

UNIVERSITY OF DERBY

SMALL BUSINESS TRANSITION
TOWARDS DEGROWTH

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Declaration

I declare that this thesis has been composed by myself and that it has not been submitted, in whole or in part, in any previous application for a degree. Except where stated otherwise by reference in the text, the work presented is my own. I confirm that this research has been ethically approved (Appendix X).

Abstract

This work focuses on the relationship between small firms and degrowth. It aims to contribute to the understanding of what production by small firms should entail for a degrowth society and economy to be possible. It is proposed that for small firms to transition towards degrowth and consequently become part thereof, small firms should become degrowth businesses. This work proposes a framework of degrowth business informed by empirical insights derived from seven cases of small firms in England. The study claims that while small firms may indeed be suitable for degrowth, this entails transformation of their business on multiple levels, including worldviews of individuals involved. Moreover, it is claimed that in transition towards degrowth, small firms are likely to face barriers. It is concluded that to transition towards degrowth, transformation of small firms into degrowth businesses is not sufficient. For degrowth society and economy to be possible, these efforts must be supplemented by a larger societal transformation involving multiple agents and structures. This work's contribution is theoretical in terms of advancing understanding of degrowth business and production by firms for degrowth, and practical since the framework developed aims to be useful for firms, policy-makers and in education.

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My deepest gratitude goes to Nature and the ecosystems which suffered in the process of production of this thesis.

I dedicate this thesis to Nature and non-human life.

1. Introduction

“What is required is much greater social change than Western society has undergone in several hundred years.” (Trainer, 2011, p.17)

For the majority of human existence as a species, people managed to co-exist with nature (Gowdy, 1998; Gowdy and Krall, 2013), and the impact of human economy on the environment, compared to the impact of geological and geochemical forces themselves, was relatively small (Townsend, 1993). Investigation of humans’ life as hunter-gatherers shows that issues associated with modernity, such as extreme inequality and global environmental degradation, did not exist with an exception of small island nations which experienced overuse of natural resources, overpopulation and collapse due to being confined to a limited territory (Gowdy and McDaniel, 1999). People of early civilisations “imagined themselves to be living on a virtually illimitable plane” (Boulding, 1966, p. 3). This was due to the planet being relatively empty of humans, and fewer people consuming less (Alexander, 2015b).

With the advent of agriculture major changes occurred, which led to production for exchange instead of consumption, stationary lifestyle, population growth and rising inequality (Gowdy and Krall, 2013, 2014). Gradually the image of a frontier between human habitat and the unexplored was replaced by a closed sphere of earth (Boulding, 1966). Further, the development of capitalist, market-based and fossil-fuel powered economies brought additional challenges to humanity itself, non-human life and ecosystems (Bonnedahl and Heikkurinen, 2019b) which humanity has as yet failed to address. Such issues include anthropogenic or human-caused climate change (Adams, 2001), resource depletion (Valenzuela and Bohm, 2017) and species mass extinction (Ceballos et al., 2017; Normander, 2012).

Modern economies are economic growth-based and economic growth-orientated, therefore expected and hoped to be ever-expanding, which over-exploits nature and threatens the existence of humans and other species (Daly and Townsend, 1993; Hall and Klitgaard, 2006; Jackson, 2017). Currently it appears that there are no alternatives to an economic growth-based economy, except for the ones described, explored and proposed in academic research or implemented on a small scale on a local level, which does not suffice for a large transformation of societies and economies that is needed in reality (Victor and Jackson, 2016).

Daly and Townsend (1993) argue that economic growth is not morally desirable, nor is it economically or environmentally sustainable, i.e. able to be prolonged far into the future. The pursuit of economic growth leads to overproduction and overconsumption which are neither

sustainable nor desirable (Assadourian, 2012; Latouche, 2009; Trainer, 1995). They cause destruction on a large scale due to exploitation of resources, promote globalisation in search of questionable market opportunities (Latouche, 2009) and do not increase wellbeing (Jackson, 2017; Fioramonti, 2017). They result in a situation of unsustainability which can be described as an impossibility of prolonged continuation of human and non-human life far into the future.

