

JUST2CE

A Just Transition to Circular Economy



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INTRODUCTION

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The e-book “Circular Economy for Social Transformation: multiple paths to achieve circularity” represents the third outcome of WP1 (Beyond the current CE models and practice) of the JUST2CE project. WP1 aims to provide a rigorous and comprehensive overview and analysis of the current state-of-the-art in the Circular Economy (CE) field, highlighting uneven developments, differences in theorisations, understandings and implementations between different geographical, ideological and political-economic contexts. Moreover, the eBook encompasses results and reflection elaborated in WP2, 3, 4 and 5.

This eBook aspires to be a map of ‘CE plurality’ by means of an overview of the current applications of CE in the international context with a particular focus on combining CE with theories of global environmental justice, social justice, gendered innovation and labour. The chapters of this book highlight some crucial elements to understand the key characteristics of the current complex process of initiating a transition towards the CE, the tools and frameworks for measuring CE and a roadmap to a just CE across its main concepts, geographical areas and scenarios. This helps us better analyse and understand what circular futures we can expect and what circular futures we should strive for. The majority of studies and narratives devoted to CE are embodied in the neoliberal economic model that is driven by market mechanisms and private for-profit corporations (Genovese and Pansera, 2021).

The prevailing idea of the mainstream CE is the assumption that an economy based on self-regulatory market mechanisms can work in symbiosis with the environmental system without changing power relations, politics, practices and norms (Genovese and Pansera, 2021; Calisto Friant et al., 2020). However, many empirical case studies in the international literature evidence that mainstream CE propositions do not address current social injustices (environmental, geographical, social, gender, labour) (Martínez-Alvarez and Barca, 2021; Meira et al., 2021; Thapa et al., 2021; Nagarajan, 2022; Suarez-Visbal et al., 2022; Valencia et al., 2023; Vanacker et al., 2023). A just CE transition CE should pursue shared objectives that balance social, economic and environmental considerations and should be implemented in the most equitable, participatory and inclusive way possible. A CE should ultimately aim to create greater well-being for all without leaving anyone behind. Therefore, there is a gap in the discussion about imagining a different and more just transition to CE that calls for more critical and systemic approaches to mainstream CE models and theorising a just circular socio-economic system. This e-book and the project behind it intend to contribute to filling this gap and provide the basis to build an alternative and achievable circular future in which the assumptions and the logic underlying the linear model are questioned. Indeed, without overcoming unsustainable consumption and production models, all efforts to establish a societal system compatible with the objectives of global socio-ecological well-being become sterile. On the other hand, it should be critically underlined that the initial development of mainstream CE has reached a stage of maturity and that there is an emerging demand to look towards CE models that are more inclusive, democratic, and transformative.

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All the Just2CE Project research groups contributed to this e-book, allowing it to offer a broad and diverse representation of the different geographical, scientific and socio-economic contexts as well as the different practices and sectors related to CE. This has allowed us to create a contribution that reflects the multiple paths to achieve circularity, which contributes to fuelling a reflection on the future research paths and transformative innovation policies that may be pursued. All in all, this eBook and the Just2CE Project bring crucial insights for the CE scientific, business, and policy community and civil society seeking alternative forms of understanding and implementing a just transition to a CE.

Overview of the chapters

The Chapters contained in this e-book are divided into three main parts concerning respectively (i) the basic aspects and concepts of the CE, (ii) the measurement of just transition processes and initiatives, and (iii) the key factors of the just transition, such as environmental justice, gender and labour approaches. Although these are different aspects, they are interconnected based on the common objective of offering a space for discussion and reflection to achieve a just CE transition. The Chapters have been developed based on literature reviews and bibliometric analysis of the CE literature as well as empirical studies located in both Global North (GN) and Global South (GS)¹ countries. Moreover, the Chapters proposed different theoretical frameworks, scientific methods and political approaches to ensure a plurality of theorisations, interpretations, and understandings and to support public decision-makers in planning policy measures to favour the transition to a Just CE.

