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Supplementary appendix

This appendix formed part of the original submission. We post it as supplied by the authors.

Supplement to: Zimm C, Schinko T, Pachauri S. Putting multidimensional inequalities in human wellbeing at the centre of transitions. *Lancet Planet Health* 2022; **6:** e641–42.

Supplementary Information

Indicators

We match the intermediate needs identified by Doyal and Gough[1] and split them into enablers (supportive of human wellbeing for those who benefit from it) in green and impediments (hampering human wellbeing and planetary health) in grey. The multidimensional poverty and inequality literature proposes a wide set of indicators to be studied that share a similar theoretical grounding. We try to provide one to two proxy indicators for each intermediate need to facilitate visualization. We acknowledge that many other indicators could be chosen as well. We obtain many of the indicators form the Human Development Report 2020 online database (http://hdr.undp.org/en/data)[2]. Some indicators are also outcome-related (e.g., health indicators and education), for the sake of visualization we keep to the proposed dichotomy. For some needs identified by[1] data are not available for a global country set (i.e., physical security, significant primary relationships, security in childhood). The analysis includes the cumulative overshoot indicator of material use developed by[3] based on[9]. From their dataset we had to exclude Cuba, Korea (Democratic Republic), Somalia, Syrian Arab Republic, Republic of Yemen and Venezuela, BR due to missing GDP data. For the following country pairs, the first was taken in our assessment: Sudan and South Sudan, Serbia and Montenegro, Ethiopia, and Eritrea. We plot the aggregate (biotic and abiotic). The abiotic Lorenz curve resembles the aggregate, while the biotic one shows lower inequality. We add natural resource use, waste, and GHG emissions as enablers, as they have historically contributed to high levels of human wellbeing but also link to impediments today and for future generations.

INTERMEDIATE NEEDS[1]	PROXY INDICATOR (unit)	YEAR/TIME FRAME	COUNTRY (population) COVERAGE	SOURCES	
Adequate nutritional food and water	Unsafe water & sanitation deaths (number)	2016	175 (7.2 bn)	HDR (2020)/WHO (2020)	Impediments
A non-hazardous physical and work environment	Air pollution deaths (number) Disaster deaths (number)	2016 2009-2019	175 (7.2 bn) 130 (4.5 bn)	HDR (2020)/WHO (2020) HDR (2020)/UN-SD (2020)	Impediments
Safe birth control and child-bearing	Maternal mortality (number of deaths)	2017	176 (7.3 bn)	HDR (2020)/WHO et al. (2019)	Impediments
Adequate protective housing	Electricity (kWh) Internet (bits/sec)	2018	135 (7.1 bn) 183 (7.5 bn)	IEA (2020), WBWDI (2019) ITU (2019)	Enablers
Appropriate health care	COVID19 vaccine doses administered (number) Healthy life expectancy at 65 (years)	4 April 2022 2019	155 (7.2 bn) 155 (7.2 bn)	OurWorldinData (2022) WHO (2021)	Enablers
Basic education	Mean years of schooling 25+ (female) (years)	2019	182 (7.2 bn)	HDR (2020)/UNESCO (2020)	Enablers
Economic security	Income GDP per capita (2017 PPP $)	2019	184 (7.0 bn)	HDR (2020)/World Bank (2020)	Enablers
Enabling resource USE infringing on planetary health					
Natural resource use	Material Footprint (t) Cumulative Material Overshoot aggregate (t)	2017 1970-2017	148 (7.3 bn) 154	UNEP-IRP (2022) Hickel et al. (2022)	Enablers
Resource & global commons use	Municipal solid waste (t)	2010-2020	178 (7.3 bn)	World Bank (2021)	Enablers
Global commons use	GHG emissions (tCO2)	2018	180 (7.3 bn)	HDR (2020)/GCP (2020)	Enablers

Data Sources

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