

# JUST2CE

A Just Transition to Circular Economy



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# CHAPTER 19

## LABOUR IN THE TRANSITION TO THE CIRCULAR ECONOMY

## Chapter 19. LABOUR IN THE TRANSITION TO THE CIRCULAR ECONOMY

### A CRITICAL LITERATURE REVIEW ON JUST TRANSITION AND CIRCULAR ECONOMY

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#### Abstract

The Circular Economy (CE) is an economic project based on object design, reuse, recycling and transformation that aims to limit the extraction of resources, waste and pollution to a minimum. It is a mode of production that seeks to respond to the challenges of the Anthropocene, namely global warming and the ecological crisis. Nevertheless, it is not always obvious to what extent CE practices and models take into account the social aspects of transitioning, in terms of decent wages or working conditions for a dignified and healthy life. In this chapter, we aim to show the importance of the perspective of labour to design circularity. Recent Just Transition (JT) literature, on the other hand, emphasizes how workers themselves can lead or design social transformation from a CE perspective, creating high-quality employment. This is a social justice requirement in line with both JT as demanded by workers' organisations and international trade unions, and Sustainable Development Goals (SDGs) as preached by the United Nations. On the one hand, CE could benefit from workers' knowledge about productive processes. On the other hand, a marginalisation of labourers would put CE at risk of entrenching – if not deepening – social inequalities. Thus, rethinking CE from the perspective of workers implies respecting five fundamental pillars of the JT: 1) Maintaining a high level of employment (quantitative approach); 2) Ensuring decent jobs and wages (qualitative approach); 3) Taking into account the capability of workers themselves to design CE-inspired labour processes (subjective approach); 4) Rethinking CE models from the perspective of women's informal or unpaid subsistence work (feminist approach); 5) Including to migrants, racially discriminated people and non-citizens in the composition of the workforce (decolonial approach).

**Keywords:** Labour, Just Transition, Circular Economy, Workers, Employment, Trade Unions.

This chapter explores the role of labour in CE literature, emphasizing how workers themselves can lead or design a viable and effective ecological transition, fulfilling social justice requirements – in line with both JT and the SDGs.

## 19.1 Introduction

This chapter explores the role workers play in the academic and “grey” literature on CE, with the aim of measuring the effects of a hypothetical ecological transition on labour and. Moreover, the chapter elaborates on how such CE-inspired transformation can be supported - or even led - by workers and their unions. Its goal is to expand social sciences' contribution by offering a systematic and critical review of the literature on labour in connection to that on CE, analysing both bibliometric data and contents of a selection of particularly relevant papers. It starts from two main questions:

1. are workers' subjectivity and trade-unions' agency taken into account in CE models and practices?
2. If not, what would CE look like from the labour's point of view?

To begin, it is useful to clarify our definitions of two main concepts:

*Circular Economy* (CE) is a regenerative system of production and consumption, closing the loop of economic cycles of inputs and outputs preserving natural resources, limiting pollution and regulating waste (Pansera, Genovese and Ripa 2021). Circular activities include sectors such as repair, reuse, and recycling.<sup>33</sup> Activities that aimed to reduce the use of materials, pollutant emissions, waste, and remanufacturing industrial goods are also included.

*Just transition* [JT] introduces the issue of social justice into the technical reflections on ecological transition and has recently become a central concept in climate discussions (Stevis 2023). Since the early 1990s, labour organisations have forged the concept to claim that an ecological transition could not happen if all its social burdens fell onto workers' shoulders (Mazzocchi 1993). Since then, JT has been first formalized (ETUI 2011), then - in 2015 - included in the Paris Agreement. JT is nowadays one of the watchwords of many international organisations and trade unions - the so-called *Global Stocktake*, namely the concluding decision of 2023 COP 28, mentions it ten times! (UNFCCC 2023). JT seeks to overcome the fear that addressing the monumental challenge of transitioning will require us to choose between either protecting the planet or protecting workers and the economy (Ciplet and Harrison 2020; Rätzl and Uzzel, 2012). The problem is how to support the most ambitious objectives for ecological transition in a way that is at the same time ecologically *effective* and socially *fair*, which is to say attentive to workers and their communities. In its current, official definition (ILO, 2018), JT must guarantee decent working conditions for all, quality green jobs, including for workers in sectors that must be abandoned.

