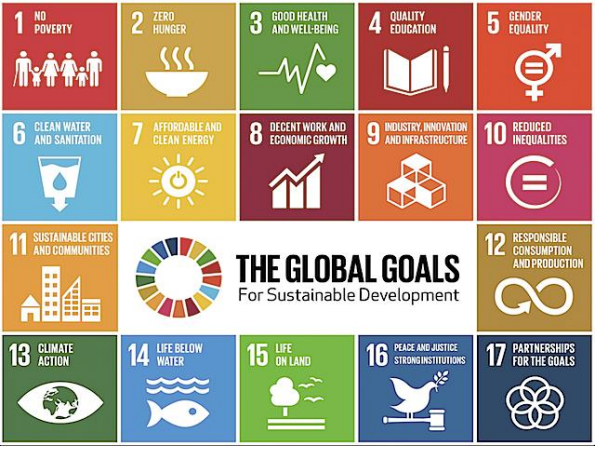






Mewujudkan Masa Depan Restoratif dan Regeneratif dengan Ekonomi Sirkular

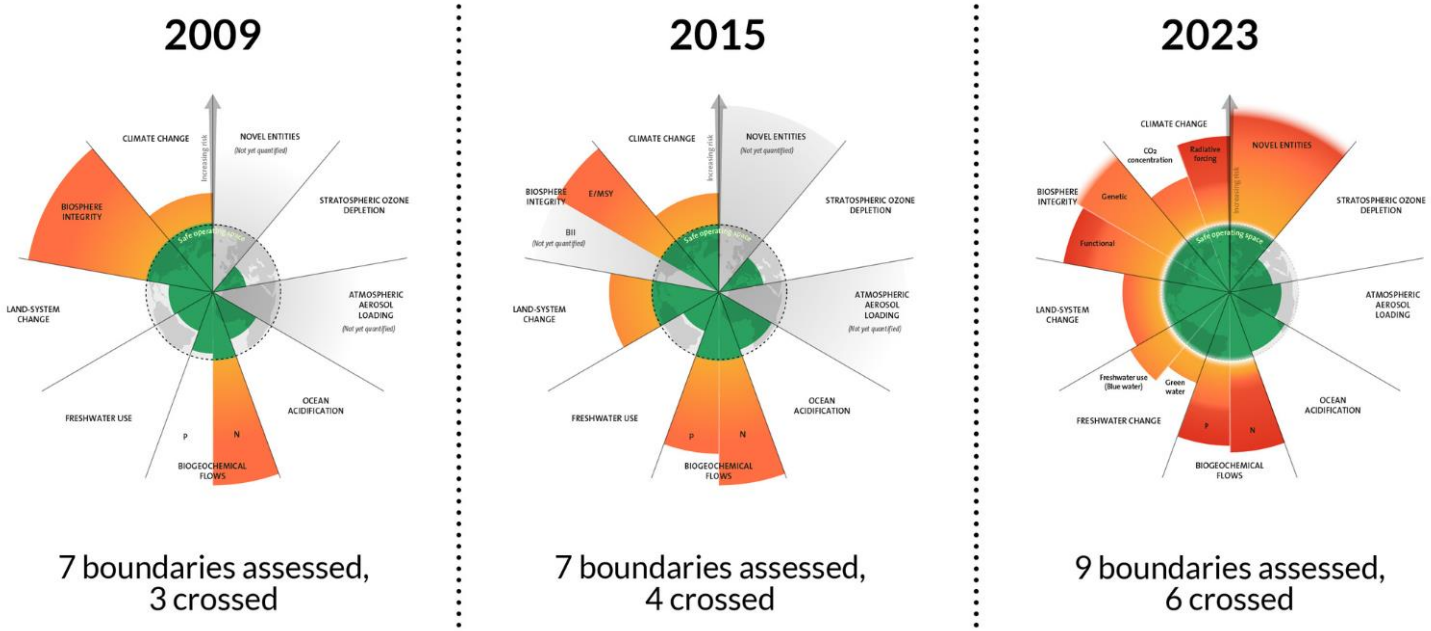
J a l a l

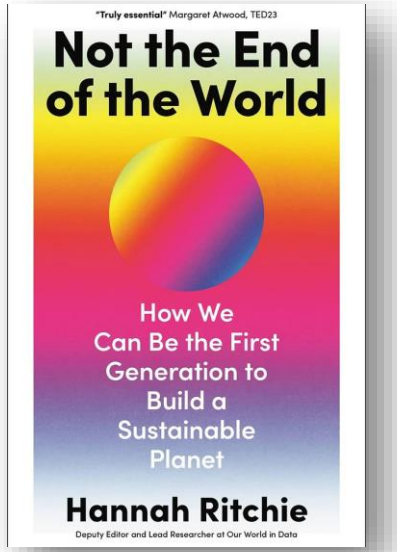
Disampaikan sebagai pemantik Avirama Talks 4

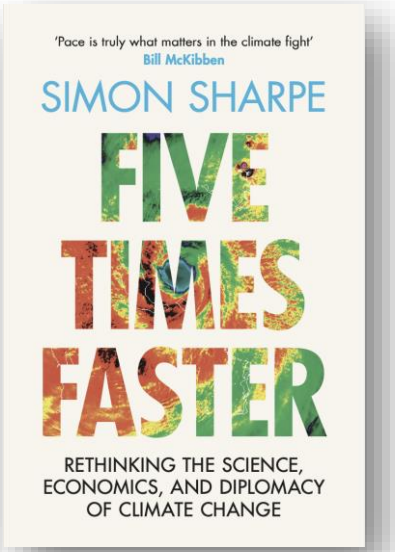
“Circular Economy – A Sustainable Future”

Bandung, 25 Oktober 2024

Dunia dalam Ancaman Eksistensial, Namun Kita Masih Mungkin Selamat (SRC, 2023; Ritchie, 2024; Sharpe, 2023)

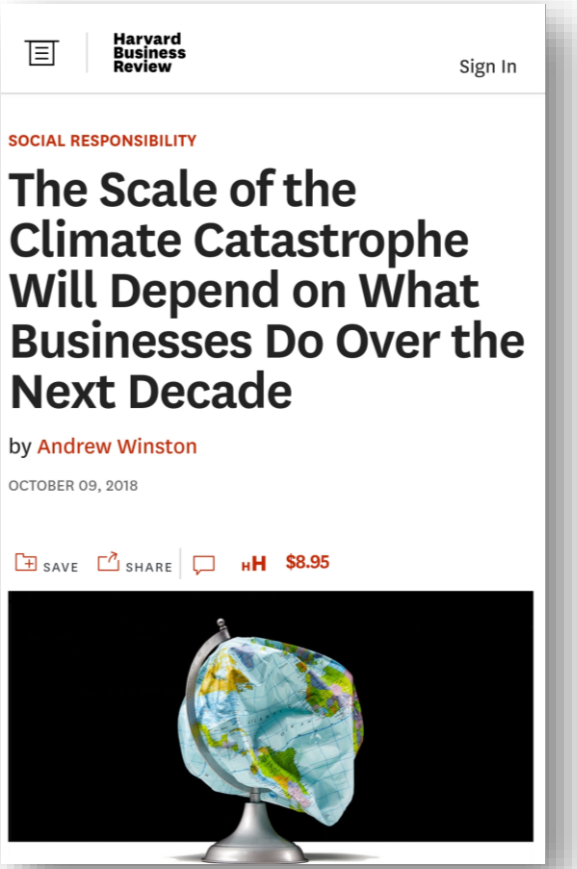






Tautan: https://www.stockholmresilience.org/research/planetary-boundaries.html; https://www.nottheendoftheworld.co.uk/; https://fivetimesfaster.org/

Memerjuangkan Keberlanjutan Bumi: Peluang Bisnis USD12 Triliun per Tahun (Winston, 2018; Elkington, 2017)





