

# What is multifunctionality?

Maria Tengö

Stockholm Resilience Centre, Stockholm University

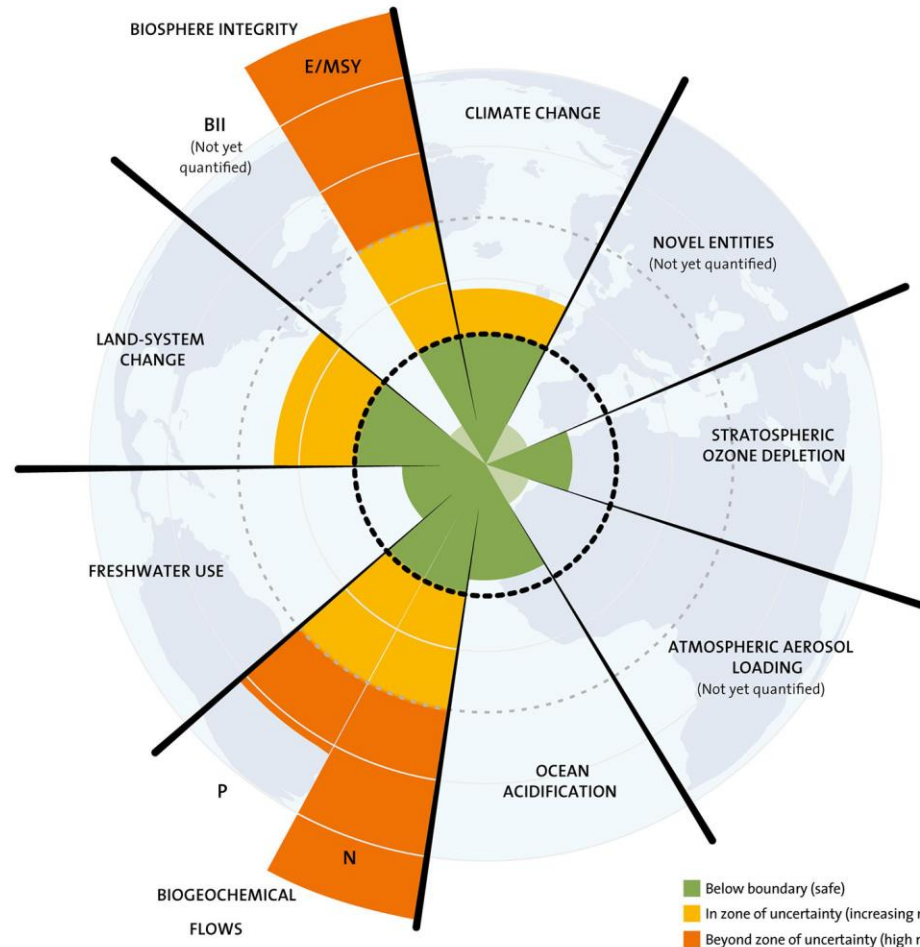
maria.tengo@su.se

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# Perspectives on multifunctionality

- Drivers – demanding and creating multifunctionality
- Approaches and initiatives addressing aspects of multifunctionality
- Ecosystem services – nature’s benefits to people
- Multifunctionality as co-created by interacting social-ecological processes
- ‘Multifunctional’ actors and policies?
  
- Discussion!