## 19.2 Different approaches to Labour

As we are specifically looking for a labour-oriented CE perspective based on JT principles, it is also useful to define what we mean by “labour”. We adopt a broad understanding that includes all forms of work, namely the whole set

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<sup>33</sup> According to the Circular Economy Action Plan and in the Monitoring Framework for Circular Economy of the EC (European Commission 2020).

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of activities which are socially coordinated to produce what is useful to satisfy human needs. This includes the practices of all waged and unwaged workers, who re/produce all that is necessary to the development of life on Earth: people, food, commodities, infrastructures, services, knowledge, art, and the biophysical environment itself. In the specialized academic literature, however, labour is typically approached in a significantly more restricted way; as waged work - jobs - in industry or service sectors. In the following paragraphs we identify and develop five different approaches we have encountered, respectively based on: quantity, quality, agency, gender, and "race".

### 19.2.1 A focus on quantity: Number of jobs

The most common approach to labour in the transition to CE is the quantitative one. It aims to evaluate the effects of public policies on employment and job creation within circular activities. The European Commission's New Circular Economy Action Plan is based on such a quantitative approach. Effects are measured in terms of numbers of jobs created per sector, often linked to econometric projections of GDP growth in the context of a transition to the CE. For example, it gives much emphasis to a study by Cambridge Econometrics estimating that "applying circular economy principles across the EU economy has the potential to increase EU GDP by an additional 0.5% by 2030 creating around 700.000 new jobs" (European Commission 2020). The same plan also exemplifies how these quantitative approaches tend to measure the effects of capital composition on employment by calculating the ratio between capital intensity and labour intensity in circular activities (Llorente-González and Vence 2020). Overall, the quantitative approach can certainly be useful to understand some of the effects of labour market restructuring between different economic sectors on a global scale, but should be complemented by other perspectives, in a pluralistic effort.

### 19.2.2 A focus on quality: Decent work

An approach that takes into account the way in which labour is performed, rather than the sheer number of jobs, can be considered qualitative. It has a particular focus on working conditions, including their social and environmental determinants. The quality of labour is generally formulated in terms of "decent work" or "quality jobs" (Poschen 2017; van der Ree 2019). Decency has been defined as being "productive work for women and men in conditions of freedom, equity, security and human dignity" (UNEP 2008). Decent work is productive and delivers a fair income; it provides security in the workplace and social protection for workers and their families; it offers better prospects for personal development and encourages social integration; it gives people the freedom to

express concerns, to organize and to participate in decisions that affect their lives, guaranteeing equal opportunities and treatment for all (ILO 2008).

A similar qualitative dimension is present in the recommendations of the Agenda 2030 and its Sustainable Development Goals (SDGs), which "promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all" (United Nations 2015). Both definitions nevertheless mix a quantitative and a qualitative approach. Both, in fact, presuppose that an increase in the number of jobs is socially

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desirable. Yet, it is important to keep in mind that an increasing number of jobs does not automatically guarantee their quality, nor their environmentally beneficial performance.

Labour can - and actually does - "disturb" the biosphere. It often involves the extraction of raw materials beyond the regenerative capacity of ecosystems, resulting in resource depletion or biodiversity collapse. It also usually requires an input of energy. Therefore, in a fossil economy, job creation tends to lead to an increase in greenhouse gas emissions, hence an acceleration of global warming. Finally, there is the problem of waste (Armiero 2021), which can be reduced - but never totally eliminated - while maintaining an increase in production of goods at current technology levels. This is particularly the case in the construction and clothing industries.

