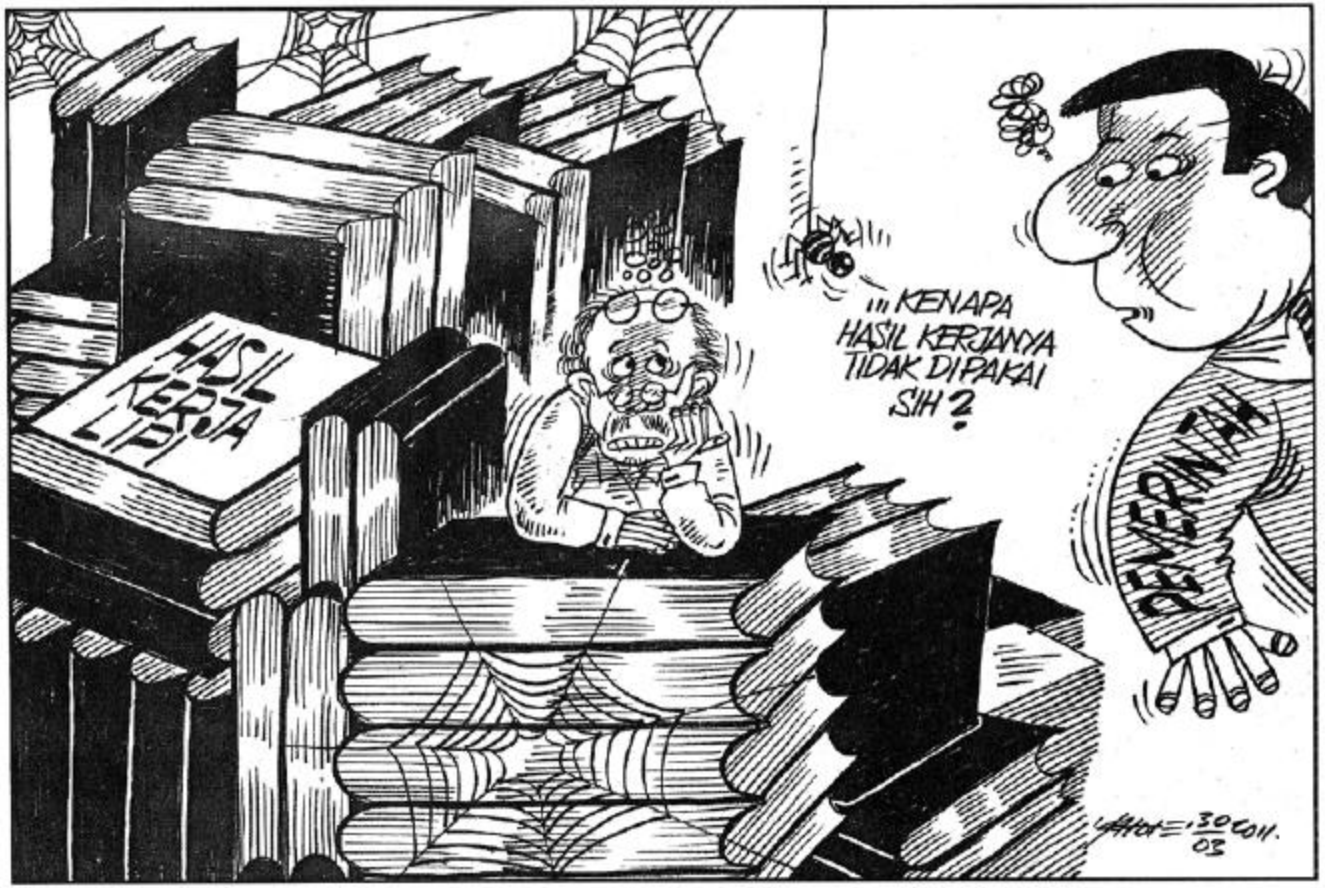
Why trans-disciplinary work is essential in science communication?
[View points from risk management field]

Jonatan A. Lassa
[Research Fellow at Institute of Resource Governance and Cocial Change]

[www.irgsc.org]

LIPI Lecture Series on Science Communication
20 August 2013


HASIL KERJA LIDI
"KENAPA HASIL KERJANYA TIDAK DIPAKAI SIH?
PEMERINTAH
30-03-2011

(not so new) Challenges

- How to communicate uncertainty in climate science? How to communicate uncertainty (and probability) in Rokatenda's volcano?
- Trends in non-linear dynamics, uncertainties, and high political stakes in decision making – e.g. climate change
- Theory of Mode 2 K-production: complexity, hybridity, non-linearity, reflexivity, heterogeneity, and transdisciplinarity (Gibbons, et al.)
- The limits of segmented thinking and problem solving
- Reductionist and mechanistic assumptions are uninformed by stakeholder and community inputs;
- False expectation that science delivers final estimates with certainty

Emerging realities

- Old models of science communication has an embedded problem: high transaction costs; longer propagation towards adoption and change; scientific boundaries are too wide to cross [E.g. scientist in the field A produced Ka and then communicate the Ka to both scientists in the field B to Z and the policy community and society as a whole].
- New model of K-production is required – low transaction cost in science communication, creative boundary crossers are needed to ensure adoption and change.

