

SUSTAINABLE FUTURE FOR UKRAINE: CLARIFYING THE SENSES AND STUDYING THE CASES OF DOUGHNUT MODEL

Viktoriia Kiptenko, Snizhana Ulanova*

Taras Shevchenko National University of Kyiv, Ukraine

**Corresponding author: ulanova544@gmail.com*

Sustainability discourse after 2015 got several interpretations, among which Doughnut idea still is relatively unknown in Ukraine. Challenges of war and vectors of post-war recovery raise the issue of better acknowledgment of it and its implications, inspiring the search for testing the cases and benchmarking recovery framework for Ukraine. The integrative capabilities of geographical knowledge and the analytical capacity of modern applied geospatial and contextual analysis tools can substantiate the Doughnut glocalization model for urban planning. At the same time, additional research on critique and the feasibility of applying the Doughnut model can serve as a more reasonable discourse in academic and applied aspects focused on selecting indicators and parameters for the analysis.

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Introduction

After the UN Summit in 2015 put the 17 Sustainable Development Goals on the agenda, every country that aims to ensure the well-being and prosperity of its people must consider the need to preserve the planet for posterity. At the same time, there is a necessity to meet the basic needs of society. This challenge has forced many governments to rethink their consumption of resources and look for ways to increase them. However, this issue is of concern not only to politicians but also to scientists in various fields, who are actively offering their ideas to overcome the critical challenges of today. After all, if the planet's resources are depleted, it will be impossible to meet even the most basic needs in full.

In practice, the conceptual foundations for addressing the challenges of sustainable development are based, in particular, on the concept of Anthropocene (Dirzo et al., 2022; Waters, 2016), planetary boundaries (Cowie et al., 2022; Rockström, 2009), interpretations by Ukrainian scholars in light of balanced development (Maruniak et al., 2021), which are currently being actively implemented within the framework of green and circular economy models.

A specific response to the demand of the academy, policy, and decision-makers is the Doughnut concept developed by British economist Kate Raworth (2012). The author offers her vision of what human thriving means today, and Doughnut Economics explores the ways of thinking needed to achieve it.

Nowadays, challenges of Ukraine's development require considering the most recent – based on sustainability imperative – discourses, among which the Doughnut framework got the focus and aim of our paper. Realizing some limitations of subjunctives (to some extent) determined by our

perceptions, we consider that our overview of senses and availability for studying cases will push the explorations of the interpretations and implications by the Ukrainian academic circles.

Results

Kate Raworth bases her model (2012) on the planetary boundaries concept, which the author expanded with a social basis (Figure 1). The Doughnut has two rings: the inner (social) and the outer (environmental). The inner ring sets the minimum humanity needs for a good life and stems from the 17 Sustainable Development Goals. The outer ring is the ecological boundary that humanity must not cross in order to avoid damaging the climate, soils, oceans, and biodiversity (Boffey, 2020).

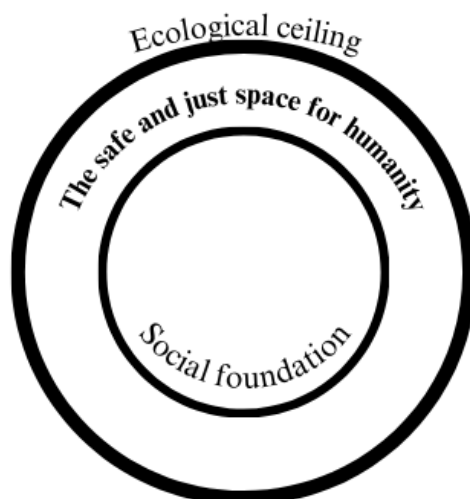


Figure 1. The Doughnut model basics, *inspired by Raworth (2012)*

The ecological ceiling comprises nine planetary boundaries: chemical pollution, climate change, ozone depletion, biodiversity loss, air pollution, ocean acidification, land conversion, nitrogen and phosphorus loading, and drinking water use. Four of these already go beyond the defined boundaries: climate change, biodiversity loss, land conversion, and nitrogen and phosphorus loading. For example, the planetary boundary for phosphorus and nitrogen applied to the land as fertilizers is 6.2 and 62 million tonnes per year. The current values are 14 and 150 million tonnes per year, respectively. The planetary boundary for the rate of species extinction is ten extinct species per 1 million species per year, with the actual figure ranging from 100 to 1,000 extinct species.

