

# Towards Circular Economy

Exploring states' incentives for change

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## Abstract:

This paper explores how policy makers want a transition towards circular economy to look like and what solutions they visualize, with a focus on the why(?) arguments. By analyzing the discourse in states official roadmaps towards circular economy, this study forms an understanding for what motivates a transition. The findings show that the possibilities for economic gains and the creation of new markets are the main purpose to change. In addition to that, whenever the survivability of humanity and the environment was arguments for a change, it in almost all cases came back to the economical outsets with such transition, how much money can be gained/saved.

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## List of contents:

<b>1. Background:</b>	1
<b>1.1 So, what is Circular Economy?</b>	1
<b>1.2 Linearity to circularity:</b>	3
<b>1.2 Purpose:</b>	4
<b>1.3 Research question</b>	5
<b>2. Literature review</b>	6
<b>2.1 Social constructivism:</b>	6
<b>2.2 The relation between politics and environmental ethics:</b>	7
<b>2.3 What is the environment?</b>	7
<b>2.4 Sustainability:</b>	8
Weak sustainability	9
Strong sustainability	10
<b>2.5 Green political theory of value:</b>	11
Economic	11
The Anthropocene	12
Eco-centric	13
<b>3. Method:</b>	15
<b>3.1 Epistemology:</b>	15
<b>3.2 Sampling</b>	16
<b>3.3 Discourse analysis:</b>	17
<b>3.4 Validity and reliability:</b>	19
<b>4. Analysis:</b>	20
<b>4.1 Slovenia:</b>	20
4.1.1 Introduction:	20
4.1.2 Why CE?	20
4.1.3 General theme:	21
4.1.4 Focus Areas:	21
4.1.5 Summary:	23
<b>4.2 Denmark:</b>	24
4.2.1 Introduction:	24
4.2.2 Why CE?	24
4.2.3 General theme:	25
4.2.4 Focus areas:	25
4.2.5 Summary:	27

<b>4.3 Scotland:</b>	27
4.3.1 Introduction:	27
4.3.2 Why CE?	27
4.3.3 Focus Areas:	28
4.3.4 Summary:	29
<b>4.4 Finland:</b>	30
4.4.1 Introduction:	30
4.4.2 Why CE?	30
4.4.3 Focus areas:	30
4.4.4 Summary:	33
<b>4.5 The Netherlands:</b>	33
4.5.1 Introduction:	33
4.5.2 Why CE?	33
4.5.3 Focus areas:	34
4.5.4 Summary:	36
<b>4.6 Discussion:</b>	37
4.6.1 The role of consumers, companies and the state:	39
4.6.2 Global justice:	40
<b>5. Conclusion:</b>	42
<b>6. Further Discussion:</b>	43
<b>References:</b>	44

# **1. Background:**

The environment has over the past fifty years caused a growing concern among scientists, politicians and the public. Over the past spring, protesters in London have been blocking trains and bridges, hundreds have been arrested by the police (Said-Moorhouse 2019). There is also the student strike initiated by Swedish Greta Thunberg (Watts 2019) that have spread worldwide. On a political level, focus have primarily been on new green solutions, rethinking policy and political action. One of these policies are Circular Economy (CE), the idea of reusing, refurbishing and recycling products without adding anything but energy (Kalmykova et al. 2018). This paper will explore how policy makers want this transition from a linear to a circular society to look like.

The birth of the modern environmentalist movement is generally connected to the publication of Rachel Carson's *Silent Spring* in 1962 which became an immense bestseller. The book created a massive debate on the environment and the conflict between international and national interests in global issues. Public concern increased as pollution had been visibly growing for some time with cities covered in smog and bodies of water declared "dead". Due to the public opinion and the high tone in the media debate, new laws were formed, and the situation improved noticeably. However, when climate change became a major issue many were inclined to dismiss it as overdramatized as the effects were not obvious and dealing with it would fundamentally change our lifestyles. These new environmental concerns, unlike the core concerns of the previous environmental crisis, are truly global (Goodin 2013). These problems are shared globally in a stronger sense, they are not just problems for each nation to handle by themselves. The whole world must be involved in the solution. That is why new social and political solutions that emerges from global issues must be progressive and rethink everything we know (ibid 2013; Brännlund and Kriström 2012).

## **1.1 So, what is Circular Economy?**

CE is an umbrella for multiple different models on how to change production and the current 'Take-make-dispose' linear economy. The first theories on CE as an approach to combat increased consumption of raw materials, scarcity of increasingly important materials and promote sustainable development emerged back in 1966 (COM 1977; Boulding 1966) but it has recently received increasing attention in the debate on industrial development. These discussions are primarily led by policy makers such as the European Commission (COM 2015,

2017) and state actors (Kalmykova et al. 2018). Although the idea of material cycles has been around since the dawn of industrialization (Desrochers 2002; 2004) it has been given potency by the current discussions on climate change mitigation and sustainable development. Unlike traditional recycling, the practical policy and business advocacy orientated CE approach emphasizes product, component and material reuse, remanufacturing, refurbishment, repair, cascading and upgrading, viewing recycling as the last resort (Kalmykova et.al. 2018; MacArthur 2015).

The CE concept is diverse, making it difficult to define and understand. In this section I further provide insight on how the notion of CE is based on a vast collection of ideas derived from a variety of scientific disciplines, such as spaceman economy (Boulding 1966), limits to growth (Meadows et al. 1972), “cradle-to-cradle” (Sahel and Ready-Mulvey 1981; Braungart et al. 2007; McDonough and Braungart 2002; 2003), industrial ecology (Frosh and Gallopoulos 1989; Ayres 1996; Lifset and Graedel 2001; Graedel 1996), steady-state economy (Daly 2005) and performance economy (Stahel 2010). Apart from established research fields (e.g. ecological economics), which has a long tradition in recycling and its related issues (Georgescu-Roegen 1971; Daly 1996; Ring 1997; Boulding 1966; Ayres 1999), CE also provides a natural point of departure for other research streams. These include industrial ecosystems (Jelinski et al. 1992) and industrial symbioses (Chertow and Ehrenfeld, 2012), cleaner production (Ghisellini et al. 2016; Lieder and Rashid, 2016; Stevenson and Evans, 2004), product-service systems (Tukker, 2015), eco-efficiency (Huppes and Ishikawa 2009; Haas et al. 2015; Welford 1998), biomimicry (Benyus 2002) resilience of social-ecological systems (Folke 2006; Crepin et al. 2012 ), the performance economy (Stahel 2010; EMAF 2013), natural capitalism (Hawken et al. 2008), the concept of zero emissions (Pauli 2010). This gives an idea on how many diverging approaches that works within the same framework.

Before moving on, I will mention a few of the different models seen within CE, highlighting the similarities within the foundation of thought:

- ‘Spaceman economy’ suggest the replacement of the open economy by a cyclical system capable of continuous reproduction of material and products, all it needs to exist is a constant flow of energy (Boulding 1966).
- ‘Limits to growth’ is a computer simulation focusing on the need for change by illustration. The simulation is based on exponential economics and population growth

with finite resources under three scenarios. Two of them overshooting their resources leading to a collapse and one reaching sustainability (Meadows et al. 1972).

- ‘Cradle-to-cradle’ depicts a closed system where resources continuous flow in a product-life cycle (Sahel and Ready-Mulvey 1981). Similar to the reuse, recycle present in CE.
- ‘Industrial ecology’ envisions an integration of industrial ecosystems - inspired by the biological (Frosh and Gallopoulos 1989). Implementing such biological implementation on the industry would create zones where materials are recycled and reused internally and where the only input would be energy (Ayres 1996).

Despite the first models being introduced back in 1966, CE have received little political attention, at least until recently (Kalmykova et al. 2018). Over the recent years, CE has seen a revival and become an increasingly used concept. Before 2012, most countries did not discuss CE but China, the country formed its scarce resources policy already back in 2002, which has later developed into a wider CE framework (Mcdowall et. al. 2017).

## **1.2 Linearity to circularity:**

In short, CE seems to be able to provide solutions to many of the complex problems of the 21<sup>st</sup> century and it has therefore become a true buzzword among policymakers and researchers. It is however also widely recognized that a transformation from a linear to circular model is not an easy one since it will require new type of design, business models and more collaboration between different actors and sectors (Ellen MacArthur Foundation 2018). In other words, transformation from linearity is not simply a technological project but requires a great deal of political will. It is also important to point out that the notion of CE expands beyond production of goods in the sense that CE is also a framework that aims to develop and increase sustainable consumption. This is done for instance through promotion of shared economy (EMAF 2013 quoted in Korhonen et. al. 2018:545).

Research shows that the benefits of a transform from linear to circular model are significant. It has been for example calculated that in the circular model European gross domestic product (GDP) could increase as much as 11 percent by 2030 and 27 percent by 2050 (compared to 4 percent and 15 percent growth in the liner model) (Ellen MacArthur Foundation 2015).

CE emphasizes product, component and material reuse, remanufacturing, refurbishment, repair, cascading and upgrading, while seeing recycling as the last resort due to its inefficiency (Kalmykova et.al. 2018; Ellen MacArthur Foundation 2015; Tierney 2015). That recycling, as it is today, is not sustainable, became undeniable after the world's largest importer of plastic waste, China, put a ban on imported plastic waste January 1st, 2018 (O'Donnell 2018; Mosbergen 2019). Newly formed companies in south-east Asia were paid to process the waste, and no control were made on their ability to do so (Brooks et al. 2018; Harrabin and Edgington 2019). On a yearly basis an estimated 9 percent of plastic is recycled while 11 percent goes in landfills and a staggering 80 percent is expected to end up in our nature and oceans (Jambeck et al. 2015; Brooks et al. 2018). According to the Ellen MacArthur foundation report (2016), there will be more plastic than fish in the ocean by 2050 and if we do not change our patterns of consumption, 20 percent of all new oil produced will go to plastic products, compared to around 5 percent today. Today's linear 'take, make, dispose' economic model, which relies on cheap and easily accessible materials has reached a point where scarcity of certain resources will inevitably lead to changes, and CE is believed to be the best approach (Ellen MacArthur Foundation 2015)

## **1.2 Purpose:**

Research in the field of CE has mainly focused on the potential of technological innovations and the market economy's role in driving the transition to a sustainable society and economy. The transformation from linear to CE is a deeply political project since it has the capacity to change many important aspects of our everyday lives and these socio-political aspects of the transform from a linear to a circular model have been therefore understudied (Markard et al. 2012; Smith et al. 2010 cited in Martin and Upham, 2015). There is also a need for more research on the different stages of implementation strategies and political aspects of CE. For example, Kalmykova et al. (2018:190) have pointed out that lack of research on this field can preclude effective implementation of CE and even put planned CE investments at risk. Furthermore, as Milios (2018) and Korhonen et. al. (2018) point out, definitions of CE (such as the one by Ellen MacArthur Foundation 2015:2) are rather ambiguous and words and terms such as 'restorative' or 'highest utility' linked to CE can be difficult to translate to the language of policies and therefore put in practice.

