

# Macro-socio-ecology-outline

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## 1 ABSTRACT

Increasing human pressure on the planet from population, extractive and consumptive activity leads to resource scarcity and risks of crossing so-called planetary boundaries putting the human species, other species and the entire earth system at risk. Further, with increasing demand of both continuing economic and social development along with a good and healthy environment and resources for the future - the need for a macroscopic view on how human resource use relates to the state of environment, as well as social and economic outcomes is needed.

The socio-ecological approach considers human activities as embedded and interacting with the biosphere. Socio-ecological systems have historically been considered when humans interact with the environment in extractive activities, often in marine or forest ecosystems.

At the core of the socio-ecological systems approach are questions about the dynamics of how governance systems affects the way humans interact with the environment and what they get out of their interaction with the environment.

Socio-ecological approaches, however, have a history of having been applied largely to local dynamics and to simple systems that can be analyzed analytically. As such, the socio-ecological approach has not delivered a guiding framework for how society can co-evolve in the long-term from the global to the national and regional scale.

In parallel, global, regional or national frameworks for looking at socio-ecological dynamics have been developed. However, they have rarely been phrased explicitly as such.

Here we provide an overall framework for what can be considered a macro-socio-ecology. We tie together classic socio-ecological research with recent large scale approaches of similar character. We outline main research questions for macro-socio-ecology, its main methodological toolbox, and its policy and governance relevance.

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## 2 THE NEED

- Success of socio-ecology
- A strong micro-level foundation
- Recent foundational concepts
- Planetary boundaries
- Social foundation
- Doughnut economics
- A guiding national, regional and world map
- not a GPS that will tell you how to get to where you want
- To inspire discussions
  - About what we use our resources for
  - About the efficiency with which we use resources - environmental (extraction, transport), social, economic
- Plenty of data - fragile framework
  - The national, regional and global level of organization

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## 3 MAIN RESEARCH QUESTIONS

- what do we use resources for
  - social
    - \* health
    - \* well-being
    - \* culture
    - our relation to the environment
  - economic
  - environmental
- what is the impact of our socio-economic activity on the environment
- what is our relation to to the biosphere

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## 4 DIFFERENTIATING MSE FROM OTHER FIELDS

- Related to global sustainability studies and sustainability science
  - Related to socio-ecology
  - Related to macroecology
  - Related to macroeconomics
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## 5 HOW - THE TOOLBOX OF MACRO-SOCIO-ECOLOGY

- Cross-country comparisons
- Linking earth system science to social dimensions
- Development of methods to study teleconnected socio-ecological dynamics
- Composite indicators such as Genuine Progress Indicator
- Scenario?

### 5.1 THE CORE

Is the core of macro-socio-ecology relating resource consumption to social outcomes and environmental impacts?

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## 6 REFERENCES

The following literature was cited