The twelve dimensions of the social foundation derive from the internationally agreed-upon minimum social standards set by governments in the 2015 Sustainable Development Goals. They include food, health, education, fresh water, energy, communications, housing, gender equality, social equality, political voice, income, work, peace, and justice. None of these 12 indicators, as of today, satisfy the basic needs of all the world's inhabitants (Raworth, 2020).

Between the social and ecological boundaries lies a doughnut-shaped space in which the needs of all people within the planet can be met - an ecologically sound and socially just space in which humanity can thrive. If humanity's goal is to get to the doughnut, the problem is that we are still far from it. Around the world, billions of people are unable to meet their basic needs, yet humanity is

collectively crossing at least four planetary boundaries and heading toward climate disruption and ecological collapse (Raworth, 2020).

The logical continuation of the economist's research was the publication of the book 'The Doughnut Economy: 7 Ways to Think Like a 21st Century Economist' (Raworth, 2017), where the author explored in detail the new economic thinking necessary for prosperity.

1. Change the goal: We should stop taking GDP growth as an indicator of progress, as we have for the past 70 years. Instead, it takes effort to thrive in balance.

2. See the bigger picture: The economy should be embedded in society and nature, not just in the circular flow of capital and production;

3. Nurture human nature: Let's shift from the portrait of the 20th century economic man (selfish, isolated and mercantile) to a new one where everyone is social, value-driven and dependent on the world. This change is not only necessary but also hopeful and inspiring.

4. Understand systems: Let's make systems thinking the starting point, the basis of economics. to understand the dynamics of today. This understanding will not only enlighten us but also empower us to make informed decisions.

5. Design to distribute: It is necessary to go beyond income redistribution and explore ways to distribute wealth, especially land, businesses, technology, and knowledge;

6. Create to regenerate: New economic thinking should trigger regenerative processes to help transition to a circular economy;

7. Do not focus on growth: Humanity does not need an economy that grows but does not prosper. It needs an economy that allows for prosperity, regardless of economic growth.

Doughnut of social and planetary boundaries as an idea has a powerful potential to become a tool for urban planning. The integrative capabilities of geographical knowledge and the analytical capacity of modern tools of applied geospatial and contextual analysis can substantiate the Doughnut globalization model.

Its application at the city level allows us to explore what it means to thrive within a Doughnut, considering location, context, culture, and global interconnections and ultimately creating a Portrait of the City. It consists of four interconnected 'lenses' each of which highlights a different aspect of what it means to be a thriving city (Table 1).

Table 1. Lenses used to create a portrait of the city, *inspired by Raworth (2020)*

	Social	Ecological
Local	What does it mean for city residents to thrive?	What does it mean for a city to thrive within its natural habitat?
Global	What does it mean for a city to respect the well-being of people around the world?	What does it mean for a city to respect the health of the entire planet?

European cities, collectively inspired by the trailblazing efforts of Amsterdam, are exploring the potential of the Doughnut economy. The experiences of cities like Copenhagen, Brussels, and Barcelona, following Amsterdam's lead, are paving the way for a sustainable future and aiming to achieve the Sustainable Development Goals.

In Brussels, the first steps in applying the Doughnut model were taken as part of the Brussels Doughnut project, which was implemented from August 2020 to May 2021.²

Work is also underway on a regional economic transition strategy for the Brussels-Capital Region, *The Changing Economy*, with the support of the Secretary of State. It aims to transform the Brussels economy into a decarbonized, regenerative, circular, social, democratic, and digital one.

The strategy aligns with the principles of the ‘doughnut economy,’ as it aims to bring economic activity back within the planetary boundaries while respecting human well-being. Specifically, it aims to redirect economic subsidies towards ‘exemplary’ actors (*Downscaling the Doughnut at 4 Levels in Brussels* | *DEAL*, n.d.).

