

sDiv working group meeting report

"sSCAT"

1. Purpose and Focus of the Meeting

The sSCAT working group - Fit-for-purpose models and frameworks for understanding and managing diverse social-ecological conservation systems - held its third meeting at iDiv Leipzig from 27–30 October 2025. Researchers and practitioners from Africa, Asia, Europe, Australia, and the Americas participated in person and online to advance a comparative understanding of protected and conserved areas as social-ecological systems (SESs).

This meeting focused on pushing forward three central products:

- 1. A feedback-archetypes paper characterising recurrent feedback structures across diverse area-based conservation systems.*
- 2. A CIS Guidance Document, which provides a shared ontology and step-by-step process for capturing and comparing conservation case studies using the Coupled Infrastructure Systems (CIS) framework.*
- 3. A mid-range theory paper that offers a practical pathway for developing and testing mid-range theory for conservation systems.*

The meeting was focused on making progress on our two key papers and sought to balance group discussion with hands-on collaborative work. It included:

- Morning plenaries aligning objectives and advancing conceptual framing.
- Breakout groups dedicated to case study comparison, modelling, and guide development.
- Hybrid work sessions, with remote colleagues joining key discussions.
- Hands-on synthesis sessions, involving diagramming, coding, writing, and cross-case comparison.
- Engagement with the iDiv community, including participation in the iDiv Seminar Series and informal networking events such as Cake & Connect.

The meeting benefitted from excellent organisational, technical, and hybrid-support from the sDiv team. The meeting rooms, breakout spaces, and hybrid facilities significantly enhanced productivity. The working atmosphere was collaborative, energized, and focused, with participants consistently emphasising how essential the in-person format was for achieving conceptual clarity, resolving classification challenges, and making substantial analytical progress.

2. Key Discussion Areas and Progress

2.1. Major Advances in Case Study Analysis and Archetype Identification

The meeting enabled the group to make substantial progress in comparing our global case studies and identifying emerging archetypes of conservation systems. Working in person allowed participants to jointly refine how we describe and classify key social, ecological, and institutional elements of each case, resolve challenging coding decisions, and build a shared understanding of the feedback structures that shape system dynamics.

With this shared foundation, the group was able to take important first steps toward systematically comparing cases and exploring how different conservation systems cluster based on their underlying feedbacks. Early exploratory analyses showed encouraging differentiation among cases, giving us confidence that the approach can meaningfully capture real-world variation. These advances now position the group to refine the dataset and analysis, identify archetypes, and complete our paper.

2.2. Consolidating the CIS Guidance Document

Because the CIS framework underpins both core papers, the group dedicated substantial time to refining the CIS Guidance Document. The in-person discussions allowed participants to work line-by-line through the codebook, clarify challenging distinctions and develop practical examples and instructions. Key progress was a near-complete codebook defining components, interactions, and common translation challenges, practical guidance on how to define system boundaries, classify actors, and identify feedbacks in complex SESs and some practical guidelines on how to use the CIS for different purposes.

2.3. Advancing the Mid-Range Theory Paper

The group also advanced our mid-range theory paper, which proposes an operational and model-supported approach to developing mid-range theory in conservation science. Building on the Coupled Infrastructure Systems (CIS) framework and simple feedback-focused models, the paper outlines how conservation scientists can move from conceptual diagrams to tractable, quantitative models that clarify system dynamics, refine definitions, and generate testable hypotheses. Some of the week was spent refining this approach and illustrating it with examples, also refining the framing of the paper and discussing the toy models presented therein. This paper also provided the foundation of the seminar to the wider iDiv community during the week, providing an opportunity to share the emerging framework, gather constructive feedback, and strengthen the conceptual direction of the paper.

3. Next Steps and Future Work

Following the progress made during the meeting, the working group will now turn to consolidating and completing the global case study set. Existing cases will undergo a final round of review, and several new cases from underrepresented regions will be added. This expanded dataset will provide the basis for refining the emerging archetypes and developing a stronger comparative understanding of how conservation systems function in different contexts.

The group will also continue advancing the three central synthesis products—the feedback-archetypes paper, the mid-range theory paper, and the CIS Guidance Document. Over the coming months, smaller teams will work online to draft full versions of these outputs, integrate feedback, and refine the examples and illustrations developed during the working group meeting. As these core products take shape, the group will begin scoping additional synthesis opportunities, including papers that explore how archetypes may inform conservation practice, how the CIS framework can support place-based research, and how dynamic feedbacks can be integrated more effectively into conservation planning and decision-making. The meeting also opened discussions about longer-term collaborations, including the potential development of tools, practitioner-oriented resources, and a future SocSES (Society for Social-Ecological Systems) working group to extend this work beyond the project's formal end.