

Was sagt transformative Wissenschaft zu Energiesysteme denken und beeinflussen?

Herausforderung

- Globales Energiesystem nicht nachhaltig
- Europa könnte wichtiger globaler Vorreiter werden
- Bestehende Systeme haben starke Pfadabhängigkeiten
- Lösungen meist auf technologische Revolutionen aus
 - durch ökonomische Anreize
- Partikulare Perspektiven und unterschiedliche Energie-Paradigmen in Europa
 - Ganzheitlicher Systemblick als Ansatz

Was sind System Innovationen?

- System Innovations are **radical** – *insofar as they alter existing system dynamics – innovations in socio-technical systems that fulfill societal functions, entailing changes in both the components and the architecture of the systems.* (OECD 2015: p.6)
- *Driving the system to do more will not be enough if something different is needed. When the goals and ends of the system are in question, then systems innovation has to focus not merely on new means but on a new **purpose**.* (Leadbeater and Mulgan 2013)

Vision: wirklich ganzheitlicher Ansatz



Social innovations are new solutions (products, services, models, markets, processes etc.) that simultaneously meet a social need (more effectively than existing solutions) and lead to new or improved capabilities and relationships and better use of assets and resources.

Young Foundation 2012



Transformation is structural change that alters the interplay of institutional, cultural, technological, economic and ecological dimensions of a given system. It will unlock new development paths, including social practices and worldviews.

WI working definition Berlin Office

Mission

Training für Realexperimente entwickeln und testen, dass System Dynamics, Social Innovation Forschung, Energiesystem-Expertise, Transformationsforschung, Leadership- und Kommunikationskonzepte vereint

Projekt selbst auch Realexperiment!

WI und CSI kombinieren ihre jeweilige Expertise in industriell-ökologischen und sozio-kulturellen Innovation



Ziele

Zukünftige Europäische Entscheidungsträger aus mehreren Ländern, Sektoren und Disziplinen

- **verstehen** unterschiedliche kulturelle und sektorspezifische Perspektiven
- **designen** innovative Lösungen für nachhaltige europäische Energiesysteme
- **testen** Realexperimente bzw. **implementieren** Prototypen in ihrem jeweiligen Arbeitskontext

Das Lab im Überblick

Struktur

Kick-off Seminar (Berlin)

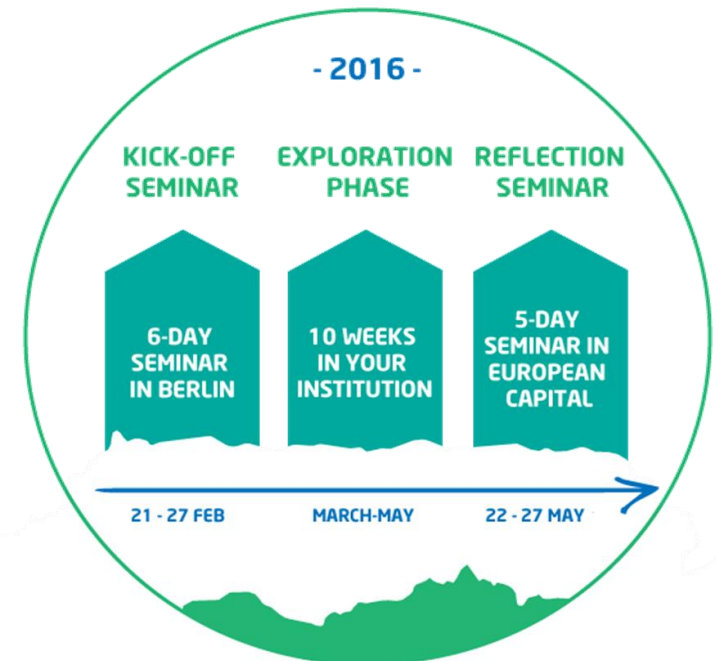
- Training zu System Innovationen & Entwicklung Prototypen

Explorationsphase (Arbeitskontext)

- Realexperimente im professionellen Umfeld

Reflexionsseminar (Warschau)

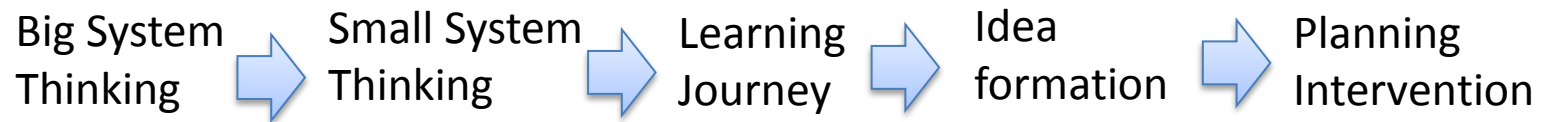
- Lernprozesse und Ergebnisse austauschen, Erfolgsfaktoren für systemische Prototypen sammeln und auswerten



Agenda Auftaktseminar

Grobe Struktur

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Arrival and Get Together	Systems and their innovation	Innovation and I	Inspiration from the Field	Prototype development	Strategies for exploration phase	Farewell



Agenda

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	Arrival and Get Together	Systems and their innovation	Innovation and I	Inspiration from the Field	Prototyping my own project	Strategies for exploration phase	Farewell
Morning		Welcome and Contracting Energy Systems Game <i>(Piotr Magnuszewski)</i>	Short Intro and Input for the day Change Makers Input Reflection from research perspective	Keynote Germany's Energy Transition <i>(Manfred Fishedick)</i> Welcome Climate KIC and EUREF Campus InnoZ presentation and guided tour on campus	Prototype development Part I – Design Thinking	Prototype development Part II Role Play Devil's Advocate	Logistics Exploration Phase
							Feedback
				Startup pitches over Pizza-Lunch			
Afternoon	Arrival of participants Getting to know each other	Debriefing and System Dynamics Modeling <i>(Piotr Magnuszewski)</i>	First idea collection for prototypes Change Maker Role Play	Debriefing through journalling and dialogue walks Afternoon off to relax (or do work)	Communication/Advocacy Training <i>(Stefan Schurig)</i>	Coaching on Multi-Stakeholder Leadership in Exploration Phase <i>(Petra Künkel)</i>	
Evening	Snacks & Drinks	Joint Cooking	World Café with Change Makers external and from group	Night off in Berlin	Dragon's Den	Farewell evening	9

Gewünschte Ergebnisse

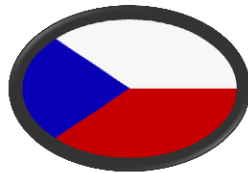
Für Teilnehmer:

