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A Just Transition to Circular Economy



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CHAPTER 7

Approaches

underpinning CE policies and initiatives in the different regional contexts

Chapter 7. Approaches underpinning CE policies and initiatives in the different regional contexts

Sanja Arsova, Andrea Genovese, Panayiotis H. Ketikidis

Abstract

The attainment of the European CE policies is strongly associated with initiatives at the regional level, because regions are in the optimal intermediate position to liaise upwards with their national government but also downwards to their municipalities and cities. Nevertheless, when it comes to regional implementation of the CE, there is lack of systematicity both in academic literature and policy documents. This chapter presents some of the main findings emerging from the conducted policy Delphi study. Namely, EU measures will need to take into account the protagonist role of the regions in vast numbers of vital aspects of the CE transition, as well as the importance of coordination for ensuring effective multi-level governance. An effective and functional institutional environment and responsive regional government institutions are conducive to the development of CE initiatives. Furthermore, the CE transition should encompass a place-based territorial approach, considering the specific regional strengths, opportunities and challenges throughout the policymaking process. Lastly, the smart specialisation strategies are perceived as fundamental delivery mechanism on the EU sustainability agenda overall.

Keywords: multi-level governance mechanisms; institutions; place-based approach; smart specialisation strategies; regional CE policies

This contribution will attempt to postulate crucial aspects and approaches underpinning the regional transition towards the CE, which need to be taken into account in the CE policymaking process and related mechanisms of implementation.

7.1 Introduction

Looking at the circular economy (CE) transition conundrum from a territorial perspective, in order to achieve a functional global circular economy in the long run, an alignment of actions on all governance levels is essential (European Commission [EC], 2015). The international and national levels provide high-level directionality and a unifying narrative of actions, while the regional and local levels are on the frontline when it comes to implementation through planning and accomplishing more tangible actions. More specifically, regions, through

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their policies and strategies, are playing a key role in promoting and reinforcing the underlying systemic changes needed to transition towards more sustainable and circular society (Vanhamäki, 2021). This is clearly reiterated by Strat et al. (2018) 'A functional global circular economy can be built incrementally starting from the interconnection of national circular economies that rely on interconnected regional circular economies', and graphically illustrated in Figure 7.1.