# Planetary boundaries – beyond climate change as critical global issues

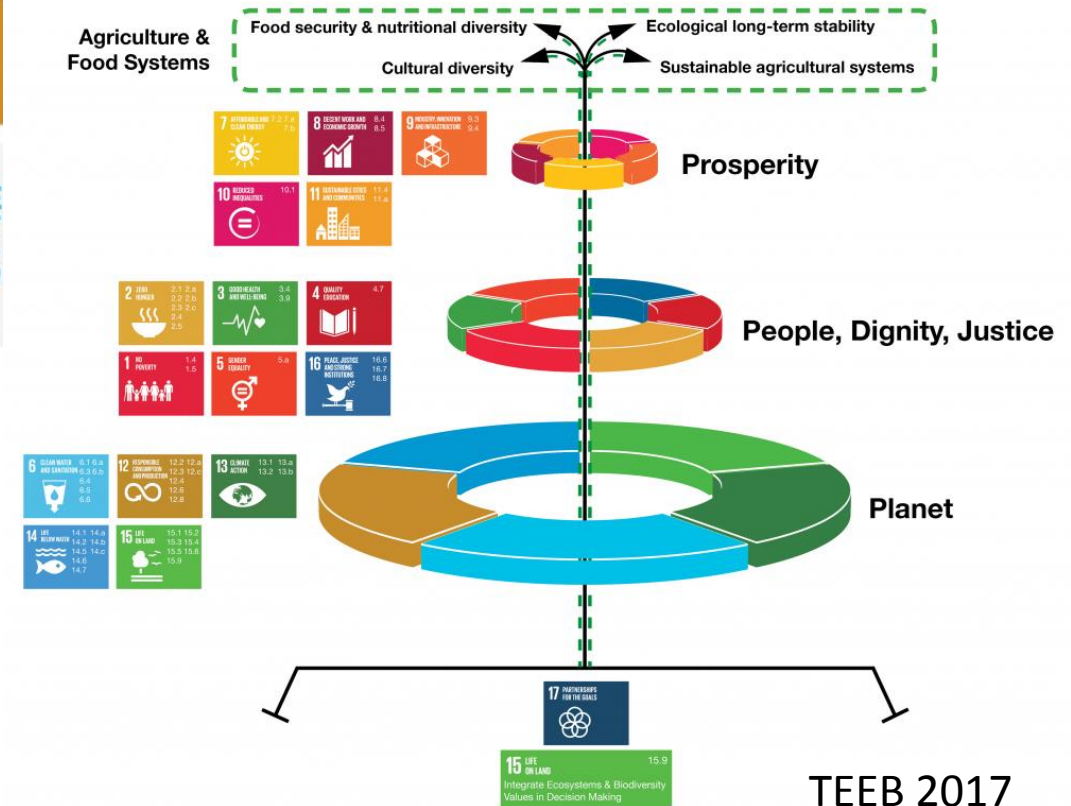


## Boundaries

- Biosphere integrity
- Climate change
- Land-system change
- Fresh water use
- Biogeochemical flows
- Ocean acidification
- Atmospheric aerosol loading
- Stratospheric ozone depletion
- Novel entities

Nine planetary boundaries  
(updated in Science Steffen et al 2015)

# SUSTAINABLE DEVELOPMENT GOALS



# Food, health, environment

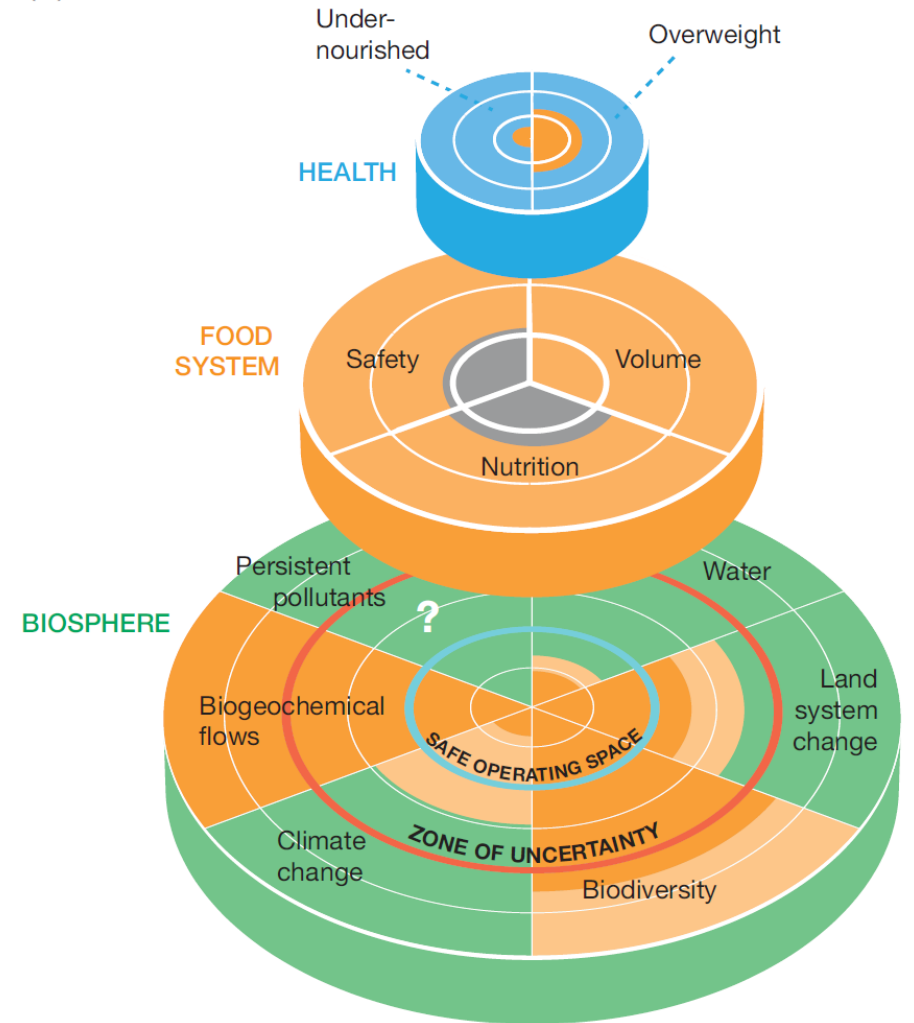
## The EAT-Lancet Commission on Food, Planet, Health (2019)



