CIRCULAR ECONOMY DISCLOSURE BY AGRI-FOOD COMPANIES

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OPEN ACCESS

How to cite: Nastari, R., Pisano, S., & Pozzoli, M. (2022). Circular economy disclosure by agri-food companies. In G. M. Mantovani, A. Kostyuk, & D. Govorun (Eds.), *Corporate governance: Theory and practice* (pp. 69–74). https://doi.org/10.22495/cgtapp12

Received: 20.04.2022
Accepted: 26.04.2022
Keywords: SDG, Environmental Disclosure, Directive 2014/95/EU, Agri-Food Companies, Stakeholder Theory, Legitimacy Theory
JEL Classification: L66, M14
DOI: 10.22495/cgtapp12

Abstract

Circular economy (CE) is a model adopted by companies aimed at reducing, reusing, recycling resources and reducing consumption (Pearce & Turner, 1990). In their review of 114 CE definitions, Kirchherr et al. (2017) found that the recurrent components are: reduce, reuse and recycle, followed by recover (4R dimensions). Ellen MacArthur Foundation (EMF) (2015) provided the most used CE definition, intended as an industrial system that aims to regenerate. In detail, CE favours the value maximization in each part of the product's life (Stahel, 2016) and the achievement of closed-loop resource flow (Geng & Doberstein, 2008), changing waste into resource (Witjes & Lozano, 2016) and increasing the resource use efficiency (Ghisellini, Cialani, & Ulgiati, 2016). Over the years, many authors focused their attention on this topic, by conducting review studies (Ghisellini et al., 2016; Andersen, 2007), or investigating closed-loop value and supply chains within companies (Lüdeke-Freund, Carroux, Joyce, Massa, & Breuer, 2018) and their relation with sustainable business models (Pieroni, McAloone, & Pigosso, 2019; Geissdoerfer, Vladimirova, & Evans, 2018). According to Moraga et al. (2019), the concept of CE does not refer exclusively to material preservation through strategies like recycling, but it also includes the impacts of the companies' activities on the environment, society and economy (Elkington, 1994).

For many years, CE has been intended as an approach to implement for improving waste management (Ghisellini et al., 2016). Therefore, CE is considered also a tool useful to achieve sustainable development goals (SDGs) (Schroeder, Anggraeni, & Weber, 2019; Rashid, 2013), especially with respect to the environmental dimension (Kristensen & Mosgaard, 2020; Geissdoerfer, Savaget, Bocken, & Hultink, 2017). However, CE is not specifically mentioned in the SDG context. CE practices and principles are crosscutting, so they can support many companies to pursue specific SDGs (Schroeder et al., 2019). For example, CE can improve the achievement of SDG 8 (target 8.4), promoting sustained, inclusive and sustainable economic growth, full and productive employment and decorous work for all, and 9 (target 9.4), reducing CO2 emission, improving resource efficiency, as well as increasing supply chain and resource security. CE is also closely related to SDG 12, favouring the development of CE business models for products such as closing loops and using renewable energy. Several studies have investigated the relationship between CE and SDGs (Di Vaio, Hasan, Palladino, & Hassan, 2022; Velasco-Muñoz, Mendoza, Aznar-Sánchez, & Gallego-Schmid, 2021; Donner, Gohier, & de Vries, 2020; Teigiserova, Hamelin, & Thomsen, 2020; Van Zanten, Van Ittersum, & De Boer, 2019; Jurgilevich et al., 2016), conducting the literature review.

CE issues also attracted the attention of policymakers (for a complete analysis of CE policies issued see Friant, Vermeulen, and Salomone, 2021). Germany has been a pioneer in this field, integrating CE into national law in 1996 with the closed substance cycle and waste management act (Geissdoerfer et al., 2017). In December 2015, the European Commission adopted a CE Action Plan to make the European Union more sustainable (European Commission, 2019), by maximising the use of resources and minimising waste (European Commission, 2015). In a similar vein, in 2016 Italy issued Law No. 116/16 aiming at reducing food waste by introducing CE paradigm. Recently, Italian legislator issued the National Recovery and Resilience Plan (PNRR) to ensure the revival of the country's economy, post pandemic, and to achieve green and digital development. Mission 2 of PNRR provided 2.1 billion resources to improve the country's capacity for efficient and sustainable waste management and introduce the CE paradigm.

In this context, the adoption of sustainable business models represents a significant competitive advantage for companies (Porter & Kramer, 2011), favoring the decrease of resource waste effectively and efficiently (Bocken, de Pauw, Bakker, & van der Grinten, 2016; den Hollander & Bakker, 2016). In particular, companies should implement CE business models (Bocken, Short, Rana, & Evans, 2014), by

rethinking how they generate and distribute value in a sustainable way (Lozano-Lunar, Barbudo, Fernández, & Jiménez, 2020; Urbinati, Chiaroni, & Chiesa, 2017).

Companies adopting CE business models need to communicate the actions implemented, such as their results and impacts, to external stakeholders, in order to increase their legitimacy and consensus (European Commission, 2021; Stewart & Niero, 2018; Lock & Seele, 2016; de Colle, Henriques, & Sarasvathy, 2014; Mahoney, Thorne, Cecil, & LaGore, 2013). However, although the requirement of Directive 2014/95/EU to disclose environmental information is effective by 2017 fiscal year for bigger companies, there are few reporting guidances mentioning CE (Opferkuch, Caeiro, Salomone, & Ramos, 2021). Moreover, the existing reporting guidance, such as Global Reporting Initiative (GRI) standards, is vague and does not provide detailed suggestions of CE information. As noted by the GRI (2019) there is an information gap in the CE business model. In their review on CE disclosure within sustainability reports, Opferkuch et al. (2021) found that little research focused on CE business models implemented by companies and that CE is not a central issue disclosed by companies in their sustainability reports. For previous reasons, the authors highlighted the need to explore the reporting practices of companies with respect to CE information.

This study responds to this call for research by investigating the CE information released by all agri-food Italian listed companies after the implementation of SDGs and Directive 2014/95/EU, in order to understand how companies incorporate CE in their business models to achieve sustainability. To achieve this aim, we content analysed the sustainability reports drawn up according to Directive 2014/95/EU.

We analysed the food industry because this sector presents greater potential in applying the CE paradigm, considering its strong environmental impact (Raimo, de Nuccio, Giakoumelou, Petruzzella, & Vitolla, 2021). More specifically, the implementation of CE can favour waste reduction (Fiandrino, Busso, & Vrontis, 2019). This research specifically focuses on the Italian food industry, considering that waste reduction is a theme of great interest in Italy. As previously discussed, Law No. 116/16 aims at reducing food waste by introducing the CE paradigm and a specific component of Mission 2 of PNRR specifically focuses on sustainable agriculture and CE.

The findings reveal that companies disclose little information on CE. The majority of CE information released concerns the "reduce" dimension. Fewer data are provided on the "recover", "recycle" and "reuse" dimensions. In addition, almost all sentences are qualitative, non-financial and referred to the present. The findings reveal that nowadays CE is not a central issue disclosed in the sustainability reports.

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