Session Abstract

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Mobilizing Knowledge for Transitions: The Dutch Strategy for "Practice-Forward" Transdisciplinarity

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Addressing complex societal transitions requires approaches that can handle interlocking issues of institutions, power, knowledge systems, and values, rather than treating "society" as an external context for science. Transdisciplinary research (TDR) —aimed at integrating academic and non-academic knowledge to produce actionable knowledge—has been widely argued to be particularly suited to such complexity and societal relevance (Nicolescu, 2002; Klein, 2017; Pohl & Hadorn, 2007).

While the need for TDR has gained momentum, a recurring barrier is the **gap between conceptual recognition and practical implementation** in real institutional settings (e.g., funding, evaluation, researcher incentives, disciplinary boundaries, and governance of collaboration). TDR scholars and practitioners report that institutionalization is often difficult because TD requires time, reflexive facilitation, shared legitimacy, and methods for co-production that are not routinely supported by standard academic structures (Nowotny et al., 2001).

This session therefore shares developments from the **Dutch academic landscape**—spanning research universities and universities of applied sciences—to strengthen TD practice through a **"practice-forward" strategy**: embedding societal impact, co-production, and knowledge use *as methodological and organizational commitments*, not as add-ons. Such "impact-oriented" and "co-produced" knowledge frameworks align with established approaches in transdisciplinarity and sustainability science, where joint problem framing, boundary spanning, and iterative learning are central to producing usable knowledge for societal transformation (Pearce & Ejderyan, 2019; Lang et al., 2012).

Central to this strategy is the Nationaal Expertise Centrum Transdisciplinair Werken (NECTR). In line with the broader literature on knowledge infrastructures and sustainability transitions, NECTR's mission—mobilizing knowledge, enabling collaboration, and strengthening recognition and training for TD work—can be understood as building the enabling conditions for transdisciplinary practice at the system level (Wittmayer et al., 2014). We will illustrate how this "practice-forward" ethos is operationalized through a sustainable network of knowledge, skills, and organizational routines that support TD collaborations over time.

After an introduction to the NECTR national network and the consolidated perspective in a recent NECTR white paper (NECTR, 2025), we will discuss two long-term (10+ year) programs that embed TD research and practice-oriented engagement from the outset:

1. **The Convergence Alliance**—a collaboration between TU Delft, Erasmus University Rotterdam, and Erasmus MC. Convergence-oriented research aligns with scholarship on "mission-oriented" and boundary-crossing research aimed at addressing urgent societal problems by connecting disciplinary expertise through shared goals and iterative integration. By explicitly spanning institutional and disciplinary boundaries to tackle challenges such as climate change, health system pressures, and urbanization, the Alliance reflects principles common to TD practice: joint problem framing, integration across knowledge domains, and iterative translation into societal action (Lang et al., 2012; Pohl & Hadorn, 2007).

2. **FRAIM**, a Dutch transdisciplinary research and innovation network focused on shaping the future of physical work. Labor shortages and deteriorating working conditions in essential sectors are widely addressed in transition and responsible innovation literature as socio-technical challenges requiring both technological development and institutional/organizational change, including attention to ethics, labor relations, and lived experience (Rip & Kemp, 1998; Owen et al., 2013). FRAIM's strategy—integrating worker perspectives with robotics, design, ethics, psychology, and organizational studies—corresponds to TD and co-production approaches that treat stakeholders as co-producers of knowledge, not merely data providers, and that build legitimacy through participatory and reflexive engagement Its aim to institutionalize this emerging network in a national center for the future of physical work illustrates a key TD lesson: long-term institutional scaffolding is necessary to move from pilots to sustainable governance and uptake.

Together, these cases illustrate how Dutch TD can generate **actionable knowledge for systemic transitions**, combining (i) rigorous integration of diverse knowledge, (ii) participatory co-production, and (iii) organizational mechanisms for implementation and scaling [Lang et al., 2012; Scholz & Steiner, 2015; Wittmayer et al., 2015]. The session concludes with a panel featuring representatives from Convergence and FRAIM, inviting critical dialogue with international TDR experts and practitioners on **scalability, operational challenges, and distinct strengths** of the Dutch TDR model.

Session Flow:

- 0:00 – 0:10 | Part 1: Opening & The NECTR Strategy – White Paper on TD collaboration in the Netherlands

Speaker: BinBin Pearce

- 0:10 – 0:25 | Part 2: Long-Term Application – Convergence
  Speaker: Nikki Brand
- 0:25 – 0:40 | Part 3: Long-Term Application – FRAIM - Future of Physical Work
  Speaker: David/Deborah/Eva
- 0:40 – 1:00 | Part 4: Panel Discussion & Audience Q&A
  Moderator: BinBin Pearce; All speakers together

Keywords: Systemic transitions, knowledge-to-action Pathways, human-robot interaction, future of work, climate resilience, knowledge networks, practice-forward approach

References

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Alignment with TRACK 4: Bridging knowledge and networks for transformative change

With a particular emphasis on:

4.2. ITD in systemic transitions

4.7. Roles of intermediaries, boundary organizations

4.9. Pathways from knowledge to action and policy