

# A Doughnut for the Anthropocene: humanity's compass in the 21st century



A new model of human wellbeing is emerging to guide humanity in the Anthropocene. In essence, it recognises that wellbeing depends on enabling every person to lead a life of dignity and opportunity, while safeguarding the integrity of Earth's life-supporting systems. The conceptual framework of social and planetary boundaries—which has come to be known as the Doughnut—contributes to this paradigm by concisely visualising its ambition (appendix), and so providing a compass for humanity's 21st century progress.

Since I created the Doughnut at Oxfam in 2012,<sup>1</sup> it has been widely applied within academia, policymaking, progressive business, urban planning, and civil society as a tool for reconceptualising sustainable development.<sup>2-6</sup> Here I present a renewed and strengthened framework, based on recent advances in both internationally agreed social standards and in Earth-system science, which respectively provide the basis for establishing the Doughnut's social and ecological boundaries.

The Doughnut combines two concentric radar charts to depict the two boundaries—social and ecological—that together encompass human wellbeing (figure). The inner boundary is a social foundation, below which lie shortfalls in wellbeing, such as hunger, ill health, illiteracy, and energy poverty. Its twelve dimensions and their illustrative indicators are derived from internationally agreed minimum standards for human wellbeing, as established in 2015 by the Sustainable Development Goals adopted by all member states of the United Nations.<sup>7</sup>

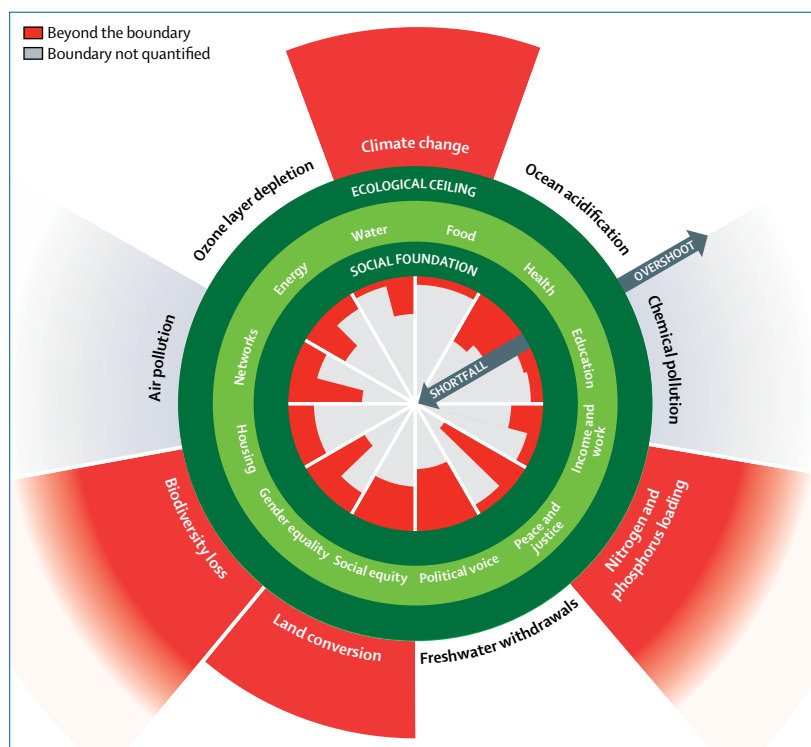
The Doughnut's outer boundary is an ecological ceiling, beyond which lies an overshoot of pressure on Earth's life-supporting systems, such as climate change, ocean acidification, and biodiversity loss. Its nine dimensions and their indicators are defined by the planetary boundaries framework, which seeks to identify and safeguard critical processes that regulate Earth's ability to sustain Holocene-like conditions, and this framework was likewise revised in 2015.<sup>8</sup> Between these two sets of boundaries lies an ecologically safe and socially just space in which all of humanity has the chance to thrive (appendix).

By quantifying and visualising the global scale of shortfalls and overshoot, the Doughnut acts as a concise compass for assessment of the current state of human wellbeing (the appendix contains the full data and methods).

Millions of people currently lead lives that fall far short of the social foundation's internationally agreed minimum standards, ranging from nutrition and health care to housing, income, and energy. At the same time, human activity has led to overshoot for at least four planetary boundaries: climate change, biodiversity loss, nitrogen and phosphorus loading, and land conversion. Improving humanity's wellbeing this century depends on eliminating this social shortfall and ecological overshoot simultaneously (figure).

The Doughnut raises four key implications for the pursuit of human wellbeing in the Anthropocene. First,

See Online for appendix



**Figure: Shortfalls and overshoot in the Doughnut**  
 Dark green circles show the social foundation and ecological ceiling, encompassing a safe and just space for humanity. Red wedges show shortfalls in the social foundation or overshoot of the ecological ceiling. The extent of pressure on planetary boundaries that are not currently being overshoot is not shown here (see appendix for all graphics).

it highlights the dependence of human wellbeing on planetary health. The Holocene is the only epoch in Earth's history in which it is known that humanity can thrive.<sup>9</sup> The best chance of enabling a life of dignity and opportunity for more than 10 billion people over the coming century therefore depends on sustaining Holocene-like conditions, such as a stable climate, clean air, a protective ozone layer, thriving biodiversity, and healthy oceans. Second, the concurrent extent of social shortfall and ecological overshoot reflects deep inequalities—of income and wealth, of exposure to risk, of gender and race, and of political power—both within and between countries. The Doughnut helps to focus attention on addressing such inequalities when both theorising and pursuing human wellbeing. Third, the Doughnut implies the need for a deep renewal of economic theory and policymaking so that the continued widespread political prioritisation of gross domestic product growth is replaced by an economic vision that seeks to transform economies, from local to global, so that they become regenerative and distributive by design, and thus help to bring humanity into the Doughnut.<sup>10</sup> Last, the Doughnut might act as a 21st century compass, but the greater task is to create an effective map of the terrain ahead. Thanks to ongoing socioecological systems research, this century is likely to be the first in which humanity begins more fully to understand and appreciate the complex interdependence of human wellbeing and planetary health.

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