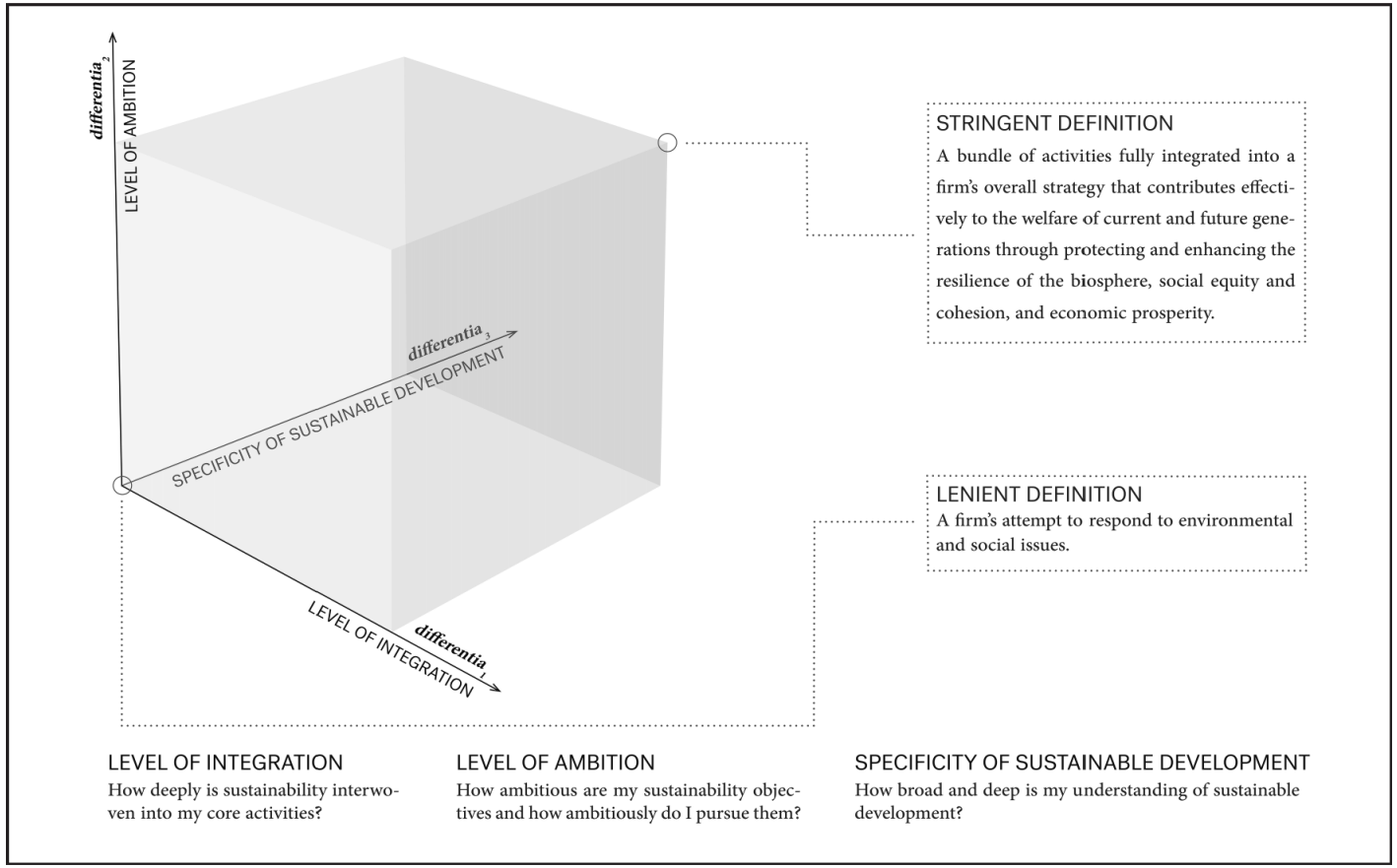


Tautan: https://hbr.org/2018/10/the-scale-of-the-climate-catastrophe-will-depend-on-what-businesses-do-over-the-next-decade; https://hbr.org/2017/05/saving-the-planet-from-ecological-disaster-is-a-12-trillion-opportunity

Pengertian Keberlanjutan Perusahaan
(Meuer, dkk., 2020; Upward dan Jones, 2016)

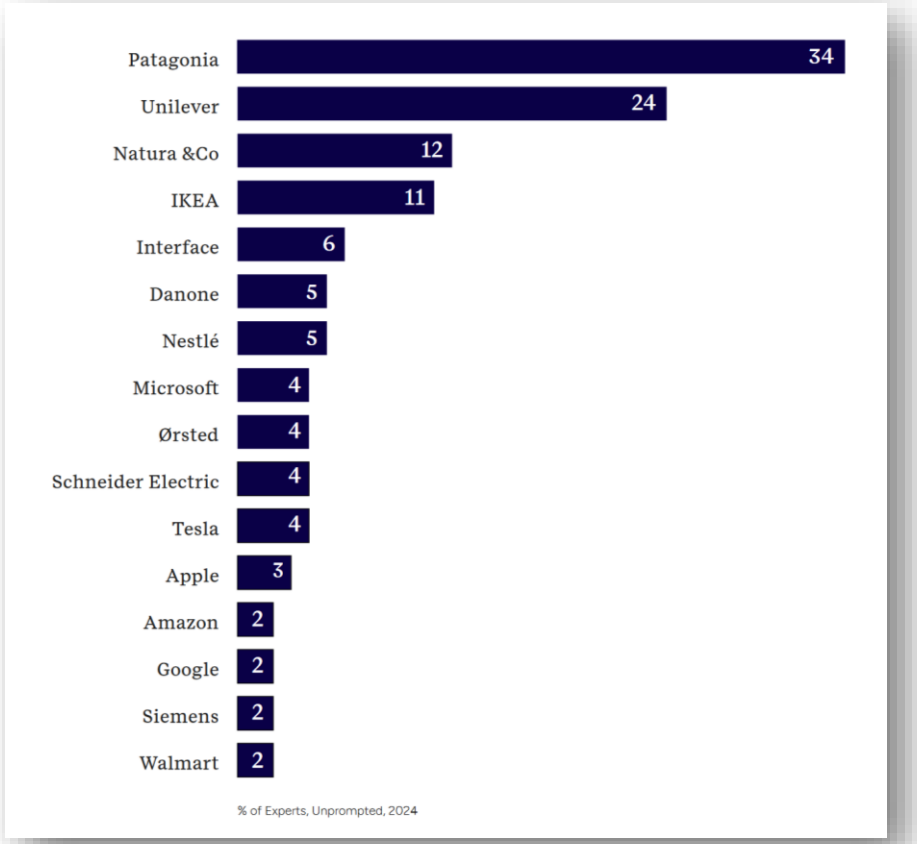
*"A sustainable firm is an organization that creates positive environmental, social, and economic value throughout its value network, thereby sustaining the possibility that human and other life can flourish on this planet forever. Such a firm would not only **do no harm**, it would also **create social benefit** while **regenerating the environment** ("doing good") to be **financially viable** ("doing well")."*

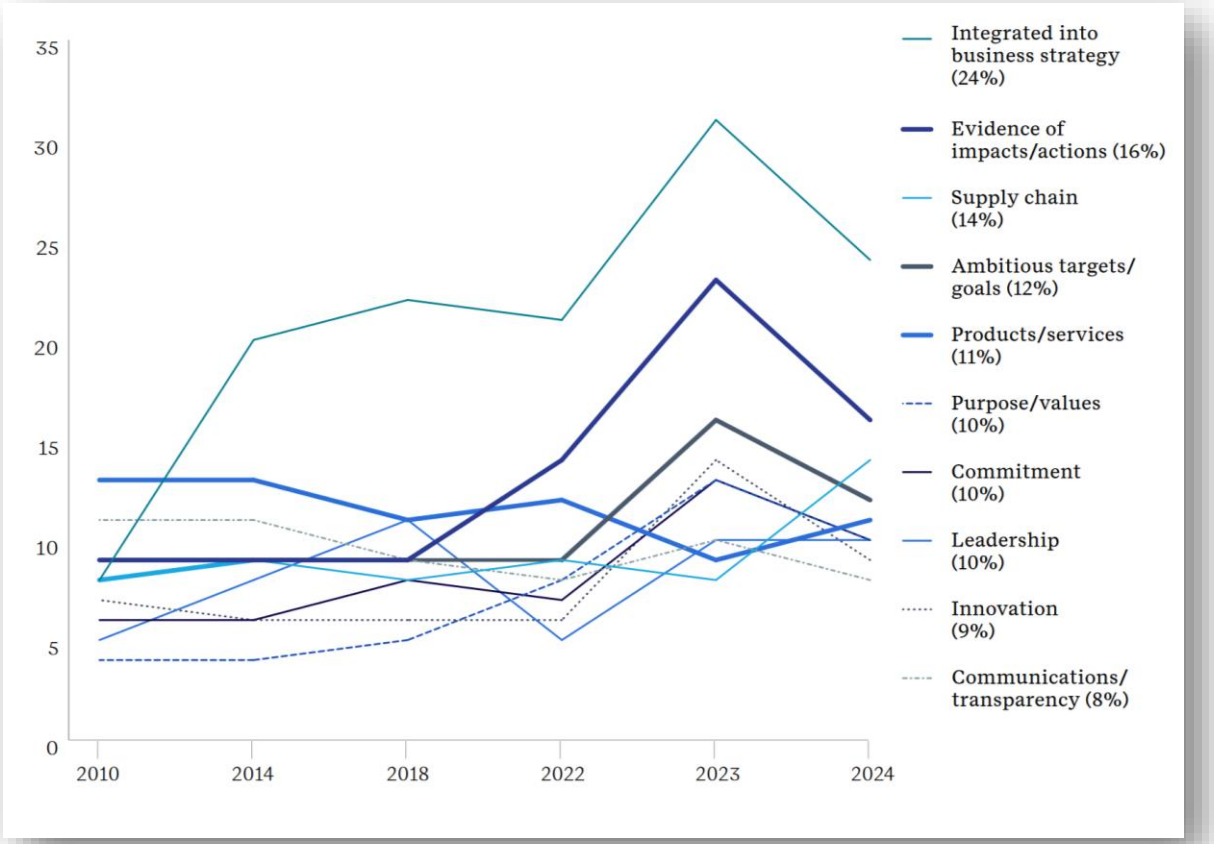
Upward dan Jones, 2016



Tautan: https://journals.sagepub.com/doi/10.1177/1086026615592933;
https://journals.sagepub.com/doi/abs/10.1177/1086026619850180?journalCode=oaec – keduanya berbayar.