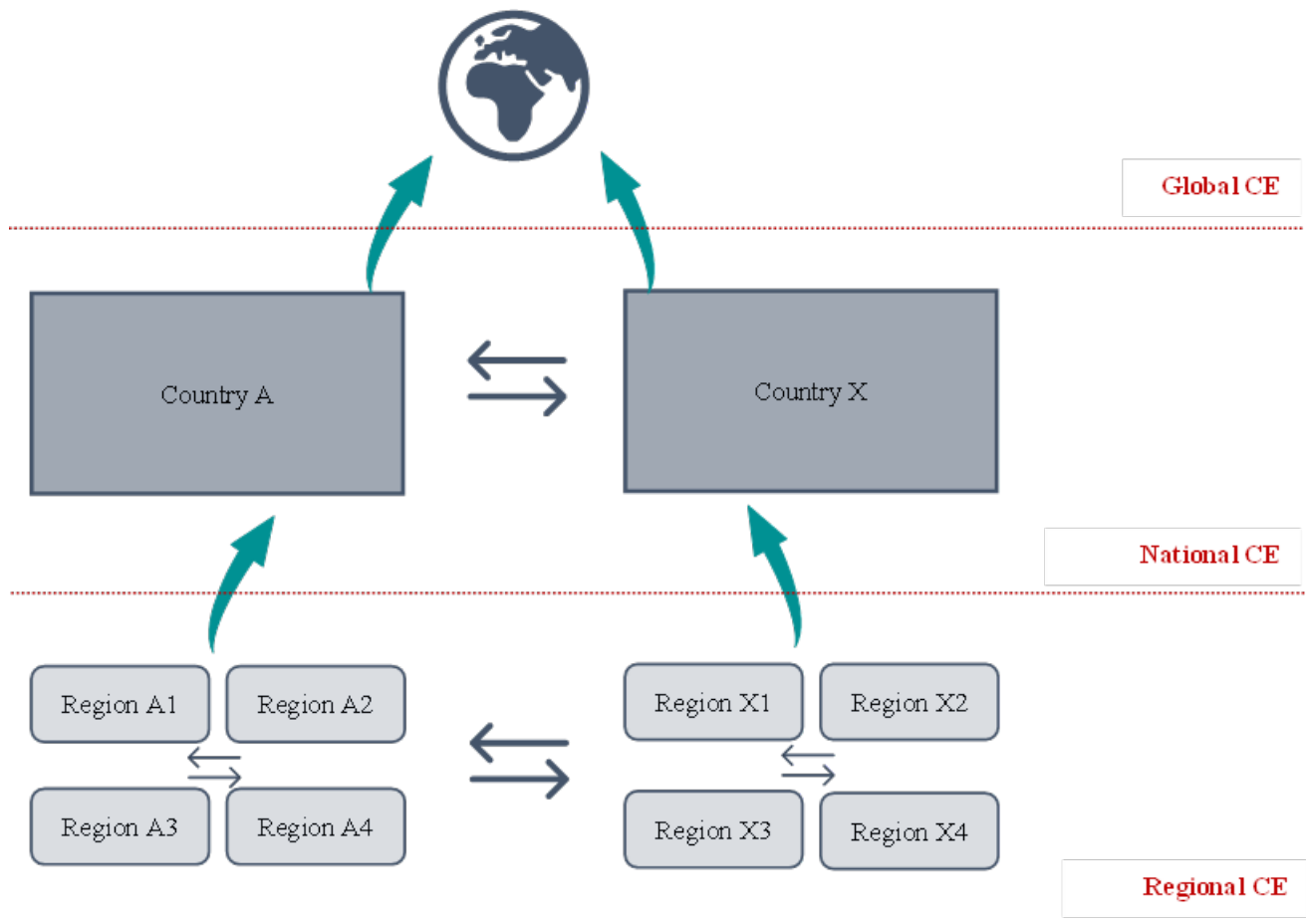


Figure 7.1 The importance of the regional circular economies and their interconnectedness – cascading upwards (Source: own elaboration)

In this context, this chapter is proposing regions (henceforth level 2 of the EU Nomenclature of Territorial Units for Statistics (NUTS 2) is used when referring to regions), as the minimum optimum unit for formulating and implementing CE policies. Regions are the most important administrative units of the EU's development policies (e.g. Cohesion policy, S3) and regional funds allocation (e.g. ERDF, ESF, CF) and so forth, have been widely used for devising and attaining strategic priorities. According to Barbero and Pallaro (2018), regions are vital for supporting the realization of EU and national strategies and policy frameworks because they are situated in an intermediary position to detect and address multi-faceted challenges which often entails inter-institutional policy

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response at all governance levels (Arsova et al., 2022). Practitioners are considering regions as forerunners in the green transition, stimulating changes way before national frameworks are devised. This is due to their scale and controllable economic systems; their proximity to environmental, social, and economic issues; and their ability to leverage on the local experience of relevant stakeholders (CIRCTER, 2019). Moreover, in EU Member States (MS), regions have the legislative power and regional autonomy to devise regional laws, adopt a wide range of policies in different sectors, and manage EU structural funds.

Henrysson and Nuur (2021) claim the predominant literature and policy discussions have taken a technological and industrial purview; however, the cardinal point of success of the CE model relies heavily on the relational dynamics which underlie industrial, regional, and national development. A specific socio-technical regime, like the CE, is conditioned by local and regional factors (Henrysson and Nuur, 2021) and the corresponding local institutional arrangements avail sub-national territories to embark on a sustainable journey to economic development (Rodríguez-Pose, 2013). This is attributed to the more efficient functioning of these institutional arrangements at the local and regional scale, as the national scale is perceived to be secluded and detached to successfully mobilise stakeholders (Rodríguez-Pose, 2013). However, the geo-political dimension in the dissemination of the CE concept and its implementation need to gain greater attention, because the CE solutions are not universal; hence, they cannot be replicated in different geo-political spaces without careful consideration of their specific context. According to Przywojska et al. (2021), contexts differ considerably and respectively, stakeholders encounter analogous environmental, social and economic challenges. Therefore, a territorial anchoring of the circular activities is needed, because omitting the dynamics of geographical proximity in CE approaches would mean disregarding the environmental dimension of the CE, which is central (Bourdin et al., 2022).

Most of the CE discourse development has been carried out by the private sector or governments, and in academia the emphasis was given to debating the conceptual boundaries of the CE paradigm, along with the actual implementation of CE practices on company and supply chain levels (Vanhamäki, 2021). The application of the CE concept at the regional scale and the related regional policy fora is still in the infancy stage, though increased interest has been noted recently (Arsova et al., 2022; Vanhamäki, 2021). In light of this, this chapter attempts to address these under-investigated areas and enrich the knowledge base on the formulation and implementation of CE policies at the European regional level.

The structure of the chapter is as follows: **Section 7.2** provides the research context by presenting the main findings from the conducted literature review, ultimately identifying the main research question to be addressed. **Section 7.3** describes the research methods applied to this study. Namely, the four-stage policy Delphi method that was designed for the purpose of this study and the subsequent template analysis which followed. The emerging findings are presented in **Section 7.4**, providing an overview of the predominant approaches for the development of CE policies and initiatives in the EU regional context. The main concluding remarks are provided in **Section 7.5**.

7.2 Literature Review

The vital role of local and regional authorities in initiating and promoting the CE transition has been underlined in several recent studies (Scarpellini et al., 2019; Silvestri et al., 2020; Arsova et al., 2021; Arsova et al., 2022), and

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according to Bacova et al. (2016) consists of establishing framework conditions or directly encouraging local and regional actors (Silvestri et al., 2020). Moreover, as stated in Bacova et al. (2016), *"since CE implementation is affected by geographic, environmental, economic and/or social factors, the diversity of territorial contexts translates into different needs and opportunities that any CE approach should address"*. Lechner et al. (2021) added that even though policymaking is perceived as a mainly (trans)national way to address sustainability issues on a large scale, local authorities have an important influence on climate mitigation activities.

