

Collapse, Resilience, & Transformation

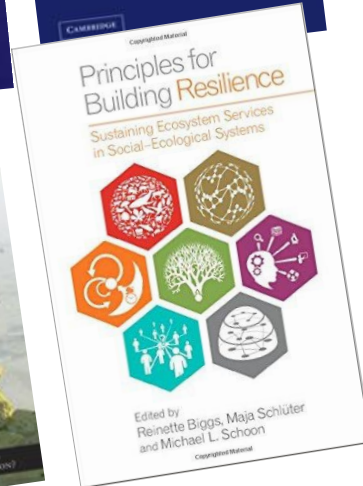
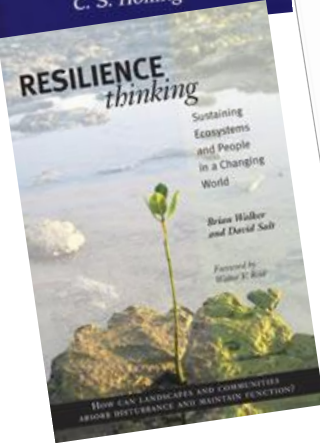
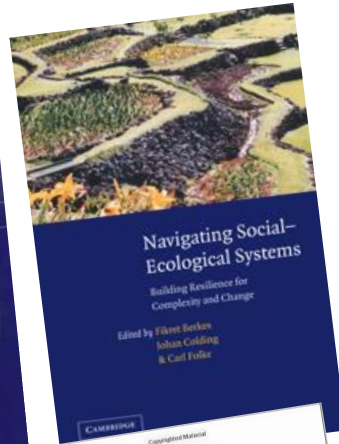
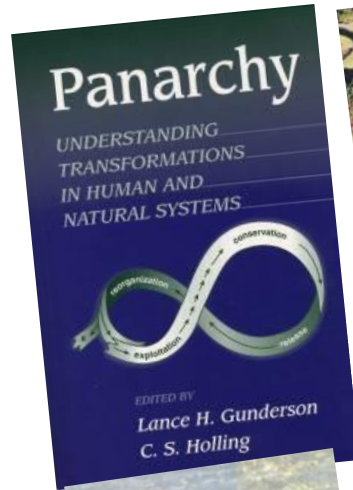


Fostering Innovation for
Transformational Change

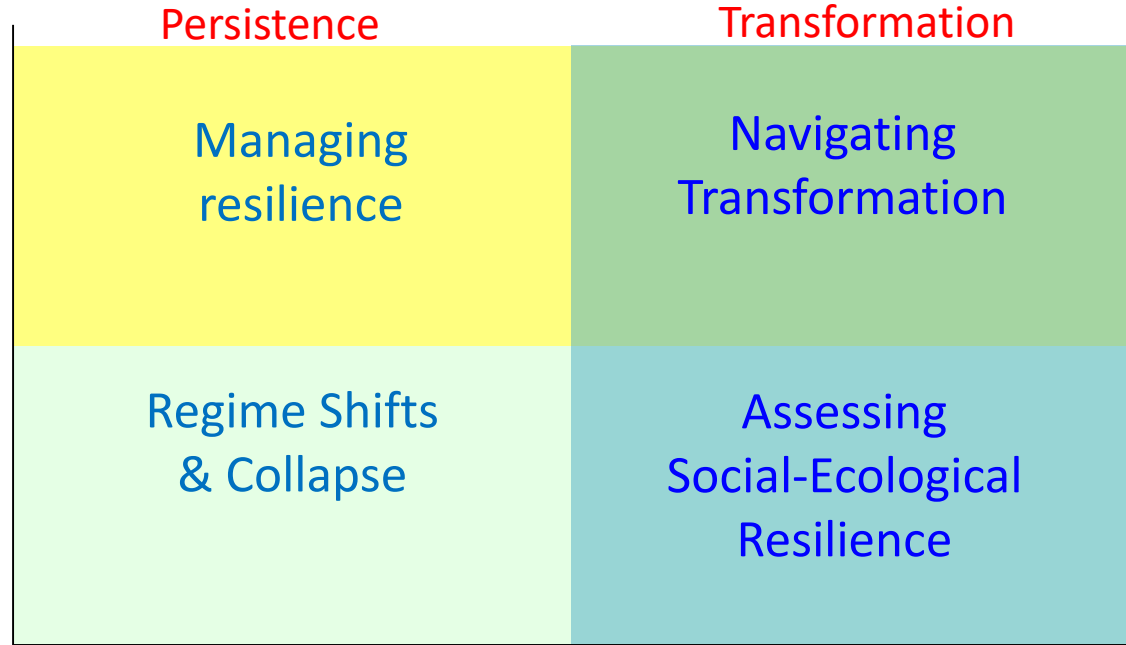
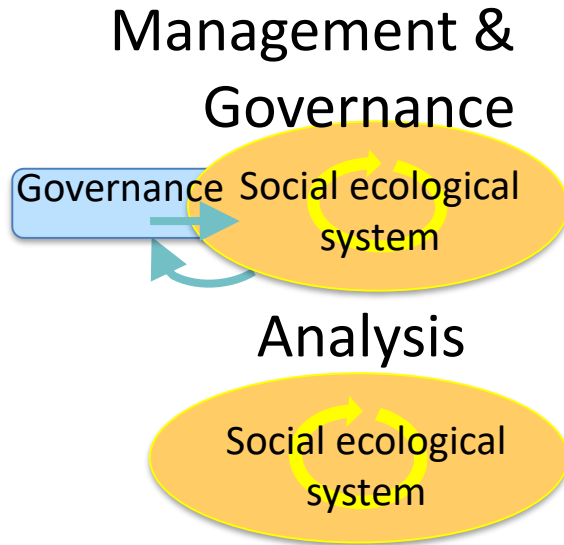
Professor Garry Peterson
Stockholm Resilience Centre
Stockholm University

