

# **The low-carbon transition pathway in the post-pandemic era:**

## **A Doughnut Economics perspective**

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### **Abstract**

Doughnut Economics (DE) is an emerging framework for sustainability evaluation that integrates socioeconomic and biophysical spheres with theoretical bases updating traditional economic thinking. Despite an increasing number of studies on DE, a comprehensive review has yet to be undertaken. This study aims to conduct a critical systematic review following the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) principle, covering the period from 2012 to 2024 and structured around four research questions: the theoretical framework of DE and its alignment with the Sustainable Development Goals (SDGs), the publication landscape, accounting procedures, and empirical progress. The study findings indicate that: 1) DE is theoretically different from SDGs in terms of its indicator system, research foci, internal interrelationships, and sustainability assessment; 2) the UK leads in DE research, followed by USA and other European countries, with discussions in the field gaining momentum since 2021; journals like *The Lancet Planetary Health* and *Sustainability (Switzerland)* are prominent publishers on this topic; 3) selecting planetary boundaries and estimating corresponding indicators and thresholds is essential for measuring sustainability achievement by comparing actual values with these thresholds; and 4) while most countries have exceeded biophysical boundaries related to climate change and ecological/material footprints, the situation varies significantly for other boundaries like biogeochemical flows, freshwater, and land system change. Socioeconomic boundaries concerning basic human needs such as food, energy, and water are generally upheld, unlike those related to ideology and value judgments, including voice, social equity, and gender equality. DE is still in its infancy and needs further development in its theoretical and methodological framework.

**Keywords:** Doughnut Economics; Sustainable Development Goals; sustainability evaluation framework; PRISMA principle; accounting procedure