Kokkinos et al. (2020) emphasize the role of regional authorities in the renewable energy transition, being mostly directed towards spreading awareness and informing the local society and industry for the benefits emerging from actions towards cleaner technologies. The regional level is perceived to be crucial also for employing waste management policies since regions and municipalities are accountable for separate collection systems and for creating and overseeing treatment facilities. For example, as discussed in Arsova et al. (2021) in Italy, the waste policy is devised nationally, while regions formulate their own waste management plans and govern how waste management is applied, and local governments manage municipal waste collection and treatment (Committee of the Regions, 2020). Therefore, the CE initiatives in practice are predominantly developed regionally, due to the competencies and legal powers at the regional level.

Savini (2019) claims the popularity of CE policymaking has gained momentum along with a culture of ecological production and consumption. The concept of presumption emerges in this context, emphasising the role of households (both as producers of waste and consumers of reprocessed waste materials) as vital for closing the urban chains of waste supply and demand. The outcomes of a recent study of the Brussels capital region's urban policies provide support for this conclusion. In territories with high consumption and limited production activities and resources, environmental policies must shift focus to the consumption side to impact circularity and climate change more effectively (Christis et al., 2019). Towa et al. (2021) proposed different CE actions for regions to increase their circularity and reduce their circularity gap. Nevertheless, these interventions must be developed with an *"integrated approach nesting inputs and outputs"*, and they should not imperil a shift of environmental challenges. Additionally, in the new global economy, the interconnectedness effects of countries and regions shall be considered and incorporated into foreign policies both at the EU and international scale (Towa et al., 2021a).

Real et al. (2020) refer to the work of Manzini (2013) related to the concept of cosmopolitan localism, described as a web of *"interconnected localities, where many important decisions are made locally by the people directly concerned, and more importantly, where for each step of the process of production and consumption, much of the decision-making, know-how and economic value remains in the hands, minds and pockets of the local communities"*. In this context, the CE is delineated as a network of smaller circular economies, where in order for a transition to happen certain settings need to be enabled which correspond to the local contexts, like regulation, policies, infrastructure, and user's conduct. This is closely linked to other concepts, among which are degrowth (Demaria et al. 2013), diseconomies of scale and opposition to bigness (Kohr, 1957) or conviviality (Illich and Lang 1973), all of which require change-makers to create socio-technical transitions in small territories such as cities or regions (Real et al., 2020). Nevertheless, according to Genovese and Pansera (2021), the governance and political implications are scarcely contested in CE literature, while the emphasis is firmly put on the technical feasibility, entirely depoliticizing its effects. This kind of technological optimism prevents scholars to challenge economic models which bring uncertain contributions to sustainability and perpetuates the idea that GDP growth

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can continue forever by simply recycling waste into new productive inputs (Corvellec et al., 2021). The technocratic outlook of the CE is grounded on the rift between a holistic discourse and end-of-pipe policies, anchored on growth and competitiveness rather on socio-ecological challenges. Hence, EU policies are only intended to advance circularity, rather than hindering the linear economy legacy (Corvellec et al., 2021).

The policy review performed by Stanojev and Gustafsson (2021) uncovered that CE should be perceived as a wider sustainable development strategy which should also *“support Member States and regions to strengthen innovation for the circular economy through smart specialisations”*. The work of Vanhamaki et al. (2021a) presented an original approach to investigate the spatial implementation of a CE using a conceptual framework of smart specialisation strategies (S3)¹ in EU regions. One of the main suggestions was regions to concentrate on precisely denoted objectives and specific but amendable plans on how to attain the targets, with the purpose to take advantage of both S3 and CE. Despite the fact that both S3 and CE are novel and still in development, hence good regional practices of combining both are still not available, the potential for synergies between these two approaches shall be acknowledged. Henrysson and Nuur (2021) highlighted the need for policy interventions, beyond sectoral involvements or requirements for more circular product design, in order to transition to a more CE. Namely, they call for policy actions directed towards local factors being crucial for establishing and maintaining institutional environment supportive of CE-based transformations.

Compagnoni (2020) also argues that regional authorities have indispensable role in implementing CE, because local challenges and opportunities related to CE adoption can be very specific. Three key instruments have been used by Italian regional authorities to introduce the CE principles at the regional level, namely, the Research and Innovation Strategies for Smart Specialisation, single regional laws (RL) and Regional Waste Management Plans. The S3, although considered as the most holistic instrument providing a multi-faceted policy mix based on medium-long run regional development ambition shared by many actors, was the least used one; only Emilia Romagna region explicitly mentioned the CE in its S3, while Piedmont and Lazio region included some close related notions to CE.

Sutcliffe and Ortega Alvarado (2021) studied the introduction of the CE concept in the Norwegian subnational levels, through the domestication framework in order to analyse how locality and cultural context influence the translation of global policies into local practices. The CE roadmap of Pääjät-Häme region, one of the first regional CE strategies (Vanhamaki et al., 2020) devised by local government, industry, and academia, aimed to close technical and biological loops, and encourage sustainable energy technologies, new consumption models and demonstration sites (Sani et al., 2021). When the Pääjät-Häme road map was launched, only big EU cities had CE strategies of plans like Circular Amsterdam (2016), Circular Glasgow (2016) and the London CE Route Map (London Waste and Recycling Board, 2017) (Vanhamaki et al., 2020). On the other hand, the focus of the Regional Programme of Brussels Capital Region was on the urban political economy of the CE (Sani et al., 2021). Overall, the CEAP (2021) appears to be largely focused on waste and carbon footprints reduction, increasing durability, reutilisation, reparation and recycling of products and promote digitalisation. When it comes to the social aspects of the transition, they seem to be limited to the encouragement of good practices for consumers, and overall, the

¹ An innovative approach aiming to boost growth and jobs in Europe, by enabling each region to identify and develop its own competitive advantages.