- Umgesetzte neue Ideen (Prototypen) und dokumentiere Lernprozesse (know-what)
- Entre-/Intrapreneurieller Geist und Durchhaltevermögen (know-how)
- 20-25 motivierte “change agents” und ein Musketier-Gefühl zwischen ihnen (know-who)

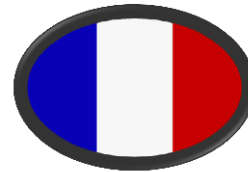
Für die Allgemeinheit:

- Ein neuartiges Lab-Trainingsprogramm
- Ein Handbuch mit wichtigsten Konzepten und weiterführenden Informationen
- Neue und getestete Initiativen für die Überwindung von typischen Problemstellungen von Energiesystem-Akteuren

Home countries of participants



Czech Republic



France



Poland



Germany



Austria



Hungary



Estonia



Sweden

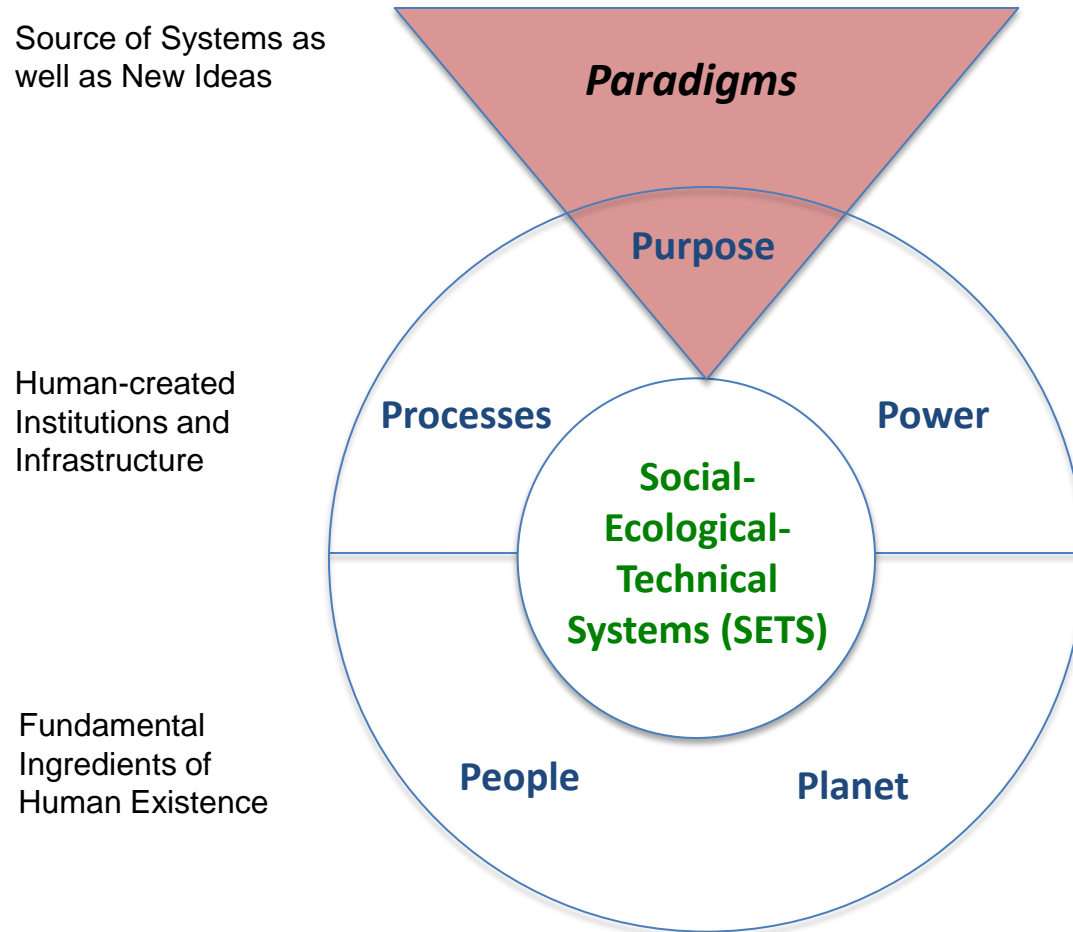


Moldova

Home institutions of participants



4. Transformative Literacy: hack the system and do not forget the structural power of common sense





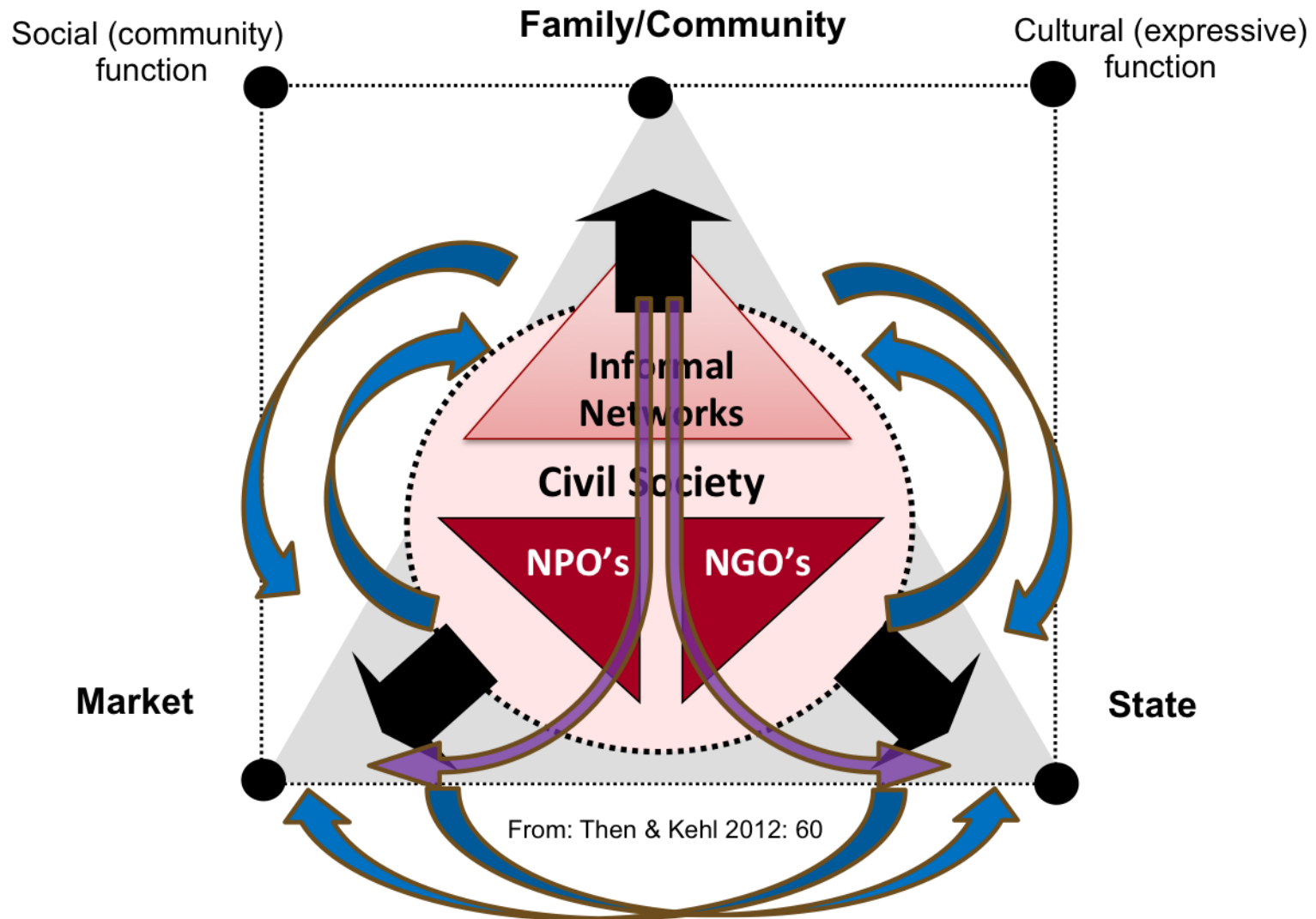
System Innovation (in the energy context)