Transdisciplinary imperatives

- Rising complexity as: facts, context, emerging branch of science, approaches, interdependency of the world (e.g. risk).
- Social change is no longer a simple endeavour - it challenges mono disciplinary understanding of reality
- Nicolescu's 1996 Manifesto of Transdisciplinarity: ''New Vision of the World'' - three pillars of transdisciplinarity: complexity, multiple levels of reality or multidimensionality and the logic of the included middle (Klein 2004)

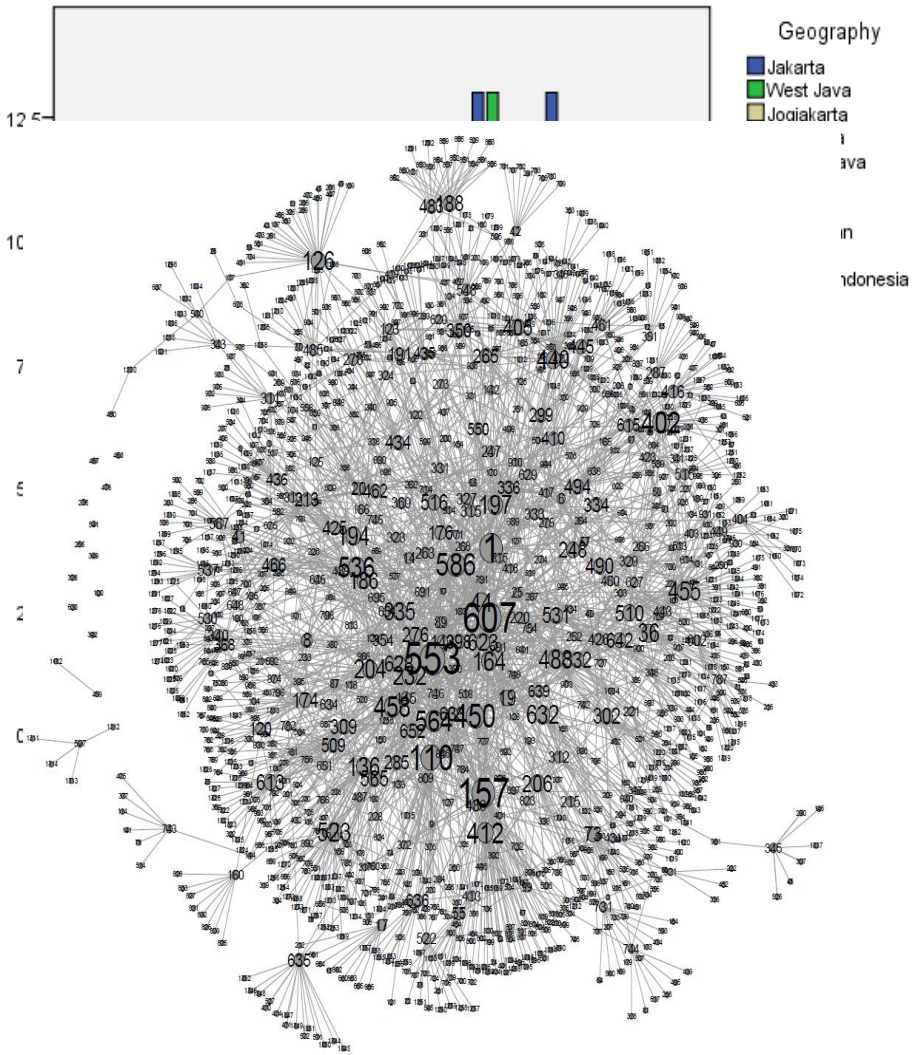
Simpler definition (Klein et al. 2001)