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issues of justice (social, geographical and gender), remain unanswered by the CE literature, mainly because the social and ecological benefits are wrongly conceived as by-products of the transition and assumed to be achievable by simply decoupling economic growth from the environmental impacts (Ripa et al., 2021).

The policies and legal frameworks stimulating CE are differing cross the world (McDowall, 2017), conditional on the political system and governance structure (Cramer, 2020). China on one hand is promoting the CE as a top-down national political objective, while, on the other hand, Japan, the USA, and EU countries are more reliant on devising bottom-up environmental and waste management policies (Ghisellini et al., 2016; Vanhamäki et al., 2021a). Similarly, Gravagnuolo et al. (2019) label the Chinese and European cities as leaders in the delineation and application of the circular city concept. However, the difference between their approaches is evident. The strategies of the Chinese cities are instigated by top-down national policies, while those of the European cities take a bottom-up, place-based stance, adopting diverse approaches depending on their resources and local challenges. More importantly, the strategic action plans for the CE transition of many European cities/city-regions are devised with the participation of consultants and local stakeholders (businesses and civil society organisations). Nevertheless, the 'apolitical' nature of the CE concept, being one of its main points of criticism, along with the ambiguity delineates the CE as an 'empty' signifier, availing different actors and sectors to articulate circular discourses depending on their political and economic agendas (Calisto Friant et al., 2020). Therefore, the need for more fundamental questions to be asked transpires, as stated in Ripa et al. (2021), such as: who is advocating the CE, which narratives they are using, which new socio-economic dynamics, regulatory challenges and trade-offs emerge from subsequent changes in supply chains and production and consumption processes, how is the CE discussed/understood differently across municipalities/states/regions and with what effects for their local/national/global regulation.

Therefore, the main research question that this chapter will attempt to address is *“what are the underpinning approaches fostering the emergence and development of CE policies and initiatives in different regional contexts in the EU?”*

7.3 Materials and Methods

7.3.1 Policy Delphi study

This study adopted a policy Delphi method, considering the main research question is related to the development of regional policy frameworks in the CE area. The policy Delphi, applied when dealing with social and political matters, is deemed more suitable in the social sciences compared to the classical Delphi (van Zolingen and Klaassen, 2003). The method includes a collection of data from experts in multiple rounds (van Zolingen and Klaassen, 2003; De Jesus et al., 2019; Campbell-Johnston et al., 2021) and the ultimate goal is to generate policy alternatives by adopting a structured public discussion (Faché, 1993).

The Delphi method has been applied in the CE literature so far. Campbell-Johnston et al. (2021) adopted a policy Delphi to investigate the outlooks on improving Extended Producer Responsibility (ERP) policies to contribute to the CE targets in the Netherlands. De Jesus et al. (2019) also used policy Delphi method to uncover the CE's core characteristics and evaluate the trade-offs which must be coped with for the transition, while Mahanty et al. (2021) and Sharma et al. (2018) used the classical Delphi method. To the best of the researcher's knowledge, no study so

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far has adopted policy Delphi to investigate the implementation of CE policies in the context of European regions. The policy Delphi was structured in four interrelated phases (**Figure 7.2**).

Phase 1 involved the nomination, selection and contacting of the experts. In total 169 regional policy experts were being reached mostly via email, but also via LinkedIn messages. In *phase 2* a short online survey was coded using the Qualtrics software and distributed to selected policy experts from *phase 1*. Before distributing the survey to the regional policymakers, an internal pre-piloting and piloting was conducted, testing the functionality but also the validity of the questions. In total 42 experts responded to the survey, representing 20 EU countries and 32 EU NUTS 2 regions (**Table 7.1**).

In the online survey, the experts had the opportunity to express their interest to participate further in the research, by agreeing to take part in an individual interview. Hence, in *phase 3*, semi-structured individual online interviews were organised with 19 experts, which aimed to tackle the hidden complexities of the area of research, which could not be captured in the survey. Ten (10) experts which responded to the survey also participated in the interviews. In two cases the participants of the survey suggested their colleague to participate in the interview, and the remaining 7 participants were recruited subsequently using a snow-balling technique, to mobilise additional knowledge, each one of them in their area of expertise. It has to be noted that not all of the experts were regional policymakers; some were policy analyst or directors working in EU institutions, eminent academics in the field of environmental sciences and regional development policies, project managers. All interviews were conducted online and recorded using the ZOOM platform. In total the video recordings amounted to 13 hours and 20 minutes (or 800 minutes) of recorded conversation, which then were transcribed by the lead researcher, using the standard (non-verbatim) transcription style.