This raises the problem of economic growth: if an expansion of GDP presupposes a system that seeks to produce more commodities to satisfy ever-increasing human needs, then it will be accompanied by an enlargement in the disturbance of natural environments. In a situation fully inspired by CE principles, we can imagine producing as many goods as in the previous cycle, but not more, since that presupposes extracting more resources, consuming more energy and producing more waste. It is difficult to conceive of an economy that aims to limit extraction, pollution and waste by producing more goods.

The necessary increase in the number of jobs should thus be questioned. Green jobs are mainly linked to the sectors of reproductive labour - in the broad sense, including agricultural and care work - and services, while jobs linked to the production of new material goods tend to deteriorate the relations with the environment by extracting raw materials, emitting greenhouse gases or producing additional waste.

## 19.2.3 A focus on subjectivity: The agency of the workers

A third approach focuses on workers as a potentially active subject of a CE-inspired transition. A classic example of the input and creativity of workers in the restructuring of industry in ecological terms is the famous Lucas plan of 1976. Threatened by thousands of jobs losses, workers of Lucas Aerospace in the UK published an alternative plan for the future of their company, which involved electric bicycles, wind turbines, energy conservation services, heat-pumps, re-manufactured products (Räthzel, Uzzell and Elliot 2010).

A more recent, but equally relevant example is that of the ex-GKN occupied factory in Campi Bisenzio, near Florence. In July 2021, facing massive layoffs due to delocalisation, the workers of this automotive factory first called a permanent assembly (which is still operational) and then built an alliance with the climate justice movement (Gabbriellini and Imperatore 2023). Through the direct involvement of many solidary researchers, the Factory Collective was able to produce an innovative reconversion plan. It claims the intervention of the national Government to enable an automotive value chain no longer subordinated to car-centred private mobility, but rather oriented - in line with CE objectives - towards public and sustainable bus-centred mobility (Feltrin and Leonardi 2023).

More generally, worker's agency not only gives meaning, pride and recognition on the job, it is also important to initiate the transition to CE at different scales. At the enterprise level, workers should have a role to play in general decisions, enterprise strategies, occupational health and safety, and production processes. At the national level, workers' proposals for social and environmental measures should find expression through unions and social dialogue – no matter how difficult and problematic such perspective may prove (Keil and Kreinin 2022).

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The approach of eco-design - of objects and technical systems - centred on labour (White 2020; Valencia, Koppelmäki, Morrow et al. 2020) seem to us particularly useful in the transition to a circular economy. It combines the concept of workplace design - born in the 1970s in the Scandinavian trade unions, aimed at implementing workers-friendly modes of design and innovation, with eco-design. Eco-design (Ceschin and Gaziulusoy 2020) refers to the design for reuse, reemployment and recycling but should also take into account the type of labour process involved and the relationship to the environment in workplaces. A workers-based view should also include all actors involved in determining the function of an object or a technical system. Domestic workers or workers in the reuse or recycling sectors have an important role - often invisible - in the use of objects: informal waste-pickers know best the different transformations an object can undergo (Archer and Adelina 2021). Such participatory workers' design strategies require new forms of industrial eco-democracy, to be achieved through social dialogue via trade unions, cooperative enterprises or direct and participatory democracy (White 2021).