**Figure 1**

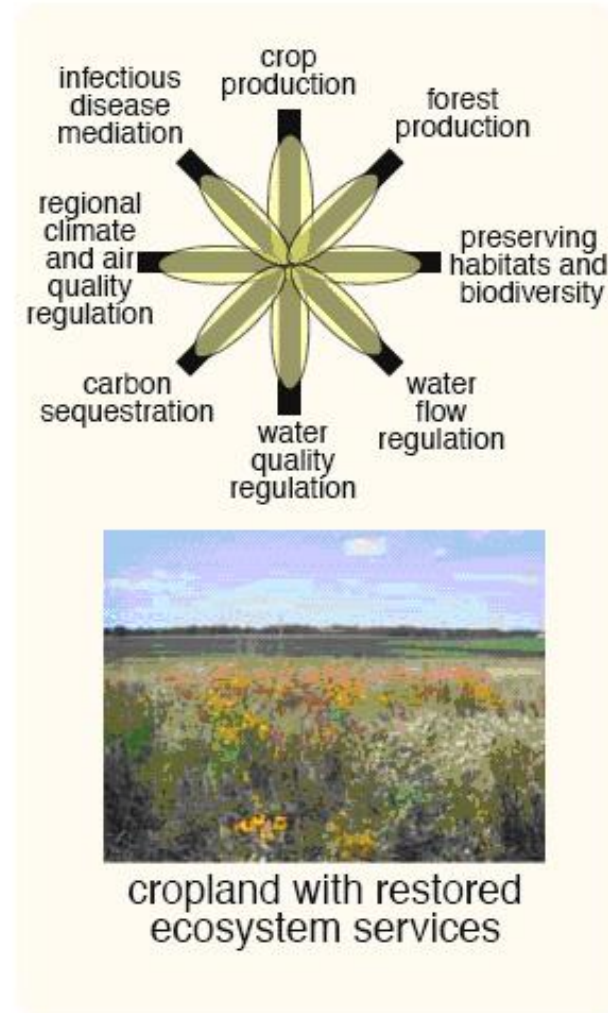
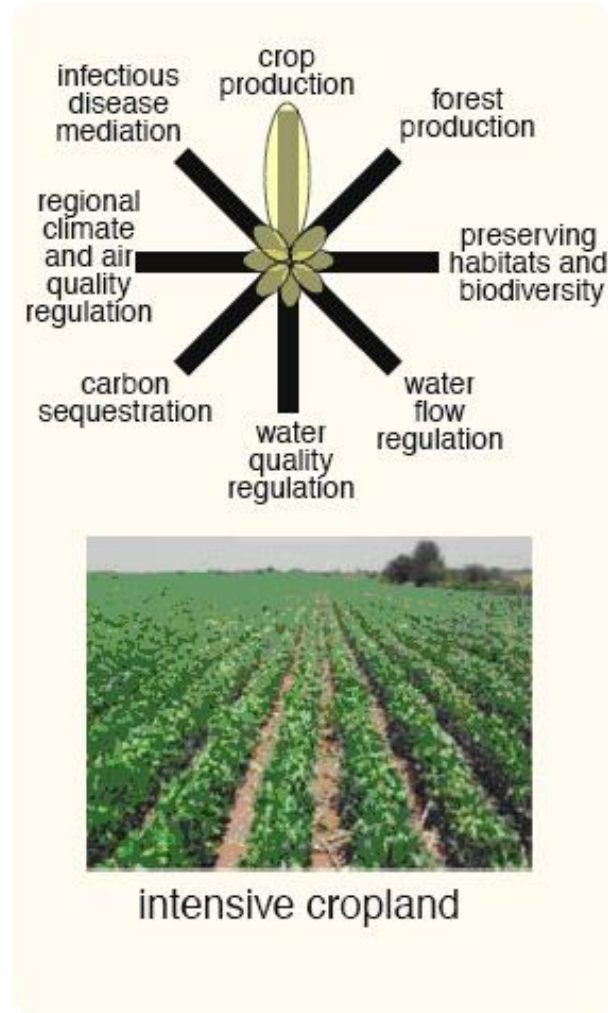
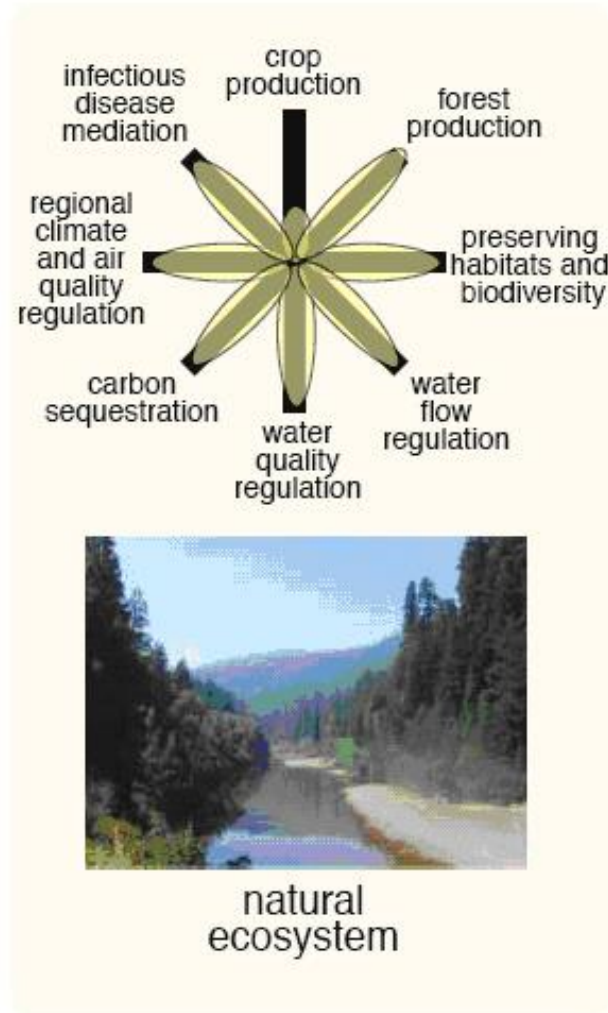
An integrated agenda for food in the Anthropocene recognizes that food forms an inextricable link between human health and environmental sustainability. The global food system must operate within boundaries for human health and food production to ensure healthy diets from sustainable food systems for nearly 10 billion people by 2050.