The diversity of systems approaches I

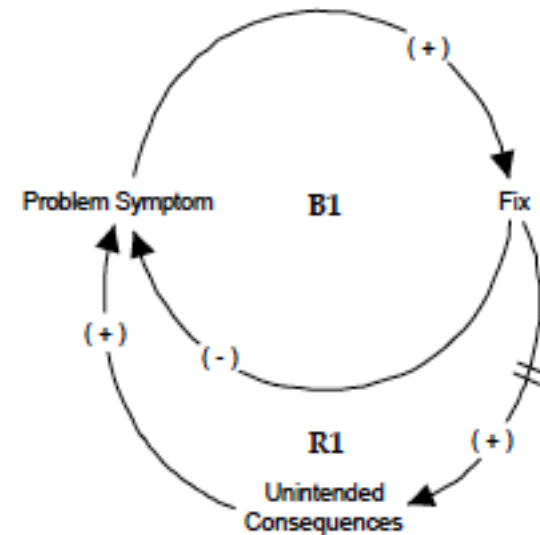
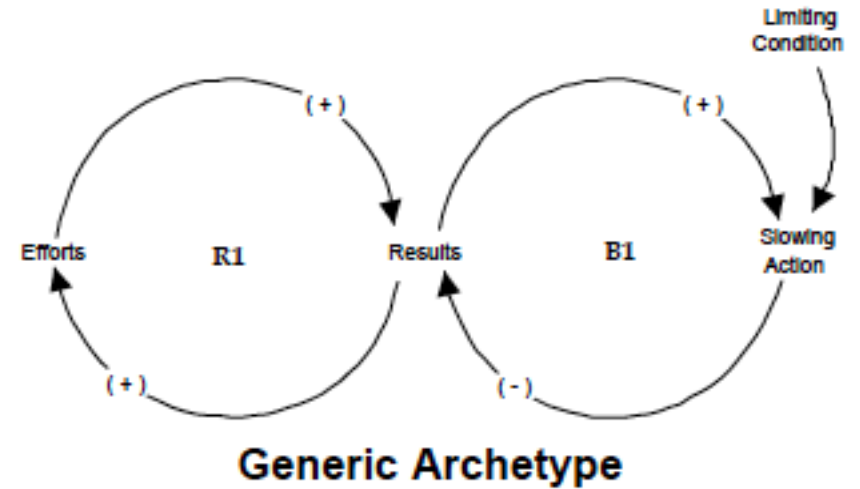
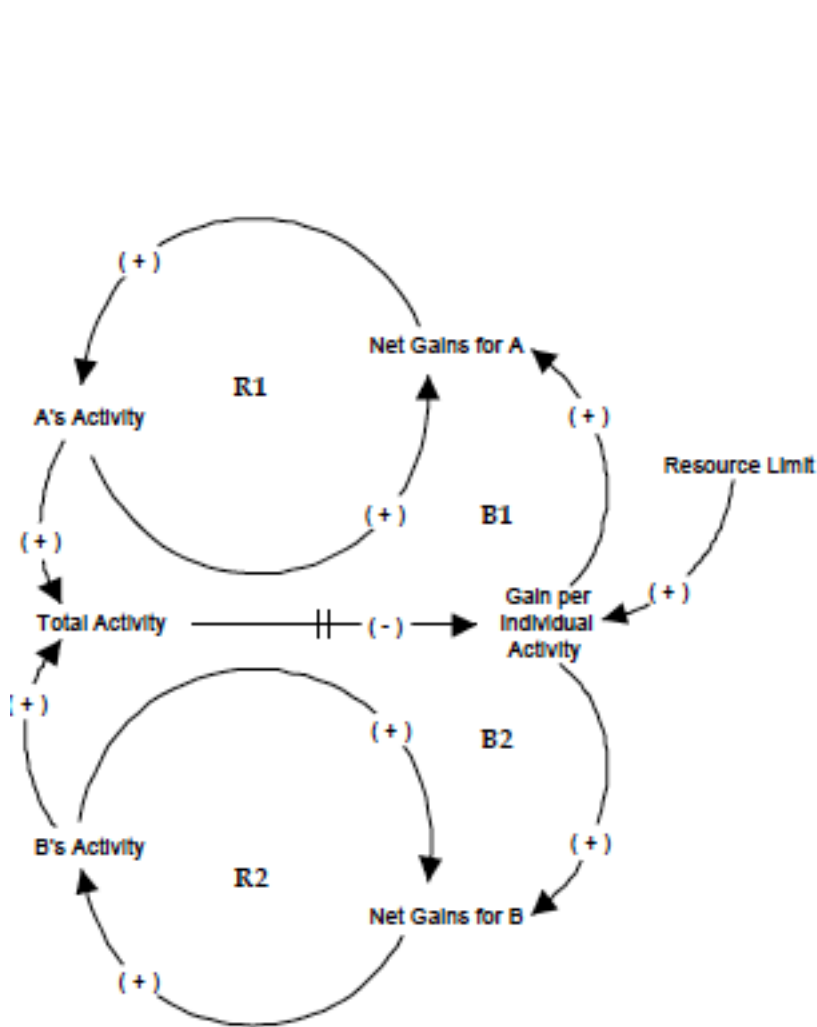
The ecosystem surrounding water as a wicked problem
(ibid)