In June 2020, the Copenhagen City Council developed a plan to adopt the Doughnut as an economic model. Copenhagen already has an ambitious climate plan, adopted in 2012, to make the capital CO₂-neutral by 2025. Emissions have significantly decreased by 40% compared to 2005, but the city is still behind schedule regarding CO₂ emissions from the heating and traffic sectors. At the same time, they are heavily dependent on the combustion of partially imported biomass at the Amager plant, which 32 local and international NGOs do not consider sustainable and have asked the city authorities to phase out its use.

The municipal climate plan also contains a built-in restriction that the CO₂ neutrality goal applies only to the capital as a geographical unit. In addition, the Copenhagen doughnut model should define targets and frameworks in other environmental and welfare areas, such as health, healthcare, community, and employment (*How Copenhagen Voted for the Doughnut* | *DEAL*, n.d.-b).

Barcelona is conducting a study to adopt the vision of the Doughnut Economy to move towards a city model consistent with a just ecological transition for both the people who live there and the planet. In this way, the city joins a vision that analyses some of the indicators that allow it to thrive without touching the planetary limits: climate change, the biodiversity crisis, air and water pollution, and, at the same time, that does not contribute to the growth of social inequality. Barcelona has announced that it uses the tools and concepts of the Doughnut Economy to guide actions to address the climate emergency and the city's ecological transition. The Barcelona City Council is collaborating on this initiative with the Barcelona + Sustainable network - a network of more than 1,000 organizations committed to environmental, social, and economic sustainability - and a team from the University of Barcelona. Barcelona is also a member of C40 Cities, a network of cities committed to leading the way in taking bold climate action (*Barcelona Embraces the Doughnut* | *DEAL*, n.d.).

Such ‘lenses’ should be provided with appropriate indicators and parameters that specify their content and create space for the diverse application of participatory approaches and broad stakeholder engagement.

To create a City Portrait, it is also necessary to localize the seven principles of the Doughnut Economy, and for the first time, such an interpretation was made for Amsterdam (Raworth, 2020):

1. Embrace the 21st-century goal. It is crucial to align your organization's purpose, networks, governance, ownership, and finance with this goal. This comprehensive alignment is key to meeting the needs of all people within the means of the living planet. Expect the work to be challenging, innovative, and transformative.
2. See the big picture. Recognize the potential roles of the household, the commons, the market, and the state - and their many synergies - in transforming economies. Ensure that finance serves the work rather than drives it.

3. Nurture human nature. Promote diversity, participation, collaboration, and reciprocity. Strengthen community networks and work with a spirit of high trust. Care for the team's well-being.
4. Think in systems. Experiment, learn, adapt, evolve, and aim for continuous improvement. Be alert to dynamic effects, feedback loops, and tipping points.
5. Be distributive. It's essential to work in the spirit of open design and share the value created with all who co-create it. This approach fosters collaboration and ensures that all stakeholders benefit from the value created. Be aware of power and seek to redistribute it to improve equity amongst stakeholders.
6. Be regenerative. Aim to work with and within the cycles of the living world. Be a sharer, repairer, regenerator, and steward. Reduce travel, minimize flights, and be climate and energy-smart.
7. Aim to thrive rather than to grow. Do not let growth become a goal in itself. Know when to let the work spread out via others rather than scale up in size.

Current restrictions due to the war hinder the possibility of such testing in Ukrainian practice. However, such circumstances provide time to study the experience of implementing changes in cities that have already developed ways to maintain the momentum of Doughnut's glocalization. In particular, the list identified in the study of the experience of glocalizing the Doughnut model based on the example of Amsterdam seems to be useful for empirical and analytical research (Table 2).