According to Kalmykova et.al. (2018), there is no overarching analysis of the available CE implementation strategies and on the CE implementation experiences. That is why this paper aim at exploring the underlying, either explicit or implicit, reasoning behind the implementation of CE in different national contexts. Uncovering the incentives states emphasizes on, how to regionally tackle a global issue. By analyzing the discourse in the roadmaps towards CE, this study seeks to understand whether motives and incentives for CE are built around anthropocene, ecocentric or economic discourse<sup>1</sup>. In a wider perspective, this will also highlight whether and how environmental ethics have a role to play in the formulation of environmental politics.

The purpose of this paper is to explore how policy makers want the transition towards CE to look like, what solutions they visualize but with a focus on the why(?) arguments, how different actions and solutions are motivated. This will be done by using the framework genres of future generations (anthropocene), climate change and environment (Ecocentric), or economic implications and possibilities (economical). By doing so, I will highlight what is being used and how the same solutions might be framed differently depending on social values and context.

This area of study is increasingly important as the current CE concept is hampered by diverging approaches, making dissemination and evaluation context driven. Korhonen et al. (2018) argue that the current research on CE focuses on the tools, indicators and instruments - such as energy consumption, waste and emission etc. - which is only the first step towards a paradigm shift. Both Kalmykova (et al. 2018) and Korhonen (et al. 2018) argue that there is a huge gap within CE research on how to change values, social structures and underlying world views on corporate social responsibility and the state as a driver for change. A gap that needs to be filled to create a more holistic understanding of CE and how it needs to move from idea to public philosophy (Carstensen and Paulsen Hansen 2019:582). Different states are bound to have different ideas on what CE is. Understanding these differences is thus a key for shaping a new global paradigm (see Jarozs 1996; Howarth 1995; Carstensen and Paulsen Hansen 2019).

### **1.3 Research question**

The research question is defined as follows:

How do different states motivate a transition towards Circular Economy?

- Anthropocene, ecocentric or economic discourse.

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<sup>1</sup> See chapter 2.5 for definitions

## **2. Literature review**

In this chapter the key concepts and perspectives connected to CE will be introduced and problematized through a social constructivist frame, drawing from Korhonen et al. (2018) argument regarding the socially constructed nature of CE. The following sections will introduce the reader to social constructivism, the relationship between politics and ethics, and how commonly used terms such as sustainability and environment are to be understood.

These sections build the foundation for the genres used in the analysis, presented in chapter 2.5.

### **2.1 Social constructivism:**

Social constructionism is used in this paper to explore meanings connected to CE. Social constructivists argue that concepts such as CE do not have an objective meaning of their own, but they are constructed in a discourse between social actors (Eder 1996 in Klostermann and Kramer 2006). In other words, concepts such as CE are shaped by local practices and understandings and thus mean different things in different contexts (Klostermann and Kramer 2006).

Bryman (2011) argues that social interaction creates social phenomena and that social phenomena are constantly under revision. Whether it is politics or economic paradigms, humans play a large role even if we do not realize it ourselves. Today's reality is thus something the younger generation is learning by discovering the social patterns and the different institutions embedded in society (Wenneberg 2001). This comes with the assumption that certain concepts and frameworks will be interpreted differently in different contexts based on historical, cultural, political and economic conditions (Godrej 2016:39).

According to Foucault, when we start to think about reality in a particular way, we block our ability to think in other ways (Johnston 1986). Hence, Foucault's central question was: what gives the claims the authoritative status of truth? To answer this question Foucault looked at the broad cultural and historical contexts, and the differences, that produced the truths, and the practices that the truths make possible (Howarth 1995:115). Some scholars (Escobar 1996; Peet and Watts 1996; Jarosz 1996) claim that the mainstream definitions of climate change and environmental problems are socially and politically constructed to the advantage of the few.

This is an interpretation of Foucauldian (Howarth 1995:115-117) discourse theory which suggests that science and the institutions which generate it works as means of reproducing the old positions of power. This suggests that concepts are constructed rather than discovered yet maintained as they correspond to something real in the world. This is consistent with the idea of Berger and Luckmann (1991), they are concerned with the construction of knowledge - how theories on what causes environmental harm to emerge and how these perceptions become so significant for society.

## **2.2 The relation between politics and environmental ethics:**

The general standpoint seems to be that politics and science are the tools to lead the change and solve the issues. Science does indeed provide us with information of the issue, for example the thinning ozone-layer, the tools and technical development to tackle the issues. However, as Stenmark (2017) points out, we are unable to form environmental policy based on science alone and we need other sets of frames.

Understanding our process of valuing becomes particularly important when environmental issues and climate change constitutes to the entire planet, the oceans, the atmosphere, our continents and all living things populating these areas (Broome 2012). All connected through complex interactions we cannot simply explain or predict. Once science has done its job and the predictions are set, we face the challenge of valuing these outsets. Besides plant and animal aspects, climate change will inevitably lead to the loss of lives in heat waves, famine, by diseases or in other ways. Actions to slower climate change and protect our environment will save lives and the benefits of doing so has to be considered (ibid 2012:8-9).

## **2.3 What is the environment?**

One of the key aspects of green politics and concepts such as CE is an interest to safekeep and protect our environment. But what is the environment and where do we draw the line between nature and environment? In the narrow sense of the word, 'environment' refers to what surrounds us, thus including the room you are in or the world you are inhabiting. The word environment in different languages reiterates this meaning, the German word Umwelt "the

surrounding world” or “the world around”, and the French milieu which can be translated as “the place we are in the middle of”. In other words, environment is where we are, the city we are in, what surrounds the city and the planet itself. But is there any nature in our environment? The answer to this question depends on how we define nature. John Stuart Mill (1879:373-375) pointed out that the word ‘nature’ has two distinct meanings. On one hand, it is commonly understood as “the sum of all phenomena” - everything that exists and operates in the physical world under the “laws of nature”; On the other hand, nature is everything except results of our intelligence, skills and capacities - the constructed house, computers, roads and cars.

One of the issues with modern environmentalism, as pointed out by Steven Vogel (2016:151), is the usage of nature as “the part of the world that is independent of human beings and hasn’t been affected by them”, making nature unconnectable with the environment. Vogel (2016) questions this standpoint by arguing that no part of nature is untouched or can be separated from the environment as the environment is truly global and shaped by human interaction. Zalasiewicz et al. (2010) refers to this as the anthropocene epoch, where humans are the major factor to changes in the environment and our lack of controlling mechanisms make our impact anarchic. Garrett Hardin’s (1968) famous “tragedy of the commons”, where a group of herdsmen each can decide if they are to add more cattle to their herd also follows this idea. If they each keep on adding, the common collapses, and yet there is an advantage for the individual in increasing the herd, no matter what. This example of the commons explains some of the challenges of environmental issues.

Problems of the environment, from this point of view, are thus not problems of nature. These issues arise from the failure to grasp the consequences of our actions towards the world that environs us. Actions such as COP and the current student protests are different ways to acknowledge that the environment is built by us and there is an urgent need to build it better. Vogel (2016:157) argues that the environment we inhabit is in the condition it is, not because we decided to build it that way, but because no decision was made at all. Nature is not separated from environment but rather a symptom of reification where it is given a new meaning.

## **2.4 Sustainability:**

The meaning of sustainability is, alike environment and CE, a subject of debate among scientists. Just like the previous concepts, sustainability and sustainable development are subject to socially constructed meanings of context and culture (Escobar 1996; Peet and Watts

1996; Jarosz 1996). One of the key issues with sustainability is the concept as such – it can be seen as not fully operational and flawed since it mixes together the technical characteristics of a particular development path with a moral/ethical injunction to pursue it (Du Pisani 2006; Arias-Maldonado 2013). The sustainability debate currently focuses on the maintainability between economy and environment or between “natural capital” and “manufactured capital”, a debate captured in terms “weak” vs. “strong” sustainability (Du Pisani 2006; Ayres et al. 2001). The definition depends on perspective, but in general, it is understood as balance within what is measured (Goodin 2013).

Weak sustainability is characterized by the lack of consideration to the depletion of natural goods as long as new goods of equal value are produced. Ayres et al. (2001:2, 5) describe weak sustainability as when we dismiss the fact that some natural material and services cannot be replaced by manufactured goods and services, highlighting the lack of tools to give things that is not refined a value. Ayres et al. (2012) argue that weak sustainability results from uncertainty on how far the Brundtland report's injunction to conserve our environment, plants and animal species really goes. Are we supposed to preserve all of them? And at what cost? The Brundtland report (1987:2), for example, stated that 'The loss of plant and animal species can greatly limit the options of future generations; so sustainable development requires the conservation of plant and animal species'. Or as Wilfred Beckerman put it already in 1994, “Interpreted this way, sustainable development becomes equivalent to some requirement that well-being does not decline through time” (1994:195).

Ayres et al. (2001) argue that following the release of the Brundtland report, we entered a period of weak sustainability; the continuation of human progress and economic development was seen as key for any development. This was made possible by masking the resources that initially seem inexhaustibly abundant and signs of their incipient depletion by normal fluctuations in resource levels between years or decades. This fluctuation and uncertainty make it difficult to get people to agree on exercising restraint in harvesting a shared resource (see tragedy of the commons). Furthermore, in some theories, including economic growth sustainable development is translated into intergenerational equity (Ayres et al. 2001:3), this means that development is about always increasing the standards. In sum, for the concept of sustainability to be operationally useful, it must be more than just an expression of social values or political preferences disguised in socially constructed scientific language (Janakiraman et al. 2018).