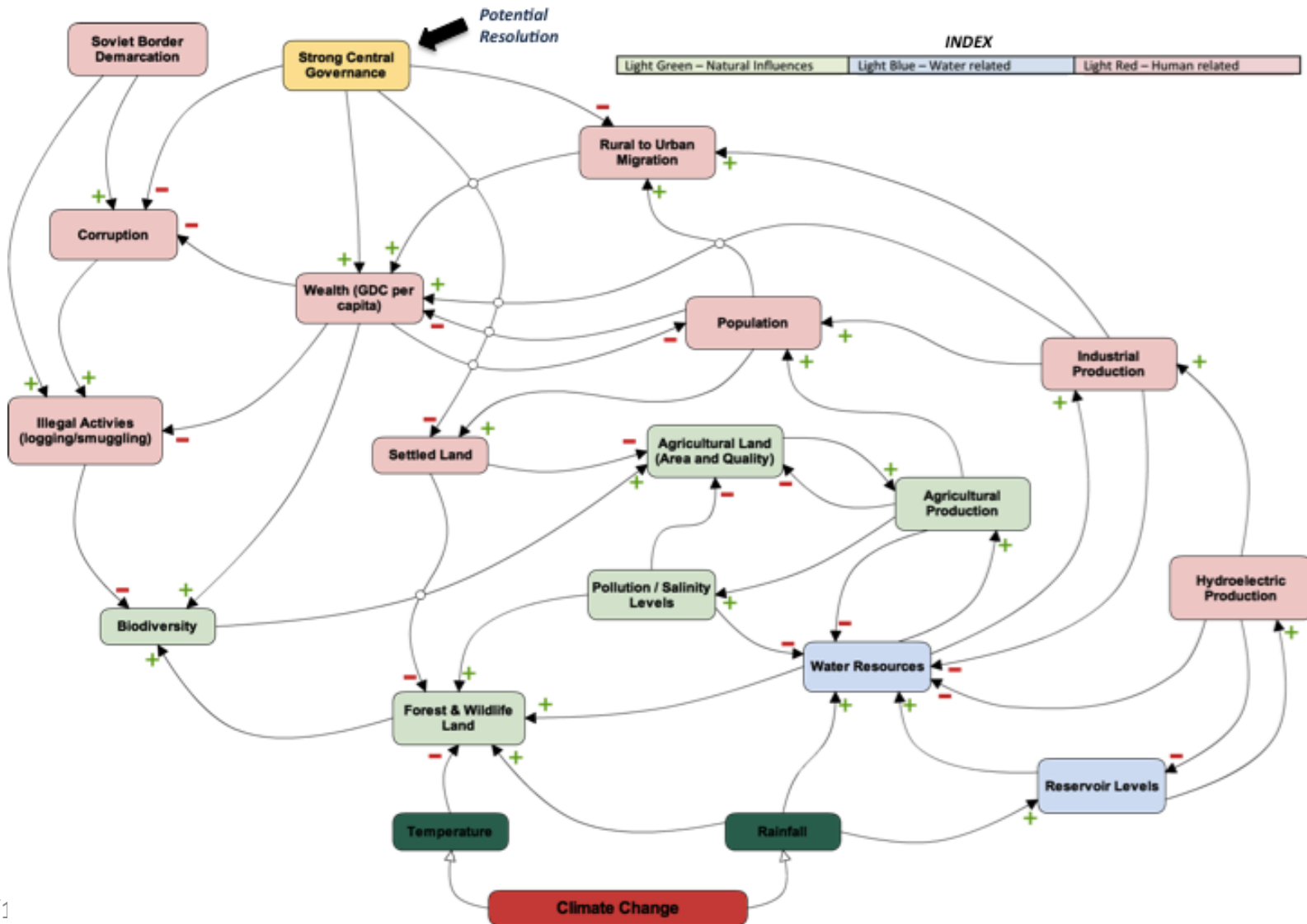
The diversity of systems approaches II



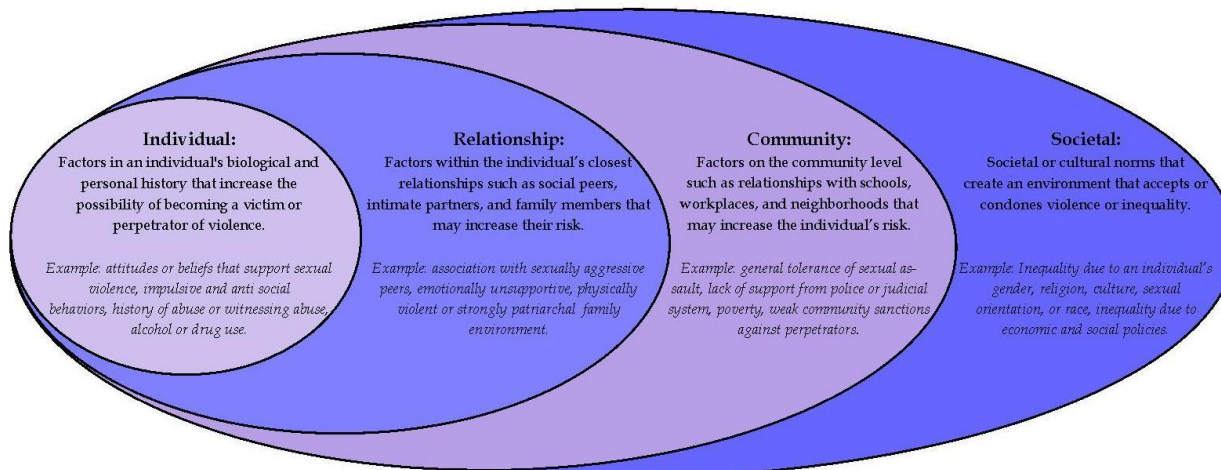
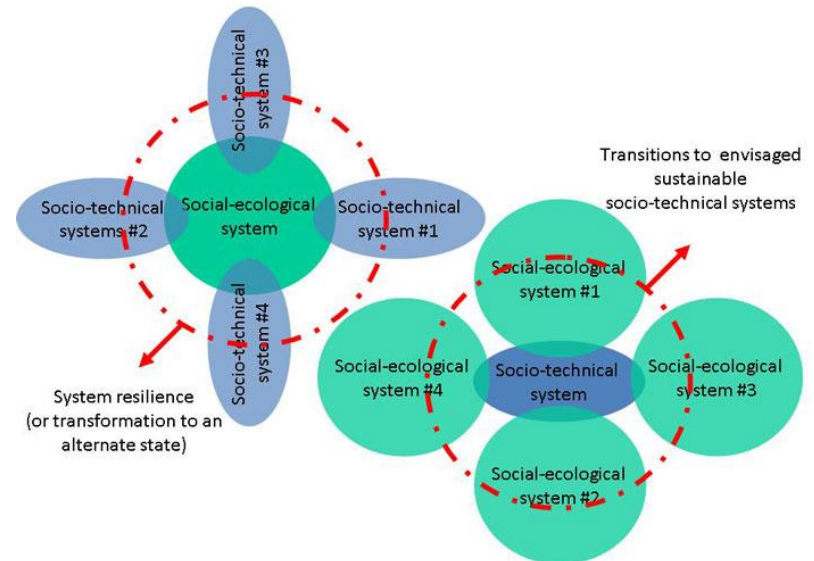