Two Faces of Resilience

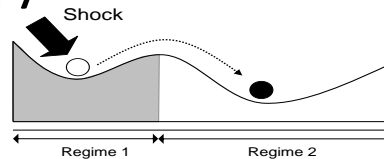
1. **PERSISTENCE** in the face of change, buffer capacity, withstand shocks
2. **TRANSFORMATION**
Ability of system to self-organize; build capacity for learning, adaptation, and transformation



Alternative Resilience Strategies



System Structure

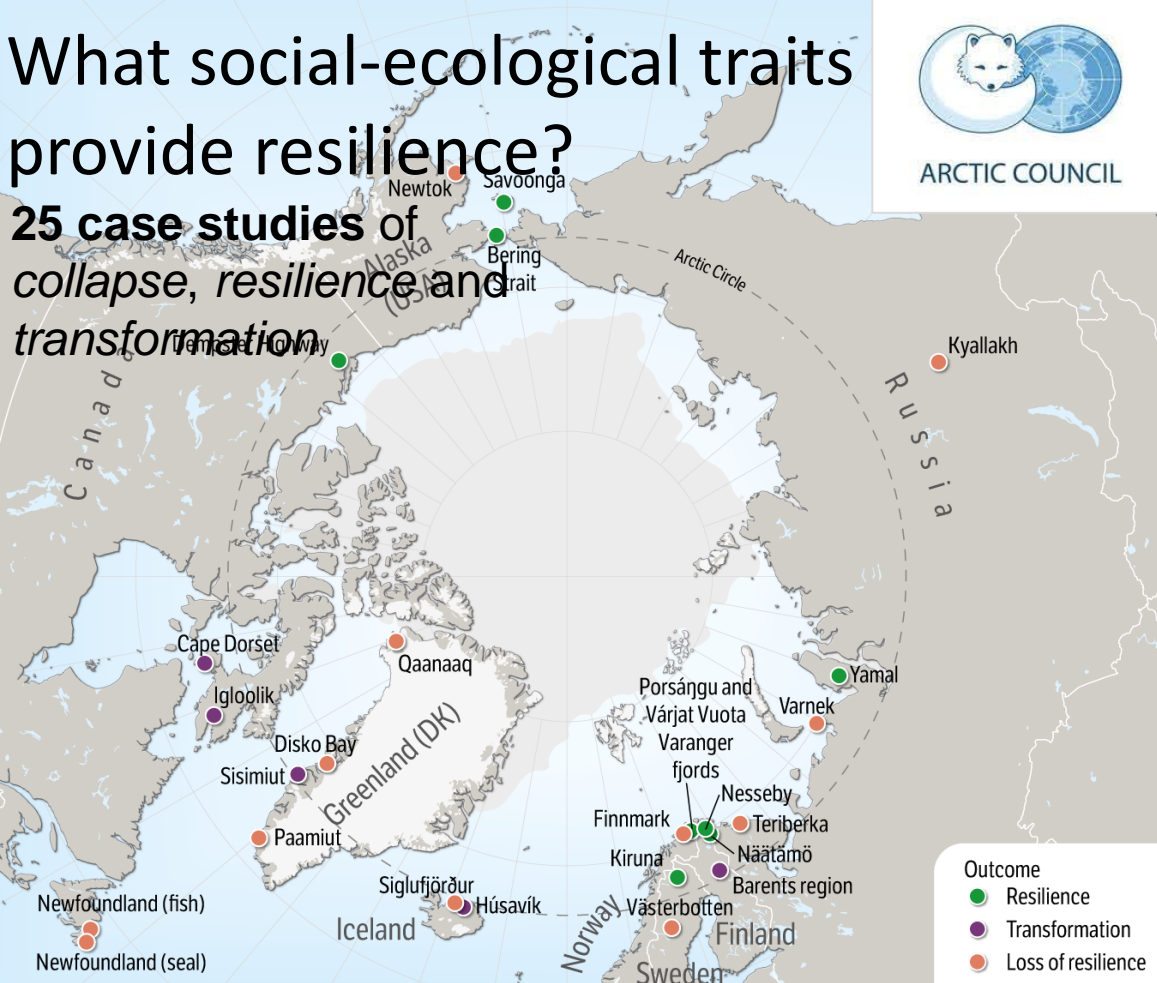


System Dynamics



What social-ecological traits provide resilience?