(b)



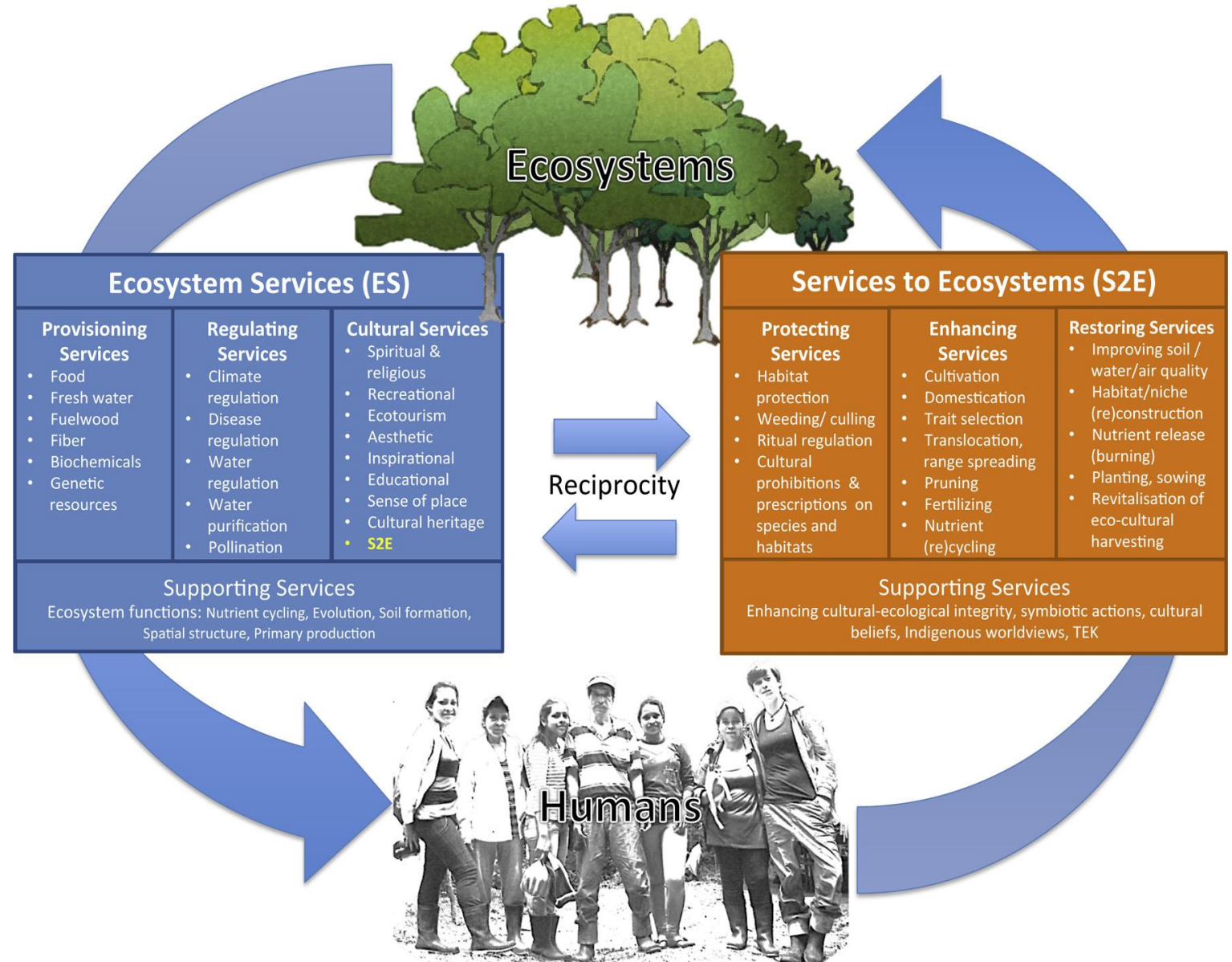
Gordon et al. 2017

# Ecosystem services to illustrate multifunctional landscapes