Pemimpin Keberlanjutan di antara Perusahaan
(GlobeScan dan ERMSI, 2024)



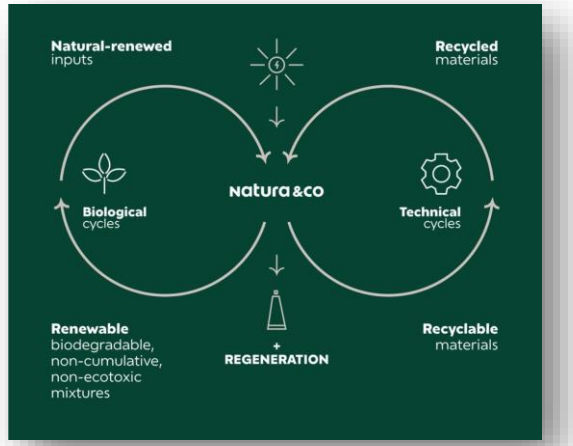


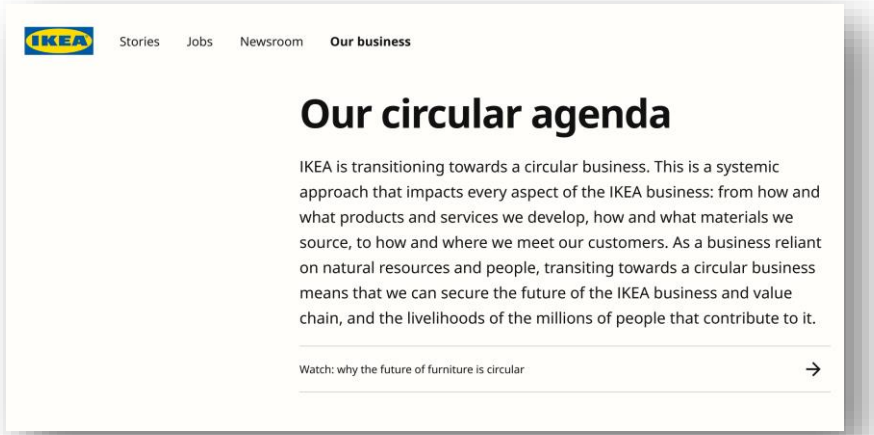
Tautan: https://globescan.com/2024/06/26/sustainability-leaders-2024/

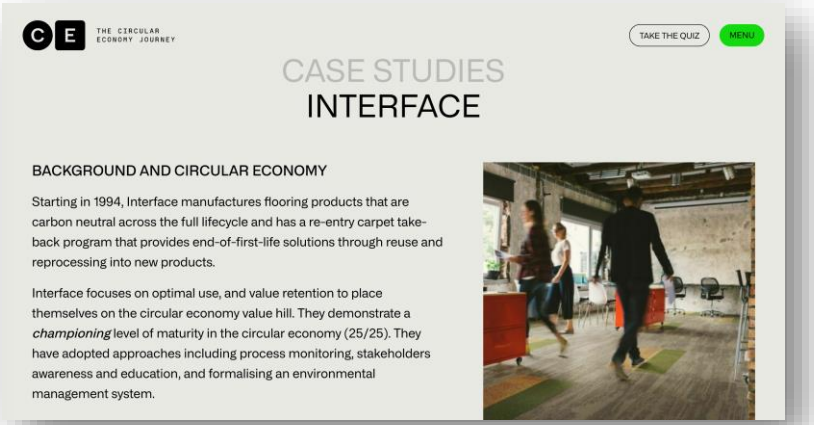
Sirkularitas: Salah Satu Penanda Penting Kepemimpinan Keberlanjutan Perusahaan







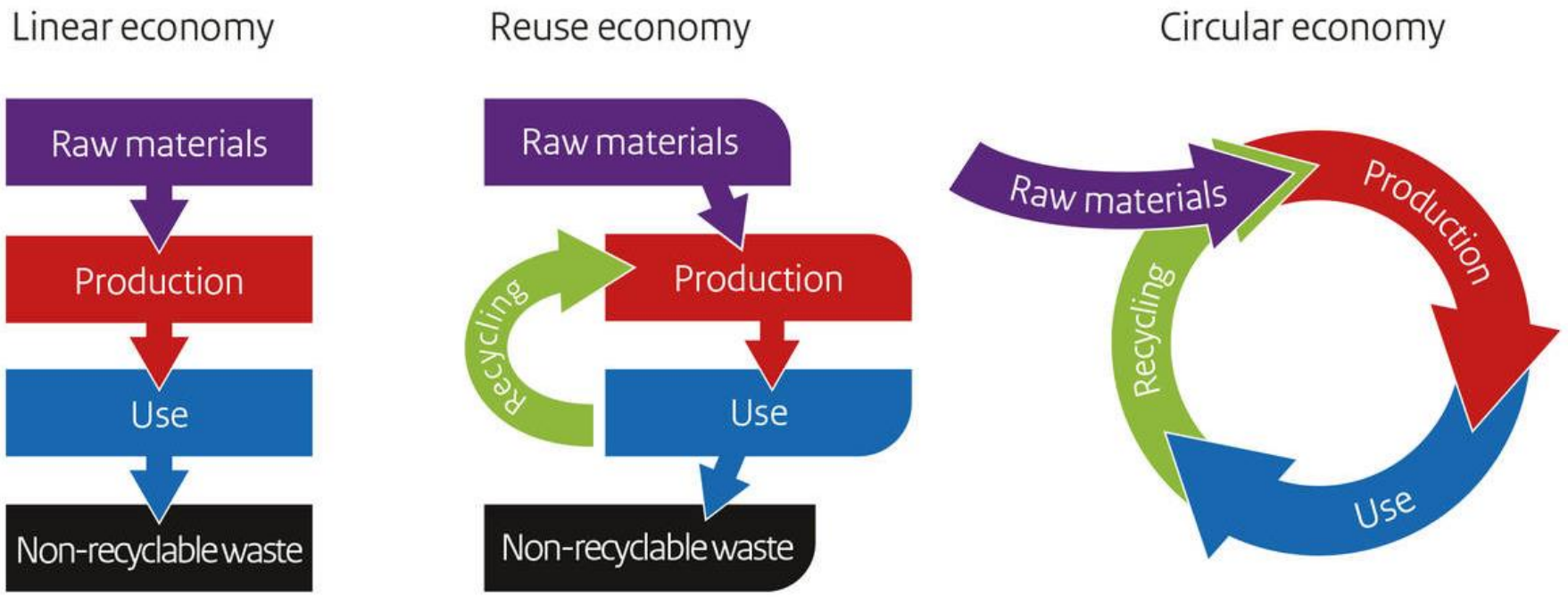




Lima perusahaan yang dinyatakan sebagai perusahaan paling berkelanjutan di tahun 2024 adalah pemimpin dalam model bisnis sirkular.

Ekonomi: Dari Linear Menuju Sirkular

(Government.nl, 2017; Ozdenkci dan Sarwar, 2017)



Ide Ekonomi Sirkular secara diametrikal bertentangan dengan Ekonomi Linear yang menghasilkan limbah yang tak dapat didaur ulang. Ekonomi Sirkular merancang sejak awal ketiadaan limbah. Di antara keduanya terdapat Ekonomi Pemanfaatan Ulang yang, karena tak dirancang sejak awal, masih menghasilkan limbah, walau jumlahnya lebih kecil dibandingkan Ekonomi Linear.

Definisi Ekonomi Sirkular

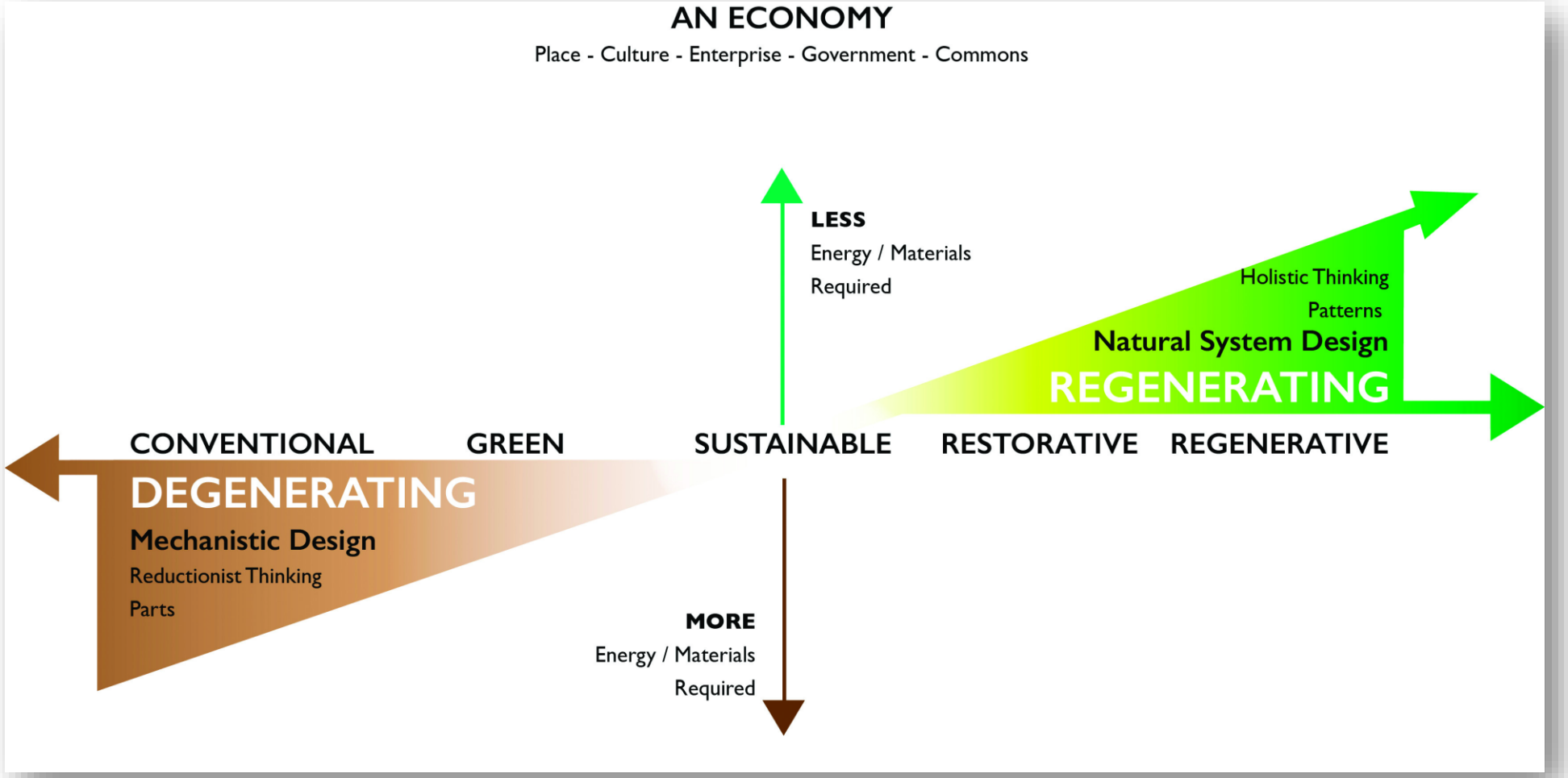
A circular economy is an industrial system that is restorative or regenerative by intention and design. It replaces the end-of-life concept with **restoration**, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse and return to the biosphere, and aims for the elimination of waste through the superior design of materials, products, systems and business models.

https://reports.weforum.org/toward-the-circular-economy-accelerating-the-scale-up-across-global-supply-chains/from-linear-to-circular-accelerating-a-proven-concept/#view/fn-11

"A circular economy is based on the principles of designing out waste and pollution, keeping products and materials in use, and **regenerating** natural systems."

