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How much resource extraction would be safe?

Approaches to determine a safe operating space of mineral and biomass use

Stefan Bringezu, Wuppertal Institute, CESR, University of Kassel, and International Resource Panel

The Safe Operating Space (SOS) concept as formulated by Rockström et al. (2009) has triggered a debate on how to define boundaries of resource use. The concept seems both useful as well as a challenge, because it combines scientific knowledge with normative societal weightings regarding the acceptability of the consequences of mining, agriculture or other primary sectors. A basic problem also lies with the fact that the assessment of SOS is depending on the scale of observation.

The International Resource Panel in its recent report "Assessing Land Use: Balancing Consumption with Sustainable Supply" made use of the SOS concept. It criticized the original target value suggested by Rockström et al. and derived a value based on findings of the Millennium Ecosystem Assessment, studies on GHG emissions by land use change, and in conjunction with policy goals of the UN Convention on Biodiversity. The global value (0.2ha/person in 2030) can be compared to actual global cropland use induced by the consumption of national economies. This has been done, for instance, of the EU by applying the principles of economy-wide material flow accounting. It seems important to note that the concept of the socio-industrial metabolism thus plays a fundamental role in the application of the concept, and that the target value is not aimed at production but on consumption.

For minerals, several proposals have been suggested to limit the growing worldwide extraction and the associated environmental and social impacts. Compared to land use change, it seems more difficult to grasp the evidence of impacts on scales higher than local and regional. The presentation will review the existing target proposals and their rationale. A procedural approach will be outlined, how the acceptance level of mineral extraction could be determined. The acceptance of slower growing or even declining resource extraction will be in particular determined by the actors' assessment of the feasibility of the targets and the consequences of implementation.

The presentation will reflect in particular on the implications for the dynamics in the Asia-Pacific and its relation to other world regions.