By imagining and promoting the concept of sustainable development, governments attempted to include some social and environmental goals into the development of economies, but this concept did not deviate from the pursuit of economic growth and thus has been criticised and challenged (Bahro, 1982; Trainer, 1985; Latouche, 2009; Kothari et al., 2014; Bonnedahl and Heikkurinen, 2019).

The situation of unsustainability demonstrates that the world in which we live currently is not the best of what is possible (Gowdy, 1998). A different world, that is at once desirable, necessary and possible, is needed (Latouche, 2009). However, this requires a different and transformative approach to economies and economic activities, including production and consumption, and a need for research that explores alternative ways of organising economic activities (Johnsen et al., 2017; Bonnedahl and Heikkurinen, 2019).

The current system needs to change to accommodate social and environmental goals and aspirations (Latouche, 2009; Klitgaard and Krall, 2012; Speth, 2012; Normander, 2012; Trainer, 2012; Moriarty and Honnery, 2016; Spash, 2017). A new, transformed system must acknowledge planetary boundaries, the need for reduction in inequalities, preserve rights of future generations, incorporate ethical principles and be based within a new paradigm of development which is not based on economic growth (Abraham et al., 2012; Bonnedahl and Heikkurinen, 2019). Such a radical undertaking of challenging and changing the norm requires a cultural change and changes in lifestyles and values, which means moving away from competitive and individualistic acquisitiveness and instead concentrating on needs rather than wants (Moriarty and Honnery, 2011; Gorz, 2012).

One may inquire into the reasons behind the failure of governments' efforts to ensure environmental sustainability and deviate from the narrative of economic growth. Policy-making, including policies concerning the environment, broader society and business, is based on the ideas of neoclassical economics (Gowdy et al., 2010; Eskelinen and Wilen, 2019). Neoclassical economics promotes and justifies the superiority of a free market economy, its outcomes (van den Bergh and Gowdy, 2003) and instruments such as valuing ecosystems in

monetary terms (Hall and Klitgaard, 2006). Ideas from neoclassical economics are widely manifested in the dominant social paradigm (Korhonen, 2002), thus making this school of thought prevalent and influential (Eskelinen and Wilen, 2019). They represent humans as greedy and selfish individuals, celebrate accumulation and maximisation of profits no matter what negative consequences this might have. Those negative consequences concern not only humanity itself but also non-human life and include habitat and biodiversity loss as well as appropriation of nature in general (Lea et al., 1987; Costanza et al., 1997; Sahlins, 1998; Normander, 2012; Spash and Aslaksen, 2015; Ceballos et al., 2017).

Unsurprisingly, the position of neoclassical economics is addressing the issue of unsustainability via market mechanisms such as carbon taxes and emissions trading, and not that of reducing the size of economy to allow it to exist within planetary boundaries (Gowdy et al., 2016). Daly and Townsend (1993, p. 3) summarise the position of neoclassical economics regarding the ecosystems in the following: “in the neoclassical view the economy contains the ecosystem”. Moreover, neoclassical economic theory focuses on circular flows between firms and households and views the economy as a system isolated from the environment, therefore resource exhaustion or pollution of the environment are not accounted for (Daly and Townsend, 1993). In other words, neoclassical economics ignores the embeddedness of the economy, which it studies, in the environment (Bhaskar, 1989).

Neoclassical economics has been criticised by various schools of economics, especially ecological economics, based on the above-mentioned grounds and in particular on the grounds of its reluctance to view the economy as embedded within biophysical reality and its misconceptions towards biophysical, and also human, nature (Hall and Klitgaard, 2006; Hall et al., 2001; Gowdy et al., 2010; Söderbaum, 2007).