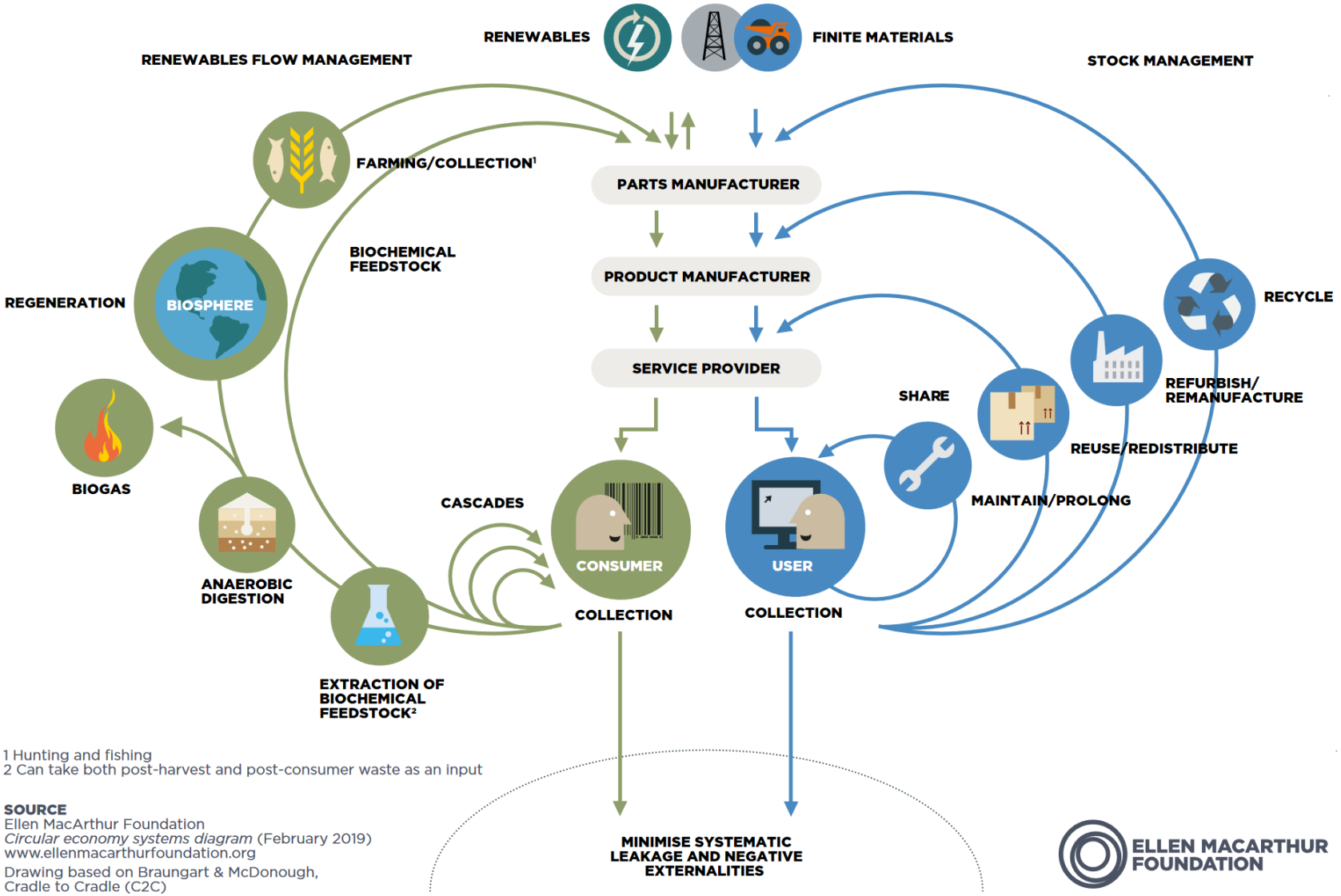
https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy

Trajektori Ekonomi
(Reed, 2007; Fullerton 2015)



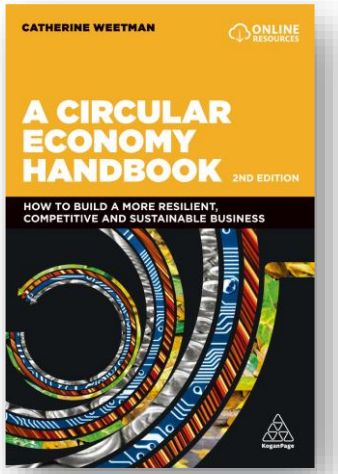
Tautan: https://capitalinstitute.org/regenerative-capitalism/

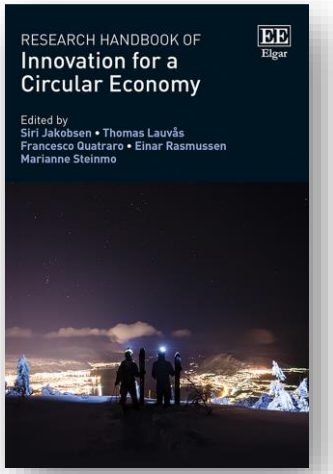
Bagan Ekonomi Sirkular untuk Material Biologis dan Teknis

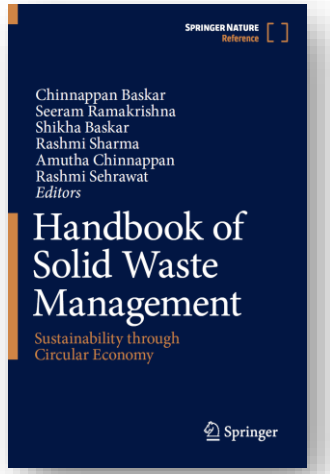


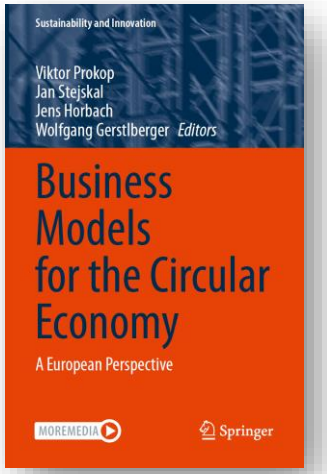
Tautan: https://www.ellenmacarthurfoundation.org/circular-economy-diagram

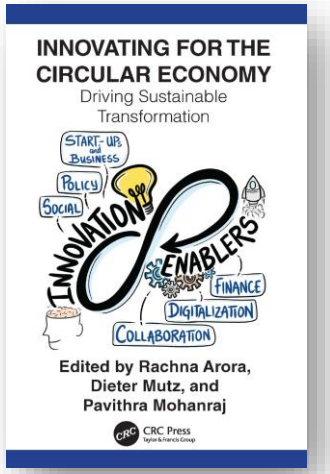
Pustaka Mutakhir tentang Ekonomi Sirkular 2021-2023

