1 Motivation

Three decades of internationally coordinated research on the Earth system has led to the conclusion that Earth has entered a new geological epoch—the Anthropocene. The stability and resilience of the Earth system is now at risk. Yet, a stable Earth system is a prerequisite for human development.

For millennia, communities have effectively managed common-pool resources on a small scale, for example forests, rangelands, and fisheries. As industrial impact has grown, and nation-state norms have evolved, the need to manage globally common resources emerged. But now, the reality of full scale of national ecological interdependencies and human impact on the Earth system challenge this traditional thinking on the global commons. How do societies shift worldviews to accommodate this new thinking? Can knowledge of effective management of common resources be applied at the planetary scale? How are user rights established?

3 Tipping Points Threatening Earth Stability

These future megatrends will further aggravate human pressures on the Earth systems with future responses of the latter being often opaque. The notion that a single stable equilibrium is at risk has been replaced by the understanding of the Earth system as a complex adaptive system with strong nonlinearities, where relatively small changes in a forcing function can push the system across “tipping points” (Lenton et al. 2007).

Examples include the rapid ending of ice ages, the exceptionally rapid warming and cooling events in the North Atlantic region, mega-droughts and other extreme events. A recent analysis of tipping points in the Earth system (Figure 2) indicates that at temperatures of between 2–3°C above pre-industrial temperatures the risk of the subsystems of the Earth system collapsing becomes high, though many uncertainties remain (Schellnhuber et al. 2016).

5 Principles for Governing Global Commons in the Anthropocene

The responsibility of the Anthropocene, and the new world view it implies, demands a new set of principles to govern our thinking of the Global Commons. We set out three overarching principles to inform transformative solutions that cross scales and regions. Together these provide a system-wide perspective to enhance the resilience of Earth and its interlinked subcomponents.

**Principle 1: The Inclusivity Principle**

The Global Commons in the Anthropocene are not external to human activity; they are internal to development at all scales and need to be treated inclusively.

**Principle 2: The Universality Principle**

Managing the Global Commons in the Anthropocene requires a paradigm shift in human worldviews toward planetary stewardship.

**Principle 3: The Resilience Principle**

Planetary stewardship of the Global Commons in the Anthropocene is fundamentally about safeguarding social-ecological resilience, from local communities to Earth stability.

The new principles are designed as foundational principles to inform economic and political decisions at all scales from local to global. For example, criteria for investment decision making would incorporate the fundamental question: how does this investment affect Earth’s resilience?

References


Steffen, W., Deutsch, L., F出示图片的自然文本。