25 case studies of collapse, resilience and transformation



Qualitative case analysis

Defined based on livelihoods
Using expert interviews & publications

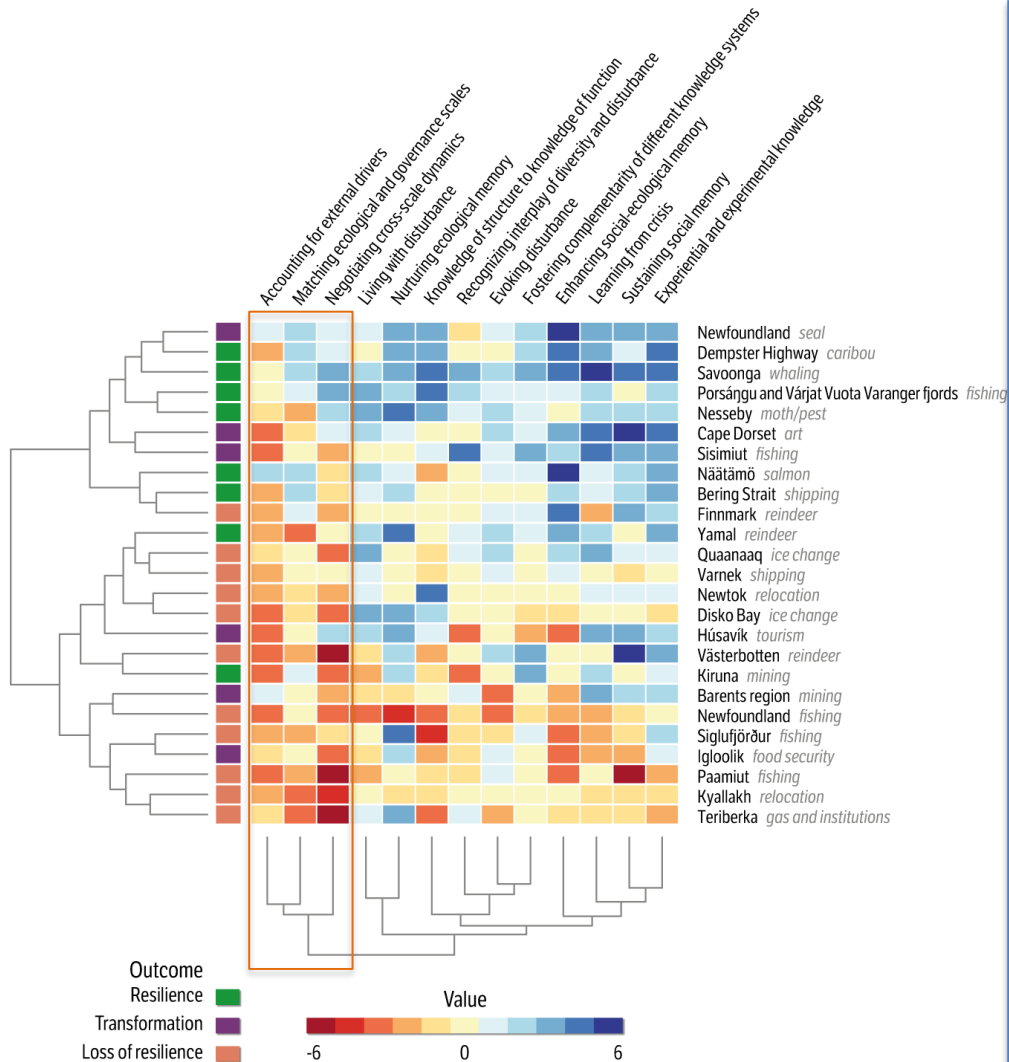
social-ecological resilience framework

Navigating change & uncertainty

Creating opportunities for self-organization

Nurturing diversity for reorganization & renewal

Combining different types of knowledge for learning



How do people produce resilience?

