Actionable knowledge and social learning for sustainability: Roles of professional knowledge and narratives

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ITD Conference 2021, session PC-1.4

NEXUS FUTURES
Nachhaltiger Umgang mit Wasser und Land

UNIVERSITÉ DU LUXEMBOURG

Transformative sustainability research

Purpose: to contribute to sustainable engagement with water and land in Luxembourg (NEXUS FUTURES project 2017-2021)

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Research questions:

- What characterises knowledge that is actionable to *professionals* and supports sustainability transformations?
- What factors facilitate or hinder the emergence of actionable knowledge from social learning processes?

Case studies

Analysis of governance processes post-2000 (EU Water Framework Directive):

- **Upper Sure:** Reducing input of nutrients and pesticides from agriculture into national drinking water reservoir (Upper Sure lake)
- **Syr:** Carrying out river restorations to enhance nature-based flood protection and improve water quality

Actors: farmers, public/intermunicipal water facility operators, environmentalists

Source: Naturpark Öewersauer

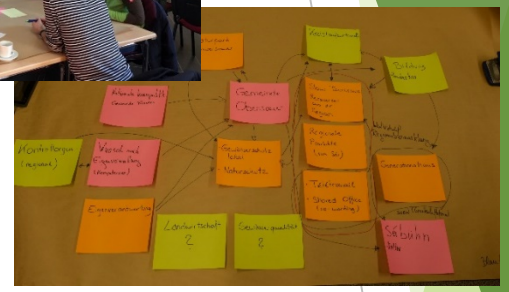
Research design and methods

Document analysis (>200):

- incl. organisational reports, minutes, statutes

Collaborative workshops (2):

- Conceptual systems mapping (CRM)
- timelines



Case studies

Site visits (17), meeting observations (15)

Narrative & walking interviews (55)

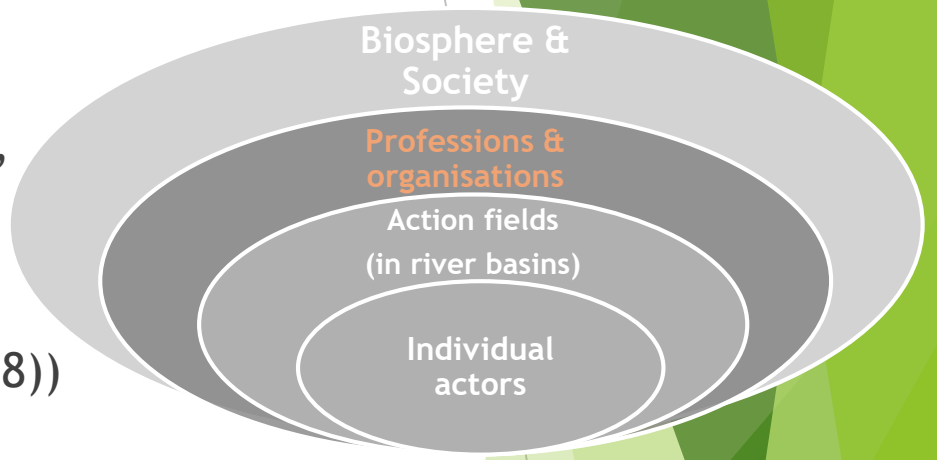
Design:

- transdisciplinary & iterative (Lang et al., 2012)
- adaptation of Management & Transition Framework (Pahl-Wostl, 2015)

Assumptions

Sustainability transformations require **shifts in dominant paradigms** away from:

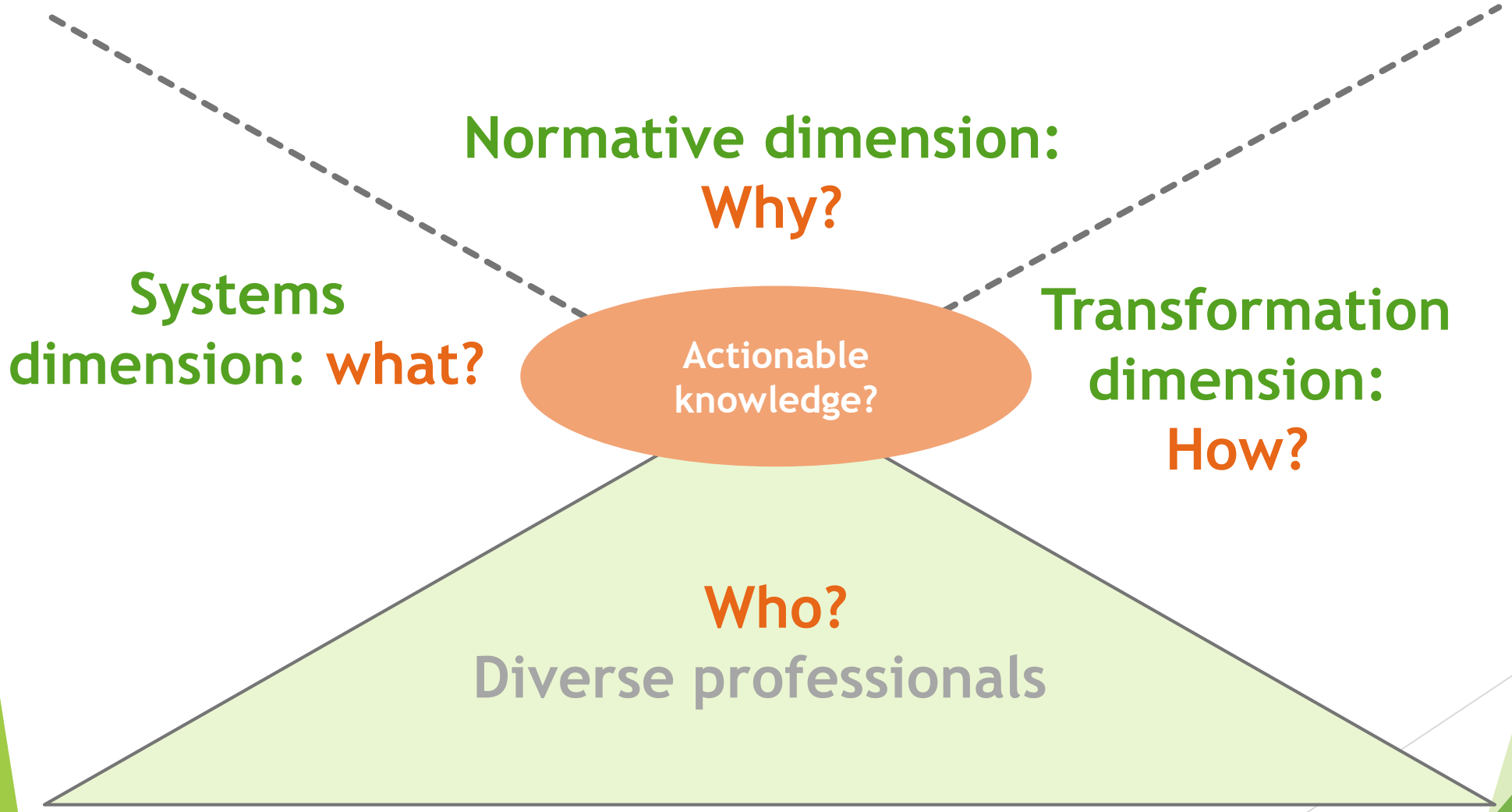
- command-and-control water management (e.g. Pahl-Wostl et al., 2008)
- Productionist agriculture (Thompson (1994), Ingram (2018))
- Managerial ecological restoration (Higgs (1997), Swart et al. (2018))