Table 2. Eight ways to turn a City Portrait into an effective tool, *inspired by Raworth (2020)*

Way	Explanation of action
Mirror	Explore the city from a holistic perspective and identify synergies for action
Mission	Develop a clear vision of what a thriving city is
Mobilize	Bring together city changers and a network of urban actors through a common framework to bring about transformation
Map	Identify existing initiatives, programs, and strategies in this direction
Mindset	Embrace the values, ways of working and new narratives that underpin the larger changes needed
Momentum	Create a circular process that guides cycles of transformative policy and action
Monitor	Evaluate progress against relevant metrics that enrich the city's portrait
Mmm!	Make it irresistible, be creative. Share results and success stories

On the other hand, economist Branko Milanovych (one of the main sceptics of the theory) criticises the theory. He argues (Milanovic, 2018) that Raworth's model ignores the fact that without GDP growth, we will not eradicate global poverty. Similarly, current sustainable innovations are marginal and their progress is minimal compared to "what is to come". Milanovych also believes that in the book, globalized capitalism is entering a "phase of more cooperation and softness", but in reality citizens are becoming more commercially motivated, leading to a self-centered society focused on money and success. In the case of models of global development, the one advocated by the

"Doughnut theory" presents well-defined problems and their possible solutions, but this does not mean that they will always be relevant or universal.

However, coming back to Amsterdam's case, its greenhouse gas emissions in 2020 constituted (*Roadmap Amsterdam Climate Neutral 2050. 2020*):

Built Environment 25%;

Mobility 18% ;

Electricity 39%;

Harbour & Industry 18%.

The expectation was that the emissions level in 2030 would be 48% lower than in 1990 - practically in line with the national reduction target of 49% by 2030.

In 2022, Amsterdam launched its Insulation Offensive, focused on countering energy poverty caused by increased energy prices (*Climate report 2023*). Energy-saving measures have, among other things, helped 12,000 households based on the 15% GasReduction (GasTerug) Action Network set for this purpose. The number of solar panels in the city rose by 24% in 2022, followed by the Congestion Taskforce launch and development to tackle congestion in the electricity grid. The AEB waste-to-energy plant also received a subsidy for capturing and storing large amounts of CO₂. The 'Job with a Future' recruitment campaign in cooperation with training groups helped to decrease CO₂ emissions by approximately 6% in 2022 compared to a year earlier.

Emissions got lower than the 1990 baseline (3,810 kt) for the first time. The most significant reduction marked the Electricity transition path due to the Netherlands' intensified sustainability of electricity production. There was some reduction in emissions within the other transition paths. Since 2018, CO₂ emissions by municipal organizations have fallen by almost 90% to 5.2 kt. The latter happened thanks to green electricity, green gas (since 1 January 2022), and HVO100 (transitional fuel for fleet vehicles). The new forecast for CO₂ reduction in 2025 and 2030 According to CE Delft's updated CO₂ calculation from January 2023, emissions are set to fall further in 2025 to 3,590 kt (6% lower than in 1990). That would mean the 2025 target (a 5% carbon reduction) is feasible. According to CE Delft, if Amsterdam implements all the current policy plans promptly, emissions could fall to 1,980 kt by 2030, a 48% reduction compared to 1990. In a scenario of minimal policy effects, the reduction is 15%. If the maximum effect works, the reduction could be as high as 56%. Accordingly, the target of a 60% reduction will not be met based on the current proposed measures.

New forecasts by transition path. Implementing the planned policies by 2030 will result in the most significant relative fall in CO₂ emissions within the Mobility transition path. The largest absolute fall will occur in the Electricity transition path, with an anticipated CO₂ reduction of 720 kt compared to 2022. Emissions will also likely fall sharply in the Harbour and Industry transition path. According to the forecast, the Built Environment transition path will see the slightest reduction in carbon emissions.

Keeping in mind that Ukraine suffers crucial damages because of war and, for example, climate impacts are huge and dramatic (*Climate Damage Caused by Russian War in Ukraine in 24 Months, 2024*), the above considerations could reason further studies of the feasibility of Doughnut model application to platform rebuilding/recovery strategies.