Absence of **Self-organization** leads to **loss of resilience**

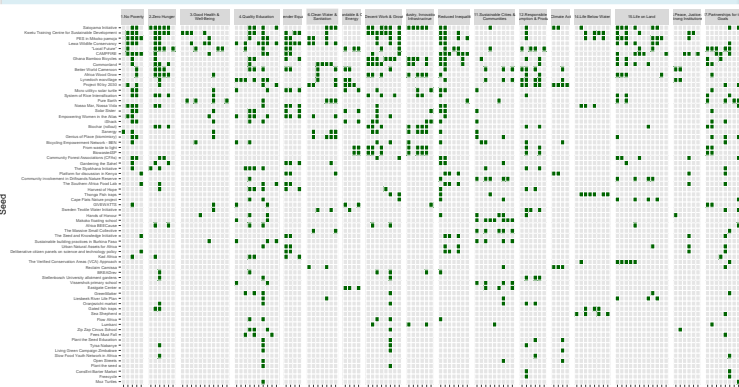
Learning to **live with change and uncertainty**, and combining different types of **knowledge** for learning also **enhance resilience & transformation**

History of Arctic colonialism has blocked self-organisation & reduced social-ecological diversity

Seeds of Good Anthropocene Project

Seed Comparison

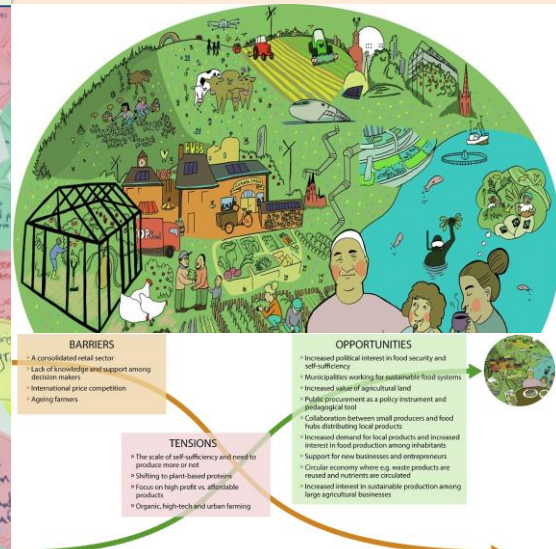
Impacts & Mechanisms



Transformative Scenarios



Catalyzing transformation



		Learning practices								Empowerment						Networking						
	Outcome	[1,1]	[1,2]	[1,3]	[1,4]	[1,2,1]	[1,2,2]	[1,2,3]	[1,2,4]	[2,1]	[2,2]	[2,3]	[2,4]	[2,1,1]	[2,2,1]	[2,2,2]	[2,2,3]	[2,2,4]	[2,3,1]	[2,3,2]	[2,3,3]	[2,3,4]
Kwetu Training Centre for Sustainable Development	1	-1	1	1	-1	0	1	-1	1	-1	1	1	1	1	0	1	1	-1	1	1	1	1
Lewa Wildlife Conservancy	1	1	1	1	1	1	1	1	-1	-1	0	1	0	1	0	1	1	1	1	1	1	1
Local Future	1	0	1	1	0	1	0	1	0	1	1	1	0	1	0	1	0	1	0	1	0	0
PES in Mikoko pamoja	1	0	1	1	-1	0	1	1	-1	1	1	0	1	0	1	1	1	1	1	1	1	1
Pure Earth	1	1	-1	1	-1	-1	1	0	1	-1	0	-1	-1	1	0	-1	1	1	1	1	1	1
Satoyama Initiative	1	0	1	1	1	-1	0	1	-1	1	1	1	1	1	-1	1	1	1	1	1	1	0
Sea Shepherd	1	-1	-1	-1	0	-1	1	0	0	1	1	-1	0	1	1	-1	1	1	1	1	1	0
The Siyakhana Initiative	1	1	1	0	1	1	1	-1	0	-1	1	1	0	1	0	-1	1	0	1	1	1	0
Africa BECAuse	0	0	-1	1	-1	-1	1	1	0	-1	1	-1	-1	-1	1	1	1	1	1	1	1	1
Community involvement in Driftsands Nature Reserve	0	1	1	1	0	1	1	1	1	-1	1	-1	-1	-1	-1	0	1	1	1	1	1	-1
Harvest of Hope	0	-1	-1	-1	-1	1	-1	0	1	1	1	1	-1	0	-1	1	1	-1	1	-1	0	0
Isisbeek River Life Plan	0	0	1	1	1	1	1	-1	0	-1	0	0	1	-1	1	1	1	1	1	1	-1	0
Nyedoch ecovillage	0	1	1	1	0	1	1	1	1	1	1	1	1	1	1	0	0	-1	1	1	1	1
Nossa Mar, Nossa Vida	0	1	-1	1	1	0	1	1	1	-1	1	1	1	-1	0	1	1	1	1	1	1	1

