

Environmental Sustainability Terminology and Concepts

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Abstract

- This document defines a set of sustainability-related terms and concepts to be used while describing and evaluating the negative and positive environmental sustainability impacts and implications of Internet technologies.
- The goal is to provide a common sustainability considerations lexicon for network equipment vendors, operators, designers, and architects.

Sustainability

- 1983 UN Commission on Environment and Development had important influence on the current use of the term. The commission's 1987 report [UNGA42] defines it as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs".
- This in turn involves balancing economic, social, and environmental factors.
- Admittedly, it is a human-centric definition!

Definition of Terms

- Appropriate technology
- Biodiversity loss
- CO₂e / CO₂eq / CO₂-eq
- Carbon awareness
- Carbon intensity (CI)
- Carbon offset and credit
- Circularity (circular economy)
- Climate change (climate emergency, global warming)
- Climate change adaptation
- Climate change mitigation
- CUE
- Embodied emissions
- Energy, power, and their measurement
- Energy efficiency (EE)
- Energy equity
- Energy proportionality
- Energy savings/conservation (ES)
- Footprint (environmental/ecological)
- GHGs
- GHG Emissions Scopes (direct, indirect, 1, 2, 3)

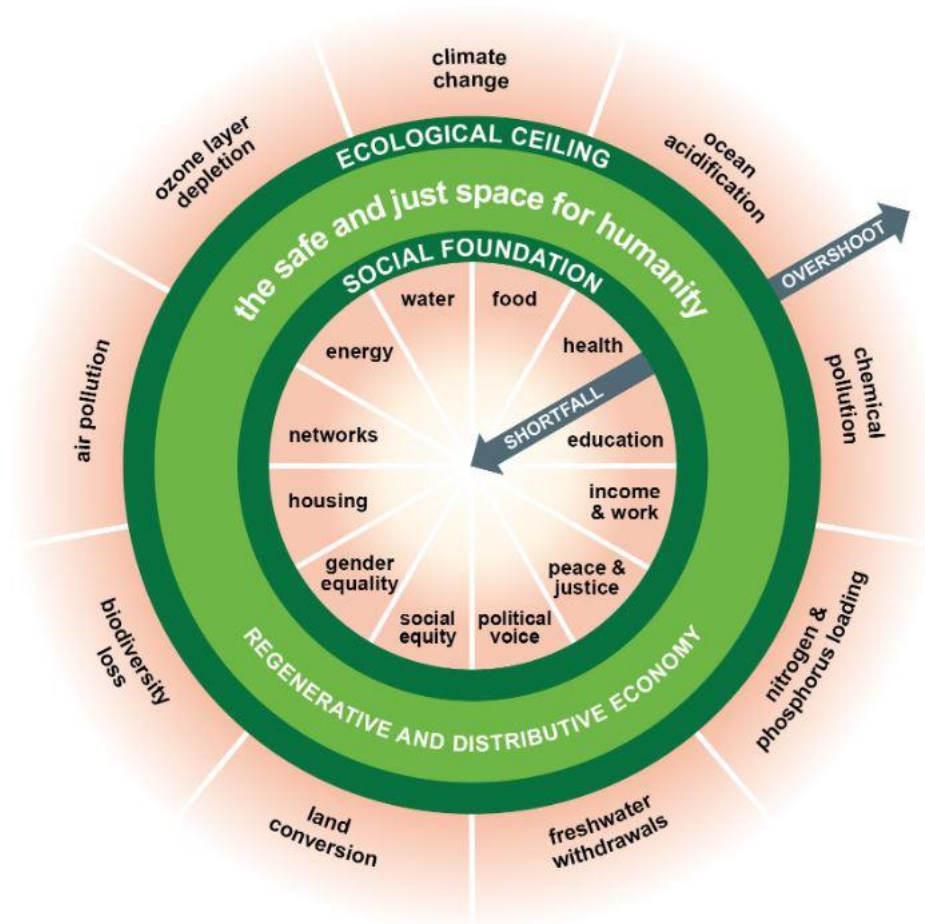
Definition of Terms – ctd.

- GWP
- Geodiversity
- Handprint (environmental/ecological)
- LCA (Life Cycle Assessment) – attributional, consequential
- Materials efficiency and reuse
- Net-zero
- PUE
- Planetary boundaries
- Rebound effect (Jevons paradox)
- Tipping points
- UN Sustainable Development Goals:
 - SDG 1 No poverty
 - SDG 2 Zero hunger
 - SDG 3 Good health and well-being
 - SDG 4 Quality education
 - SDG 5 Gender equality
 - SDG 6 Clean water and sanitation
 - SDG 7 Affordable and clean energy
 - SDG 8 Decent work and economic growth
 - SDG 9 Industry, innovation and infrastructure
 - SDG 10 Reduced inequalities
 - SDG 11 Sustainable cities and communities
 - SDG 12 Responsible consumption and production
 - SDG 13 Climate action
 - SDG 14 Life below water
 - SDG 15 Life on land
 - SDG 16 Peace, justice and strong institutions
 - SDG 17 Partnerships for the Goals

Doughnut Economics

- a selected term

Doughnut economics is a visual framework for sustainable development. It attempts to find a safe operational space within planetary boundaries and complementary (yet seemingly opposing) social boundaries, thereby meeting the needs of human societies without pushing earth environmental boundaries to their tipping points.



[https://en.wikipedia.org/wiki/Doughnut_\(economic_model\)](https://en.wikipedia.org/wiki/Doughnut_(economic_model))

Environmental Sustainability Concepts

- 'Sustainable X' versus 'X for Sustainability'
 - Sustainable Internetworking
 - Internetworking for Sustainability
 - Smart grid, smart cities, smart agriculture
- Key Values and Key Value Indicators
 - Key Value Enablers

Next steps?

- Determining the relevance of the included terminology to the Green WG – its alignment with the WG charter and roadmap and updating it accordingly.

Thanks very much!

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