The numerous interrelationships between the topics covered in the chapters and their mutual influence demonstrate the complexity of implementing CE models which are socially just and environmentally sustainable. This complexity depends on a diversity of factors (regional norms, national and global socio-economic models, action and role of stakeholders, action of pressure groups, effectiveness of policies, etc.) which characterise CE in its current development phase. Part I of the e-book faces these aspects, illustrating the basic concepts and state-of-the-art regarding CE with particular reference to mainstream CE approaches, local economic models, different stakeholder engagements, social awareness, and shared responsibilities.

Development steps are affected by research progress and innovation, appropriate quantitative and qualitative measuring methods, and unwanted rebound effects and injustices in market economies. With this in mind, Part II of the e-book focuses on methods and indicators for measuring phenomena and topics (such as environmental impacts, environmental and social justice, and gender and labour inequalities). These indicators bring key insights and feedback to analyse the state of a just CE transition both in the GN and GS. Roadmaps to a just CE transition

¹ Global South and the Global North is a terminology that distinguishes not only between political systems or degrees of poverty, but between the victims and the benefactors of global capitalism. Available online: <https://www.ipbes.net/node/41221> (see also footnote n.7, chapter 3).

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are different in different areas. They may lead to stabilising a mainstream vision of CE without improving social and environmental characteristics, or they may engage stakeholders towards transformative change that enhances social and ecological well-being. These aspects are discussed in Part III with peculiar reference to changing patterns of mainstream technocentric CE in GN and GS scenarios, as well as transformative CE policies that consider critical issues of environmental justice, gender and labour. The essential messages of the book's 26 chapters are summarised below to offer readers an interpretative key to better approach and understand the variety and complexity of theoretical, policy and practical implementation aspects related to a just CE transition.

Part I provides an overview of the basic concepts and state-of-the-art of CE development.

Chapter 1 argues that a mainstream model of CE is still dominant while a model of CE more socially aware is emerging in the academic literature, whose seeds can be found in grassroots initiatives of the "social & solidarity economy", "care-centred economy", "civil economy", and "place-based sustainability" paradigms. Moreover, it is worth underlying the nascent literature focused on the link between the concept of "Just Transition" and that of "CE" since it shows case studies focused on the emergence of social *injustices* (e.g. fashion and e-waste trade from the GN to GS) for which a solution is urgently needed.

Barriers and drivers to a just CE transition based on the international literature and case studies evaluated within the JUST2CE project are summarised in **Chapter 2**. The purpose is to improve the knowledge about the factors (such as legislative, political, organisational, behavioural, economic, and social) that hinder or favour the implementation of a just CE and design adequate policies or delineate future research directions.

Chapter 3 highlights that one of the limits of mainstream CE approaches is the lack of socio-ethical considerations. The chapter addresses this gap by proposing a theoretical-practical framework grounded on the four pillars of the concept of "technologies of humility" (framing, vulnerability, distribution and learning). The chapter is particularly useful for researchers and policymakers seeking a framework to better assess and understand the social justice implications of CE developments and design transformative policies on that basis.

Social justice is an essential concept in the transition process towards a CE and is the core focus of **Chapter 4**. Social justice includes equality, equity, diversity, fairness, and human rights. A just CE transition implies societal changes that revise the balance between winners and losers so that susceptible countries and vulnerable populations are not left behind. As a result, a CE transition should promote inclusiveness and participation of all involved stakeholders and rely on appropriate methods and indicators that measure positive and negative impacts on social justice.

Shared responsibility emphasises the active participation of stakeholders to overcome the challenges of a CE transition. **Chapter 5** is a case study of one of the most discussed technological transitions of our time: the electric car. It shows that sharing costs between producers and consumers in the GN and GS could be one of the measures to ensure greater social and environmental justice. This is especially important for people in the GS, which bear the highest socio-ecological costs related to the extraction of materials needed for the electric vehicle transition.

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Chapter 6 proposes a framework for evaluating scenarios of shared responsibility and just CE transitions. The framework takes into account different stakeholder groups and assessment tools, roadmaps and multiple indicators, including various comprehensive labour, gender and justice aspects.

Different regional patterns of CE development in the EU are outlined in **Chapter 7**, while **Chapter 8** looks at different patterns of CE implementation in the GN and GS. Both chapters highlight that the local context plays an essential role in shaping specific models of CE-making and that stakeholders in such contexts must be adequately listened to in defining the transition process. The adoption of a decolonial approach within the JUST2CE project (**Chapter 9**) contributed to widening the perspective of analysis of CE models in favour of a more open-ended and reflexive approach as well as a less partial and site-specific view of reality (e.g. beyond Western, Modernist, and EU-centric perspectives).

