Technology change to stay within the Planetary Boundaries.

Topic: Environmental Input-Output Modelling (5)
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This presentation provides insight into the updates to the global multi-regional input-output (MRIO) database EXIOBASE (v3.10) and results are presented for consumption-based accounts of nations relative to the planetary boundaries (PBs). The analysis is framed in a scenario perspective in order to answer what level of decoupling is needed to stay with planetary boundaries.

The v3.10 update to EXIOBASE includes a new time series of input-output tables and a range of environmental extensions relevant for PB analysis, with emission, pressure and extractive accounts and their links to biodiversity metrics.

PBs form science-based limits to environmental pressures, from which downscaling can be performed to set limits for national, corporate, or household impacts. MRIO approaches allow for the connection between PBs, interpreted as supply-side limits, and the demand-side pressure of consumption by households or industry.

Specifically, a range of scenarios of population and affluence are presented relative to the current projections in order to determine what level of technological progress is needed to stay within the boundaries by the mid-term policy horizon (2050). A discussion of scenario approaches follows, in order to further model the possibility of technology and efficiency improvements until 2050.