Intergovernmental Platform on
Biodiversity & Ecosystem Services



goodAnthropocenes.net



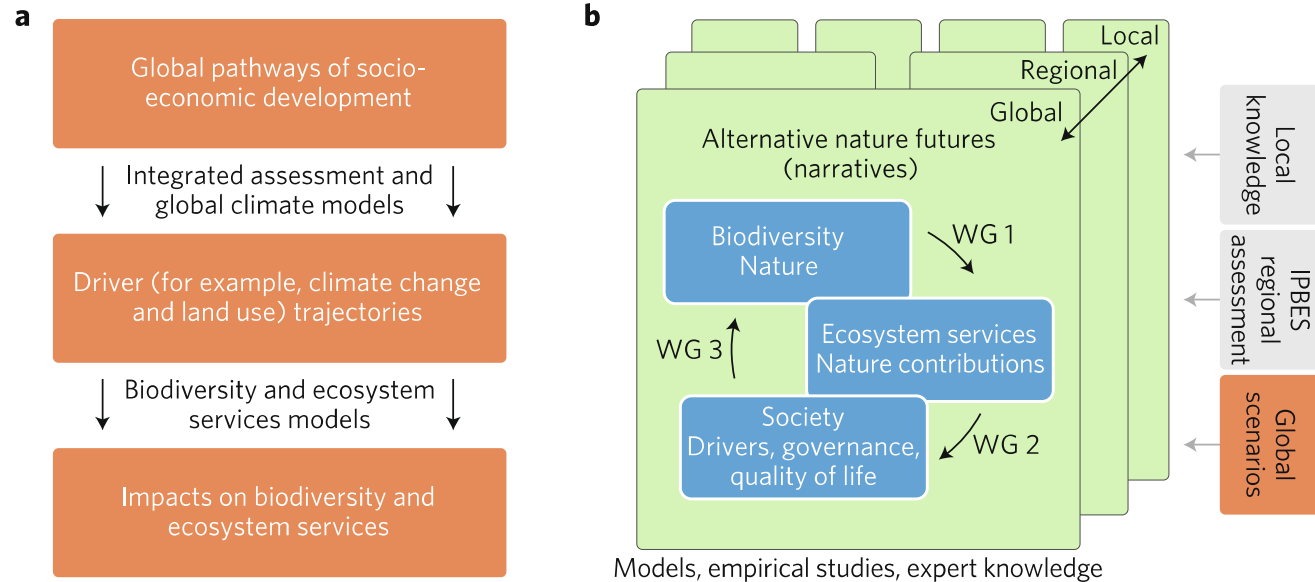
Intergovernmental Platform on Biodiversity & Ecosystem Services