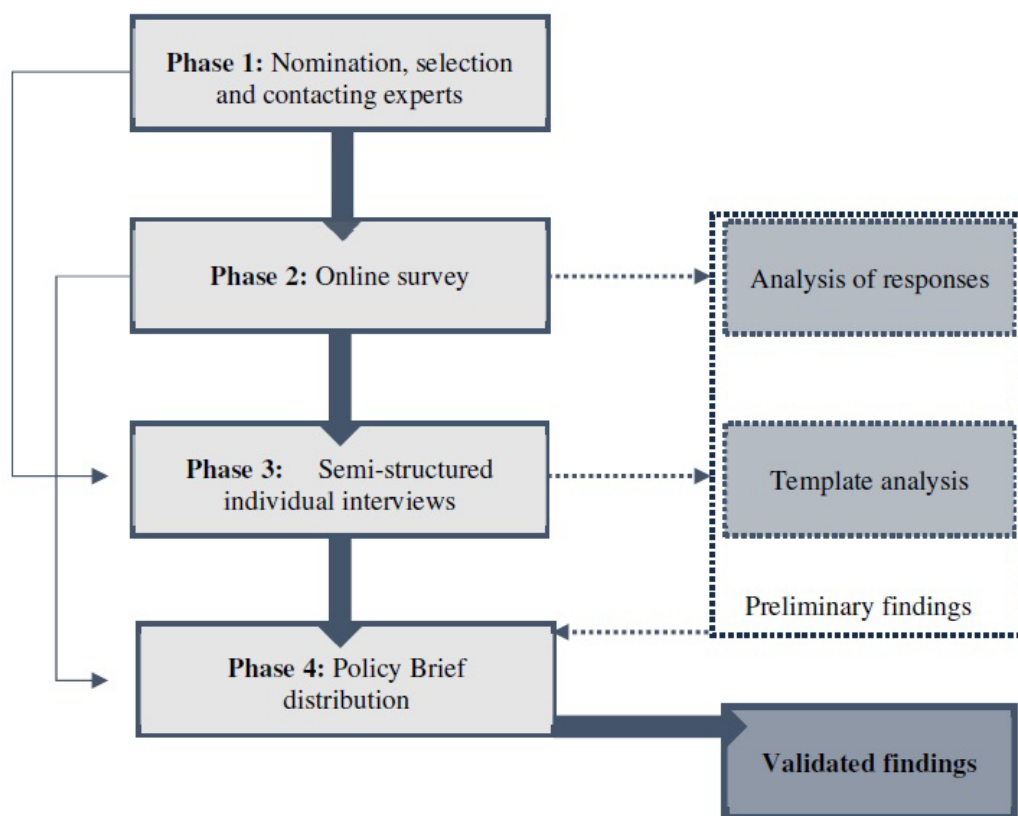


Figure 7.2 Policy Delphi study – process and data analysis

In the last phase, *phase 4*, a Policy Brief was developed with the main findings of the study from the previous phases and distributed for validation to 43 policy experts which participated in one or both previous phases of the study. In total, 10 experts provided feedback, 8 through mail and one through an online discussion which was subsequently transcribed. The feedback was collected, and the validated version of the Policy Brief was processed for subsequent analysis.

The length of the study including the primary data collection lasted roughly 14 months, from 12th May 2022 when the survey was distributed until 16th July until the final feedback for the Policy Brief was collected.

Table 7.1 Surveyed NUTS 2 regions and number of respondents per region

Country	Region	Number of respondents
Austria	Upper Austria	2
	Brussels Capital Region	3
Belgium	Flanders	1
	Wallonia	1
Cyprus	Cyprus	1
Czech Republic	Prague	1
Denmark	Capital Region	1
	Central Jutland Regions (The Central Denmark Region)	1
Finland	East and North Finland	1
	West Finland	1

France	Pays de la Loire	1
Germany	Weser-Ems	1
Greece	Region of Central Macedonia	3
	Western Macedonia	2
	West Greece	1
	Eastern Macedonia and Thrace	1
Hungary	North Great Plain Region	1
	Emilia-Romagna Region	1
Italy	Tuscany	2
	Marche Region	1
	Lithuania	Capital Region
Luxembourg	Luxembourg	2
Poland	Malopolskie	1
Portugal	Madeira	1
Romania	North-East Region	1
Slovakia	Western Slovakia	1
	Galicia	1
	Basque Country	1
Spain	Catalonia	2
	Sweden	Stockholm
The Netherlands	Friesland	1
	South Holland	2

7.3.2 Data analysis procedure

The interview transcripts were analysed using Template Analysis (TA), as one of the qualitative approaches for data analysis preferred by researchers who are pragmatists (Tabari et al., 2020). TA encompasses the development of a coding 'template', summarising the themes determined by the researcher as relevant in a data set, and arranging them in a purposeful manner (Brooks and King, 2014). TA, as a type of Thematic Analysis, is deployed in a wide range of research studies in social sciences, where the data sets are usually in a form of interview transcripts (Tabari et al., 2020; Brooks et al., 2015; Brooks and King, 2014). Themes are reiterative traits brought up by the participants which the researcher deems are important to the research questions, while the process of identifying the themes in the data set and labelling them (setting a code) is known as coding. The themes are arranged in template, in a purposeful way to show the links between different themes and sub-themes (Brooks and King, 2014).