To give an example of the implications of weak sustainability in practice, we can look at the small Pacific island nation of Nauru (Case from Pariona 2017). In 1900, one of the world's richest phosphate deposits was discovered on Nauru. Over the past decades, the people of Nauru have held a high per capita income. Income from phosphate mining enabled the Nauruans to establish a trust fund estimated to be as large as \$1 billion, at fund that should have insured a steady income and the economic sustainability of the island. Unfortunately, the financial crisis, that hit hard on the Asian economy, among other factors, destroyed large parts of the fund. The people of Nauru now face a bleak future. Today, as a result of over ninety years of phosphate mining, about 80 per cent of the island is devastated and unsuitable for life. Their island has turned a biological wasteland and the money Nauruans traded for their island has turned into dust. The "development" of Nauru followed the logic of weak sustainability and shows how weak sustainability may lead to irreversible environmental devastation. This case illustrates why values of nature cannot be compared to manufactured values - once something is transformed into manufactured capital there is no way to return to the original situation.

Strong sustainability is growing forth in the modern discourse where natural environments and depletable resources have shifted to a bio-based economy approach and increased importance to renewable energy sources (Majer et al. 2018). According to the strong sustainability discourse, different types of capital (economic, ecological and social, see Ayres et al. (2001:7)) should be independently maintained. One example of when all three can be seen in the same policy is the management concepts within the forest industry. These frameworks try to ensure that extraction of timber does not surpass regenerative capacity, allowing future generations to benefit economically, environmentally and socially from the forests the same way the present generation does. It is thus not surprising that the roots of the sustainability certification, which started by the end of last century, are also related to forest management systems (Majer et al. 2018:2). The major driver for such policies is derived from the recognition that natural resources are essential aspects of our economical production, welfare and consumption and cannot be substituted for human capital (Ayres et al. 2001:7-8).

The general standpoint is that some naturally existing mechanisms and functions cannot be reproduced or replaced. When damaged, it lies beyond human capacity to do anything but safeguard and limit the damage (Majer et al. 2018:3-5). In other words, strong sustainability focuses on ecosystems and environmental assets that are invaluable and make our lives possible.

The ozone layer and clean air is examples of the second; songbirds or coral reefs might be an example of the first. Ayres et al. (2001:5) describes environmental assets as separated from economic assets and only partially substitutable. While we cannot safeguard everything, there has to be an awareness of what is sacrificed in the process as it may be irreversible on either a regional and/or a global scale.

## **2.5 Green political theory of value:**

A theory of value is, put simply, a theory trying to define what is good or bad and why. However, as Robert E. Goodin puts it, a theory of value is an idealistic outset and does not always succeed in providing a complete theory (2013:19). That gives rise to interpretations and the possibility to match incompatible theories. However, the green political theory of value offers us ways to question the role of different actors and their incentives (Clary-Lemon 2019:91). After all, how important one component is in the overall good, depends on how important supposed consideration of the good ought to be (Goodin 2013:20).

The world is filled with terminology that helps us separate humans from nature, and we do not often recognize how nature is pitted against economic growth, culture and human progress positioning “nature-as-other” (Clary-Lemon 2019:25; Sandilands 2000:179). This separation of human and environment, as well as nature and environment, sets up a naturalized discourse about the physical world (Clary-Lemon 2019:26). I use the term discourse here in its Foucauldian sense, defining it as “practices that systematically form the objects of which they speak” (quoted in Howarth 1995:115) and thus connecting it to the previous discussion on knowledge as constructed. Accordingly, the way humans have built and circulated their knowledge of their relationship with nature over the past five-hundred years has everything to do with how current discourse is formed (Clary-Lemon 2019).

Economic approaches, as used in this paper, are solutions that increases competitiveness, economic growth and profit for the current generation (Iermakova 2019:90; Beckerman 1994). This is the type example of Ayres et al. (2001) weak sustainability, the exchange of goods is valued as even when something of similar value is created in exchange of natural resources. This system incentivizes change and environmental preservation by the creation of economic value (Iermakova 2019:93). Economic arguments are also one of the most common starting-points for a great deal of political policy formulations (Lory 2010). Economic sustainability arguments are focused on how a transition will create new markets and new areas of

entrepreneurship where profit can be made (Iermakova 2019). It also focuses on how companies can change their business model to new public values and changes in the production paradigm (Iermakova 2019:93). Keywords, such as, choice, the market, competition and flexibility can be seen in most economic driven discourse, also the environmental discourse (Lory 2010:2).

Some of the main arguments on climate change and environmental issues from the economic perspective is that it does not consider economic sustainability. Solutions are not cost efficient and, in many cases, not doing enough. The threats are also seen as exaggerated; thus, the main issues of economic sustainability are on topics such as scarce resources and solutions that increase profit (Lory 2010:16; Iermakova 2019:90). These perceptions are, according to Lory (2010:17), not politically aligned but business oriented. For example, if there is a need for energy, decision makers have historically preferred solutions that further human and industrial development over preservation of environment. Brännlund and Kriström (2012:73-74) uses the example of a large dam and waterpower plant, historically we have built the dam, even when we previously deemed there to be an inestimable value in the river.

The anthropocene refers to the inevitable human intervention on our environment and the focus on human gains. For as long as we remain on the planet and possibly well after we are gone, our activities will impact these systems in significant and irreversible ways (Williston 2015:24). The anthropocene discourse within the green movement is focusing on the materialistic outset for future generations to uphold the same or, preferably, better conditions of life (Clary-Lemon 2019:53,56; Beckerman 1994:195). Not to be confused with the economic aspects that can be intertwined with the anthropocene but are not dependent on the existence of the other. One of the most profound achievements of the anthropocene is our increased appreciation of the interrelated and complex system we live our lives in. We have come to realize that natural-ecosystems function in ways that limits on our possibility to control them (Williston 2015:25). In addition, the anthropocene is what Ayres et al. (2001) describes as strong sustainability, it holds the longer perspective and solutions are not always the most profitable, sometimes a resource needed for the economy has to be left untouched as other values are preserved.

In the context of CE, anthropocene arguments represents the view of human interference in the natural as something inevitable. Nature is something that, without proper care and a change in humanity's lifestyle, will inevitably collapse. anthropocene discourse holds a strong focus on perseverance of resources and goods for future generations, the survivability of the human race and the increase of life-quality. Byron Willison (2015) argues, that the next step is extremely

difficult, as after we recognized our influence, we need to make decisions on how to proceed. The future is open to our collective agency in a way humanity has never seen before as old actors will have to change and new actors will dictate the greater good. In sum, while the anthropocene indirectly will look after nature, but nature is rather a side note when the conditions for future generations to survive are granted.

Eco-centric approaches, on the other hand, views both the economic, anthropocene and their solutions as based on the delusion that we can solve whatever problems we encounter in the future simply by speeding up the very processes that created the problems in the first place (Williston 2015:25). The ecocentric argumentation and solutions moves beyond Ayres et al (2001) strong sustainability perspectives. Here nature is the starting point for any solution, the answer to what is a good is depending on nature itself as it cannot be substituted by physical or human capital (Ayres et al. 2001:4). The eco-centric is the attunement to nonhumans and may move the discourse outward from a humanist frame yet this do not need to be antihuman (Clary-lemon 2019:118).

The survivability of humans, as focused on by the anthropocene, and the continuation of economic growth, is all relying on the resources produced by nature. Where the previous perspectives views humanity as a gardener that controls and moves nature, the ecocentric suggests that it probably is the other way around (Williston 2015; Carly-Lemon 2019). Aldo Leopold argues, in his book 'A Sand County Almanac' from 1949, that humans by themselves are not sustainable, if we are careless and break any layer in the earth triangle, all layers above will collapse, including ours. In contradiction to the idea of humans as gardeners, here we are depicted as the most vulnerable as our survivability is decided by all the other layers condition.

The ecocentric seeks the recognition of nature as the starting point for any political decision that changes the conditions. Within the progressive green there is those that argues for nature as a holder of rights, Bolivia's Universal Declaration of the Rights of Mother Earth is a well-known example of such (Piccolo 2017:960). In a CE the eco-centric approach represents solutions that hold nature and the environment as the starting point for why and how it should be done. This approach does not seek the most profitable solution or one that supports human growth, unless it also is the best possible solution for the environment (Clary-Lemon 2019).

The ecocentric is the most distinct from the previous two. If we picture this as two circles with one inside the other, the center circle is the economical and the current, the second circle is the

anthropocene. The anthropocene circle hold reasoning connected to the economic but focus on the sustainability of human life and future generations. The ecocentric on the other hand, can easily be seen as extreme as it has its starting point is from the outside of the two human circles. If we use the same process of thought as Mill's (1879) utilitarianism, the ecocentric solution is the outcome that generates the best possible conditions for nature. If the same solution also is good for humans and the economy, that should be seen as a bonus.

### **3. Method:**

This section will introduce the reader to the choices made on how to understand knowledge, sampling, method and framework. Starting with the epistemological background and the chosen material, followed by how the material is understood and analyzed.

#### **3.1 Epistemology:**

According to Androutsopoulos (2011:47), discourse is defined as “language-in-use or spoken language that comes about from communication that takes place naturally in social context”. Underlying the word ‘discourse’ is the general idea that language is constructed in accordance with the different domains of social life, familiar examples being ‘sociological discourse’, ‘political discourse’ etc. Although discourse analysis is categorized as one of the contemporary approaches in the field of qualitative research, it also shares some analytical methods with other more established qualitative methods such as grounded theory (Wertz et al. 2011:4). That includes steps such as coding, sorting of categories and the process that answer the research questions (ibid 2011:5; Shanthi et al. 2015).

This paper uses an interpretivist approach for how the discourse surrounding argumentation/motivation to CE is formulated. Keeping the Foucauldian perception in mind, that everything said, subjectively arises from existing frameworks of social opinion and the current set of values, it is both a reaction to the world and a reintervention in it (Johnstone 2017). Unlike natural sciences, knowledge within social science holds historical, cultural, social and cognitive dimensions that changes over time and context (Van Dijk 2003:85-87). Further, the terminology used in the context of CE does not hold an explicit framework and depending on context and perspective the idea of circularity, environment and sustainability will differ; hence, the discursive framework will have to adapt to the conditions present.

It is important to keep in mind that the different roadmaps used in the analysis represents different interpretations of interpretations (Strauss and Feiz 2013:51-52). Therefore, the dissection of argumentation is open for criticism as reliability will be impaired to some degree (Clary-Lemon 2019:24-26). It is needed, as pointed out by Kalmykova et al. (2018) and Korhonen et al. (2018), with more research that examines the foundation of thought behind CE in its different contexts, creating the foundation for a more overarching and holistic understanding of an abstract concept. These genres are essentially a metaphorical frame that

will provide structure to the discourse, as with structure comes consistency and recognizability (Strauss and Feiz 2013:52).