Conclusions

The study of the essence of the Doughnut should be deepened and glocalized, enriched with geographical interpretations, in particular, using the potential of integrative geographical approaches

when studying a place (city), and building an extensive list of indicators and parameters, which is a focus for the future development of the topic. In today's world, it is difficult to determine the level of development of a country or city, which is not determined by an economic indicator, for example, such as GDP. Doughnut concept suggests moving away from such a system and including the well-being of people and the state of the environment as the main factors of growth. The task for the future is the selection of indicators and parameters. Despite the fact that the concept itself has been criticized by scientists, who still consider economic indicators as key, it has already become the basis of the transformation processes of many cities.

Conflict of interest

The authors state no conflict of interest.

References

- Barcelona embraces the Doughnut | DEAL. (n.d.). DEAL. <https://doughnuteconomics.org/news/barcelona-embraces-the-doughnut>
- Boffey, D. (2020, April 8). Amsterdam to embrace “doughnut” model to mend post-coronavirus economy. The Guardian. <https://www.theguardian.com/world/2020/apr/08/amsterdam-doughnut-model-mend-post-coronavirus-economy>
- Climate damage caused by russian war in Ukraine in 24 months*. (2024, June 13). Ecoaction. <https://en.ecoaction.org.ua/climate-damage-by-russia-24-months.html>
- Climate report 2023. City of Amsterdam. (2023). https://assets.amsterdam.nl/publish/pages/943415/climate_report_2023.pdf
- Cowie, R. H., Bouchet, P., & Fontaine, B. (2022). The Sixth Mass Extinction: fact, fiction or speculation? Biological Reviews/Biological Reviews of the Cambridge Philosophical Society, 97(2), 640–663. <https://doi.org/10.1111/brv.12816>
- Dirzo, R., Ceballos, G., & Ehrlich, P. R. (2022). Circling the drain: the extinction crisis and the future of humanity. Philosophical Transactions - Royal Society. Biological Sciences, 377(1857). <https://doi.org/10.1098/rstb.2021.0378>
- Doughnut | Kate Raworth. (2020, September 30). Kate Raworth | Exploring Doughnut Economics. <https://www.kateraworth.com/doughnut/>
- Downscaling the Donut at 4 levels in Brussels* | DEAL. (n.d.). DEAL. <https://doughnuteconomics.org/stories/downscaling-the-donut-at-4-levels-in-brussels>
- How Copenhagen voted for the Doughnut* | DEAL. (n.d.-b). DEAL. <https://doughnuteconomics.org/stories/how-copenhagen-voted-for-the-doughnut>
- Maruniak E., Rudenko L., Lisovskyi S., Dronova O., Mozghovyi A. (2021). Ukrainian Small Cities in the Perspective of Sustainable Spatial Planning / In: The Routledge handbook of small towns/edited by J. Bański. NY: Routledge. P. 330–346. ISBN 9780367555900.
- Milanovic, B. (2018, June 6). *Kate Raworth's economics of miracles*. <http://glineq.blogspot.com/2018/06/kate-raworths-economics-of-miracles.html>
- Raworth, K. (2017) *Doughnut Economics: seven ways to think like a 21st century economist*, London: Penguin Random House
- Raworth, K. (2020, April 10). Introducing the Amsterdam City Doughnut | Kate Raworth. Kate Raworth | Exploring Doughnut Economics. <https://www.kateraworth.com/2020/04/08/amsterdam-city-doughnut/>

- Raworth, K. (2012). *A Safe and Just Space for Humanity: Can we live within the doughnut?* - Oxfam Policy & Practice. Oxfam Policy & Practice. <https://policy-practice.oxfam.org/resources/a-safe-and-just-space-for-humanity-can-we-live-within-the-doughnut-210490/>
- Roadmap Amsterdam Climate Neutral 2050. (2020). https://assets.amsterdam.nl/publish/pages/943415/roadmap_amsterdam_climate_neutral_2050_2.pdf
- Rockström, J., Steffen, W., Noone, K. et al. *A safe operating space for humanity*. Nature 461, 472–475 (2009). <https://doi.org/10.1038/461472a>
- Waters, C.N.; et al. (8 January 2016). "The Anthropocene is functionally and stratigraphically distinct from the Holocene". Science. 351 (6269): aad2622. doi:10.1126/science.aad2622