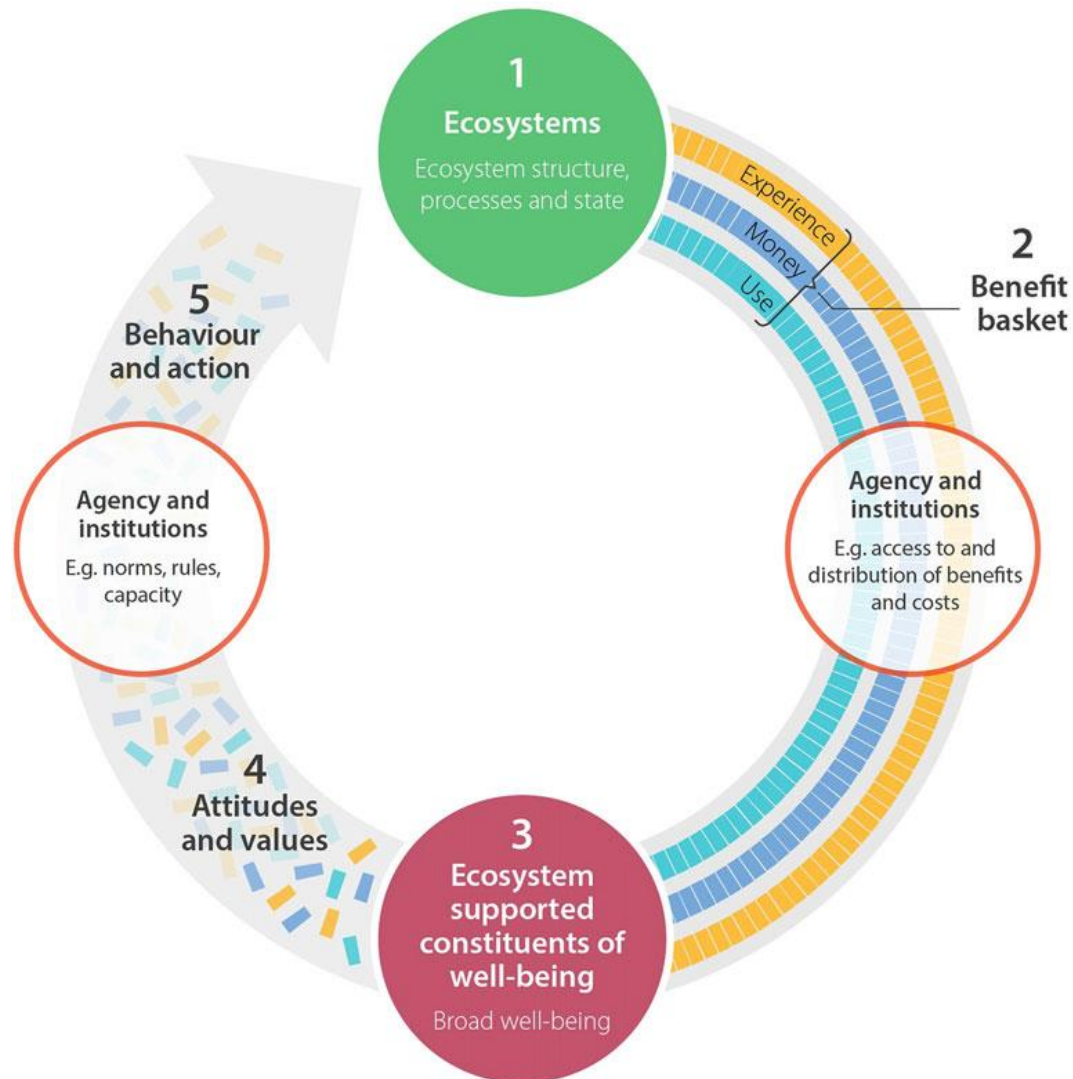
# Nature's benefits to people – and people's benefits to nature

Diaz et al. 2015, Pascual et al 2017; 2018.