Simply put, the interpretive approach takes into account the multiple subjective perspectives of different individuals, context of the phenomenon, the contextual understanding and interpretation of the phenomena and the depth of involvement/bias. Interpretivism allows the focus to be fixed on understanding what is happening in a given context and why, rather than just measuring it (Gee 2014; Johnstone 2017).

### **3.2 Sampling**

The process of sampling for this study is based on what countries fulfill the following set of criteria: **1.** Having an official road-map towards CE; **2.** The entire document being available on an official webpage in a language understood; **3.** The CE road-map is not produced by external actors. While these criteria simplify selection of documents, it also provides enough support to decide what documents to include it also provides enough support to why certain documents cannot be included (Johnstone 2017:21).

1. The requirement that the state has officially adopted a document on CE implementation. This being confirmed through decision documents and by criteria 2.
2. That said document is available on the state's official web pages and can be verified as legitimate by criteria 1.
3. Even if the document fulfils criteria 1 and 2, said document cannot be a product of external actors; Such as, other states, Intergovernmental organizations or research institutes located in a different country.

The largest obstacle was to obtain the full road-map papers in languages I could understand. In some cases, the title and introduction were in English, making the initial sample semi-large for a qualitative study. However, as the different papers were further examined only Finland, Denmark, Slovenia, The Netherlands and Scotland remained → only The Netherlands, Finland and Slovenia had an official publication in a different language than the language(s) spoken in said countries. The second obstacle was how some countries (outside of the European Union (EU)) had roadmaps that were produced in the EU or yet to be formally adopted. Within EU,

there are also countries that actively work with CE and outspokenly support the concept but have yet to formulate any official documents. These obstacles lead to the reformulation of the initial research question and also the general aim for the study.

These conditions meant the exclusion of countries that do hold a leading role in the CE transition, such as China, India and France. Countries initially seen as primary targets to get a wider cultural and political spread of the sample and a higher probability to see differences in the justifications made. However, to have clear frames on what to include is essential for the validity of the research (Johnstone 2017; Gee 2014). The question of validity and reliability of the research will be further discussed in chapter 3.4.

List of sampled documents:

- Circular Economy Scotland (Benton 2015)
- Leading the Cycle: Finnish road map to a circular economy 2016-2025 (Aistrich et al. 2016)
- Strategi for cirkulær økonomi: Mere værdi og bedre miljø gennem design, forbrug og genanvendelse (mfvm 2018)
- Roadmap towards the circular economy in Slovenia (Košir et al. 2018)
- A Circular Economy in the Netherlands by 2050 (NL 2016)

### **3.3 Discourse analysis:**

After the sampling process, the five documents were thoroughly read while paying attention to changes and shifts in how the issues were described, what solutions were proposed to said issues and the justification on why these solutions were to be applied. This was done with the help of the following set of guiding questions:

- 1) What is the stated aim?
- 2) How are Ecocentric / Anthropocene / Economical perspectives displayed and linked?

The reading was done without set keywords or search phrases. Johnstone (2017:21) describes this process as reading and understanding rather than finding data to a pre-formed hypothesis. The aim of this step was to find the underlying, either explicit or implicit, reasoning behind the implementation of CE in different national contexts. As mentioned under the epistemology section, the discourse analysis used the simplified framework of genres to analyze the acquired documents. This serves the purpose of enhancing the recognizability and the reliability of the study (Gee 2014). Discourse can be shaped into genres based on the content and purpose of the text. Building overarching frameworks that, despite unprecise, thus provides a frame for the discourse. Genres can be seen as rhetorical tools to communicate facts, presented ideas and to question what shapes our reality (Strauss and Feiz 2013:58). As frames of discourse, genres entertain, impel invite, move, inform or impassion. And genres succeed in doing all this and more as they reflect our individual experiences within our social and cultural contexts (Jarosz 1996).

The genres applied are the previously outlined Ecocentric / Anthropocene / Economical (see chapter 2.5 Green political theory of value). These are selected as they represent different discourses on how to frame environmental- and sustainability issues (Clary-Lemon 2019; Williston 2015; Lory 2010). These genres provide clear and simple characteristics on how a discourse within said sphere is constructed - stereotypical simplifications of discourse. Distinguish genres in discourse are not always so clear. However, as the modality is written text it simplifies some aspects, I do not need to seek for underlying tones and consider differences in prosody. Also, as the written text is constructed documents the organizational and syntactic features can be quite distinct, simplifying the process of distinguishing genres within the discourse (Strauss and Feiz 2013:65).

After the first reading and note-taking, the documents were all re-read a week later in a different order and without previous notes available, using the Ecocentric / Anthropocene / Economical genres of discourse as an analytical lens. In this reading, new notes were made of both support for, and deviations from, the three discourses. This enabled richer and more dense analysis, to focus upon regional and contextual contingencies. In this reading there was also a focus on finding similar or the same problem description and see what solutions were proposed and how their 'why' reasoning aligned/differed from each other.

In the following analysis chapter, the different roadmaps will be analyzed separately, followed by a more comprehensive and overarching discussion. The reason for doing so is to provide a proper separation between what is said within what report and avoid the potential situation where only one of the genres are present, or one is completely absent.

### **3.4 Validity and reliability:**

I have held off until now discussing what constitutes validity for a discourse analysis. In the context of discourse analysis validity is not constructed by arguing that the results reflect reality (Esaiasson et al. 2017), this is so for at least two reasons. Firstly, reaffirming 2.1 on social constructivism and the discussion on epistemology, humans interpret the world. We do not have access to the world just as it is, it goes through layers of experiences and interpretations. Secondly, in that context, discourse analysis is an interpretation of interpretations (Gee 2014:122-123). However, that do not mean that discourse analysis is subjective and consists only of the opinions of the analyst. We have to understand that there are different layers to validity and different studies can have more or less. All analyses are more or less valid than others and validity is never absolute (Esaiasson et al. 2017:60).

Validity of discourse analysis as an empirical inquiry is dependent on how tightly the linguistic structures of analysis are made and how clearly the characteristics are outlined (Gee 2014:123). This does not mean that the analysis is by definition true or correct. Reiterating that empirical science is social and accumulative. Investigators build on others works and, in the long run, improves and moves further down the ladder of abstraction (ibid 2014:124). Since this study covers a new area of analysis and does not answer all questions, the validity can be questioned and put in the range of weak-medium validity, but it fulfils its purpose. Also, as argued by Gee (2014:124), in the case of discourse analysis, the most important aspect of validity is the convergence between what is claimed to be done and what is done. Reliability and validity are solidified by the absence of systematic, unsystematic and random errors, and a precise use of the tools of analysis (Esaiasson 2017:64-65).

## **4. Analysis:**

In this chapter, all four of the roadmaps are analyzed separately, looking at the description of CE, why CE as a broad concept are to be implemented, the general theme of the paper and provide examples from the different focus areas. The analysis will differ somewhat as the roadmaps do not come in the same format. The analysis will be followed by a comparative discussion on the findings in connection to the theoretical framework, highlighting similarities and differences between the different papers.

### **4.1 Slovenia:**

#### **4.1.1 Introduction:**

The Slovenian transition towards circularity begun back in 2016 with the ‘Partnership for Slovenia's Green Economy’, a process of mapping possibilities and challenges. The roadmap document is in the narrowest sense, directed towards the Slovenian Government, but in a broader sense, it is also aimed at all the interested stakeholders that have proven themselves invaluable co-creators in the process leading up to the roadmap (Košir et al. 2018). According to the Slovenian roadmap, CE “can be understood as a new paradigm that seeks to answer the changes that characterize the 21st century – changes that prove, in a material sense, that the exploitation of natural resources in the ways that were seemingly still acceptable in the 20th century can’t allow for the quality survival of humanity or the other living creatures on this planet.” (ibid 2018:10). Recognizing the globality of these new issues, as pointed out by Goodin (2013), and the grave need for new national policy to span beyond borders.

#### **4.1.2 Why CE?**

Slovenia describes a situation where “the economic model that has been employed in the developed world simply cannot be copied by the developing world. The quality of life that we are accustomed to in the developed world is not maintainable under the current economic model and cannot be adopted by the developing world.” (Košir et al. 2018:12). The Slovenian strive towards CE is fueled by worries for what the steep development and drastically increased consumption in previously carbon neutral/negative regions will do. This reasoning stems from primarily anthropocene discourse, protecting the potential to life for future generations. However, there are also some economic implications: “We need to find a development model that will sever or separate economic growth from the exploitation of natural resources and

negative effects on the environment” (ibid 2018:13), continuing on the same reasoning that the current economic model is not sustainable, especially when the rest of the world is about to increase their standards. While there are potential strains of ecocentric discourse within this quote, the environment does not get more attention in connection.

#### **4.1.3 General theme:**

The Slovenian roadmap puts a strong emphasis on the need for change of culture on all levels, by supporting entrepreneurs providing services such as eco-design, repairs, renovation and re-modelling, replacing products with services, reducing carbon footprints by involving local providers and shortening transport routes, employing renewable sources by means of the electrification of transport, minimizing the generation of waste, tackling everything from production to consumption waste, etc. (Košir et al. 2018:22). The Slovenian solutions are framed within the need to change, not only the small things but to rebuild how the entire society are constructed (Vogel 2016:157). These perspectives represent a shift towards a more bio-based economy approach with a larger focus on product lifecycles and increased importance to renewable energy sources (Majer et al. 2018). It also focuses on how companies will have to change their business model to new public values and changes in the production paradigm (Iermakova 2019:93), typical aspects of the current economical discourse. This section focuses on the actions that can be made now, new business models and the overdependence on virgin resources.

When looking at the description of the different examples of transition provided in the paper, the reasoning goes further. Here is one example; “Transitioning from products to services – the consumer becomes a user and pays for a service, while the ownership of the product remains with the manufacturer, enabling them to focus on more durable, longer-lasting products at a higher cost, with a longer life and designed according to the principles of circular design, so that the materials used can be employed as efficiently as possible, reducing the material costs and price risks.” (Košir et al. 2018:25). Here the economical indictments become even stronger, the example above focuses on new business models and markets created within the transition.