In terms of coding approaches, hierarchical coding was applied, meaning narrower more specific themes were nested into broad overarching themes. Parallel coding was also applied where deemed appropriate, implying same segment of text was categorised within more than one different code and theme (Brooks and King, 2014). The coding was performed manually using MS Word, due to the low number of interviews. In this study a mixed approach was used, combining the deductive nature of the *a priori* themes emerging from the literature, and survey results on one hand, and the new themes emanating from the interviews on the other hand, representing the inductive nature of the process.

7.4 Results

7.4.1 Underpinning approaches for regional CE transition

Considering that each region will transition in a territorially differentiated manner, a deep analysis of the regional narrative is the starting point. Hence, careful consideration of the regional structural aspects is indisputably a precondition, entailing on one hand the place-based approach anchored on regional strengths, but simultaneously considering the challenges the region is facing along with the emerging opportunities on which the region can leverage. Equally important are the regional dynamics characterised by different idiosyncratic factors including geographical, economic, social, environmental, political, cultural, and technological factors, along with the industrial structure of the region, particularly in the regions with natural resource-based industries (NRBIs). In these regions where the regional strength is in NRBIs, the transitioning challenge is greatest, also due to the EU commitments to phase out such unsustainable activities by 2030.

The role and importance of regions were overall recognised throughout the whole policy Delphi study, and it was perceived through two different viewpoints – considering the territorial level of policy implementation and the perspective of a regional authority. When it comes to the latter, a tendency for organisational transformation at the level of regional administration was observed, shifting the focus towards challenges and transitioning themes in order to better align the organisational structures with the goals of the CE transition. In that context, regional efforts for establishing a transversal coordination unit extending beyond departmental borders could be beneficial, therefore adopting a holistic and systemic approach in the traditional departments at the public institutions.

The institutional structure and overall prevailing mentality in regional authorities proved to be vital for the development and adoption of CE policies because collaboration and trust required to undertake CE initiatives are fostered locally. Another essential issue to be addressed is to ensure perpetuity between political cycles, especially at the local and regional elections. The importance of having well-developed capacity and leadership skills at the regional level to envisage long-term vision and actions was also stressed, which makes regional authorities feel agency over their own future. An example of this is the unceasing determination of the Central Denmark region to vouch for early inclusion of the public sector in the CE transition by showcasing to the Ellen MacArthur Foundation that public sector should be part of the CE travel, as well as their ability to cooperate for lobbying on CE agenda inclusion in the national policy bills. However, the lack of regional capacities to plan, design and execute CE strategies was noted, as well as the uneven availability and distribution of skilled public servants in regional authorities working on the CE transition. An investment in human capital and tools needs to be made in order to address the lack of capacities in regional administrations.

Regional autonomy is another important determinant, which is being reflected in a rather fragmented legislative landscape within the EU. Namely, based on the division of power the EU regions are split into regionalised Member States (MS) and unitary MS at the two sides of the spectrum. In the regionalised MS the sub-national level, i.e., regions, have legislative powers, therefore a statutory delegation of power is exercised by the central government, i.e. devolution. Regions are having regional autonomy to devise regional laws in certain sectors and therefore have wider range of instruments disposable to mobilise regional stakeholders and initiate change. Simultaneously, this is one of the main challenges and caveats of regionalised governments, because it can often instigate a gridlock between the central and regional government. In unitary MS, the legislative power is entirely concentrated at the

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central government level, resulting in lack of regional autonomy, limited planning capabilities of the regions within these MS and general difficulties to advance centrally devised strategies.

Balanced distribution of power between formal and informal regional players was therefore deemed as ideal, ensuring harmonious symbiosis between central government and local level. In these instances, regions are playing an important role in the design and implementation of the policies, hence *“it’s not a race against the government, it’s actually a positive action for and with the government”*. These regions despite the lack of legislative power to devise regional laws are one of leading regions in the transition towards the CE, due to their strong institutional capacities, informal governance, organisation culture and value of regional authority being aligned with environmental affairs.

In that respect, the need to have a unified narrative towards the CE transition through the existence of a functional and efficient multi-level governance mechanism was underlined, including vertical and horizontal governance imperative. The vertical governance imperative emerged as highly important for the CE transition and in this respect the balanced distribution of power played a dominant role. The issue of coordination transpired in this discussion, where opposing views were noted. Some regions focused on ensuring directionality and transformative action, rather than coordination, while for others the lack of coordination was underlined as the main impediment to advance towards a more circular future, by decelerating the transition process and increasing the complexities. Hence, the establishment of some type of coordination body was deemed indispensable, and this need can be utterly met with the establishment of regional and national CE hubs. At the EU level, the formation of the CCRI CSO (Coordination and Support Office) was envisaged to tackle the coordination issue in order to overcome the challenges for CE transition. The horizontal governance imperative among different regional authorities and provinces was also stressed as instrumental for the CE transition in several interviews. In this setting, *“the regional level is so efficient, as the particular regional governance is developed”*. Lastly, in the CE transition, it is fundamental that the interplay between all governance levels is maximised. In this context, the EU plays a central role, by pushing for collaborative learning and bringing all relevant stakeholders together for knowledge exchange.