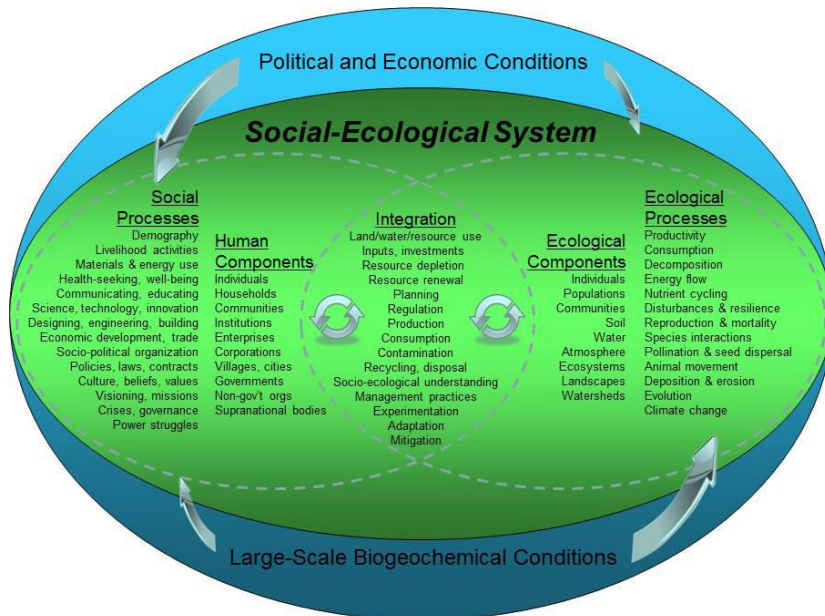
The diversity of systems approaches III



The diversity of systems approaches IV



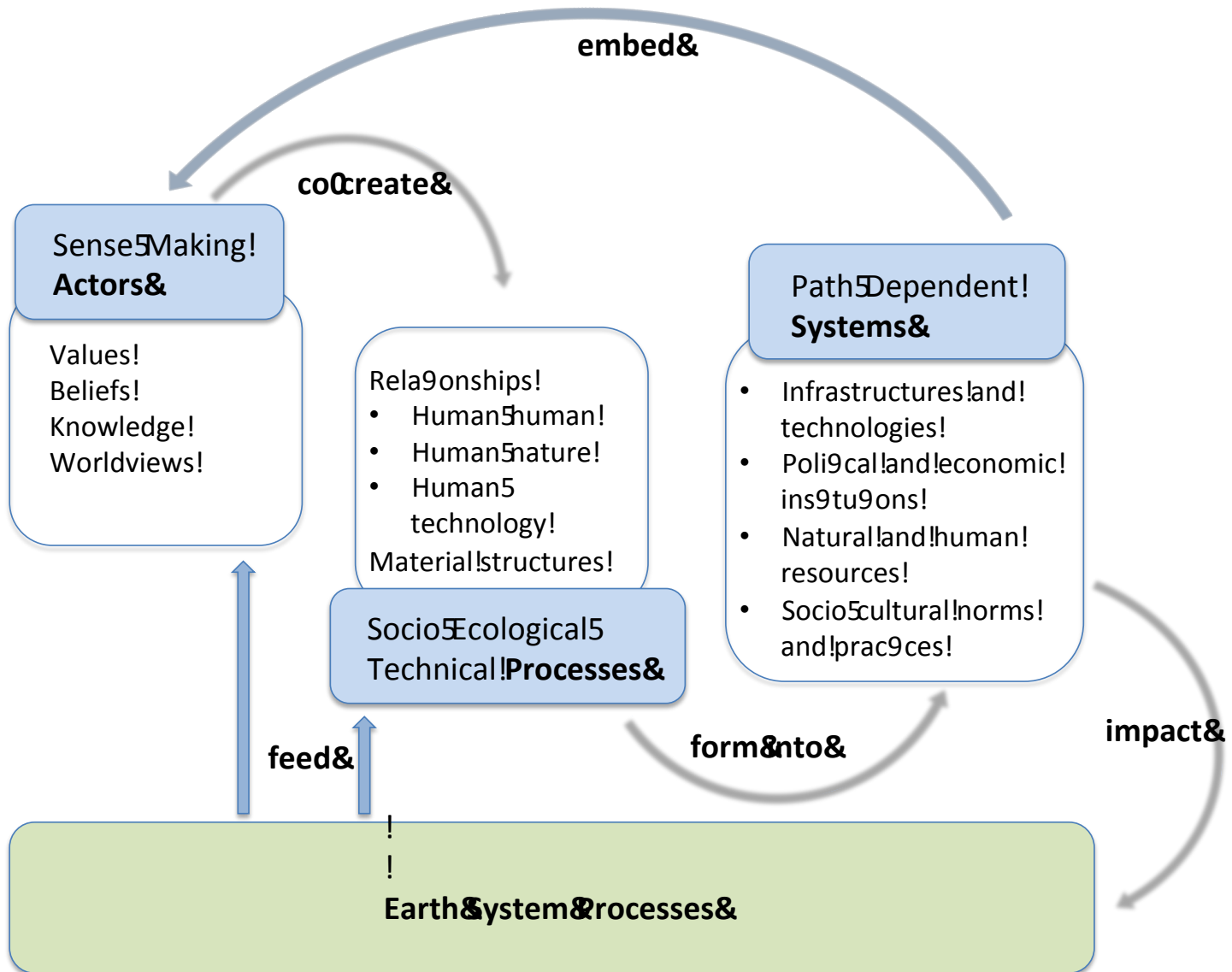
Socio-ecological system – one view?