#### **4.1.4 Focus Areas:**

Slovenia has four focus areas: food production, forest-based value chains, manufacturing industry, mobility. These are not seen as the only areas of possible focus but the ones of utmost importance and value for Slovenia (Košir et al. 2018:31). The roadmap is not trying to cover

all aspects of the transition, it is even emphasized that the document should be seen as ‘living’ and subject to constant evaluation and change. These focus areas represent the areas that are seen as holding the greatest potential in a short economic perspective, as well as, being crucial changes for the larger perspective of CE transition (ibid 2018:30, 32).

**Food production** is a focus area as we need to find sustainable ways “how to manage the food system within the planetary boundaries. Bearing in mind that already 60% of land is degraded or is not managed sustainably” (Košir et al. 2018:32). The primarily goal with these reforms is to make Slovenia self-sufficient within food production, create a better waste treatment and better use of biomass. There is a” need to harmonize policies and subsidies, incentives for good governance and adequate response to changed climatic conditions” (ibid 2018:33) when it comes to production, consumption and waste treatment. The reasons for working with food production is at large described as something that ought to be done to due to increased” concern for the preservation of waters and other food-supply related areas” (ibid 2018:32). There is a lack of clear arguments as to why this have to be done, leaving a lot of room for interpretations. There is no mention of economic gains to make or clear environmental concern, the only thing that can be read in is the anthropocene idea of preservation for the future (Williston 2015:24-25; Clary-Lemon 2019:53).

**Forest based value chains** are of interest to Slovenia as it covers 60 percent of the country and, as pointed out by stakeholders, there are a lot of” opportunities in the development of wood chains are largely unused, which is an additional reason for creating solutions that will contribute to increasing the added value and reducing the focus on wood as an export material only” (Košir et al. 2018:34). Looking at the economic opportunities within the forest industry for refining and processing of wood, the creation of new business and an increased creation of value (Lory 2010). This section is short and is not that developed in its reasonings but there is solely economic reasoning when presented with arguments, such as creation of new jobs and changes to public procedures on procurement.

**The Manufacturing industry** is the connecting sector of all the previous as CE is aimed at overcoming that the Slovenian industry is “highly dependent on imports and one of the main consumers of materials, water and energy and one of the largest producers of waste products” (Košir et al. 2018:37). This section aims at increasing the competitiveness of Slovenian companies on an increasingly global market, targeting the economic incentives to build a modern and efficient production industry. These solutions are, as described by Iermakova

(2019), aimed at incentivizing change and environmental preservation for the creation of economic value.

**Mobility** is aimed at the dispersed settlements of Slovenia, a lacking infrastructure and the need for innovative solutions that captures the entirety of the mobility sector (Košir et al. 2018:40). What is seen as a great challenge is also a possibility for the creation of new businesses and innovative solutions, “Slovenia can become a reference laboratory of green mobility and the leading country in the demonstration and transfer of green mobility technologies to international markets” (ibid 2018:41). This section aims at changing the culture on how we get from A to B, to increase the usage of shared vehicles, bikes and busses, as well as electric cars. This section does only hold economic arguments, bot for the export of innovations as well as the expansion of new businesses in rented bikes and similar.

#### **4.1.5 Summary:**

At large, the Slovenian roadmap is built around the economic possibilities around a transition, as well as, the expressed need for human action to manage and preserve nature. Not necessarily for nature itself but for the purpose of human use, both current economic gains and sustainable living for future generations. Forests are seen as “...a comprehensive ecosystem that needs to be managed as a whole” including “all stages of preservation, production, processing, transport, sale of wood, waste wood treatment, wood products, and more widely also the field of nanotechnology, tourism, construction” (Košir et al. 2018:34). The descriptions of different solutions recognize the impact of humanity on our environment. There is no aspect of the environment that is not affected by our actions, thus, there is a grave need for global solutions, old actors have to change and adapt to the new paradigm and new actors will dictate the greater good for the future. This roadmap may be progressive and contain a variety of solutions that fit the strong sustainability spectrum; however, this roadmap is not an eco-centric example. Most arguments are focusing upon how to overcome the dependence on imported goods and scarce resources, the need for “implementation of new materials” and “Switching from products to services, from consumers to users, from ownership to sharing – all this can be promoted and implemented in the field of manufacturing” (Košir et al. 2018:37).

## 4.2 Denmark:

*The Danish Roadmap was retrieved from the ministry of Environment and Food's webpage, all quotes will be translated by the author from Danish with the original quotes as footnotes. The Danish roadmap is structured differently from the others so there will be some small differences also in structure.*

### 4.2.1 Introduction:

On the first of September 2018, the Danish Minister of Environment and Food and the Minister of Industries, Business and Financial Affairs, launched the government's new strategy for CE. The new strategy contained six focus areas and 15 initiatives and followed the recommendations of the government's Advisory Board on CE.

### 4.2.2 Why CE?

In the introduction to the Danish roadmap, it is concluded that "Circular economy is all about making growth sustainable. It means using our natural resources and designing our products in a way that extracted raw materials are used as sensibly and as many times as possible. They should not end up in a dump, but in a new product."<sup>2</sup> (mfvm 2018:4). When CE is further motivated the economy continue to hold a central role as to why Denmark should change. The document states that "A circular approach may open up for an accelerated transition to new business models aimed at a rapidly growing global market for green technologies and services. Circular economy presents an evident option for expanding Danish strongholds within, among others, bio-economy, sustainable construction, and resource-efficient production. Thereby, Denmark has the option of becoming a frontrunner within development and export of new circular technologies and solutions accelerating the transition."<sup>3</sup> (ibid 2018:6). These initial words support a strong economic inducement for transition and the business potentials within CE.

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<sup>2</sup> Quote: Cirkulær økonomi handler om at gøre væksten bæredygtig. At bruge vores naturressourcer og designe vores produkter på en måde, så råvarer, der er udvundet, bruges så fornuftigt og så mange gange som muligt. Og ikke ender på en losseplads, men i et nyt produkt

<sup>3</sup> Quote: En cirkulær tilgang kan åbne for øget omstilling til nye forretningsmodeller rettet mod et hurtigt voksende globalt marked for grønne teknologier og services. Cirkulær økonomi er en oplagt mulighed for at bygge videre på danske styrkepositioner indenfor bl.a. bioøkonomi, bæredygtigt byggeri og ressourceeffektiv produktion. Danmark har derfor mulighed for at blive førende inden for udvikling og eksport af nye cirkulære teknologier og løsninger, der kan accelerere omstillingen.

### **4.2.3 General theme:**

When reading the Danish roadmap on CE, a strong focus on recycling and economical possibilities to expand previously strong and new markets appears. By highlighting how the current waste management system is built around incineration, high municipal investments in waste incineration plants and the local authorities' position to assign household waste and commercial waste to those plants have created an incentive to fill up the plants at the expense of diverting more waste for recycling (mfvm 2018:7). Creating a situation where recycling within CE is not seen as the last resort, as described by Kalmykova et al. (2018) and the MacArthur foundation (2015), but the most important aspect of the transition.

To handle this situation the roadmap, suggest the creation of "...better access to recyclable waste will break down the barriers to establishing large sorting plants liable to increase the segregation of recyclable waste. In addition, the proposal aiming to abolish citizens' duty of using municipal services will make it easier for enterprises to establish take-back schemes and pursue new innovative solutions of recycling..."<sup>4</sup> (mfvm 2018:7). By creating incentives for the separation of waste and recyclable resources the roadmap believes that the market will create new innovative solutions on how to process and utilize what was previously burnt.

There are a few contradictions to these statements in connection to how this paper understands economic incentives. On one hand, the roadmap focuses on how the transition will create new markets and areas of innovation and entrepreneurship, just as described by Iermakova (2019:93); On the other hand, economic solutions are meant to be profitable and cost efficient (Lory 2010; Iermakova 2019), while recycling, when detailed, is connected to increased cost and low efficiency (Tierny 2015).

### **4.2.4 Focus areas:**

The six focus areas are built around the economic possibilities of a transition and the first one is how companies are seen as the driving force for a Danish transition towards CE. The first section is on how to support these companies, followed by different ways that support can be created, by digital solutions, the creation of markets and incentives for the reuse of products and materials by changing consumer patterns and behavior. At large it all boils down to how

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<sup>4</sup> Quote: ... bedre adgang til det genanvendelige affald vil fjerne barrierer for at etablere store sorteringsanlæg, der kan øge udsorteringen af genanvendeligt affald. Desuden vil forslaget om en afskaffelse af borgernes pligt til at benytte de kommunale ordninger gøre det nemmere for virksomheder at etablere tilbagetagningsordninger og forfølge nye, innovative løsninger for genanvendelse...

the state has an idea on how they want their companies to act and a six-step plan on how to incentivize said behavior (mfvm 2018). This makes the Danish roadmap stand out, there is no specific reasoning behind the different solutions but how they may contribute to a transition and may help the companies to lead the way.

The driving force behind the Danish transition is envisioned within the progressive companies that already hold a leading role and to increase accessibility to modern technology for medium to small enterprises to join the movement. “In order to increase access to new markets and enhance competitiveness, enterprises will benefit from focusing on the development of circular solutions and services. Enterprises may improve their business by designing products and components in a way that they have a long useful life and are readily repaired, reused, and recycled.”<sup>5</sup> (mfvm 2018:15). These arguments are based on incentivized change and environmental preservation by the creation of economic value. There is no reasoning at all concerning eco-centric and anthropocene values in a transition towards CE.

Ayres et al (2001) describes it as weak sustainability, when the center of the discussion is rather on the economic possibilities than preservation of natural/environmental values. For example, under the section on ecodesign the road-map highlights the Danish efforts to influence the European commission in their efforts to create labels and directives, as well as the EU Ecodesign Directive, as means to support Danish interests and a market-driven transition to CE (mfvm 2018:24). The reasoning is that it would both support the growth of Danish companies in the forefront of circular production, as well as, incentivize producers that have yet to adopt circularity to change; “The development of new international standards may contribute to the promotion of the transition to a circular economy in Denmark. Thus, standards may create trust and transparency in the market, compatible products and solutions, as well as better access to international suppliers and buyers.”<sup>6</sup> (ibid 2018:25).