Both the EU Green Deal (EUGD) and the Circular Economy Action Plan (CEAP) are formulated and implemented following a very top-down approach, which certainly has the advantage of providing a unified directionality. However, the very top-down approach has the tendency to be auspicious for the already advanced regions, neglecting the needs of the weaker ones. Additionally, the increased environmental top-down conditionalities related to the EUGD funding instruments are raising the risk of squeezing out innovation due to an additional web of requirements, leaving regions with fewer degrees of thinking freedom. But without the bottom-up approach, a lot of conflicts and frustrations are generated; hence more balanced interventions are needed and ways to increase the interaction between both approaches.

In terms of the links between S3 and regional CE, a mutual interaction between the two policies was uncovered. A constant interplay between the two strategies was defined, and this is becoming more widespread lately, due to increased awareness of the CE idea. However, a less deterministic relationship appears to exist with several risks of adverse influence, including risks of regional lock-ins in linear supply chains and potential negative path-dependency situation.

7.4.2 Architecture of CE policies and initiatives in different regional contexts

Overall, it was deemed beneficial for a region to have a regional CE strategy or policy, mainly for two reasons, it provides an overall vision and directionality. Additionally, by developing a regional strategy, the region can leverage

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on funding indispensable for transition. Nevertheless, the interlinkages between the existence of regional CE policy and the level of CE advancement were characterised as nuanced, since there are regions which are very advanced in a particular field but don't have a CE strategy per se. Some essential determinants which need to be considered during the formulation of regional CE policies emerged, like the entanglement of the place-based approach since there is no "one-size-fits-all" solution. This was evident in the case of the Galician CE strategy, where the main focus was on food value chains because this sector is very important for the region. The systemic changes required for the CE transition were also mentioned, as well as the need for system boundary delineation. General EU guidelines in this respect were deemed as helpful both for regional and sectoral scales. The last determinant to be considered, particularly for the national level is to provide an overall framework where regional authorities can innovate based on their local situation and try to strike the balance between compliance and "room" for innovation. An attempt was made to categorize the regions based on the existence of a regional CE strategy, policy or action plan and its specifics. For instance, the region of Galicia has a standalone CE policy, the *Galician Circular Economy Strategy for 2020-2030*, and it has a twofold aim – to be aligned with the main EU policies and the regional S3. South Holland region also has a standalone CE strategy, but recently they developed a very industry-specific strategy looking at the regional logistics hubs, like the Rotterdam harbour in the CE transition. Brussels Capital region is another example of a standalone policy, *Brussels regional circular economy program of 2016-2020*. Catalonia has many regional policies addressing environmental issues, but the most relevant strategy is the *Bioeconomy strategy*. Additionally, the Catalonian S3 for both programming periods had CE as a transversal priority and therefore, a central element of S3.

The Region of Central Macedonia doesn't have a CE policy, but it has two related action plans resulting from ad-hoc EU projects, *Action plan for promotion of circular economy within the SMEs* and *Action plan towards biobased circular economy*. Furthermore, CE is one of the priorities of the National S3, and indirectly of the Regional S3 since they both have to be aligned. Marche region likewise doesn't have any regional CE strategy and has no intentions of developing one soon. Nevertheless, CE is quoted many times in their regional S3 as one of the main sectoral drivers. Similarly, the region has a *Regional Law on Industry 4.0*, focusing on promoting digitalisation, modernisation, and sustainability of businesses and the CE is part of it. The twin transition, green and digital, was additionally brought up in other discussions. Slovakia is another example where regions don't have developed their CE strategies, but the current National S3 (*Research and Innovation Strategy for Intelligence Specialisation of the Slovak Republic 2021-2027*) contains CE elements. Upper Austria has a wider sustainability agenda, called *Upper Vision 2030*, but furthermore has a roadmap for the plastics value chain. Central Denmark region has a wider *Sustainability Strategy for 2030*, where CE is one of the main focus areas, and moreover, they have a Sustainability Strategy focused on the plastics value chain in hospitals. In other instances, like Poland, CE policies on other levels like national and city level (Krakow, Warsaw, and Gdansk) were mentioned, despite the existence of few regional policies in Malopolskie and Śląskie region.

Additionally, an attempt was made to present the diverse scenarios among the EU regions which led to the initiation and formulation of CE policies or related activities. In the case of South Holland region, the CE strategy development was influenced by two factors from a political nature. Namely, the last provincial elections had a deputy with CE related political agenda, combined with the organisation transformation resulting in a shift of organisational structures and modus operandi. The latter one was also quite deterministic for Catalonia, where a shift from an overarching CE regional policy to the integration of CE elements in a wide range of existing regional policies was observed. Both cases are the result of strong regional initiatives coming from the regional authorities. The Galician government was another example where the regional government contracted the formulation of the strategy,

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following the priorities coming from the EU. The policy formulation was initiated by the regional government, and drafted by three universities, considering the feedback of the Triple helix actors, industry, academia, and government, but omitting the involvement of societal actors.