IPBES Scenarios & Models Task Force

Catalyse
development of
new nature
scenarios

Move from drivers
to feedbacks & to
Desirable Natures



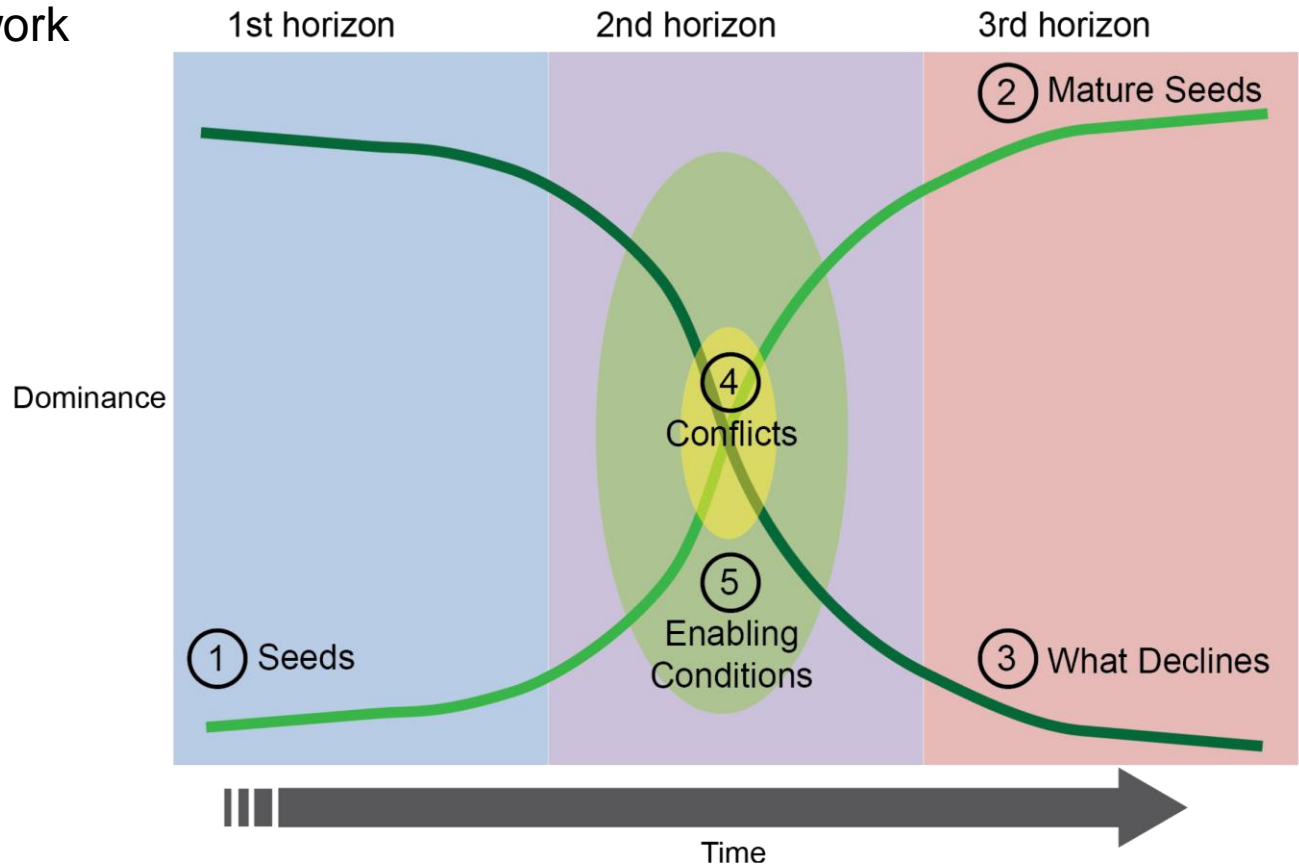
Need to Build Transformative Scenarios

using 3 horizons framework

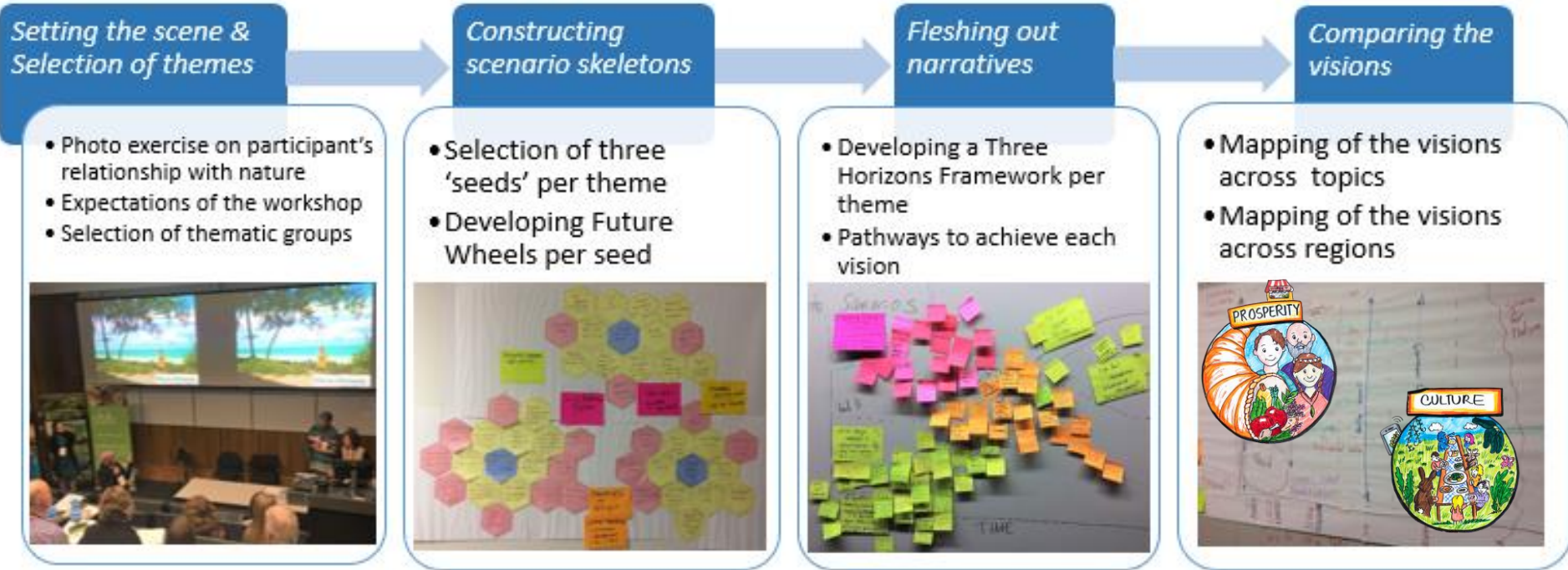
What enables the growth of seeds?

What has to vanish?

Processes that dominate today will not dominate in a transformed world!