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<sup>5</sup> Quote: For at øge adgangen til nye markeder og styrke konkurrenceevnen kan virksomhederne med fordel fokusere på at udvikle cirkulære løsninger og services. Virksomhederne kan forbedre deres forretning ved at designe produkter og komponenter, så de har lang holdbarhed og er nemmere at reparere, genbruge og genanvende

<sup>6</sup> Quote: Udviklingen af nye internationale standarder kan bidrage til at fremme omstillingen til en cirkulær økonomi i Danmark. Standarder kan således skabe markedstillid og transparens, compatible produkter og løsninger samt bedre adgang til internationale leverandører og aftagere.

#### **4.2.5 Summary:**

The entire roadmap focuses on the transition as an economic necessity to secure the prosperity of the Danish production industry and hold no direct ethical reasoning connected to sustainability of our lifestyle, future generations or the environment. The lack of such suggests that the request formed by the government to produce a CE roadmap is formulated in such a way that it focusses primarily on the practicalities and economic implications. Also, there are no external sources mentioned or cited when motivating the different initiatives, which is a feasible explanation to the large amount of uncertain positionings. Most of the initiatives comes with a ‘may’ lead to this or that.

### **4.3 Scotland:**

#### **4.3.1 Introduction:**

In 2016, the Scottish government developed a strategy to move the country towards circularity and a sustainable economy, aligning its environmental and economic objectives. The roadmap strategy holds two key elements: to develop a more comprehensive approach to producer responsibility when it comes to repairing and reusing, and to more fully expose and address the cost of recycling and disposal; that includes to reduce food waste by 33% by 2025 (Benton 2015:1). Benton (2015:2) describes CE as a concept of multiple different loops, where the ideal use of CE “means direct reuse of products, which preserves both the highly engineered character of a product and its useful function. Where a product needs repair or reconditioning before it can be used again, remanufacturing preserves the most value”. This is followed by two types of recycling, the closed loop where a product is turned into the same product over again, such as glass. On the other hand, is the open loop where products are downcycled to a new material with a lower value.

#### **4.3.2 Why CE?**

Scotland targets the rising risk of not having access to needed resources and the economic value being lost in waste. These current developments are feeding a more interventionist approach to resource policy and Scotland sees potential in making its economy more circular, by assessing potential opportunities in three exemplar sectors, oil and gas, food and drink and finance. The

aim is to develop these into a wider suite of lessons for government as a whole (Benton 2015:1-3).

#### **4.3.3 Focus Areas:**

**The oil industry** is the first sector subject to change, the engine of Scottish economy and the single largest source of emission. Benton (2015:5) describes the oil industry's biggest opportunity as "reusing infrastructure for carbon capture and storage (CCS). This technology will be needed to decarbonise industry and would help to decarbonise the power sector". This solution is motivated as "there is plenty of demand for CO<sub>2</sub> storage from across the EU, making the knowledge and skills acquired by going early on CCS networks in Scotland valuable to a wider market." (ibid 2015:9), lifting economic incentives on how an early transition will create market advantages both by selling their knowledge and experiences to other actors adopting CCS as well as selling carbon storage under the North Sea.

**The food sector** is the least radical, here solutions range from food redistribution and gleaning to biogas. Arguments for food distribution highlights the ability to "reduce their costs and enable more efficient food redistribution", while gleaning would help farmers "harvest food which would otherwise not be harvested" as "even a small increase in the use of harvested food could be significant" (Benton 2015:11). These solutions are not motivated further where presented, but put in connection to the introduction for the food chapter it is stated that "better use of biowaste is estimated to be worth €1 billion per year" (ibid 2015:10), building upon the economic advantages of reshaping and refining current systems. One concrete example is how the whisky industry produces waste that currently are reused as energy and heating direct at the plant, while there is other uses that would produce more value within that waste (ibid 2015:13-14), similar to the arguments lifted by Iermakova (2019:90) on how the transition is not only about reducing waste but producing greater value and profit out of said value. Both the pharmacy industry and the fishing industry can save money by buying these leftover products from the whisky producers, as well as the profit for the producers goes up as only the minimum needed waste will go to energy and heating (Benton 2015:14). Simply put, the refined system will not only reuse resources but find new more utilized usage of the same resources for a higher profit by increasing flexibility and competition on the market. This represents typical economy driven discourse (Lory 2010:2).

**Finance** is the last focus area, not since it produces a lot of waste or use a lot of resources, but as the prime enabler for a transition through two key elements: co-ordination and technology. CE is a risk-game at this stage as there is uncertainty on what investments will give the best results (Benton 2015:16). “Although recycling captures more value from materials, fluctuations in the market value of recycled plastics are seen as risky, compared to the stable returns created through subsidy. Getting finance for higher value circular loops will require a reassessment of current policy” (ibid 2015:17), giving the state an important role in facilitating the conditions needed for finance to flow into a creation of new value, new solutions and opportunities to export knowledge and, in the long run, create economic growth. This section highlights how the state and financial sector are interdependent in transitioning towards circularity, whereat both sectors need each other. The finance needs the state to create the conditions for the finance to dare invest and carry the risks.

#### **4.3.4 Summary:**

This strong focus on the economy as a driving force for change is based on a perception that the financial sector is a key enabler for CE, for example: “Scotland may need to work with other governments to address existing market incentives” and “Closed loop recycling, reuse, biorefining and remanufacturing should not need to be subsidised once scaled up but, where there is competition for feedstock or finance, public policy should be adjusted to enable these technologies to compete” (Benton 2015:16-17) further these positions. The strategy presented hold no direct ethical reasoning connected to sustainability of our lifestyle, future generations or the environment. This gives weight to the claims made by Lory (2010:14), that the heavy politicization of the environmental issue and the involvement of science situate the incompatibility of economy and ethics. In the case of Scotland, the request formed by the government to produce a CE roadmap may be formulated in such a way that it focusses primarily on the practicalities and economic implications, and/or, the current form is due to the involved partners, enterprises, entrepreneurs and local stakeholders, and who it is written for.

## **4.4 Finland:**

### **4.4.1 Introduction:**

In 2016 the Finnish research institute SITRA released a roadmap towards CE titled 'Leading the Cycle', where they envision Finland as the pioneers of CE the world needs. This is done by searching for “operating models for economic growth and increased well-being without over-consumption of fossil fuels and natural resources”. “The road map highlights best practices and pilots that can be easily replicated and provide added value on a national scale” (Aistrich et al. 2016:3).

### **4.4.2 Why CE?**

The world need pioneers that takes the lead and dares to take the risks, Finland envisions itself as a hotbed for innovation and experimentation on new progressive solutions. What is envisioned is a development where legislators, companies, universities and research institutes, consumers and citizens, and all regions within Finland participate to achieve systemic change. A transition where the “aim of a CE is to keep Finland vibrant for people and nature” (Aistrich et al. 2016:15). A transition would create immense economic growth and a lot of new job opportunities, estimated to 75,000 new jobs by 2030. The added value potential for the entire national economy is significantly higher. There are no numbers presented for Finland, but as an example, the European economy, the net benefit of the CE has been estimated at up to 1800 billion euros by 2030 (ibid 2016:3)

### **4.4.3 Focus areas:**

The Finnish roadmap holds four focus areas, food systems, forest-based loops, technical loops and transport and logistics. The fifth entity is joint actions as all the different focus areas have “mutual synergies and those that apply to other loops” not chosen as focus areas (Aistrich et al. 2016:13).

**Food systems**, the first focus area, circulates around building a need-based food production, as well as increased knowledge and information for the consumer. In the roadmap it is described as a “regional sustainable food system model based on CE principles and innovative practices. It will be based on appreciation for local food and on developing a local food culture, also focusing attention on the cultivated land and its condition” (ibid 2016:16). Where the aim is to “to ensure all those involved in the sustainable food system have a greater understanding of sustainability and the impacts of food on the regional economy. Production will become more transparent and consumption will emphasize alternatives that save natural resources and reduce

climate emissions (ibid 2016:16). These motivations hold both anthropocene and economic reasoning; economic as it focus on how to develop the regional market and increase its flexibility towards consumption; anthropocene as emphasis is put on the preservation and condition of the local environment, as well as the reduction of climate emissions, holding a long term perspective in mind (see Lory 2010; Willison 2015).

The food production section holds a variety of both long and short termed goals and solutions. When focusing on food production all steps are considered, from the consumer back to the soil, the key for all food production. Solutions focusing on fertilizing the soil “should take safety and soil impacts into account” and provide methods on how to “reduce the amount of nutrients entering waterways and causing eutrophication” (Aistrich et al. 2016:15), holding a more eco-centric approach to the importance to not cause harm to vulnerable ecosystems. However, does it reach all the way to be considered an eco-centric reasoning as the same section also talks about the importance to “influence the EU’s fertiliser regulation to ensure that recycling ingredients do not prevent CE marking for fertiliser products” to enable the commercialization and a new market for these solutions (ibid 2016:15)? To some extent this is ecocentric, the focus is on the need to not harm the environment and reduce emissions. One the other hand, both the economic incentives of new market opportunities and food safety for the future show diverging approaches as to why this solution is important.

**Forest industry**, the second focus area, addresses the issue of how to change how wood is used and values are being produced, moving from low-value products to more refined ones. “Maximising the overall value of Finnish forest-based products and services rather than the amount of wood”, this solution is based on the “national economy viewpoint, raising value is more important than increasing the amount of wood”<sup>7</sup> (Aistrich et al. 2016:18). This section is clearly economic driven as the basis for change is the increased creation of value from basic goods (Lory 2010:16; Iermakova 2019:90), whereat a large portion of the current forest industry is focusing on basic and low value products. “The focus will be on export development, capitalising companies with Finnish and international money and attracting investments to Finland. The aim is to develop significant business in Finland on the basis of the major R&D functions already performed. Refining bio-based raw materials into products with a higher refinement value” (Aistrich et al. 2016:21) furthering the point previously made. There is a focus on streamlining the chain of production, shift the main product towards more refined

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<sup>7</sup> This quote has been rewritten from capital letters to support the cohesiveness of the text

good, such as furniture, to increase the economic growth by using the same or less natural resources (see Beckerman 1994).