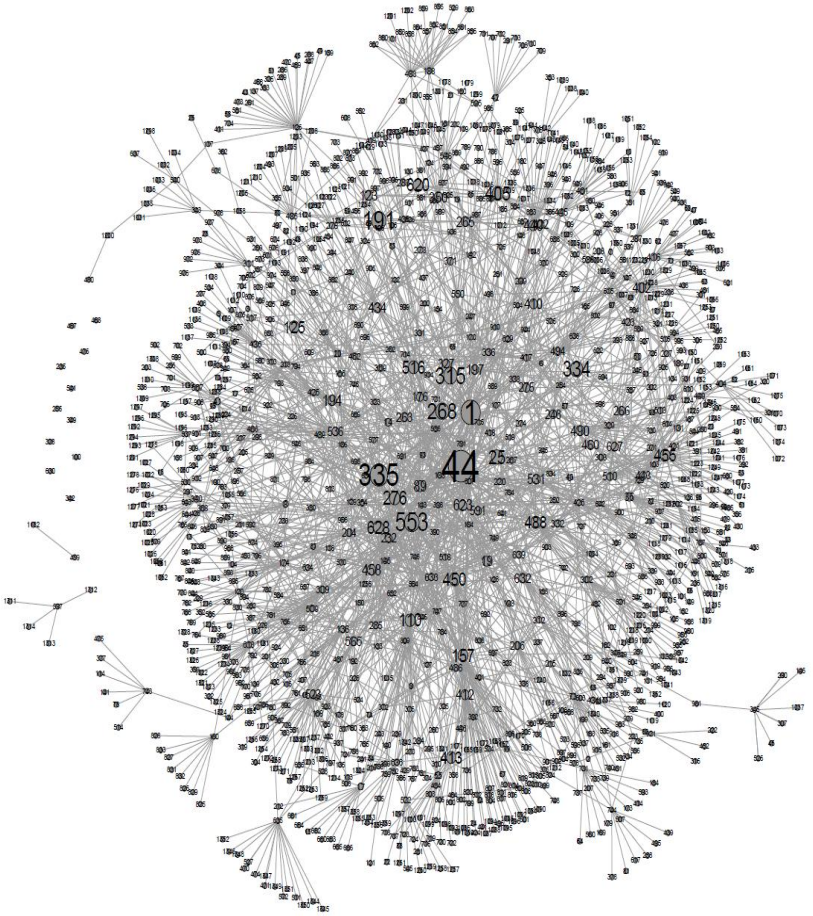
- The core idea of transdiscipinarity is different academic disciplines working jointly with practitioners to solve a real-world problem. It can be applied in a great variety of fields.
- Transdisciplinarity also moves beyond ‘‘interdisciplinary’’ combinations of academic disciplines to a new understanding of the relationship of science and society embodied in ‘transectorality’’ and notion of science for/with society [Scholz and Marks].
- There are wide variations in the preferences and values of decision-makers and stakeholders