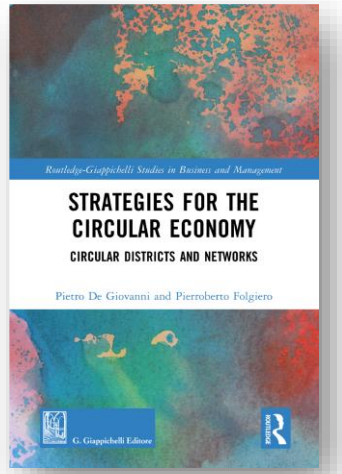


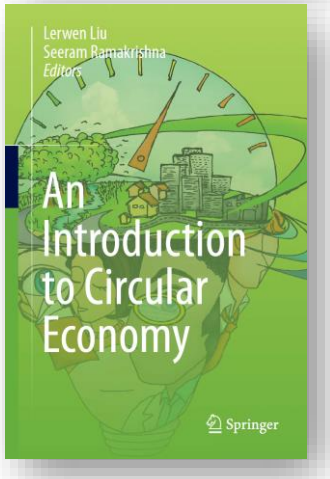


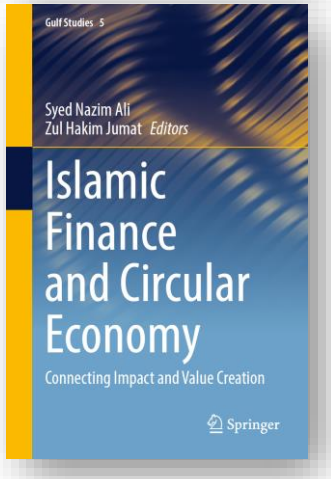


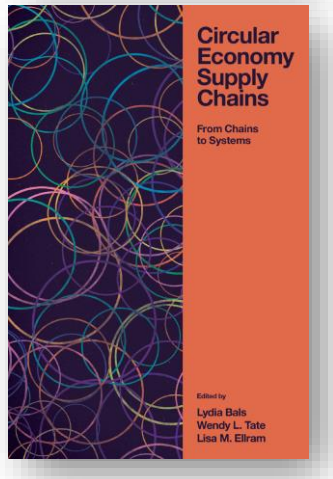


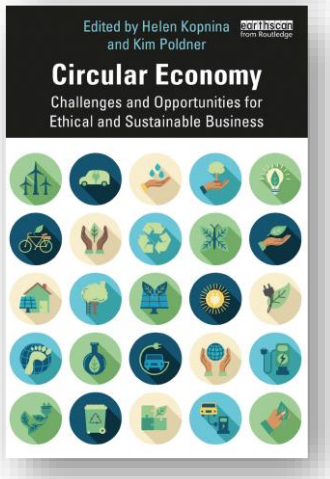


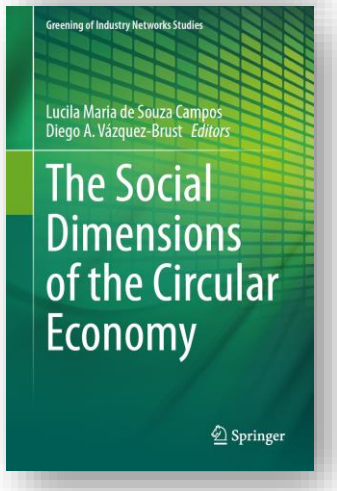


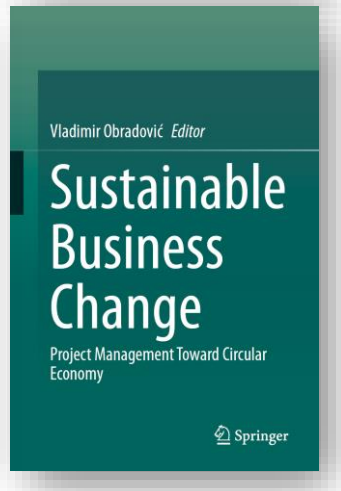






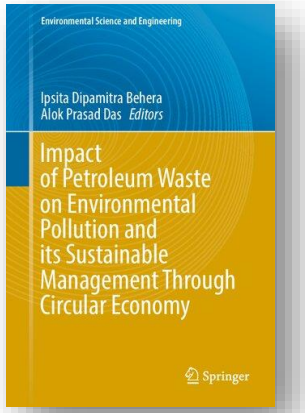


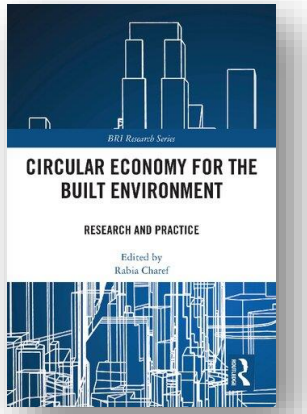


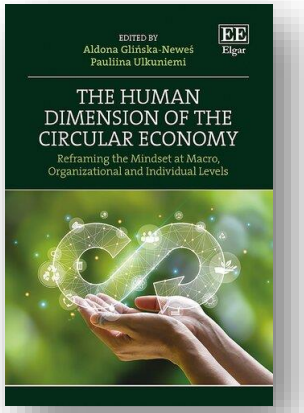


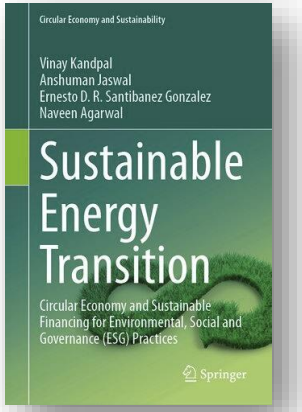
Ekonomi Sirkular di Tahun 2024: Pustaka dan Standar

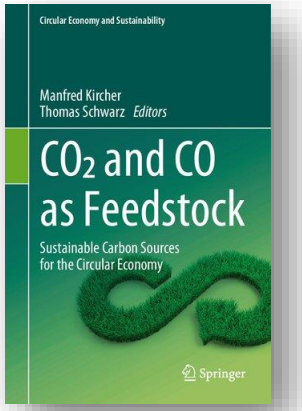
(Behera dan Das [eds.]; Charef [ed.]; Glinska-Newes dan Ulkuniemi [eds.]; ISO; Kandpal, dkk.; Kircher dan Schwarz [eds.]; Nhamo, dkk. [eds.]; Ometto, dkk. [eds.]; Ramakrishna dan Subramaniam [eds.]; Singh, dkk. [eds.]; Stefanakis, dkk. [eds.])