How to train for system innovations?

- Clarity on descriptive & normative aspects
- Big picture literacy & my subsystem
- 360 degrees mapping (holistic)
- Analysis and narrative
- Historical-contextual awareness
- Radical incremental change
- Timing and persistence
- Knowing and sensing

Reflexivity for transformative literacy



Preparation for exploration phase

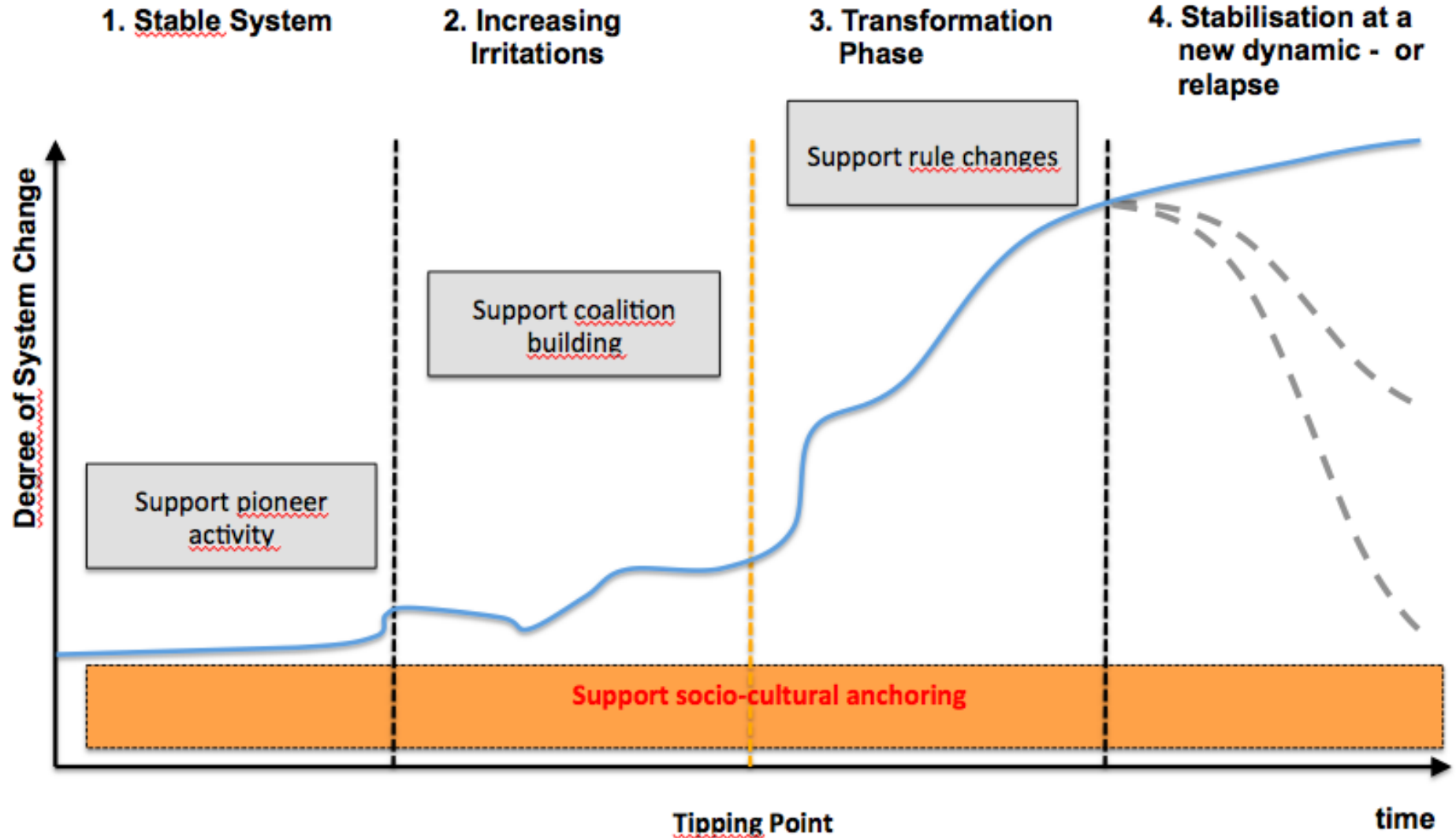
Main outcomes to be taken into the next phase:

- A prototype that can be tested within 10 weeks
- A feasible & realistic schedule for testing
- The motivation & the encouragement to „go out and try things“