Part II centres on methods, indicators and integrated tools to measure a just CE transition.

Chapter 10 analyses 12 macroeconomic indicators developed and implemented by governments and international organisations. These indicators shed light on important aspects beyond Gross Domestic Product (GDP), which represents a valuable starting point for developing new indicators to measure the performances of a more transformative and socially aware CE. The design of these indicators should be open to potential stakeholders to test their validity in capturing socially desired aspects and performances.

The definition of sustainability and CE requires a new systemic understanding capable of capturing and modelling the dynamics between social and ecological systems. **Chapter 11** proposes novel hybrid approaches (including works rooted in humanities and art-based research) that adopt non-quantitative indicators to move beyond traditional managerial and policy approaches. It offers innovative ways to generate visions of desirable sustainable futures through a balanced integration of creative, reflective inquiry and normative pathways.

Chapter 12 demonstrates the value of a framework of Responsible Research and Innovation (RRI) as it fosters the reshaping of the CE discourse to enable a fair CE transition where people and the planet are at the centre. RRI could be beneficial to reframe mainstream CE research and innovation and create innovations that acknowledge and account for the socio-ethical impacts of CE practices.

The Sustainable Development Goals (SDGs) are studied in **Chapter 13**, evidencing the geographical distribution of the literature on SDGs and their links with CE. The link between the SDGs and CE seems to be much stronger for some of the SDGs, namely, SDGs 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 15 (Life on Land). On the other hand, it is weak or very weak for SDG 3 (Good Health and Well-being), SDG 5 (Gender Equality), SDG 10 (Reduced inequalities), SDG 11 (Sustainable Cities and Communities), and SDG 16 (Peace, Justice and Strong Institutions).

Chapter 14 presents a critical analysis of the current assessment frameworks and indicators adopted to monitor the CE at national and international levels centred on accounting input and output flows. The chapter shows the importance of developing assessment frameworks that integrate further environmental aspects and could monitor the transition towards a CE in a holistic manner. Moreover, the chapter proposes ways to integrate life cycle assessment and energy accounting frameworks.

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An overview of the main assessment methods (life cycle assessment, life cycle costing, social life cycle assessment, material flow accounting, *energy* accounting, internal rate of return, gender equality assessment) that can be used for the evaluation of environmental, social and economic impacts of CE applications is presented in **Chapter 15**. The latter highlights how these methods could be integrated to provide a more holistic and robust assessment framework and to overcome the limits of each individual method.

Chapter 16 shows the application of a combined framework involving Input-Output analysis and Stock-Flow Modelling for the simulation, evaluation and comparison of CE strategies. The first results suggest that adopting CE strategies in a market economy context is insufficient to achieve a just transition. This showcases the importance of requiring Governmental interventions to reorient the CE transition towards environmental and social justice goals.

Part III of the e-book focuses on an in-depth analysis of the three main facets of a Just CE Transition: Environmental justice, Gender and Labour, as well as the evaluation of CE across geographical areas.

Chapter 17 underscores the importance for CE to integrate the principles of the degrowth movement to include justice concerns in all their forms (distributive, procedural, and restorative) and to avoid the social and territorial impacts of the linear economy. The chapter showcases these arguments with a case study of waste pickers in Rio de Janeiro (Brazil). It finds that the mainstream CE model does not consider the value of informal repair, waste picking and unpaid reproductive work and that recognising the value of these jobs could be a step towards just transition policies.

Chapter 18 looks at links between gender, the SDGs and CE. It finds that, while the SDG's approach to gender, with its focus on women empowerment and leadership, is an important step towards reducing gender inequality, it does not challenge patriarchal norms and oppressive systems. Adopting a Feminist Ecological Economics approach, the chapter links the present socio-ecological crisis to patriarchal power relations and the lack of consideration for reproductive care work.

