuse, complex and all-pervasive phenomenon. Globalization has become a catch-all term for many cultural and economic trends and processes, and is often identified as an underlying cause of social and environmental problems, even though we still lack a cogent theory of globalisation. A telecoupling perspective, however, helps us to delineate and analyse particular place-specific environmental problems and their (often remote) drivers in a globalising world, which provides new insights into why and how misfits arise in the governance of global flows. This paper centres around the following research question: What misfits occur when governing telecoupled systems that are connected through global flows, and how can we rectify them?

Ten facts about land systems for sustainability

Land use is central to addressing sustainability issues including biodiversity and nature conservation, climate change, food security, poverty alleviation, and sustainable energy. Here we synthesize knowledge accumulated in land system science, the integrated study of terrestrial social-ecological systems, into ten core facts underlying the challenges of managing land systems and their dynamics. These “hard truths” have strong, general, empirical support, and help to explain why achieving sustainability in land use is so complex, while also pointing the way towards solutions. The ten facts are: 1. Meanings and values of land are socially constructed and contested; 2. Land systems exhibit complex behavior with abrupt changes; 3. Irreversible changes and path-dependence are common features of land systems; 4. Some land uses have a small footprint but very large impacts; 5. Drivers and impacts of land use change are globally interconnected and

spill over to distant locations; 6. Humanity lives on a used planet where all land provides benefits to societies; 7. Land use change normally entails trade-offs between the provision of different benefits – whereas win-wins are rare; 8. Land tenure and land use claims are often unclear, overlapping and contested; 9. The benefits and burdens from land are unequally distributed; 10. Land users have multiple, sometimes conflicting, ideas of what social and environmental justice entails. We discuss the implications of these facts, with the aim of addressing prevailing misconceptions about land and its use in order for scientists, policy-makers, practitioners, and societies in general to develop effective and fair ways for using land as a lynchpin for sustainability.

At the end of the third day, time was reserved to discuss alternative paper ideas. Two were mainly discussed. For the second several insights were used for the *Ten facts about land systems for sustainability* paper.

Transdisciplinarity in the making: Challenges and opportunities for sustainable land use change

The policy-business-science interface is increasingly emphasised in questions concerning sustainability. In land use and cover change, sustainability questions concern the production and use of land based products for food, feed, fibre, and energy. Despite the emphasis on transdisciplinary collaboration to address sustainability challenges little is known about how transdisciplinarity plays out in practice. In this paper, we reflect on the policy-business-science interface within 14 PhD projects placed exactly at this interface and within a project explicitly focusing on sustainable land use. Key challenges and opportunities are highlighted, as are ways forward. Attention will be given to project design, implementation and internal collaboration, aspects often highlighted as key to achieve transdisciplinarity. Support for this is found, but insights pertaining different ambitions, normative goals, procedures of knowledge communication and sharing, and daily working habits between the partners within the project are highlighted as barriers that need to be dealt with if the policy-business-science interface is to fulfill the aim of enabling sustainability.

TBD: Outcomes of COUPLED.

We will with this paper try to generate a synthesis paper focused on what we have learned as a project, based upon the individual projects. We will in this paper focus on ‘outcomes’ or results from the research done. Can we provide some general, overarching findings of relevance for Land system science/Sustainability Science. We will work bottom-up, iterative. A number of points from this discussion fed in to the wider ’10 facts’ paper.

Policy White Paper

The fourth day was dedicated to the question of how the results of COUPLED can be best integrated to increase research impact and develop policy recommendations in the form of a Policy White Paper for policy and decision makers.

At the beginning, ongoing policy processes were discussed, to which the results of the COUPLED research projects have relevant results to contribute. These include the EU public consultations on Forests (https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12674-Forests-new-EU-strategy_en), Biodiversity (https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/1832-Evaluation-of-the-EU-Biodiversity-Strategy-to-2020), Restoration (https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12596-Protecting-biodiversity-nature-restoration-targets), or Regulations (https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives?page=1&topic=ENV).

In breakout groups, the participants elaborated policy-relevant project results, possible windows of opportunities (e.g. policy processes) and target audiences. All ideas were later “pitched” in a plenum session, not only to choose the best idea but also to find commonalities between the topics proposed. In the end, the topic *Governing land use beyond borders* was chosen. The question about the international reach of EU trade

in land-based products connects many of the COUPLED results and spans several individual projects. The concept of telecoupling can be shown as a way to understand flows inherent in the trade and improve EU policies in regard to sustainability. A writing group was formed. This then framed the paper and assigned writing tasks.

Practitioners Summaries

The fifth and final day of the workshop continued the question of how to increase the impact of the scientific results of COUPLED and further develop them for the policy-business-science interface. While the above policy white paper focused mainly on recommendations for policy-makers, the focus was here also on further stakeholder involvement, e.g. NGOs, business/industry and civil society groups. Much of the discussion served to highlight the value of transdisciplinarity to create research-based solutions from a collaborative project like COUPLED. This helped the ESRs to identify in the following the relevant stakeholders to their results as well as to frame the outcomes. Twelve practice-relevant topics could be identified and will be further elaborated as Practitioner Summaries to be handed in as COUPLED Deliverable 7.1:

Preliminary list of titles

1. Empowering women in Tanzania's artisanal and small-scale mining sector (A.F. Pedersen)
2. Rubber boom and the global and local impacts of personal car use in the European Union (P. Laroche)
3. A need for bottom-up governance in Lao protected areas (J.G. Persson)
4. Assessing relationship patterns in commodity supply chains and their sustainability implications (T. Reis)
5. Land use, land use change and forestry: Review of EU rules (N. Roux et al.)
6. Three principles for the EU to reduce imported deforestation (S. Bager)
7. Re-examine international conservation funding gaps (S. Qin)
8. Supporting farmers through the post-maize transition (P. Pravalprukskul)
9. Challenges and opportunities of governing global value chains (C. Parra Paitan)
10. Going beyond country-level deforestation when assessing impacts for sourced commodities (F. Mempel)
11. Governing spillovers of agricultural production through voluntary sustainability standards (G. Sonderegger)
12. The EU can govern beyond borders to address the displacement of environmental impacts (J. Coenen)

The workshop closed with an exchange on ideas how to take the dissemination outcomes up during targeted events aimed towards policy-makers and practitioners.

Appendices

A List of participants

	Name	Organisation
1	Bager, Simon	Université catholique de Louvain
2	Bech Bruun, Thilde	University of Copenhagen
3	Challies, Edward	Leuphana University Lüneburg
4	Coenen, Johanna	Leuphana University Lüneburg
5	Corbera, Esteve	Universitat Autonoma de Barcelona
6	Friis, Cecilie	University of Copenhagen
7	Frohn Pedersen, Anna	Humboldt-Universität zu Berlin
8	Haberl, Helmut	BOKU Wien
9	Heinimann, Andreas	University of Bern
10	Kastner, Thomas	Senckenberg Biodiversity and Climate Research Centre
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17	Mempel, Finn	Universitat Autonoma de Barcelona
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19	Meyfroidt, Patrick	Université catholique de Louvain
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