this necessitates profound changes in professions

"A management paradigm refers to a set of basic assumptions about the nature of the system to be managed [what], the goals of managing the system [why] and the ways in which these goals can be achieved [how]. […]. [It] is manifested in artefacts […], regulations, […] practices" (Pahl-Wostl et al., 2011)

Analytical framework on social learning and actionable knowledge



Elaborated based on Grunwald (2016), Pohl & Hirsch Hadorn (2008), Wiek & Lang (2016), König (2018)

Key concepts

Professional knowledge: Occupation-based purposes, understandings, skills and practices derived from experience and shared within communities, often tied to formal training and underlying scientific discipline(s)

(based on Schön (1983), Knorr Cetina (1991, 2007), Ellett (2012))

- ***rooted in specific paradigm?***
- ***reflected in narratives?***

Narratives: stories that evoke particular meanings that provide individuals and groups with sources of identity and orientation and guide actions

(based on Somers (1994), Ezzy (1998), Tsoukas (2005), Chabay et al.(2019))

Changes in narratives as indicators of social learning and paradigm shifts?

Empirical findings: Professions

	Water Managers	Farmers	Environmentalists
Paradigm	Command-and-control	Productionist	Managerial restoration
Why (identities)	*drinking water suppliers, protecting people against floods*	*food producers & entrepreneurs*	*nature protectors*
What	water bodies-infrastructures-society	production-regulation-markets	ecosystems & pressures
How	technologies	technologies	nature-based ´solutions´
Narratives	*Water needs to be controlled and treated for human purposes.* ***Progress*** *thanks to science and technologies.*	*Without farmers, no food.* ***Progress*** *in efficiency & ecological effects thanks to science and technologies.*	*Nature needs to be protected against humans to stop ecological* ***regress*** *caused by economic and demographic growth.*

Empirical findings: Social learning

Water facility operators

*"We need to reduce **need** for water treatment"*

"We need to increase natural retention capacities and give water more space"

❖ ***expanding*** **command-and-control paradigm?**

Environmentalists

"It´s impossible to restore natural balance, we´ll always have to intervene in ecosystems".

"We depend on farmers for mowing [or pasturing]"

❖ ***expanding*** **environmentalist paradigm?**

Shared purpose: preventive drinking water protection & river restorations through cooperation
Action field: regional agriculture

Farmers

"In a way, we are drinking water producers, too"

"I´d be happy to produce differently and do more for the environment; but consumers need to pay more".

❖ ***expanding*** **productionist paradigm?**

Hindering and facilitating narratives

Narratives of powerlessness and division (widespread)

	Common denominators
Self-efficacy	**Low: *"back against the wall", "treadmill"***
Why	High degree of professional identification, **own purposes versus others**
What	"*Too many*" pressures, constraints, uncertainties
How	• Sticking to own profession (lack of trust and capacities) • Sticking to established practices

Narratives of self-efficacy & interdependence (pioneers)

	Common denominators
Self-efficacy	**High: *"I believe I can do something"***
Why	High degree of professional identification & **reflexivity** & sense of interdependence
What	Growing pressures, but "*future is open*"
How	• Need for learning, cooperation, compromise • Need to change practices

Implications for transformative research

Actionable knowledge for sustainability needs to both resonate with, challenge and expand existing *professional* knowledge and narratives.

Role of researchers & methods:

To understand professional knowledge & narratives (e.g. narrative and walking interviews)

***To transform by supporting social learning*:**

- Enhance reflexivity & mutual understanding by using and juxtaposing diverse perspectives and narratives (in collaborative conceptual systems mapping, contradiction mapping, scenarios, visioning, timelines…e.g. Galafassi et al., 2018)
- Strengthen sense of self-efficacy by opening change-making opportunities (e.g. contributions to regulatory processes through accompanying research)
- Foster co-creation of joint action fields, pilots, experiments
- Set-up collaborative platforms for long-term cooperation

Feedback and discussion

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