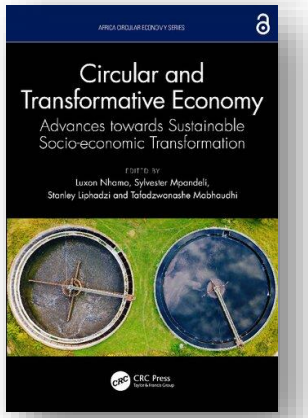


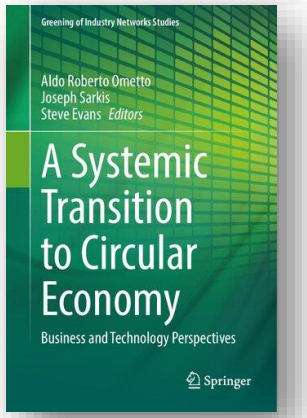


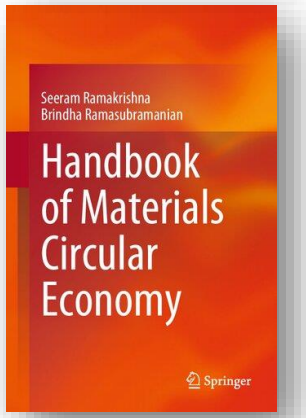


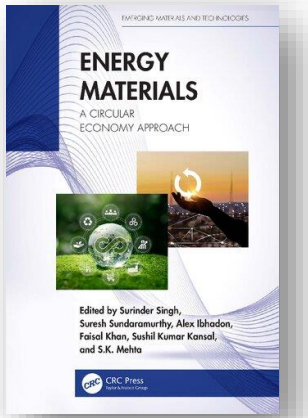


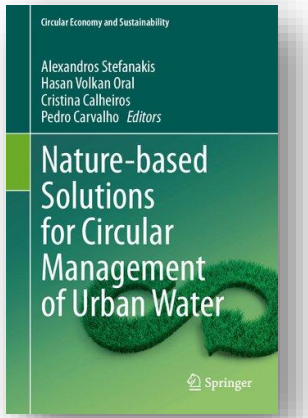


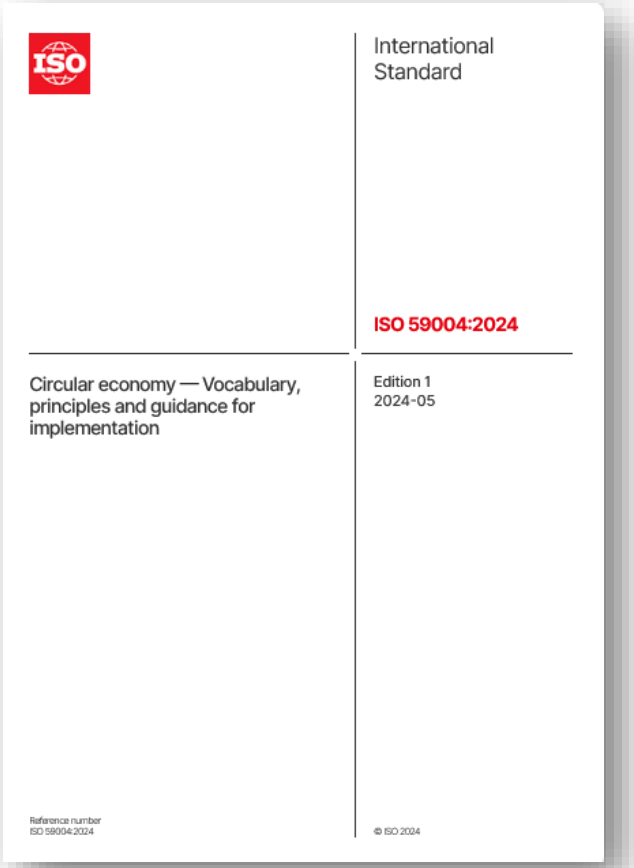




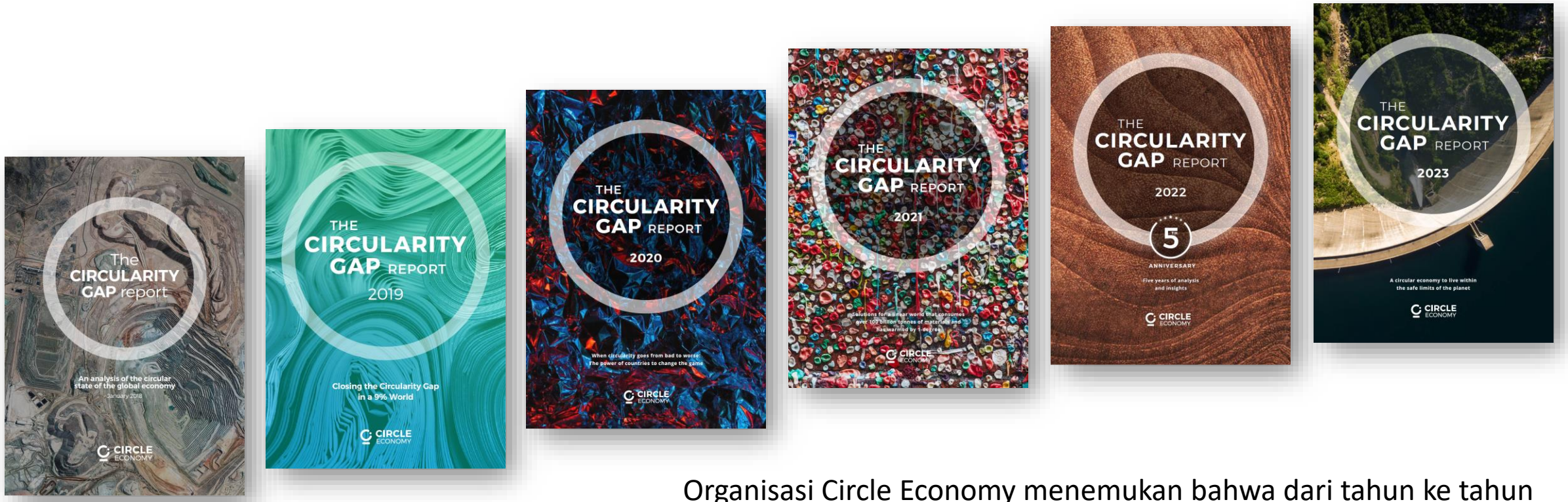






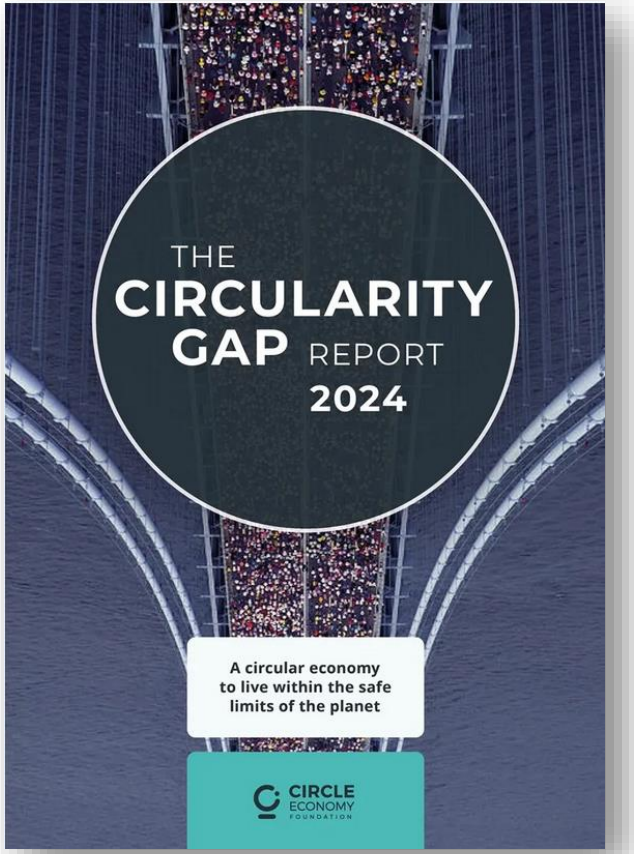


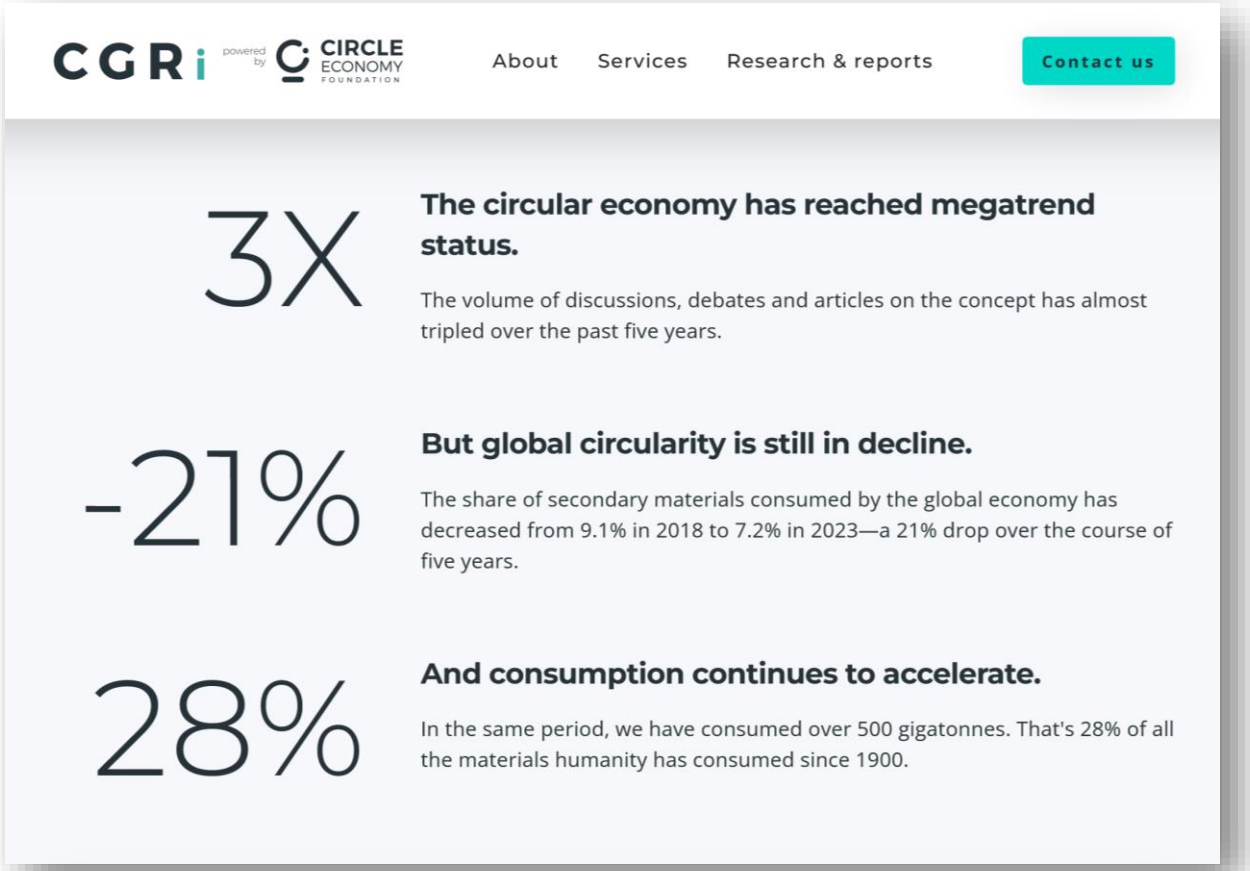
Laporan Kesenjangan Sirkularitas 2018-2023



Organisasi Circle Economy menemukan bahwa dari tahun ke tahun sirkularitas terus menurun, yaitu dari 9,1 di tahun 2018 menjadi 7,2% di tahun 2023. Tautan: https://www.circle-economy.com/

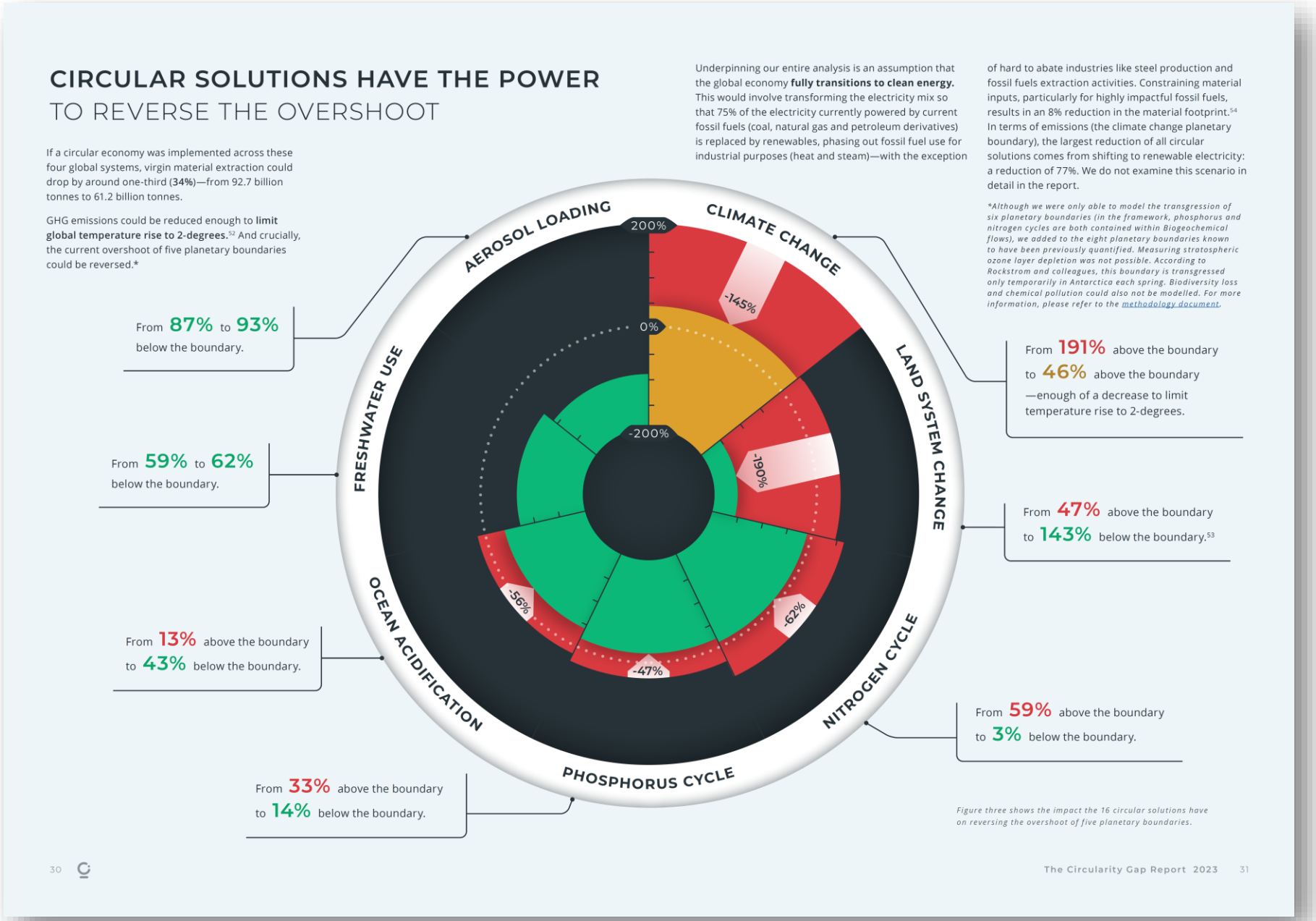
Laporan Kesenjangan Sirkularitas 2024
(Circle Economy, 2024)