**Technical loops**, is aimed at developing new solutions, “The goal in this focus area is for Finland to build its competitiveness by producing solutions that take into account sustainable use of materials and products, optimising the length of their loop, and enabling reuse in different phases of their life cycle. It is also important to ensure clean material loops at the same time” (Aistrich et al. 2016:22). Holding a strong economical drive to overcome the scarcity of resources and reduce the costs of waste management. By incentivizing the development of technology and subsidizing new businesses within previously economically unsustainable areas there is a hope to close the loop; for example, in the mining industry where waste could be further refined if made cost-efficient. This will be made possible by “Promoting the use of secondary raw materials, including waste act interpretation and streamlining the environmental permit procedure. The goal must be to utilise secondary raw materials, such as industrial side streams, as effectively as possible by actively seeking uses for side streams instead of allowing them to become waste” (ibid 2016:24).

**Transportation** is aiming both at the transportation of goods and services as well as the everyday door-to-door trips for inhabitants, focusing primarily on urban areas. This is done by investing in trains and “Promote alternative forms of transport to replace private cars, such as compatible door-to-door mobility services (MaaS), smart and easy-to-use public transport, and the development and spread of new services, walking, cycling, ridesharing and car sharing” (Aistrich et al. 2016:26). This section is to “enable innovations related to smart transport and mobility and the development of new business” (Aistrich et al. 2016:27) suggesting that these investments will further economic growth.

At large, Finland is viewing itself as a testbed for new innovations and technology, carrying the costs of pilot projects and development. For example, a project in the city of Lappeenranta, here they are replacing its vehicle fleet with methane-powered vehicles, which would contribute to gradually reaching a 100% rate of renewable energy use (Aistrich et al. 2016:29). These solutions are not clearly within the frames of the economic or anthropocene, as formulated for this paper, there is however room for interpretation. This will help develop the technology needed for future generations, hopefully generate new production industry in Finland and the possibility to export knowledge (see Iermakova 2019).

#### **4.4.4 Summary:**

The Finnish roadmap is at large economic driven when it comes to why certain actions are to be implemented. However, there is a diversity of solutions that focus on what ought to be and how to incentivize these actions to become economically sustainable, here the reasoning (why) do not originate in money but the need to change something so private capital will see this sector as profitable. Reaching the goal by approaching the market. There are also initiatives that is hard to place, such as the investment in train infrastructure, viewing another example where there are other underlying factors primarily whereat the economy is more of a secondary or bonus to the investment. Lastly is the section on soil management and effective fertilizing, it is built around avoiding spill of nutrients from fertilizers entering waterways causing eutrophication, protecting the soil and food security. Trying to find ways to sustain survivability while finding the best possible solution for nature from a human perspective, keeping the anthropocene lenses on.

### **4.5 The Netherlands:**

#### **4.5.1 Introduction:**

In September 2016 The Netherlands introduced its roadmap, ‘A Circular Economy in the Netherlands by 2050’, envisioning a 50% reduction in the use of primary raw materials by 2030 and when virgin raw materials are needed, they will be obtained in a sustainable manner and further damage to social and physical environments will be prevented (NL 2016:5). According to the Dutch roadmap CE needs to be implemented “In order to continue feeding humanity, provide it with the necessary goods and to guarantee people a decent existence, a fundamental change in how we use raw materials is necessary. We are talking about an economy that provides for people’s needs without placing an unacceptable burden on the environment and without exhausting natural resources” (ibid 2016:6), strong anthropocene arguments as to ensure future generations quality of life and sustainable living, as well as economic incentives to combat scarcity of crucial resources (Clary-Lemon 2019; Iermakova 2019).

#### **4.5.2 Why CE?**

Over the past century, “Earth’s population started using 34 times more materials, 27 times more minerals, 12 times more fossil fuels and 3.6 times more biomass” (NL 2016:9) and the demands will just continue to increase as the world is becoming more and more developed. The roadmap’s focus areas, food, plastics, construction, manufacturing and consumption are seen

as sectors holding the utmost potential to reduce waste and the use of virgin materials (ibid 2016:8-10). These steps are seen as crucial, not only for environmental purposes, but also for the fairness of development. Currently, The Netherlands import almost 70% of all raw materials used and a large portion from developing countries. This could lead to “increasing disparity in access to raw materials, whereby the poorest population groups will have the greatest disadvantages”, making the sustainable development goals even harder to reach (ibid 2016:9). The Netherlands show clearly that this is not only a matter of national prosperity, but larger perspectives are weighted in. I mention this idea of fair development, not because it fits in any of the genres, but since it is diverging from the more general approach of CE roadmaps and hold the ethics of sustainability in a new light. I will return to this section in the later discussion as I find it intriguing.

#### **4.5.3 Focus areas:**

**Food industry** and production of biomass represents the first focus area, two interconnected areas as biomass by its nature,” is a circular raw material, which distinguishes it from other raw materials. Biomass is used for food and feed; it is a base material for, inter alia, textile, paper & carton, building materials, chemicals, plastics, transport fuels, and energy. Biomass is thus of essential importance for reducing our CO<sub>2</sub> emissions and our dependence on fossil resources. Furthermore, its use contributes to the greening of several major economic sectors with considerable large exports” (NL 2016:43). By focusing on the reduced use of finite resources and the possibilities in generating new economic sectors the food priority is, at large, economically driven (Lory 2010). It also displays the increased importance of renewable energy sources, as mentioned by Majer et al. (2018), trying to maintain economic, ecological and social values (Ayres et al. 2001:7). This section puts emphasis on natural resources as an essential aspect of our economical production, welfare and consumption and cannot be substituted for human capital.

The food production section holds a variety of both long and short termed goals and solutions. When focusing on food production all steps are considered, from the consumer back to the soil, the key for all food production. This is called “precision farming, in which nutrients are used in the right place, in the right quantities, and at the right time, thus ensuring that fewer nutrients are wasted. This also prevents nutrient leakage into the environment, which could cause eutrophication issues” (NL 2016:46), holding a more ecocentric approach without reaching all the way. This argumentation is primarily a question of food safety and anthropocene survivability (Williston 2015) since, “preservation of a fertile and healthy soil is vitally

important to be able to produce biomass for food and other purposes in the future” (ibid 2016:46). The main method of application will be through legislation which regulates the use and trade requirements for “artificial fertilisers to organic fertilisers, soil improvers, and growth media. This can create more room for the production of artificial fertilisers from secondary (recycled) fertilisers” (NL 2016:48), using state leverage in the process of achieving new standards.

**Plastics** is a growing issue as we do not have sustainable means as how to handle it, addressing the issue of incineration, export and loss of value where the goal is to be 100% circular by 2050. Meaning that all plastics are either biodegradable or recycled (NL 2016:49-51). This section refers to the Ellen MacArthur Foundation report ‘The New Plastics Economy’ (2016), signaling a need to end plastic litter, which does not belong on the streets or in the oceans. “In water, plastic gradually degrades into increasingly smaller (micro and nano) particles. These particles – that can attract toxins – eventually affect the ecosystem and end up in our food system” (NL 2016:51), targeting the lack of controlling mechanisms humanity have over its own impact on the environment (Zalasiewicz et al. 2010; Vogel 2016). This represents an anthropocene reasoning that turns economic in the following sections where emphasis is put on maintaining the value in the plastic product, focus on reusable plastics and the creation of a market for sustainable usage of plastics (NL 2016:51-52). The combination of both global and local conditions continue to hold a strong position in the roadmap, such as: “The plastic soup issue that is growing all across the globe needs to be tackled, but also offers opportunities for the Dutch business community in the maritime, waste, and recycling sectors to valorise our knowledge and expertise in the field of plastics clearance” (ibid 2016:53), where the need to address these global issues can be linked back to the opportunities for local companies to gain on a global market.

**The manufacturing industry** represents the third focus area, there is a growing need to reduce the usage of raw materials as “the supply of raw materials such as scarce metals is particularly limited. Such raw materials originate from only a few source countries and conflicts hamper accessibility of the supply”. Further, The Netherland believes that “Without a change in policy, the relatively limited availability of certain raw materials will lead to increasing dependency and geo-political tension, while negatively impacting companies as well as regional and national economies” (NL 2016:57). These reasonings is within the economic discourse as the main priority is the accessibility of the resources needed for national production and the effects a discrepancy to the flow of recourses would have (Lory 2010). There is another side to these

reasonings that do not fall within the frames of analysis, similar to the previous mentioning, is not only the best outsets for the national population in focus, viewing the decreased demand for rare minerals as a mean to reduce conflict and geo-political tension. The focus on the usage of materials and how to create the incentives for the internal and external markets to change, however, “A source of concern is that most businesses pay relatively little attention to the topic of supply security and the role a circular economy could play in this respect” (NL 2016:58). These conditions highlight the role of the state in a transition as the new markets do not create themselves out of necessity but business (Ibid 2016:58-59; see also Kalmykova et al 2018).

**Consumers** are the last focus area, this is because this group continuously makes “conscious yet also quite frequently unconscious choices when purchasing consumer products, and discard such products after a certain period of time” (NL 2016:63). This is a combination of corporate responsibility and how consumers handle the waste after use, “it is imperative that products are designed in a manner that extends product life, enhances their reusability, repairability, and recyclability, and uses renewable raw materials. Consumers must exercise more care in the separate disposal of products and materials in the appropriate collection systems”, fostering high-grade recycling and closing loops (ibid 2016:63). Keeping in mind the previous criticism towards recycling, there is a need to make these systems both cost efficient and profitable (see Tierney 2015; Korhonen et al. 2018), for recycling to lead to greater change. Once again, highlighting the need for the state to create the incentives for the market to act upon. A new system that incentivize environmental preservation by the creation of economic value following the economic discourse (see Iermakova 2019).

#### **4.5.4 Summary:**

The Netherlands roadmap is at large economic driven, but it is also the most diverse in its justifications and reasonings. Some portions of the discourse are neither economic, anthropocene or ecocentric, but rather a variation of justice prepositions. Throughout the roadmap, there is a diversity of solutions that focus on what ought to be and how to incentivize these actions to become economically sustainable, here the reasoning why do not originate in money but the need to change something so private capital will see this sector as profitable. There are also solutions that focus on the sustainability of human life, the anthropocene and, to some extent, also what is the best for nature. However, these reasonings on what is best for nature never leave the human perspective.