Used Seeds of Good Anthropocene Methods to Explore Diverse Nature Futures

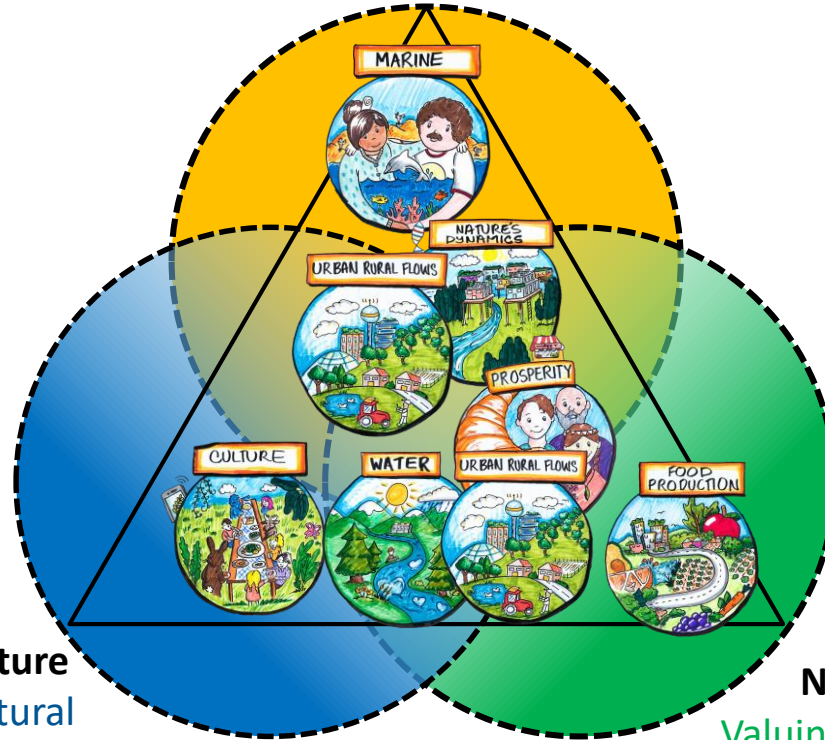


Pereira, L., K. Davies, E. Belder, S. Ferrier, S. Karlsson-Vinkhuyzen, H. Kim, J. Kuiper, S. Okayasu, M. Palomo, H. Pereira, G. Peterson, J. Sathyapalan, M. Schoolenberg, R. Alkemade, S. Carvalho Ribeiro, A. Greenaway, J. Hauck, N. King, T. Lazarova, F. Ravera, N. Chettri, W. Cheung, R. J. J. Hendriks, G. Kolomytsev, P. Leadley, J. Metzger, K. Ninan, R. Pichs, A. Popp, C. Rondinini, I. Rosa, D. Vuuren, & C. J. Lundquist. 2020. Developing multiscale and integrative nature–people scenarios using the Nature Futures Framework. *People and Nature*. <https://doi.org/10.1002/pan3.10146>

Alternative nature perspectives

Based on analysis of
the stakeholder
visions,
consultations, &
alignment to IPBES
values assessment

Nature as Culture
Valuing biocultural
relationships



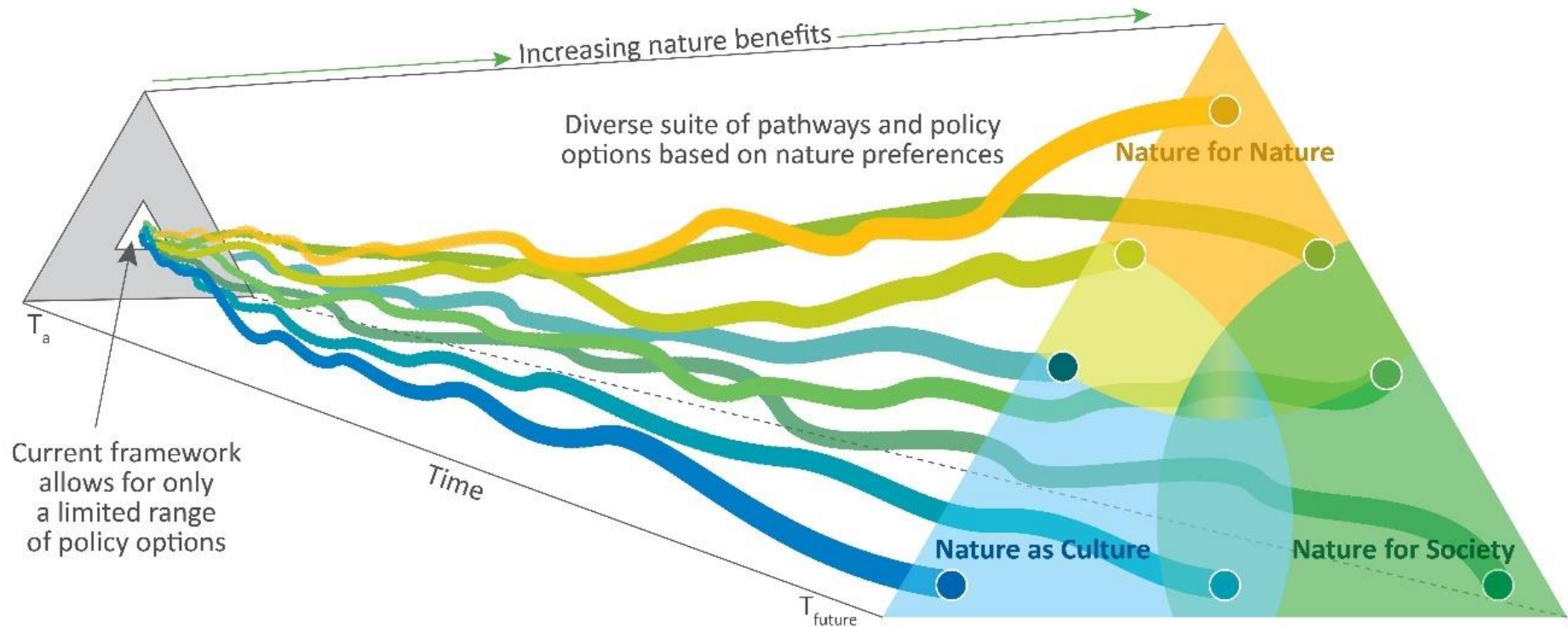
Nature for Society
Valuing the contributions of
nature to people