Tautan: https://www.circularity-gap.world/2024#download

Ekonomi Sirkular dan Batas-batas Planetari (Circle Economy, 2023)



CIRCULAR SOLUTIONS HAVE THE POWER TO REVERSE THE OVERSHOOT

If a circular economy was implemented across these four global systems, virgin material extraction could drop by around one-third (**34%**)—from 92.7 billion tonnes to 61.2 billion tonnes.

GHG emissions could be reduced enough to **limit global temperature rise to 2-degrees.**[52] And crucially, the current overshoot of five planetary boundaries could be reversed.*

Underpinning our entire analysis is an assumption that the global economy **fully transitions to clean energy.** This would involve transforming the electricity mix so that 75% of the electricity currently powered by current fossil fuels (coal, natural gas and petroleum derivatives) is replaced by renewables, phasing out fossil fuel use for industrial purposes (heat and steam)—with the exception of hard to abate industries like steel production and fossil fuels extraction activities. Constraining material inputs, particularly for highly impactful fossil fuels, results in an 8% reduction in the material footprint.[54] In terms of emissions (the climate change planetary boundary), the largest reduction of all circular solutions comes from shifting to renewable electricity: a reduction of 77%. We do not examine this scenario in detail in the report.

**Although we were only able to model the transgression of six planetary boundaries (in the framework, phosphorus and nitrogen cycles are both contained within Biogeochemical flows), we added to the eight planetary boundaries known to have been previously quantified. Measuring stratospheric ozone layer depletion was not possible. According to Rockstrom and colleagues, this boundary is transgressed only temporarily in Antarctica each spring. Biodiversity loss and chemical pollution could also not be modelled. For more information, please refer to the methodology document.*

AEROSOL LOADING
From **87%** to **93%** below the boundary.

CLIMATE CHANGE
From **191%** above the boundary to **46%** above the boundary —enough of a decrease to limit temperature rise to 2-degrees.

FRESHWATER USE
From **59%** to **62%** below the boundary.

LAND SYSTEM CHANGE
From **47%** above the boundary to **143%** below the boundary.[53]

OCEAN ACIDIFICATION
From **13%** above the boundary to **43%** below the boundary.

NITROGEN CYCLE
From **59%** above the boundary to **3%** below the boundary.

PHOSPHORUS CYCLE
From **33%** above the boundary to **14%** below the boundary.

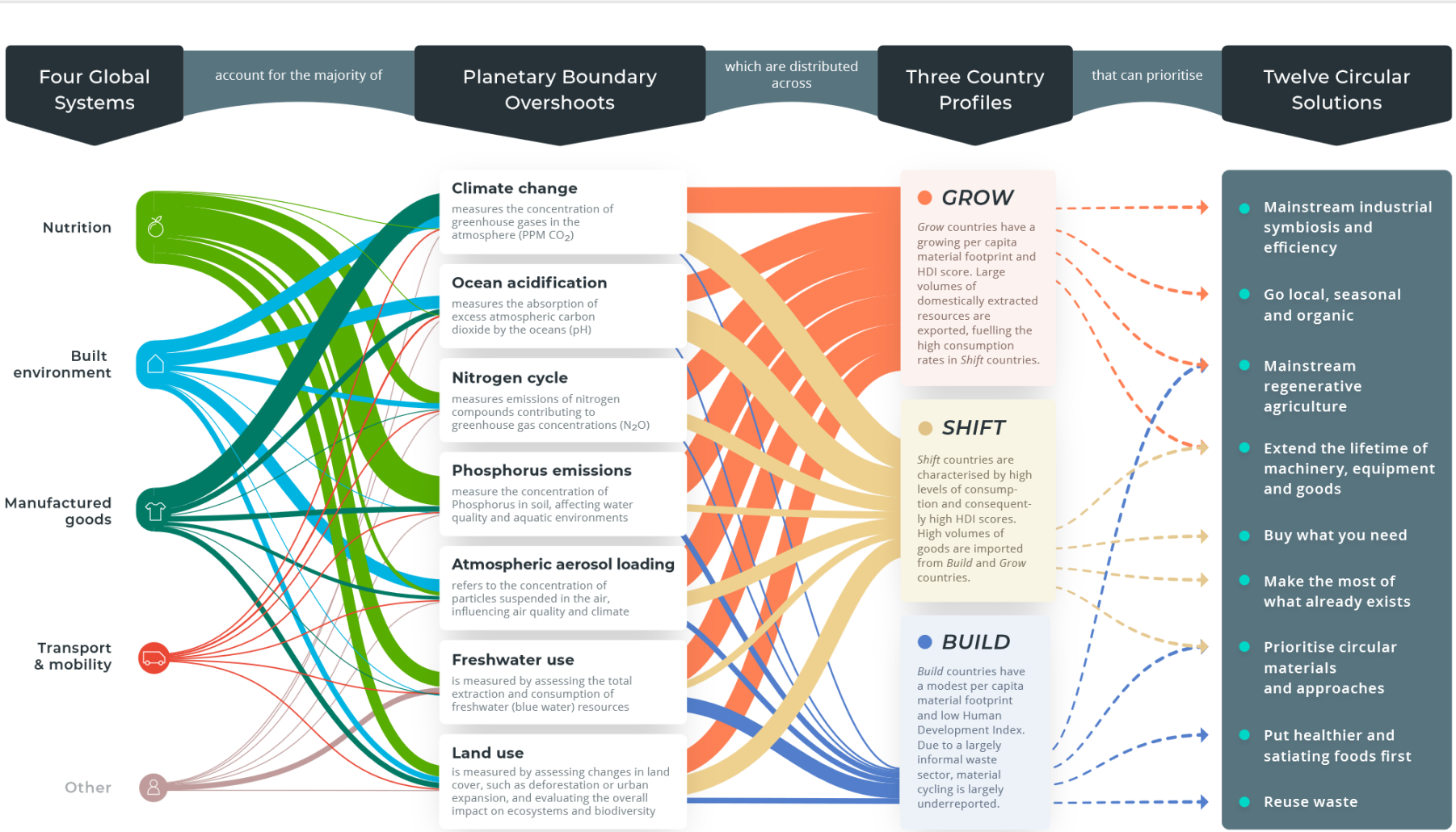
200%
0%
-200%
-145%
-190%
-62%
-47%
-56%

Figure three shows the impact the 16 circular solutions have on reversing the overshoot of five planetary boundaries.

30

The Circularity Gap Report 2023 31

Tautan: https://www.circularity-gap.world/2023



Dari Teori menuju Tindakan Sirkularitas (Circle Economy, 2024)

Tautan: https://www.circularity-gap.world/2024#download

Tantangan Menegakkan Ekonomi Sirkular

(Ritzen dan Sandstrom, 2017; Droege, Raggi, Ramos, 2021)

Financial	Measuring financial benefits of circular economy
	Financial profitability
Structural	Missing exchange of information
	Unclear responsibility distribution
Operational	Infrastructure/ Supply chain management
Attitudinal	Perception of sustainability
	Risk aversion
Technological	Product design
	Integration into production processes

Factors Influencing Implementation	Challenges	Exemplary Arguments
Technical	• No adequate CE assessment approach • Complex CE assessment process	"CE tools are not applied in a systematic way (. . .) due to their complexity, the time required to implement them" [15] (p. 554); "CE strategies demand socio-institutional changes (. . .), increasing the complexity of the evaluation" [9] (p. 460)
Financial	• Costs for introducing and executing CE assessment	"New systems require significant managerial investments in measurement design and staff training for information collection" [78] (p. 92); "High upfront investment costs" [79] (p. 29)
Structural	• Voluntary nature of CE assessment • Missing stakeholder engagement for CE assessment • Missing leadership commitment to CE assessment	"Absence of mandatory requirements" [56] (p. 91); "Leadership traits contributed substantially in implementing successfully" [80] (p. 1); "Need for stakeholders' engagement" [15] (p. 554)
Cultural	• Bureaucratic/political mindset • Lack of CE awareness	"Public organization (. . .) aversion to change in general" [39] (p. 24); "Subject to political wills and power struggles" [39] (p. 6); "Influenced more by the political climate" [64] (p. 536); "CE is associated with poverty" [43] (p. 73); "lack of awareness" [15] (p. 554)