## 19.2.4 A focus on gender: The eco-feminist perspective on labour

Income from paid labour is not the only material resource for well-being and dignity (Barca 2019; Barca 2020; Gibson 2020). Unpaid labour, as an important part of social and environmental reproduction, can play a key role in the development of a circular society. Taking care of living beings, be them children or parents, cooking, sorting waste: all these are activities that ensure the reproduction of society within the domestic sphere. A gendered approach to labour focuses on these invisibilized spheres to rethink work as a whole. It uncovers a huge amount of unpaid labour, mostly done by women and/or racialized people (Dombroski 2020). Examples are: care work for people or the natural environment, domestic labour and reproductive work more generally, to ensure the subsistence conditions of communities. Many circular activities, such as volunteering in recycling centres, are carried out by unpaid workers. Some authors therefore propose to shift the focus from paid labour and consumption to unpaid care work for other humans and environments (Gibson-Graham, Cameron and Healy 2013). Questioning the sexual division of labour inherited from early modernity (Salleh 2004) allows for a critique of gender inequalities in income, hygiene, health and safety at work. It also allows us to envisage a low-carbon economy that aims at the wellbeing of human and non-human communities instead of devaluing unpaid reproductive tasks and overvaluing paid productive activities. Waste sorting – or environmental domestic labour (Farbotko 2017) - is often free labour, mostly performed by women. Reuse, remanufacturing and recycling rely both on ecological conditions that need to be maintained and on domestic tasks without which products cannot be reintroduced into CE (Battistoni 2020; Ravenswood 2022). Domestic labour should thus be at the heart of reflections concerning CE.

## 19.2.5 A focus on "race": The postcolonial critique

Postcolonial approaches to labour (Chakrabarty 2007; Mezzadra 2011) show how the Eurocentric focus on the white male wage-earner obscures the history of a whole section of male and female workers (Spivak 2015). Post-colonial theories focus on non-manufacturing activities outside the Northern metropolitan centres. At the epistemological and political level, post-colonial approaches to labour give voice to those who do not have. Furthermore, they take into account types of work that were often disregarded by modernist theories, which often focus on productive labour, namely: the activity of transforming natural matter by natural human agency, in order

to satisfy specific social needs. Such definition of labour excludes care and reproduction activities, agricultural eco-regulation work and most of the service sector, particularly in the informal economy. Moreover, it neglects illegal workers, especially women (Farris 2020) and the international division of labour which devotes certain areas of the world economy entirely to certain forms of labour (Mies 1982, van der Linden 2008).

This, with regard to this literature, two important issues emerge: the place for racially discriminated, immigrant and non-citizen workers; and the international division of labour required by a CE-inspired transformation. Although such issues are very rarely addressed, a transition that truly leaves no one behind - starting with people in migratory situations, people of colour in Northern countries, and frontline communities in Southern countries - should not ignore them.

## 19.3 A systematic literature review

In order to better analyse the intersecting literature on CE and JT, and to be able to develop new theoretical perspectives, we enriched our critical literature review with bibliometric and content analysis of the collected papers (Grant and Booth, 2009). We followed the methodology used in Circular economy and social inclusion: a systematic literature review by Oliveira, Vincenzi and Souza Piao (2021). Our critical bibliography consisted of 232 academic papers and reports from international organisations, NGOs or trade unions; most of them were published after 2015.<sup>34</sup>

### 19.3.1 CE in the academic literature

There is a generalized lack of interest in labour issues within the academic literature on CE. Out of 14,825 references on "Circular Economy" in Web of Science, only 73 mention "Labour" (most of which are actually irrelevant). This already uncovers a way of thinking about CE that focuses on economic and ecological flows without taking into account working conditions and workers' agency. In the few cases the literature mentions labour, it is mainly through quantitative approaches, although there is also an increasing consideration of its qualitative dimension.

As job creation is one of the assumed objectives of the conventional CE (Stahel 2016), it is unsurprising that it forms the focus of about one third of the academic literature; sometimes as the sole social indicator (Mies and Gold 2021). The literature seems to show an overall, albeit minimal net increase of jobs (Mitchell and James, 2015; Wijkman and Skånberg, 2015; Larsson and Lindfred 2019; Wiebe et al., 2019)<sup>35</sup>. The results of an overall increase in employment have however been criticized.

The results of these calculations are often uncertain, due to the complexity of concrete situations or because of the diversity of economic models. It is difficult to calculate the number of jobs of an hypothetical policy without considering monetary and fiscal regimes, and to measure indirect effects on employment in sectors that are not

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<sup>34</sup> Further details on our methodology can be found in Guillibert, Barca and Leonardi (2022).