Central Denmark region was another example where CE-related activities were undertaken even in 2010, originating from the genuine interest of the regional authorities in the CE agenda. This was founded on normative and innovative approaches to mobilise the regional ecosystem, by initially establishing a platform enabling to work on CE-related issues. The outcome of this was their first strategy, called the Innovation Strategy, developed following a co-creation approach. In parallel, the region was working with SMEs, by initiating a program for SMEs interested in CE transitioning. There were also very effective vertical governance mechanisms for cooperation, because the region was also engaging the municipalities by providing municipal funding for CE-related projects, involving Triple helix actors, and municipalities had the obligation to include these CE actions into their municipal strategies. Subsequently, the region shifted their efforts towards value chains, trying to ensure every partner along the value chain had value from cooperating towards CE. Therefore, they identified “piloting” areas for testing and gaining knowledge, focusing on a project on plastic packaging in hospitals.

On other occasions, certain regional policies were formulated following a top-down conditionality, either coming from the EU or national governments. The *Sustainability Strategy 2030* of the Central Denmark region was a legal demand coming from the Danish national government. On the other hand, the Galician case was an example where the EU policies and priorities were more influential than the national ones, pointing out a potential disjuncture of the transposition process. Nevertheless, the impediments to these EU initiatives reaching all regions simultaneously were also highlighted since this will require a particular governance structure and a more focused approach targeting specific areas. In this context, it was noted that there is also an upward channel of influence because the actions of the regions are affecting the EU policies in turn. This top-down conditionality is inevitably increasing the compliance and requirements at regional and local levels, which bears the risk of strangling the innovation. Poland was another interesting example, where due to EU law the countries were obliged to have National Waste Management Plans as well as Regional Waste Management Plans, and recently regions started converting the latter ones into regional CE plans, as a response to the latest developments. However, these plans are very sector-specific, mostly focusing on waste management, industrial and municipal because this is the easiest way to report good results, as stated in one of the interviews. Despite the lack of regional CE policy, the Marche region has scattered CE-related activities undertaken within different EU projects but has no CE strategy. Lastly, an attempt was made to show the different stages of CE policy implementation among participating regions, along with some of the main challenges they are encountering. The CE concept started penetrating in related policies and discussions at the regional level, however, there is still a time lag between West and North Europe, compared to South and East Europe. For example, CE-related discussions that have existed in Brussels since 2013 have only now started appearing in Western Greece. Catalonia was one of the most advanced regions when it comes to CE adoption, where CE is becoming business as usual, according to the participant. The CE policy has already penetrated in a wide range of existing regional policies, and there is integration of the CE concept. Western Macedonia region is in the process of formulating regional CE policies. Similarly, Slovakian regions will need to devise regional policies due to regulatory compliance in the current programming period 2021-2027. Despite not having a CE policy, the CE concept started penetrating in related policies in the Marche region, as well as different scattered CE activities have been undertaken within EU projects, like the establishment of the regional reuse centre. In other regions, there is a lack of realisation observed due to different reasons. The immaturity of the CE concept was raised not only in Malopolskie region but in Poland overall, as well as in the Region of Central Macedonia

where additional difficulties were faced in the CE implementation on the industry side since SMEs seem disengaged with the CE agenda. In other instances, like for Galicia, policy prioritisation issue was observed, because of the political agenda. For the South Holland region, a lack of regional enforcement mechanisms was noted, since occasionally tasks from the national government were delegated without adequate budget allocation for implementation.

7.5 Conclusions

This chapter provided an overview of the current approaches underpinning the CE policies and initiatives in different European region, and how did CE transitions unfold across different geographical contexts. Namely, the CE transition will entail a place-based perspective, as each region will transition in a territorially differentiated manner; hence, policy actions directed towards local factors are crucial for establishing and maintaining an institutional environment which is supportive of CE-based transformations. In this context, the rigidity of institutions and inflexible organisational structures were mentioned as existing obstacles, as well as the insignificance of the level issuing the regulation for the stakeholders; what matters is the availability of funds, directionality and new regulations that *"indicate the landscape is changing"*. Balanced distribution of power between formal and informal players was deemed as ideal, with functional and efficient multi-level governance mechanism in place (both vertical and horizontal), allowing interplay maximisation between all governance levels. Overall, the configuration of the CE policies within EU regions appears to be wide and diverse, ranging from no policies in place (but scattered CE activities undertaken within the region), to existence of a standalone CE strategy, action plan, or wider sustainability agendas which entail CE elements. Similarly, the initiation of regional CE policies seems to be diverse, some following top-down conditionality, while others being initiated on an initiative of the regional government. In terms of stages of implementation of the CE policies, the picture was also scattered; on one hand we identified regions where CE was perceived as business as usual and the CE concept has penetrated in wide range of existing regional policies, while on the other, we found regions not knowing from where to start from. The CE concept started penetrating in related policies and discussions at the regional level, however, there is still a time lag between West and North Europe, compared to South and East Europe. The main challenge therefore is whether the CE transition, with its 'apolitical' current framing and related implementation instruments, will act as a potential accelerator of the divide, ultimately creating a two-speed Europe. In light of this, the distributional aspects (who gets what environmental benefits and burdens) and related justice need to be considered in the systemic transition not only towards more circular but also a more just future. Therefore, the geographical (and social) distribution of benefits and burdens from CE transitions and policies should be further explored, taking into account the territorial polarities, inequalities and shifting power dynamics which could transpire.

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