Tautan: https://www.sciencedirect.com/science/article/pii/S221282711730149X; https://onlinelibrary.wiley.com/doi/full/10.1002/csr.2140



Environmental Science and Policy 109 (2020) 64-72

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journal homepage: www.elsevier.com/locate/envsci

From elite folk science to the policy legend of the circular economy

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ARTICLE INFO

Keywords:
Circular economy
Decoupling
Life-support system
Policy legend
Uncomfortable knowledge
Post-Normal science

ABSTRACT

This paper explores the implications of the widespread success of the term circular economy in the institutional and public debate. The concept of circular economy in itself implies a logical contradiction: on the one hand, the concept acknowledges the dependence of the economy on biophysical flows; on the other hand, the proposed solution—a business model guaranteeing a full decoupling of the economy from natural resources—seemingly ignores that biophysical processes are subject to thermodynamic constraints. A biophysical view of the sustainability predicament—the flows exchanged between the technosphere and the biosphere — is depicted to show that the idea of a full decoupling is simply due to ignorance of the knowledge generated in (inter)disciplinary scientific fields other than the dominant economic one. The success of economics as an 'elite folk science' is explained by the need of the establishment to ignore uncomfortable knowledge that would destabilize existing institutions. The success of the term circular economy can be seen as an example of socially constructed ignorance in which folk tales are used to depoliticize the sustainability debate and to colonize the future through the endorsement of implausible socio-technical imaginaries. A strategy that can lead to an irresponsible management of expectation: implausible master narratives are impossible to govern. Rather than continuing to impose technocratic plans, as if we knew the optimal thing to do, Post-Normal Science suggests that it is much more effective and responsible to adopt a flexible management approach, exploring the ability of self-organization of social-ecological systems.



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DOI: 10.1111/jiec.13187

RESEARCH AND ANALYSIS

JOURNAL OF INDUSTRIAL ECOLOGY WILEY

Critiques of the circular economy

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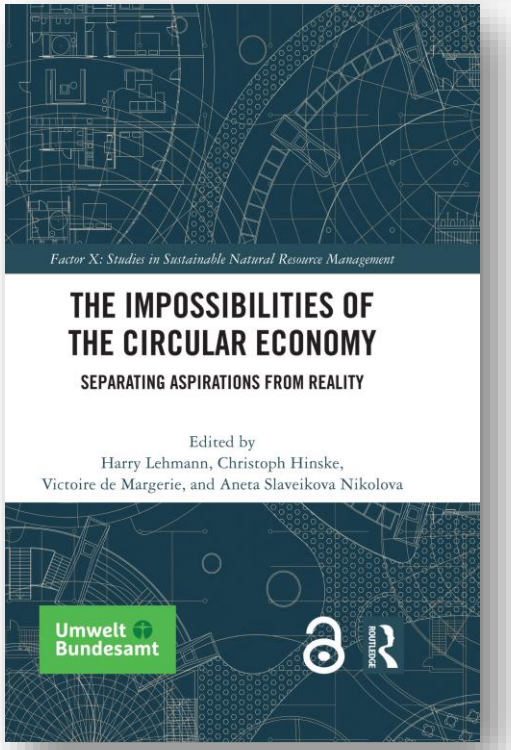
Editor Managing Review: Junming Zhu

Abstract

This paper presents a reasoned account of the critiques addressed to the circular economy and circular business models. These critiques claim that the circular economy has diffused limits, unclear theoretical grounds, and that its implementation faces structural obstacles. Circular economy is based on an ideological agenda dominated by technical and economic accounts, which brings uncertain contributions to sustainability and depoliticizes sustainable growth. Bringing together these critiques demonstrates that the circular economy is far from being as promising as its advocates claim it to be. Circularity emerges instead as a theoretically, practically, and ideologically questionable notion. The paper concludes by proposing critical issues that need to be addressed if the circular economy and its business models are to open routes for more sustainable economic development.

KEYWORDS
circular economy, circular business models, critique, industrial ecology, review, sustainability



Factor X: Studies in Sustainable Natural Resource Management

THE IMPOSSIBILITIES OF THE CIRCULAR ECONOMY

SEPARATING ASPIRATIONS FROM REALITY

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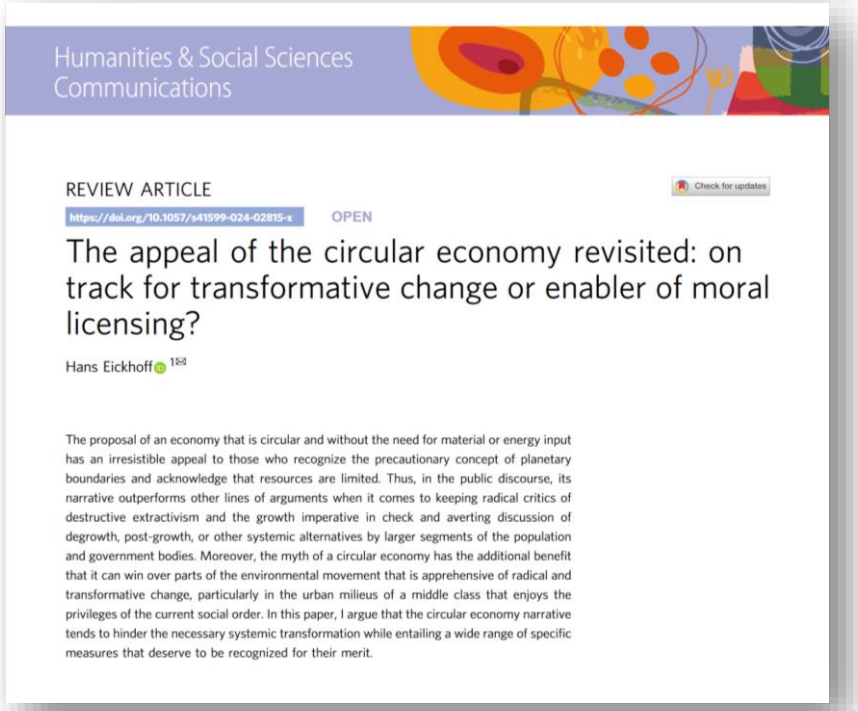

Humanities & Social Sciences Communications

REVIEW ARTICLE

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https://doi.org/10.1057/s41599-024-02815-x OPEN

The appeal of the circular economy revisited: on track for transformative change or enabler of moral licensing?

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The proposal of an economy that is circular and without the need for material or energy input has an irresistible appeal to those who recognize the precautionary concept of planetary boundaries and acknowledge that resources are limited. Thus, in the public discourse, its narrative outperforms other lines of arguments when it comes to keeping radical critics of destructive extractivism and the growth imperative in check and averting discussion of degrowth, post-growth, or other systemic alternatives by larger segments of the population and government bodies. Moreover, the myth of a circular economy has the additional benefit that it can win over parts of the environmental movement that is apprehensive of radical and transformative change, particularly in the urban milieus of a middle class that enjoys the privileges of the current social order. In this paper, I argue that the circular economy narrative tends to hinder the necessary systemic transformation while entailing a wide range of specific measures that deserve to be recognized for their merit.

Kritik terhadap Ekonomi Sirkular

(Giampietro, Funtowicz, 2020; Corvellec, Stowell, Johansson, 2022; Lehmann, et al., eds., 2023; Eickhoff, 2024)

Tautan:
https://www.researchgate.net/publication/341201400_From_elite_folk_science_to_the_policy_legend_of_the_circular_economy;
https://onlinelibrary.wiley.com/doi/10.1111/jiec.13187;
https://www.taylorfrancis.com/books/oa-edit/10.4324/9781003244196/impossibilities-circular-economy-harry-lehmann-christoph-hinske-victoire-de-margerie-aneta-slaveikova-nikolova;
https://www.nature.com/articles/s41599-024-02815-x

Penutup

1. Dunia sedang mengalami ancaman eksistensial, termasuk dari krisis iklim.
2. Upaya perbaikan sudah dilakukan oleh umat manusia di beragam level, namun skala dan kecepatannya perlu ditingkatkan hingga 5 kali lipat dari yang sekarang.
3. Bisnis/perusahaan adalah sektor yang paling besar menimbulkan dampak ke(tidak)berlanjutan, sekaligus paling memiliki sumberdaya untuk memastikan keberlanjutan Bumi. Keberlanjutan Bumi juga merupakan peluang bisnis yang sangat besar.
4. Salah satu penanda penting keberlanjutan perusahaan adalah pemanfaatan Ekonomi Sirkular dalam praktik bisnisnya—yang mendesain sistem produksi, distribusi dan konsumsi menjadi tanpa/minim limbah.
5. Patagonia, Unilever, Natura & Co, IKEA, dan Interface—yang selalu dinyatakan sebagai pemimpin keberlanjutan oleh survei setahunan tentang kepemimpinan keberlanjutan dari GlobeScan—menyediakan contoh-contoh paling menarik terkait sirkularitas.
6. Ekonomi sirkular memiliki beragam tantangan dalam penerapannya, selain berbagai keterbatasan paradigmatik dan praktik, sebagaimana yang ditunjukkan oleh para kritikusnya, terutama karena penekanan berlebihan pada kemampuan teknologi untuk menyelesaikan masalah, juga mungkin akan membuat transformasi yang dibutuhkan pada sisi konsumsi menjadi lebih lambat.
7. Untuk bisa mewujudkan peluang dari Ekonomi Sirkular—dan seluruh upaya menuju ekonomi regeneratif—diperlukan partisipasi semua pihak untuk memelajari, membuat strategi, dan mempraktikkan, mengevaluasi dan memerbaiki tindakannya sesuai kapasitas masing-masing.

SALAM LESTARI.
TERIMA KASIH!



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