Comberti et al. 2015

# The relationship between ecosystems and human well-being - revisited






# The relationship between ecosystems and human well-being - revisited




# Peoples contributions to nature

Contributions of Indigenous and Local Knowledge to biodiversity and nature

**DOMESTICATION**




**a** Domesticating and maintaining crops...




**b** ... and animal breeds

**CREATING NEW ECOSYSTEMS**



**c** Creating cultural landscapes with enhanced habitat heterogeneity

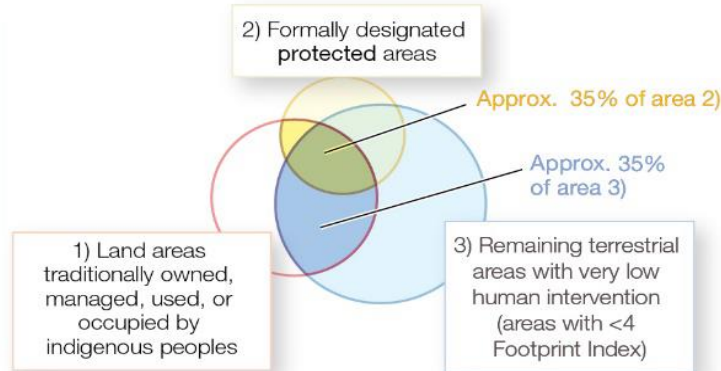


**d** Developing production systems with a multitude of domestic and wild species

**PROTECTION**



**h** Preventing forest loss



**SUSTAINABLE USE, MANAGEMENT, AND MONITORING**



**e** Habitat management



**f** Wild species management



**g** Restoration

**CONCEPTS**



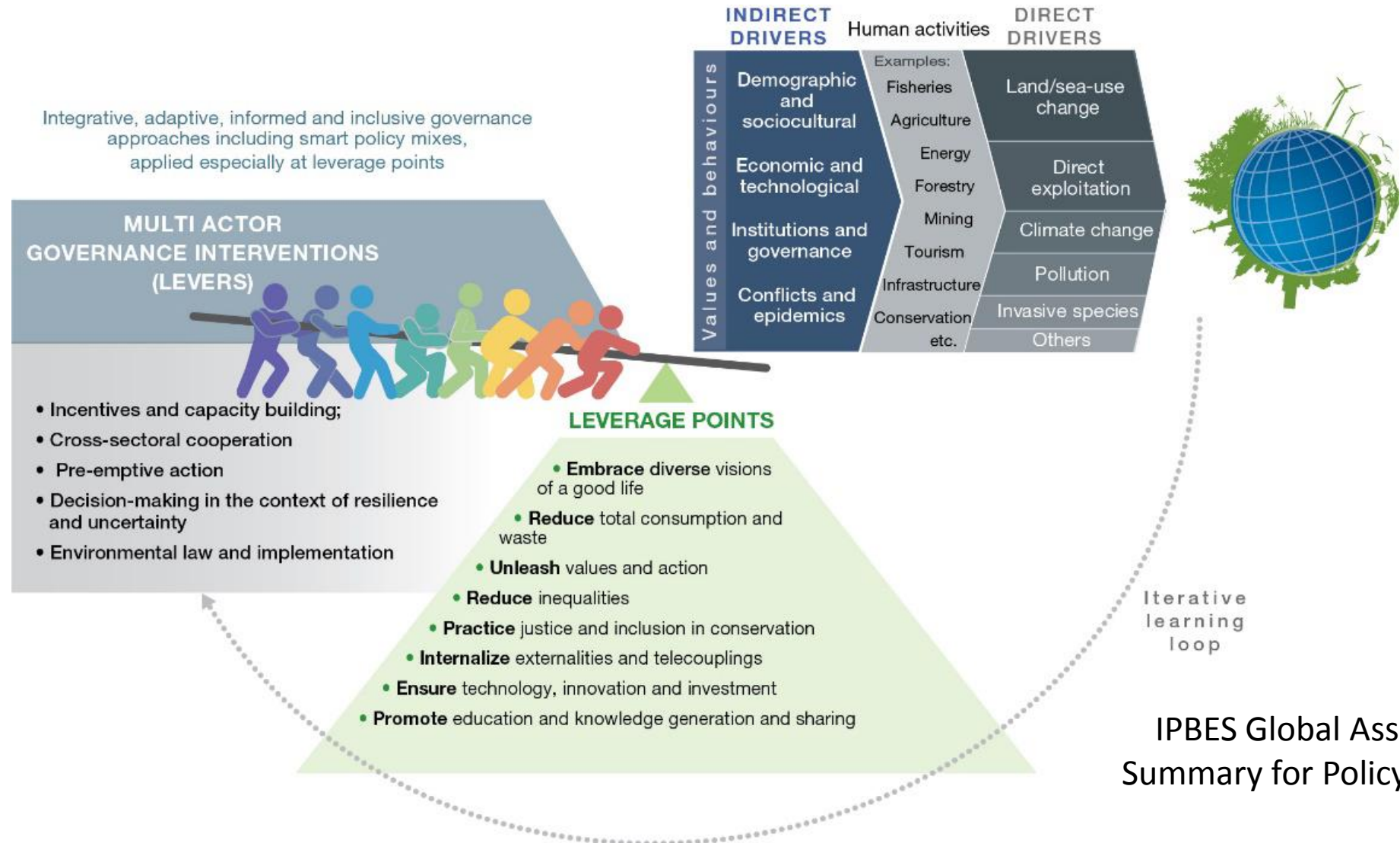
**i** Alternative values and worldviews

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Global Assessment of Biodiversity and Ecosystem Service  
IPBES 2019