<sup>35</sup> The assessments of the overall increase in employment are more positive in reports from public and private organisations than the academic literature on the subject (Stavropoulos and Burger 2020).

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directly affected by the transition. Moreover, most studies are based on ex-ante macro-economic models. There are very few ex-post studies of actual CE-inspired transitions.

Moreover, what is needed is an international, global approach - as regional or national borders do not correspond to real material flows in a global value chain economy (Geng, Sarkis, Bleischwitz 2019). The academic literature is nevertheless very little concerned with the international division of labour or with global capitalism. Less than 0.4% of papers on CE mentions "International" in their title or abstract; even less mentions "Global value chain" or "International trade". Studies on global value chains - for example in the textile industry - have nevertheless shown that transition to CE in the GN may be accompanied by a decrease of jobs in the production countries (Repp, Hekkert, Kirchherr, 2021), reinforcing social and spatial inequalities (Schroeder, Dewick, Kusi-Sarpong, Hofstetter, 2018).

Finally, we believe important consideration should be accorded to working conditions - wages, length and intensity of the working day, type and duration of contracts, access to social security and union representation, decent and equal treatment of workers. Academic literature on CE generally takes little account of the variation in the amount and type of employment created in different sectors. A rare exception is the study of Llorente-González and Vence (2020), which compares capital-intensive - such as recycling and waste recovery - and labour-intensive sectors - like remanufacturing and repair - to show that not all sectors of CE produce the same number or quality of jobs. Capital-intensive sectors appear to be creating more well-paid jobs, but in smaller numbers. Conversely, the labour-intensive sectors create more jobs, but those more precarious, with lower wages and a higher rate of unpaid labour.

In this context, JT has gained increasing attention since the Paris Agreement in 2015 and the ILO's 2018 report. In parallel, the idea of "green jobs" has become popular as a means of balancing economic growth with environmental and social concerns (Sulich and Soloduch-Pelc 2022). The formula green jobs differs from decent and quality jobs insofar as the former seeks to reconcile ecological transition and economic growth and rarely challenges the organisation of labour, while the latter involves a reflection on the decision-making power within the company and tends to focus on working conditions, wages, the length and intensity of the working day, social protection, and the presence of trade union representation. The challenge for a fair and sustainable decision-making system is both to give workers a central place in the company's management and to integrate environmental standards. With very rare exceptions (Buch et al. 2021), academic papers disregard the agency of workers, the effects of the transition on reproductive and unpaid labour or the potential role of non-citizen immigrant workers in CE. Workers are generally depicted as passive, in contrast to organisations - which are deemed active.

## 19.3.2 Labour in institutional reports

In our analysis of the interconnections between CE and labour issues within institutional reports, we distinguish three types of institutions: trade unions, public organisations (national, regional and international), and the third sector (NGOs, private foundations, think-tanks, activist groups). While in most countries trade unions are governed by private law and are legally assimilated to private non-profit organisations, they represent the voice of workers, so we dedicate a separate section to them.

## 19.3.3 Trade Unions and CE

Trade Unions generally do not seem interested in CE. At best, some trade-union reports mention it in passing or devote a scarce paragraph to it. Local and national unions hardly ever talk about the concept. Even the International



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Trade Union Confederation (ITUC) - most dedicated to JT - has never devoted a full report to CE. ITUC only notes that JT does not involve a phase-out but rather a transformation of certain sectors, implying the need for massive skills training for workers.

The transition to the CE thus is not a demand from workers themselves, although some international confederations of unions are beginning to understand it as an opportunity for employment and social dialogue (Gough 2022). It might be that CE is perceived as detrimental to workers' interests as too top-down, business-oriented, academic, or technocratic - ultimately inadequate to express the views and interests of workers and their representatives. Further empirical research is needed, however, to discover the reasons for such indifference towards CE, or even rejection of it.