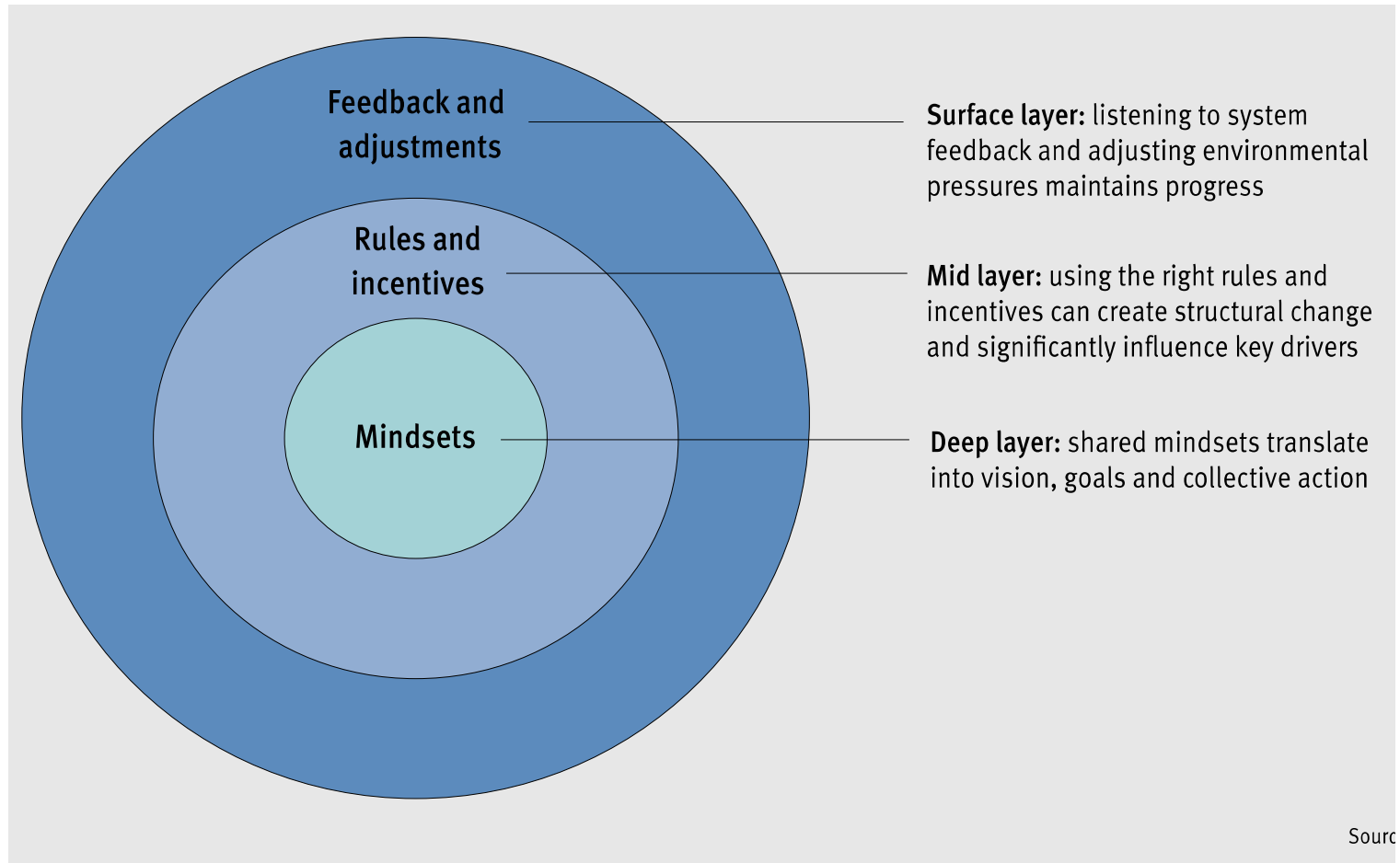
List of Participants

Title	Surname	Name	Residency	Nationality	Institution
1	Busch	Henner	Lund	Germany	Lund Centre for Sustainability Science (LUCSUS)
2	Camenscic	Evgheni	Chişinău	Moldova	Ministry of Environment Moldova + GENESCOTEC
3	Ceglarz	Andrzej	Berlin	Poland	Potsdam Institut für Klimafolgenforschung + FU
4	Haller	Hélène	Grenoble	France	Pacte Research Center Grenoble
5	Jähnert	Martin	Dresden	Germany	Binee UG (Startup Smart Recycling Systems)
6	Jerabek	Jiri	Brussels	Czech Republic	Greenpeace EU
7 Dr.	Kadar	Jozsef	Tel Aviv	Hungary	Israeli Energy Forum + Sustainable Global Leadership Academy
8	Kern	Susanne	Dusseldorf	Germany	Deutsche Bank AG Frankfurt
9	Kowalczyk	Juliusz	Piastów	Poland	GAZ-System S.A.
10 Dr.	Kronenberg	Nicole	Essen	Germany	KlimaExpo.NRW
11 Dr.	Ronay	Johanna	Vienna	Austria	Wien Energie
12	Schroeder	Kathrin	Essen	Germany	MISEREOR
13 Dr.	Stenqvist	Christian	Malmö	Sweden	EvalPart AB
14	Tolberg	Rejo	Keila	Estonia	Eesti Energie AS Tallinn
15 Dr.	Wetterstedt	Martin	Uppsala	Sweden	Knivsta Kommun
16 Dr.	Wu	Wei	Göttingen	Germany	Innovationszentrum Niedersachsen GmbH
17	Bilabel	Jacob	Berlin	Germany	Thema 1/Green Music Initiative
18	Kühnhenn	Kai	Leipzig	Germany	Konzeptwerk Neue Ökonomie/UBA
19					Bundesverband Erneuerbare Energien
20					BMW