# IPBES Global Assessment

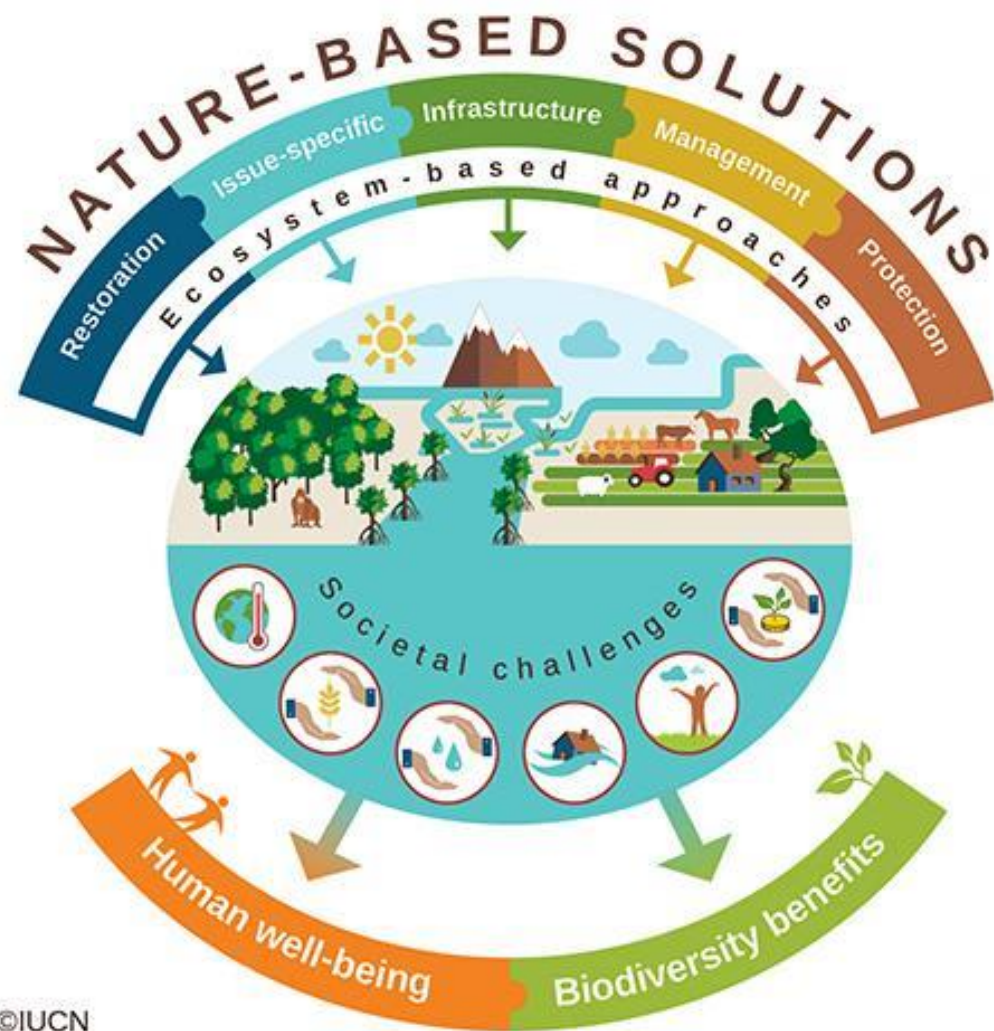
Drivers  
Actors  
Solutions

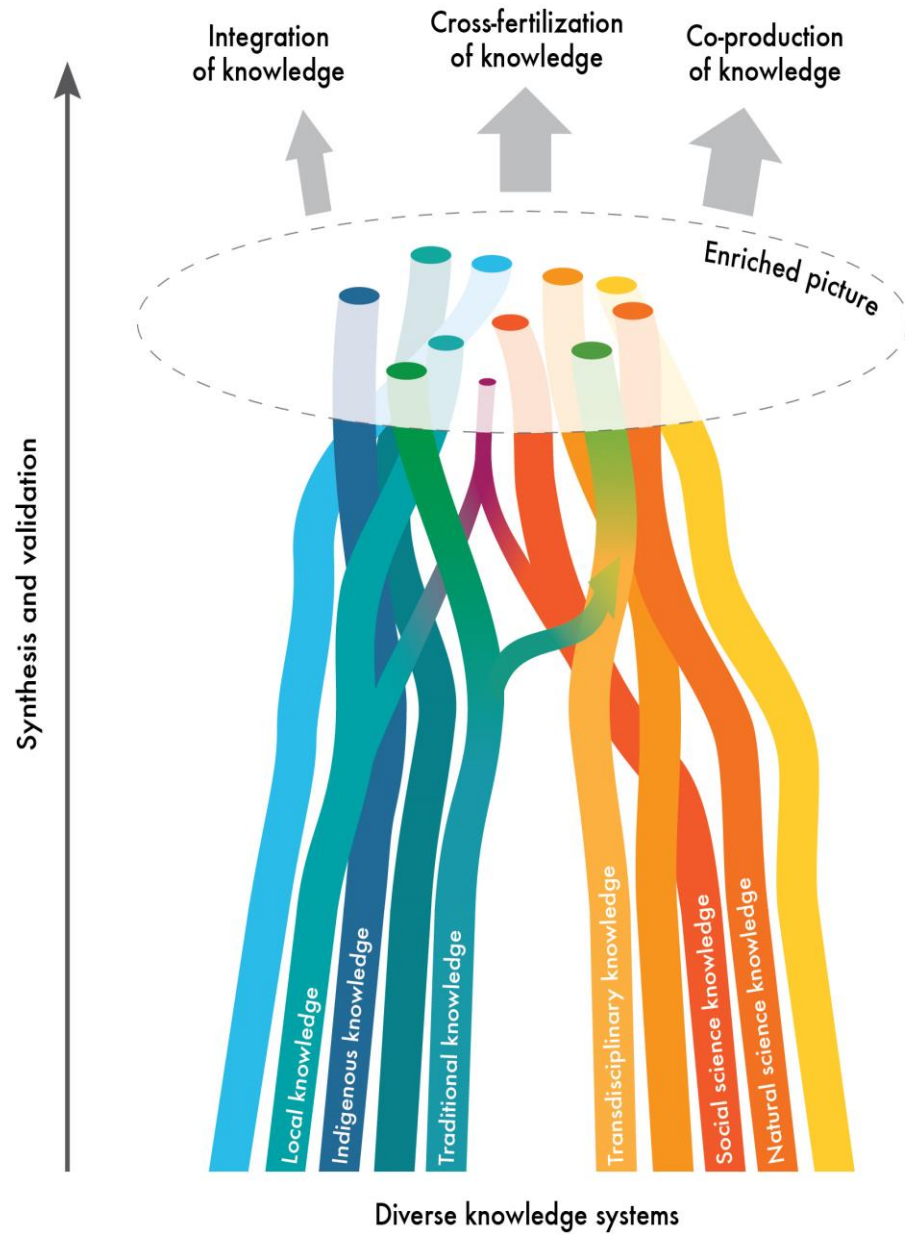


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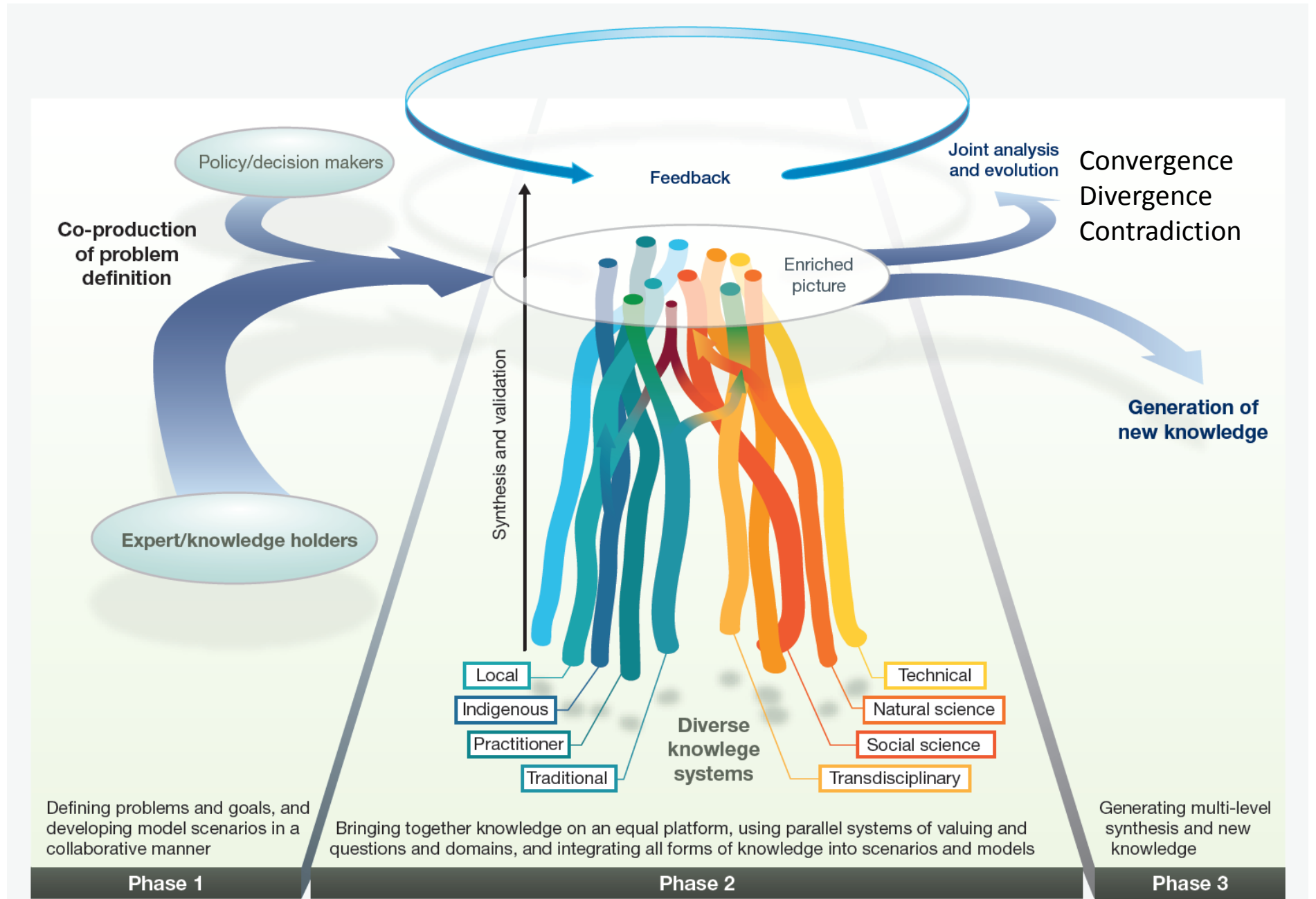


# The Multiple Evidence Base (MEB)

- Complementarity
- Diverse knowledge systems
- Validation within

(Tengö, Brondizio, Elmqvist, Malmer, Spierenburg 2014)

# Multiple Evidence Base approach (MEB)



- SDGs – value in thinking about synergies and trade-offs
  - Particular focus ones for agriculture?
- Anthromes?
- On how to do it: Multiple evidence base