Chapter 19 shows how CE literature considers labour mainly in quantitative (e.g. number of jobs created with the circular activities) and, to a lesser extent, qualitative terms (e.g. decency or quality of circular jobs), while ignoring issues such as workers' decision-making, gender inequalities (e.g. unpaid circular labour that in most cases is done by women in the GS) and racism in the labour market. It argues that more investigation on these dimensions is required to avoid the transition to CE from perpetuating or even accentuating the social, gender and racial inequalities of the linear economy. Third-sector studies offer some of the most inclusive and transformative views about working conditions, gender and North-South relations, shedding light on case studies of very poor working conditions such as those of waste pickers in Bangkok.

The following three chapters offer insights into the social justice implications of the CE transition in different parts of the world. The transition to a just CE in Africa, as argued in **Chapter 20**, has the potential to reduce poverty, inequalities and environmental degradation. However, rapid urbanisation, industrialisation and population growth are essential challenges. Waste collection and recycling rates remain low, while the continent is becoming the illegal and disconcerting destination of consistent waste streams (mainly toxic) from the GN. In practice, the CE in Africa primarily concerns waste management and recycling activities, mostly performed as informal initiatives. These are a source of social injustices carried out by the poorest sectors of society without any social protection.

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Chapter 21 analyses CE policies in Africa, showing how these are mainly developed at the country level or within the African Union (e.g. Agenda 2063) while being almost absent at the continental scale. The transition to a CE is primarily driven by private businesses and practitioners (NGOs, consultancies, entrepreneurs, and small and medium enterprises) who have developed relevant local CE innovations and technologies based on labour-intensive processes and cost-effectiveness.

Moving from Africa to Europe, **Chapter 22** analyses the EU's commitment to adopting CE. The latter has a central position in the Green Deal, the primary policy tool to pull the EU towards carbon neutrality. The EU has issued two specific Action Plans (in 2015 and 2020) for this aim. The second Action Plan strengthened the first by adding 35 new actions and setting the target of doubling the "circularity rate" by 2030. Almost all Member States in the EU have adopted a national CE strategy. However, in practice, the EU circularity rate is still low, with a strong asymmetry between member states and different regions of the EU. Just Transition mechanisms were also by the EU to compensate those territories (e.g. mining coal regions) affected negatively by the measures aimed at achieving climate neutrality.

Chapter 23 analyses the transition to CE in China and India. China is adopting a top-down approach, with the Chinese Central Government providing laws and regulations to impose the adoption of CE principles by companies and citizens. The Chinese 14th five-year plan for the 2021-25 period primarily focuses on improving environmental impacts, resource productivity and energy provision with related social implications. India seems less committed to facilitating CE developments and achieving a high level of sustainability and lacks a comprehensive policy framework supporting a CE transition. However, India has adopted policy initiatives to improve waste management, as well as policies supporting green manufacturing and encouraging more sustainable and circular consumption.

Chapter 24 imagines what different circular futures could look like by 2050. It does so by unpacking four competing circularity discourses, from mainstream technocentric visions to transformative degrowth-oriented circularity proposals. It examines what these four visions propose for future transport, energy, agriculture, industry, social, cultural and governance systems. The chapter shows that only post-capitalist and degrowth-oriented circular futures promote a socially inclusive and desirable path that ensures the well-being of all humanity within the biophysical boundaries of the Earth. All other growth-oriented circularities will eventually hit resource shortages and planetary limits and end up replicating and exacerbating current partners of injustice, inequality, exploitation and discrimination.

Chapter 25 presents a case study in Brazil, observed through the lens of Transformative Innovation Policies, highlighting the way CE-oriented initiatives could be conducted to contribute to a just transition. By starting from the bottom and focusing on the stakeholder engagement approach, Transformative Innovation Policies enable the inclusion of local community needs, leveraging cultural diversity and valuing their perspectives and experiences. The chapter thus highlights how innovation programs adapted to local communities' specificities represent a critical point to support a just transition that addresses social and environmental inequalities.

Chapter 26 analyses two participation experiments related to CE in the inner Cilento territory of the Campania Region of Italy. It compares the practices carried out to the political intentions included in the strategic documents

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dedicated to participation. The chapter's findings underline the importance of promoting a combination of top-down and bottom-up approaches in the development of local projects, facilitating the involvement of stakeholders in each territory to develop projects based on local specificities and needs.

PART I. BASICS OF THE CIRCULAR ECONOMY AND STATE OF THE ART



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