## 4.6 Discussion:

The different roadmaps are all from the timeframe 2015-2018 and are, in structure and content, different in many ways. Just to display a first, when introducing the concept there is a variety on the concept of CE and the described aims as to why it is to be implemented. The Danish, Scottish and Finnish initiate their roadmap by putting emphasis on the economic gains that could be produced by a transition. How to create more value, new opportunities and generate more jobs (Lory 2010). Of these three, only Denmark remains focused on the economic possibilities through the entire paper. Both Scotland and Finland bring in survivability and long-term solutions connected to the anthropocene, and when approaching nature, the human lens remains in place. Both the Netherlands and Slovenia start their argumentation from CE displaying a recognition of the globality of the issue and the need to change as a necessity for human survival and prosperity. These anthropocene perspectives hold both moral and justice arguments, for future generations and towards the developing world, we must change to inspire a more sustainable development worldwide, see chart below.

Slovenia	Circular economy “can be understood as a new paradigm that seeks to answer the changes that characterize the 21 <sup>st</sup> century – changes that prove, in a material sense, that the exploitation of natural resources in the ways that were seemingly still acceptable in the 20 <sup>th</sup> century can’t allow for the quality survival of humanity or the other living creatures on this planet.” (Košir et al. 2018:10)
Denmark	Circular economy is all about making growth sustainable. It means using our natural resources and designing our products in a way that extracted raw materials are used as sensibly and as many times as possible. They should not end up in a dump, but in a new product (mfvm 2018:4)
Scotland	Benton (2015:2) describes circular economy as a concept of multiple different loops, where the ideal use of CE “means direct reuse of products, which preserves both the highly engineered character of a product and its useful function. Where a product needs repair or reconditioning before it can be used again, remanufacturing preserves the most value”
Finland	A circular economy strives to maximise the circulation of products, components and materials and the value bound to them as much as possible in the economy (Aistrich et al. 2016:9)

The Netherlands	“In order to continue feeding humanity, provide it with the necessary goods and to guarantee people a decent existence, a fundamental change in how we use raw materials is necessary. We are talking about an economy that provides for people’s needs without placing an unacceptable burden on the environment and without exhausting natural resources” (NL 2016:6)
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When states view CE as something needed to strengthen the national economy in the “accelerated transition to new business models aimed at a rapidly growing global market for green technologies and services” (mfvm 2018:6), the environment is secondary. The Danish perception on how to proceed with CE is what Ayeres et al. (2001) describes as weak sustainability, there is no remarks as to how these solutions can help protect the environment or increase survivability. This example is probably the clearest separation of ethics and ‘ought to be’, from economic development and goals.

However, the Danish roadmap is the only one that stays away from mixing in ethics and values. For example, the Netherlands do in multiple sections focus on global justice and the positive and negative effects their actions will have on a global scale. When importing large amounts of resources, and in many cases, rare minerals mined in conflict areas. Continuing to rely on such import’s risks increasing disparity in access to raw materials, making the sustainable development goals even harder to reach (NL 2016:9). This reasoning is on how we, by recognizing the globality of the environmental crisis, and acting upon these outsets turns the survivability of the own population and the anthropocene perspectives into a global action (Goodin 2013), or as John Broome (2012:8-9) puts it, climate change will inevitably lead to droughts, heat waves, famine and death, by mitigating climate change we protect the environment, insects, plants and human lives, benefits of doing so has to be considered and valued.

The Netherlands stands out as the only roadmap considering its own actions in a justice perspective. Slovenia is also referring to others, not out of justice, but out of recognition of how unsustainable the lifestyle we are currently living are and how harmful it would be if everyone did so. The aim becomes to develop new models and methods on how to become less dependent, lower emissions and to export the knowledge gained through this transition, creating jobs and markets for national gain (Košir et al. 2018:12,23,29). Same thing can be said about the Finnish and Scottish roadmaps, there is many arguments that do mention the protection of the

environment and survivability, but in most cases, the potential economic gains are always the priority (Aistrich et al. 2016; Benton 2015).

Most reasonings on how to reach a CE is based on the possibilities to create new markets, create opportunities for national enterprises and strengthening the economy. Or, the reasonings focus on how to make the sectors needed, the ought to be, profitable for the market to expand upon, working with subsidies and support the development of new more effective technical solutions, especially when it comes to recycling that, as it is now, is expensive and cost inefficient (see Tierny 2015). For most states is CE an opportunity to create growth for the national economy, for example; Denmark: “Circular economy presents an evident option for expanding Danish strongholds within, among others, bio-economy, sustainable construction, and resource-efficient production” (mfvm 2018:6); Scotland: “there is plenty of demand for CO2 storage from across the EU, making the knowledge and skills acquired by going early on CCS networks in Scotland valuable to a wider market. (Benton 2015:9); Finland: “The focus will be on export development, capitalising companies with Finnish and international money and attracting investments to Finland. The aim is to develop significant business in Finland on the basis of the major R&D functions already performed. Refining bio-based raw materials into products with a higher refinement value” (Aistrich et al. 2016:21).

Almost all roadmaps focused on food production and all, in some way, on biomass. The solutions varied quite a bit; Slovenia argued for the incentivization of seasonal goods to maximize the production of food without the need for additional wrapping, transport and intermediaries (Košir et al. 2018:32). While both the Netherlands and Finland had similar ideas, focus was primarily on the usage of fertilizers, how to be more nutrient efficient and reduce the eutrophication (Aistrich et al. 2016:15; NL 2016:46), but the reasoning was very similar, to move towards a more sustainable process of farming. The food section is, when present, a combination of anthropocene, economical and other reasons, such as but not limited to, national security and dependency.

#### **4.6.1 The role of consumers, companies and the state:**

Within the roadmaps different initiatives target different groups and see different actors as the initiator, the driving force and what hampers the development. What they all agree on is how no government can carry out this transition on its own. “Cities and local communities play a crucial role in the transition – they are increasingly recognized as the central generators of

circular change” (Košir et al. 2018:7) and “existing innovation institutions could fulfil this role, if politicians provide a mandate for them to be bold” (Benton 2015:1). However, even if they all view communities, cities, institutions and pioneering entrepreneurs as important to generate new solutions, the government play a crucial role (Aistrich et al. 2016:48; NL 2016:30; Košir et al. 2018:4) The Netherlands describes a situation where the group of pioneering business is small and enthusiastic, while the group of larger companies lagging behind is large and slow in their transition. In between are groups that are interested in the opportunities within circular economy but have yet to change as they “do not know how to do this” (NL 2016:30) Finland and Denmark on the other hand, emphasizes on the economic risks and the somewhat weak risk-taking ability and lack of consumer understanding complicating the move to CE (Aistrich et al. 2016:48; mfvm 2018:15), highlighting the need for the state to provide economic support and gives the consumer a larger role.

In all this, the Government plays a crucial role – by taking concrete and effective cross-sectoral measures it has the potential to support the key points that represent the potential for a CE. What all states need is the state to take the economic risks and create a targeted, challenge-led innovation strategy run by institutions empowered to drive technically risky, but potential big win CE pilot projects (Benton 2015:1; mfvm 2018:15-16).

#### **4.6.2 Global justice:**

The most interesting aspect from the analytical framework was, that no solutions held an ecocentric approach as the anthropocene lenses were never removed, there was some problem formulations that moved close but there was never the environment that was the driving force but survivability for humanity and new economic growth. Besides that, the idea of global justice and the recognition of national consumption of rare minerals as a driving force for inequalities, tension, or even war, in other parts of the world were refreshing. These reasonings move beyond the state on the why arguments for the importance for states to change within. It was only the Netherlands that held these types of reasoning and nuanced their motivation for transition.

The differences between different states on how they approached these issues also give us some insight to the different values at play, how the state view CE and the solutions at hand. Jarozs (1996) argues that, to be able to reach global solutions we need to understand these differences and be able to draw upon them when shaping a new global paradigm. Otherwise, unless we find common ground, we will continue the ‘tragedy of the commons’ path. For example The Netherlands, that hold the most outspoken attitude on how their actions affect the global,

probably do so as they are fully aware of what it means if the ocean continues to rise as one third of their land are below sea and protected by walls. Like Godrej (2016) suggests, the conditions at hand also changes the perception of responsibility and justice in connection to the issue.

## 5. Conclusion:

The purpose of this paper is to explore how policy makers want the transition towards CE to look like, what solutions they visualize but with a focus on the why(?) arguments, how different actions and solutions are motivated.

The findings of the discourse analysis suggest that different states motivate their transition towards CE slightly different. However, the overarching theme that can be seen strongly in all of them is the economic discourse, where they focus on the creation of new markets, businesses and the opportunities to take the lead and sell their expertise. The second most prevalent was the anthropocene, and the survivability of future generations. However, when formulations with focus on the survivability of humanity and the environment was presented, it in almost all cases came back to the economical outsets with such transition and how much money can be gained/saved. Even when the solution is not driven by the market, the state is to create the incentives that will, in the long run, make these areas profitable, highlighting the importance of the state to facilitate change.

There is also a discrepancy on how the concept circularity and CE are being used between the roadmaps. Keeping the definition made in the beginning of this paper in mind: ‘Unlike traditional recycling the practical policy and business advocacy orientated CE approach emphasizes product, component and material reuse, remanufacturing, refurbishment, repair, cascading and upgrading, viewing recycling as the last resort (Kalmykova et.al. 2018; MacArthur 2015)’. For example, we can clearly see that the Danish one, who strongly focuses on the recycling aspect, are diverging from above stated. Highlighting and understanding these differences are key for discussions about CE in a global context.

## **6. Further Discussion:**

Then why does it look this way? First of all, the documents that are the foundation to the CE roadmap are not available, the government request where what is of importance to include are framed. Also, who is the target group? In some cases, the politicians and in other the entrepreneurs, leading to a language that adopts to the focus group. This puts the less nuanced and primarily economic roadmaps in a light that probably are not representative. This is also why I do not try to evaluate the different roadmaps but simply study their reasonings and justifications.

There is still a lot to be said on how to change values, social structures and world views when it comes to circularity and CE (see Kalmykova et al. 2018; Korhonen et al 2018). However, this study shows how different states view their own role in a transition, the lack of corporate social responsibility, or rather, the need to incentivize a transition where the state takes the risks and the costs. It is also upon the state to bring CE from a level of programmatic ideas and policies to a public philosophy, as mentioned by Carstensen and Paulsen Hansen (2019:582).

Further research should focus on the policy documents produced with the roadmap in mind, examining what effect the document has held over state functions. Without proper examination of the implementation, we lack understanding on how policy is realized. This is, something that needs to be done to give this area of research a more overarching framework of analysis. Further research should also include more roadmaps, adding to the shared knowledge on why CE are implemented and why the suggested solutions are seen as solutions and promoted.

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