Unlike neoclassical economic theory, ecological economics addresses the embeddedness of the economy into planetary systems (Spash, 2012, 2017). Central to the argument of ecological economics is the issue of possibility of sustaining economic growth (Daly and Townsend, 1993) which can be summarised in the following: “in a finite world continual growth is impossible” (Daly, 1993, p. 15). The visions of economy, which are based on the arguments of ecological economics and deviate from the centrality of growth to propose alternatives, can be referred to as “post-growth” (Büchs and Koch, 2017; Jackson, 2017; Fioramonti, 2017). The Post Growth Institute (2017) states that post-growth focuses on “building on the existing aspects of our world that are sustainable in order to create resilient futures. This includes

strengthening ecologically and socially sustainable practices, while recognizing the physical limits of the earth”.

Post-growth can be considered an umbrella term that unites multiple visions and practices which go beyond growth-centred thinking. One such vision is degrowth. D’Alisa et al. (2015) differentiate between post-growth and degrowth and state that post-growth is a less concrete concept than degrowth since post-growth encompasses multiple visions. Considering the urgency to address the issues of unsustainability, this “concreteness” of degrowth and the sense of direction are desirable. Despite being a radical vision, degrowth thus aims to offer a “concrete utopia” (Latouche, 2009, p. 4), i.e. a vision which can be operationalised and materialised or come into existence.

Degrowth emphasises transitioning away from the pursuit of economic growth (Assadourian, 2012) and highlights the difference between a growth-based economy and a degrowth alternative, which is not the same but smaller, rather smaller and qualitatively different (D’Alisa et al., 2015). Schneider et al. (2010, p. 511) define degrowth as “an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level”, thus highlighting the multi-dimensional character of degrowth which not only includes ecological sustainability but also wellbeing.

Degrowth seeks to contribute to finding solutions to the problem posed, for instance, by Hubbert (1993), of how to transition from the current state of unsustainability, characterised by ecological degradation caused by ever expanding human activities (Bonnedahl and Heikkurinen, 2019b), to the state of sustainability “by a least catastrophic progression” (Hubbert, 1993, p. 125). Degrowth thus aims to avoid collapse, which it proposes to do by downscaling of economic activities (Schneider et al., 2010). While this may initially appear a precarious trajectory of descent, a degrowth transition is one towards “convivial societies who live simply, in common and with less” (Kallis et al., 2015, p. 11).

Despite the relative clarity of what degrowth aims to achieve and despite the fact that much literature which criticises economic growth and capitalist market structures, exists (Alexander, 2016; Wells, 2018), the literature on what exactly a corresponding economy would entail and how to get there, is much less developed (Alexander, 2016). Studies in the field of post-growth and degrowth tend to concentrate on the macroeconomic level or the global scale, for instance, using a scenario approach (Moriarty and Honnery, 2016; Hardt and O’Neill, 2017). However, there is a need for debate on the micro-economic level and a need to understand the function

of business in transitioning towards a degrowth society (Johanisova et al., 2013; Wells, 2018). So far, business models have hardly been addressed (Hardt and O'Neill, 2017). Moreover, since responses from governments have not produced desirable outcomes, it has been argued that firms should take a leading role in transition towards a sustainable society (Schaper, 2016).

It goes without saying that firms are important players in the contemporary economy. The economic system based on neoclassical economics overemphasises the role of large companies (Fioramonti, 2016). However, it is small firms that were the original units of production in the economy (Klitgaard and Krall, 2012), and even currently nearly all firms in advanced countries are small and perform important economic functions such as job generation and innovation (Johnson, 2007; North and Smallbone, 1996; Bjerke and Hultman, 2002; Bouznik, 2009). They provide economic and social stability and community development (Bouznik, 2009). Small firms possess characteristics which may indicate their suitability for a degrowth economy, such as their already existing embeddedness in their local communities (Trainer, 1995; Söderbaum, 2008) or contentment with their existing size (Leonhardt et al., 2017). Unsurprisingly, this has led some to view small firms as potential and desirable agents of production in a degrowth economy (Trainer, 1995, 2012; Alexander, 2015b).