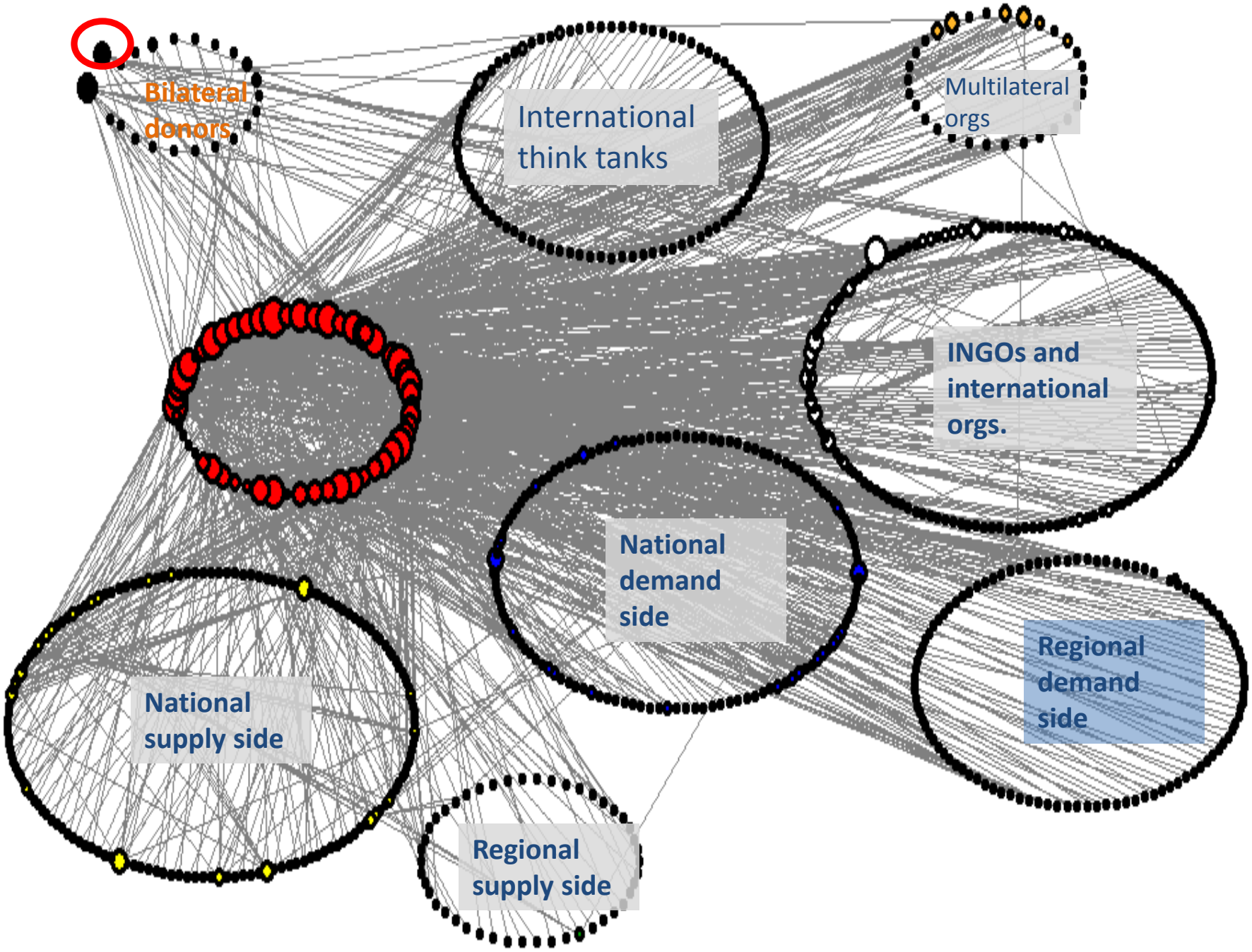
Communicative rationality and action

- Rational knowledge comes out of not only ‘‘what we know’’ but ‘‘how we communicate’’ it? This realization underscores the emergent quality of transdisciplinarity. Stakeholders enter into a process of negotiation, confronting knowledge that allow representatives to express their views and proposals (Despre´s, Brais, and Avellan in Klein 2004; Klein 1996)