In the few occasion trade unions mention CE, their reports mention the focus on quantitative aspects of labour but rapidly move on to include qualitative aspects, such as working conditions, decent jobs, fair wages and the length of the working day. For example, in Waste management in Europe. Good Jobs in the circular economy? the European Public Service Union criticizes that employment conditions are severely under-researched. Regarding the first EU package on CE (European Commission 2022) - which proposes to make almost all physical goods on the EU market more environmentally-friendly, circular, and energy-efficient throughout their whole lifecycle -, the ETUC welcomes the opportunity "to fight climate change, reduce our environmental impact and create new jobs", but criticizes the "missed opportunity to integrate a just transition into a much-needed climate policy". The EU, it is claimed, allegedly focuses on job opportunities - concentrated in sectors of waste management and repair - without mentioning the job losses in extractive or manufacturing sectors. It insufficiently considers the need for workers' retraining, and neglects working conditions and sufficient trade-union representation. Trade unions' reports tend to establish the link between ecological change and social justice both in terms of supporting workers in the transition and of limiting inequalities that may emerge from it. Trade unions are especially concerned with labour conditions, health and safety at work and economic, racial and gender inequalities. This is particularly the case in the waste management sector, where exposure to certain materials represents specific health risks.

Until very recently, CE was not seen as an overall transformation of the economy and society (EPSU 2017, ITUC 2017) in trade unions' literature, but rather framed in terms of waste reduction and the possibility of recycling. For example, the Campaign Against Climate Change - Trade Union Group in the United Kingdom (CACCTU 2021) sees

an important opportunity for developing decent, well-paid and well-protected jobs, but the chapter on CE in their report - Building a workforce for climate emergency - is in fact, solely dedicated to the waste sector.

However, a more thorough understanding of CE is recently emerging. The latest report of the European Social Partners' Project on Circular economy and the world of work (Cihlarova, Forestier and Zibell 2021) marks an important turning point. Here, CE is both understood as a general transformation of production and consumption, and as a political lever for workers. Like other studies (Laubinger et al. 2020), it assumes a limited but positive overall impact on employment volumes (0 to 2%), differentiated among economic sectors. The report stresses the requirement of higher skills for workers - who, managing a more irregular input off recycled materials, need to be more flexible, needing "Works Councils and Health and Safety Committees" to collect information and develop concrete measures to move towards circular business models. It is also concerned about the level of social dialogue and precariousness in CE (especially regarding informal work).

## 19.3.4 What do International Public Institutions say?

Being largely developed by economists in public institutions, the literature on the CE from those institutions is huge. Basically, all reports do mention the issue of labour. We therefore mainly dealt with those where the issue of labour appears as central, or those in which it assumes a remarkable position - either because it was a commonly shared position; or because it stood out from the rest; or else because it was released by a particularly important institution (e.g. the European Commission or ILO).

Public institutional reports mostly assume a quantitative approach to labour. All the reports on how to implement the first Circular Economy Action Plan (2015) talked about job creation, but scarcely addressed the quality of the jobs and the working conditions. In each of the few mentions of employment in the EC's report to Parliament (European Commission 2019), only a net increase in employment is mentioned, ignoring working conditions, social dialogue or decision-making opportunities. Similarly, another report (Cambridge Econometrics, European Commission et al. 2018), titled Impacts of circular economy policies on the labour market, develops a quantitative-only approach to labour issues. The latest publication of the Green Deal (European Commission 2022) emphasizes "empowering the consumer", while employment and JT are barely mentioned. In a new Eco-design for Sustainable Products Regulation<sup>36</sup>, the only reference to labour concerns the number of jobs created, without even acknowledging conditions and longevity, not to mention opportunities for workers-led design.