Driving transformations: *incremental* radical change

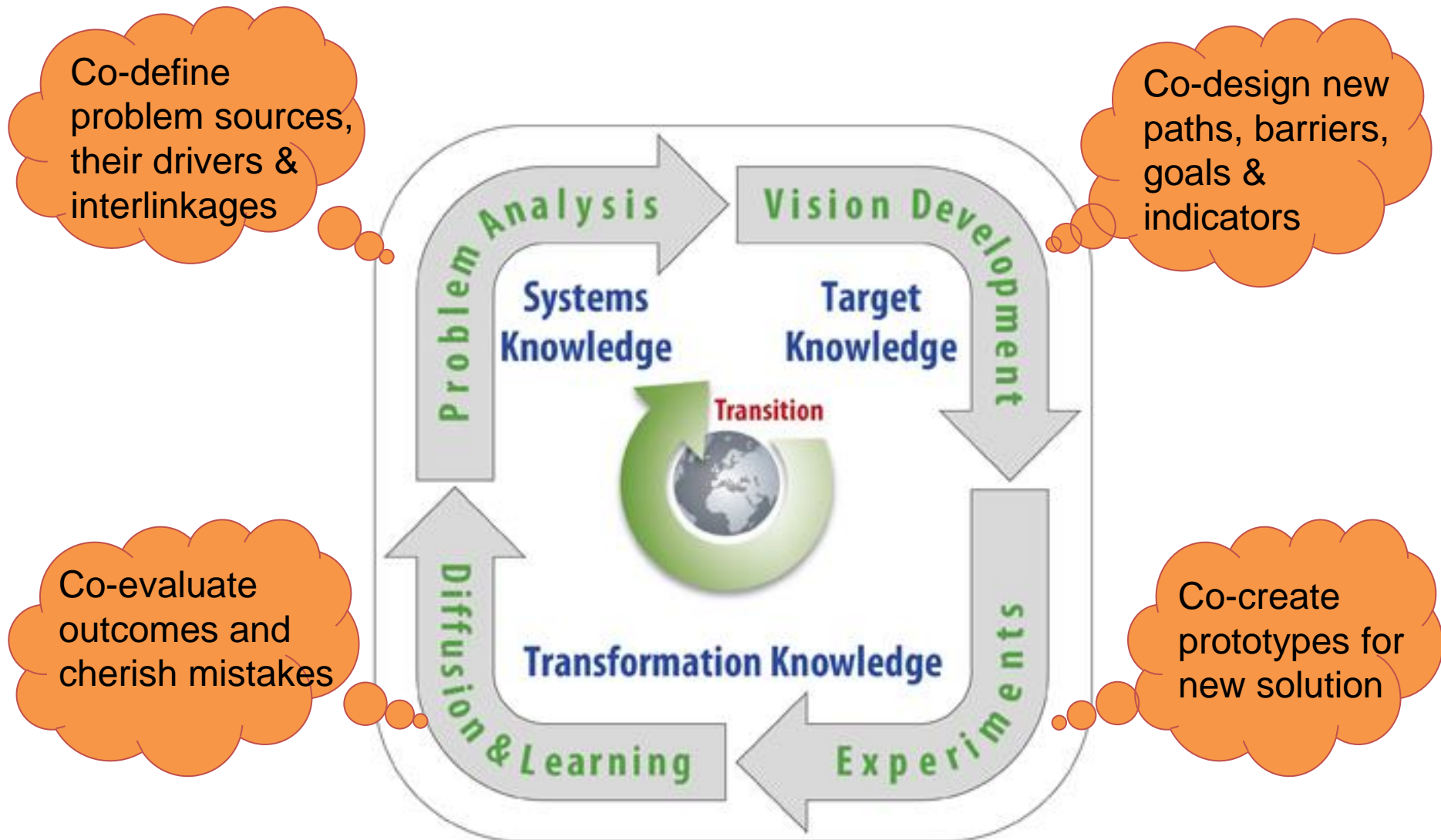


... to repurpose a system

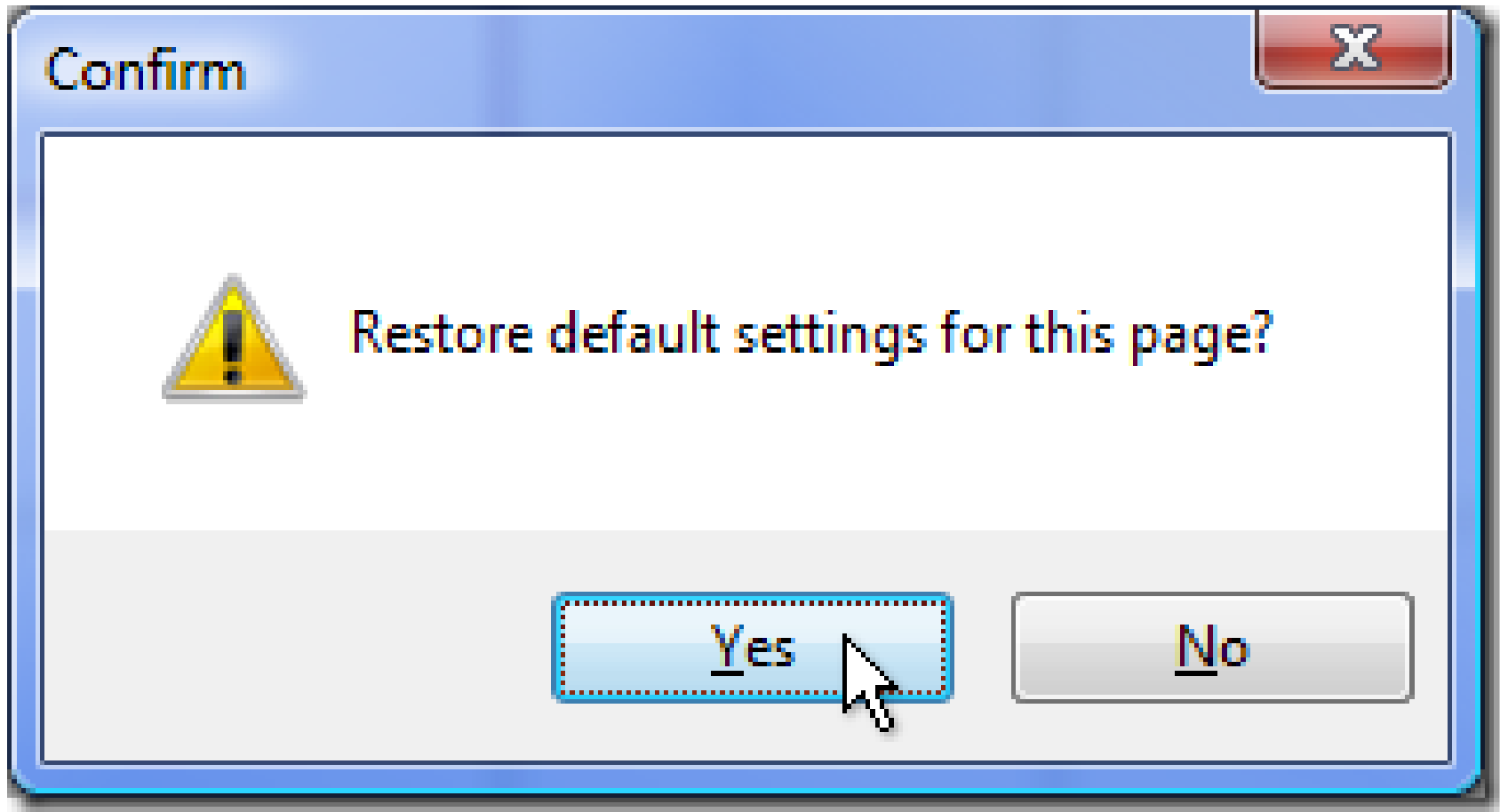


UNEP GEO5 report, 2012, Chapter 16, Scenarios and Governance, building on Donella Meadows' *Leverage Points*

... in adaptive governance processes



... until the default is changed.



The Team

Wuppertal Institute (WI)



Dr. Maja Göpel

Head of Berlin Office
Transformation research



Timon Wehnert

Project Leader Climate &
Energy Politics



Dr. Daniel Vallentin

Project Leader Energy &
Industrial Infrastructures



Verena Hermelingmeier

Research Fellow &
Design Thinking Coach

The Team

Center for Social Investment (CSI)



Dr. Volker Then

Executive Director of the
Center for Social Investment



Dr. Konstantin Kehl

Director of the Transfer & Advisory
Services Department (Berlin)