The Serendipity of Think Tanks Networks and Influence in Indonesia

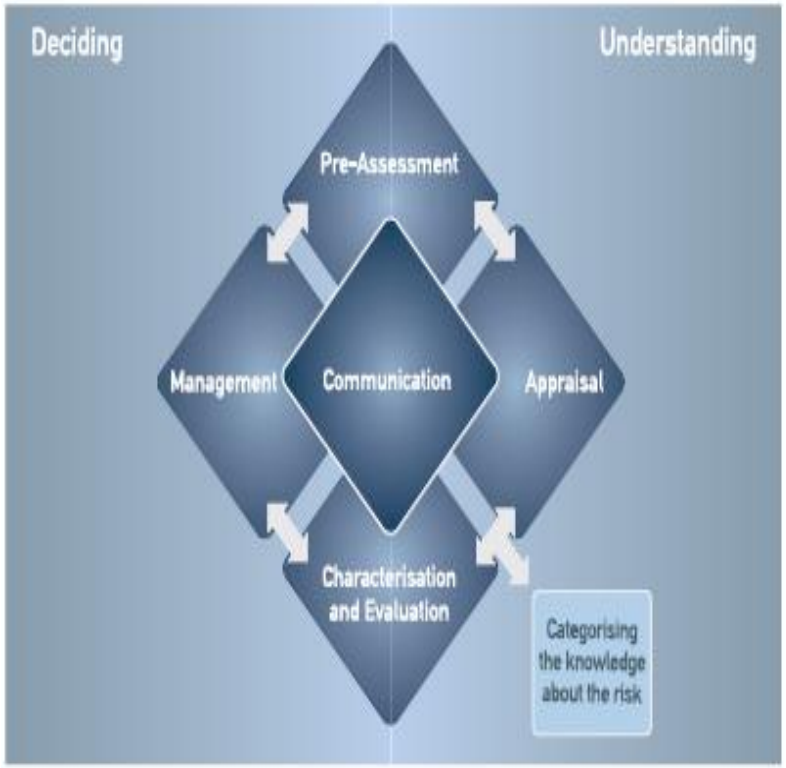


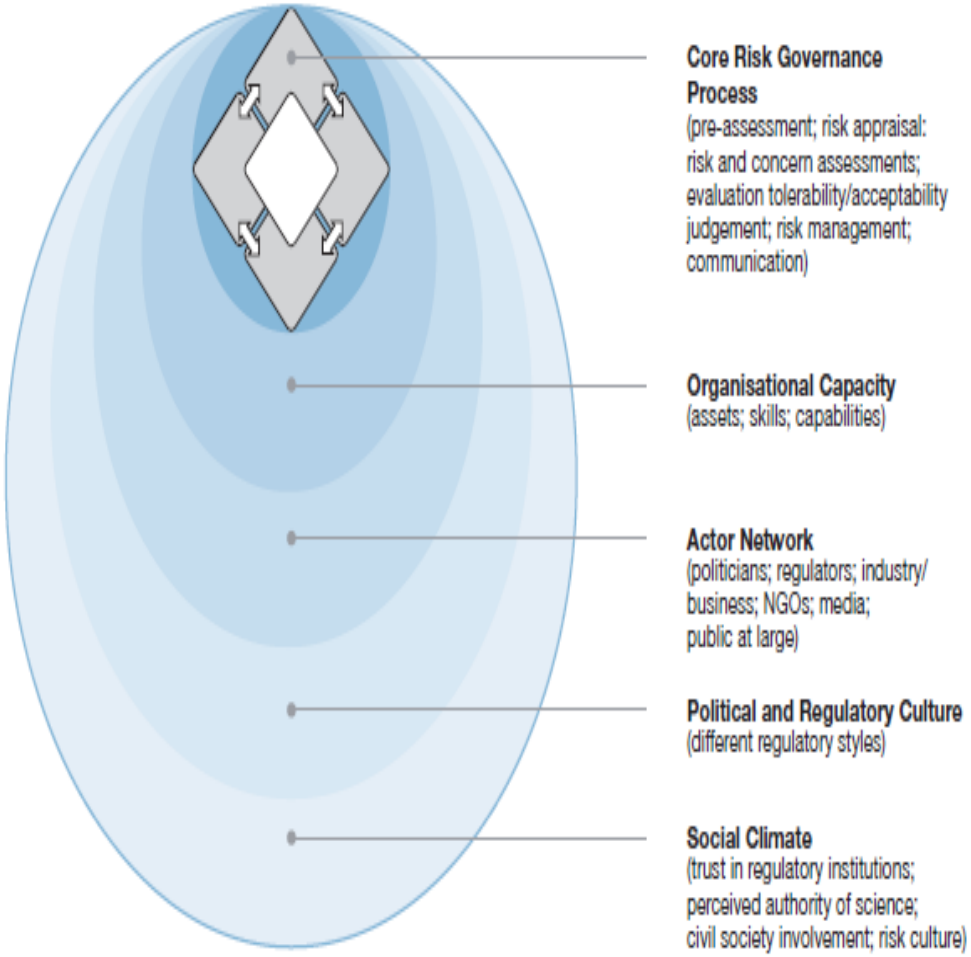



Bilateral donors
International think tanks
Multilateral orgs
INGOs and international orgs.
National demand side
Regional demand side
National supply side
Regional supply side

Disaster Risk Governance - IRGC Framework

Communication is the heart of change and transformation (Ortwin Renn 2008)





DRR-CCA boundary settings

Type of boundary	Disaster risk reduction	Interface (the coalescence of DRR-CCA or CCA-DRR)	Climate change adaptation
Boundary concepts	Disciplinary/multi-disciplinary community [of science/ of practice]	Interdisciplinary and tran-disciplinary forum	**Disciplinary/multi-disciplinary community [of science/ of practice]**
Boundary objects	DRR Models, Frameworks,	**Shared tools and skills,** shared models, shared vulnerability and resilience framework, IPCC SREX 2012, MEA 2005, etc.	**CCA models and frameworks**
Boundary organizations	DRR mandated organization; Emergency management path	Shared mandates; shared risks management mandates, hybrid organization with CCA-DRR mandate	**CCA mandated organizations**
Boundary institutions	**Disaster risk reduction specific laws/regulation/acts**	**Necessarily (and shared) institutional overlap/ mandates – shared regulatory regimes, shared planning regulation, shared values.**	**Climate Change specific laws/regulation/acts**

Concluding remarks

- Science communication ≠ transdisciplinary
- Transdisciplinarity has an embeded ‘anticipatory’ SC approach
- How to build transdisciplinary ethos?
- Transdisciplinary might be a dream – but can be a powerful approach in solving complex governance problem
- More work to be done for Indonesia