The public institution which is most attentive to working conditions and the development of decent work is the International Labour Organisation (ILO). Their 2022 report takes into consideration the effects of CE at a global scale, but also the number of quality and decent jobs that have been created by attempts at CE transitions in different countries. As for the former, the employment effects of industrial symbiosis are positive, in particular if the impacts are taken into account along an entire value chain. The quality of the jobs created, however, is not guaranteed. Some decent work deficits exist where industrial symbiosis schemes are in place.

In some countries, circular activities related to reuse, repairing or re-cycling are largely carried out by informal workers. If informal workers are defined as those who have no pension insurance, the ILO considers that the share of informal labour can be as high as 90%.

While still underdeveloped, some public institutions' reports on labour and CE do consider gender disparities, women's labour, reproductive and unpaid work (Laubinger, Lanzi, Château 2020). A feminist approach to work is still, however, extremely rare. In its 2019 report Skills for a greener future, the ILO was the first public institution to evaluate the possible effects of a global transition to CE on the gendered division of labour (ILO 2019). It concluded that, as new jobs are dependent on appropriate training, and since women tend to receive less training in new technologies, women are likely to benefit less than men from such possible transition. Without appropriate training policies, a global transition to CE could increase social inequalities between men and women and between skilled and precarious workers. Unless measures are taken to train women in relevant skills, current occupational gender stereotypes are likely to persist and women will get only a small fraction of the jobs created (ILO 2019).

Other dimensions of labour - such as workers' agency in the reorganisation of production and corporate decisions, the effects on domestic and reproductive work, the place of racially discriminated or non-citizen workers - are still completely absent from institutional reports on the transition to circular activities.

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<sup>36</sup> [https://environment.ec.europa.eu/publications/proposal-ecodesign-sustainable-products-regulation\\_en](https://environment.ec.europa.eu/publications/proposal-ecodesign-sustainable-products-regulation_en)

## 19.3.5 Labour according to the “Third sector”

Reports issued from third sector - actors such as NGOs, private foundations, activist groups - have a wide variety of political and ideological positions. The variety is much larger than in trade-unions' and public institutions' reports. This can be explained by their different nature and funding. The 2018 UN Research Institute for Social Development distinguishes four political approaches to the JT: Status quo approaches which propose the greening of capitalism through voluntary, bottom-up corporate and market-driven changes; Managerial reform approaches which seek greater equity and justice within the existing economic system through modification of certain rules and standards of employment, safety and health; Structural reform approaches in which both distributive justice and equitable decision-making processes by the different stakeholders guide the transition; Transformative approaches which imply an overhaul of the existing economic and political system built on continuous growth and imply profoundly different human-environment relations (Morena, Krause and Stevis 2019).

Most reports we discussed before - from trade unions and public institutions - can be classified in the first two categories. The reports from third sector actors, on the other hand, are distributed among all four positions. Reports by the Ellen McArthur Foundation and McKinsey (2015), or the Green Alliance in the United Kingdom (Coats and Benton 2015) have, for example, strictly quantitative visions of labour, and are therefore Status quo approaches. Reports from Chatham House (Schroeder, Albaladejo, Ribas, MacEwen and Tilkanen 2020) and the International Institute for Sustainable Development (Echeverría, Roth, Mostafa and Gass 2020), with their focus on social and geographical effects of the inclusion of countries in the GS, can be classified within the Managerial reform approach. The Circular Jobs Initiative (Goodwin, Schröder, Bachus and Bozkurt 2020), which is attentive to democracy at work, takes a Structural reform approach. The Stockholm Environment Institute (2019; Atteridge and Strambo 2020; Aung and Boyland 2020), exemplifies the Transformative approach insofar as it testifies a desire to change power relations by re-establishing workers' power over their working conditions.

Many third sector reports tend to emphasize the positive effects - and, conversely, to downplay the negative effects - of a transition to CE. For example, the report by the International Institute for Sustainable Development notes that: “All measures present positive net benefits in job creation (direct and indirect) and induced economic impacts. However, [... some] more as enablers than direct job creators” (Echeverría, Roth, Mostafa and Gass 2020, 21).