Nature Futures Framework Scenarios

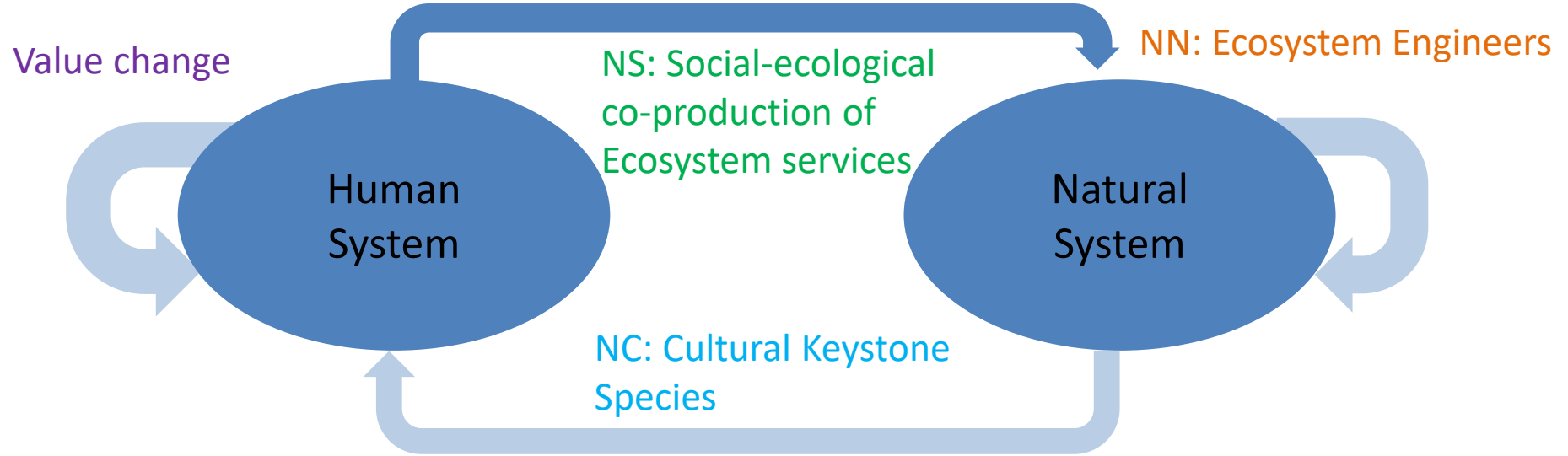
Aim to bridge multiple knowledge systems within extended peer community of IPBES

By translating, creating & comparing scenarios

Mobilizing data, & inspiring creation of new models



Key social-ecological feedbacks vary value across value perspective



Most models focus on **human impact on natural system**

Less focus on feedbacks to human system, how natural system shapes natural system & how human system shapes human system.

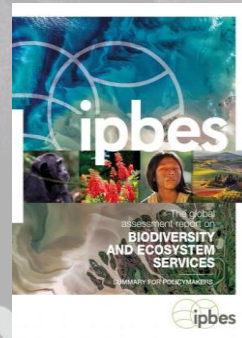
Challenge of Transformation

Urgent call for transformative change

Demand for us to quickly learn how to pluralistically create just, prosperous, resilient places & worlds

Within the inequality, ignorance, & surprises of the Anthropocene

We must halve emissions by
2030
reaching net zero before 2050



Stockholm Resilience Centre
Sustainability Science for Biosphere Stewardship



Programme on
Ecosystem Change and Society



KUNGL.
VETENSKAPS-
AKADEMIEN
THE ROYAL SWEDISH ACADEMY OF SCIENCES

arctic-council.org

ipbes.net

goodAnthropocenes.net



ARCTIC COUNCIL



Science and Policy
for People and Nature



McGill **eST**

Complex
Systems in
Transition



CONTRIBUTE
A SEED

SEEDS OF GOOD ANTHROPOCENES



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PLANTING SEEDS
OF THE FUTURE