Another report suggests that “the circular economy could create 200,000–500,000 gross jobs, reduce unemployment by 50,000–100,000, and offset 7–22 percent of the expected decline in skilled employment by 2022” (Ellen MacArthur Foundation and McKinsey 2015, 34).

However, macro-economic models are much more contradictory. In most studies, it is difficult to measure indirect employment effects in sectors that are not directly affected by the transition to CE (Laubinger, Lanzi, Chateau 2020). Third-sector reports tend to favour the results of certain scientific studies, which are more consistent with their own public strategies, rather than reporting on the complexity of calculations. Third-sector reports also favour ex-ante macroeconomic studies over geographically situated case studies in specific sectors. This methodological difference leads to a low degree of testing of the models against the reality on the ground of economic actors in a globalized economy.

Many reports from third-sector organisations take seriously gender and racial inequalities, discrimination and the social inclusion of precarious workers. NGOs' literature makes strong links to social economy and informal sectors. Some reports assume that participatory organizations are more inclusive, emphasizing the importance of workers'

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cooperatives for JT (Goodwin, Schröder, Bachus and Bozkurt 2020; Mugambi, Windberg, Ddiba, Ogot, Andersson, Gicheru and Akinyi 2020; Miguel, Martinez, Pereira and Kohout 2021). Many reports focus also on gender inequalities and how a transition to CE can either limit or accentuate them (Johnson, Han, Knight, Mortensen, Aung, Boyland and Resurrección 2020).

Finally, as a concrete example, we focus on a report by Diane Archer and Charlotte Adelina (2021), from the Stockholm Environmental Institute, in which all of the five approaches to labour we have discussed are represented:

“Waste pickers in Bangkok make significant contributions to the reduction of plastic waste leakages and, therefore, play a key role in advancing a ‘circular economy’ at the urban level. However, most of them are living below minimum wage conditions and face other threats to their livelihoods, such as a lack of access to market information, occupational health hazards, societal discrimination and harassment, and a lack of organisation and social security protections. Even within this group, some workers may be more vulnerable than others – such as street waste pickers (as opposed to salengs who buy waste from customers); waste pickers who work and live near landfills or dumpsites; women with physical safety concerns when they access public spaces and with lower asset ownership; the elderly, children, and migrant workers”.

We consider this inclusiveness as a good starting point for defining an area of intersection between CE and JT: one that aims at dignified and decent work for all, where workers can decide the direction of their labour and participate in the design of the tools of production, in a way that tackles gender and racial inequalities.

## 19.6 Conclusions

Our definition of labour, combining five different approaches, allowed us to identify which dimensions of labour are already present in the studies on CE – as well as those which are completely absent. Quantitative approaches are very often used, qualitative approaches a little less. The approaches focused on workers' decision-making power and agency, gender inequalities and racism in the labour market, are very rare. Our research confirms the claim (Kirchherr, 2021) that only very few works on CE focus on the social justice and equality.

Under these conditions, transition to CE not only risks maintaining social, gender and racial inequalities, but also accentuating them. A transition is likely to privilege white men with average skills over women and other sections of the population. We observed a nearly complete lack of consideration of racial issues. The very small number of global and international CE models - most are national or regional - does not allow to measure North-South inequalities. There is generally a lack of reflection on labour conditions - particularly in terms of contracts - which leaves out informal, often racialized, workers in the North.

We acknowledge that the main limitation of our research has been its reliance on secondary sources: for example, workers' actual voices are not directly represented in this chapter. Paradoxically, this bias particularly affects informal workers (most of them women and racialized workers) who are directly involved with hands-on waste and recycling work, while being unrepresented by trade unions, public institutions and/or third-sector organisations. Yet, we maintain that our effort can foster a JT-based conceptualisation of CE literature by opening up a workers-friendly space for scientific reflection.

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