What will production and firms in a post-growth economy look like? Some authors contemplate the future of business in transitioning towards an economy and society beyond growth. For instance, Fioramonti (2016) argues that instead of seeking growth in scale, firms will seek the right size like cells in an organism, environmental and social considerations will become an integral part of business strategy, and customers will become active participants in the production process. Fioramonti (2016) also places an emphasis on the increasing role of localisation of business operations and bottom-up business models which will challenge the status quo. Victor and Jackson (2016) conceptualise the role of business and argue that businesses will aim at the flourishing of communities, society and nature. They note that examples of this already exist in the form of community-based social enterprises such as cooperatives and community energy projects. However, further work is required to understand production by firms for degrowth specifically and to do so in a holistic and comprehensive manner.

This thesis acknowledges the need to move away from purely theoretical and conceptual work on degrowth and takes into consideration the call from scholars (e.g. Johanisova et al., 2013; Alexander, 2016; Wells, 2018) to study practical aspects of transitioning towards a degrowth

economy, especially on the micro-economic level. This research concentrates on one aspect of the production side of the economy, namely small firms.

Due to the qualitative change in its nature, rather than simply being a quantitative decrease (Kallis et al., 2015), a transition towards degrowth requires deeper understanding of what it entails for actors in the economy. Understanding concrete pathways for small firms to transition to an alternative mode of economy can help ecologically and socially-minded individuals, such as owner-managers of small firms with such inclinations, to operate and even establish degrowth firms, i.e. firms suitable for a degrowth economy, thus facilitating a grassroots change. It can also help policy-makers and educators to facilitate transition towards degrowth. Pathways proposed in this study may deviate substantially from what is familiar or considered to be “normal” (Maxton, 2018, p. 35). In relation to this, the following reminder is helpful: “What may seem a radical agenda should be juxtaposed with the cost of continuing on the present path” (Gowdy and Krall, 2013, p. 146).

To summarise, this study focuses on the link between small firms and degrowth. The **aim** of this study is to understand how small firms could transition towards degrowth to become an integral part of a degrowth economy. In other words, this research attempts to answer the following question: How could small firms transition towards degrowth and what does being a degrowth business entail?

To achieve a comprehensive answer to this question, the **objectives** of this research are:

(1) To understand the role of business in degrowth.

This objective requires understanding of the nature of production for degrowth in terms of “who” the producers in a degrowth economy may be. This objective aims to answer the following questions: What role would business in degrowth play? Who could be the agents of production in degrowth?

(2) To understand the role small firms could play in degrowth.

This objective requires understanding of potential of small firms to transition to degrowth, the nature of production for degrowth by firms in terms of “how”, i.e. the characteristics of business for a degrowth economy by designing a degrowth business framework, and barriers to small firms’ transition to degrowth. This objective aims to answer the following questions: What kind of potential do small firms have to transition to degrowth? What does

production for degrowth by firms entail? What are the theoretical characteristics of degrowth business? What barrier could small firms face in this transition?

(3) To understand how small firms could transition towards degrowth in practice.

This objective requires to inform degrowth business framework via an empirical investigation and to understand what barriers small firms face in real life.

(4) To outline recommendations regarding how the updated degrowth business framework can be used and the limitations associated with the recommendations given.

The thesis is organised as follows. Chapter 2 “Literature review: towards degrowth” explains that deviation from neoclassical economics and sustainable development is necessary. It focuses on ecological economics and the vision of degrowth based on ecological economics and why they are preferable, i.e. better positioned to address current problems of unsustainability. This chapter also includes an overview of humanity’s historical development to demonstrate that growth-based capitalism should not be seen as inevitable or necessary, and that multiple alternatives have been, and are, possible. Chapter 3 “Literature review: production for degrowth and small firms” focuses on the main area of this study, i.e. the production for degrowth and in particular that by small firms. This chapter concludes with a theoretical framework of a business for a degrowth economy. Chapter 4 “Methodology” starts with the author’s ontological, epistemological, methodological and axiological positions and states that deviation from mainstream economics requires deviation from positivism. Critical realism is seen as a preferable philosophical lens. The chapter proceeds to outline the approach of this study, method selection, research design, and describes the collection and analysis of the data in detail. Chapter 5 “Findings” presents the findings from individual cases as well as findings resulting from the synthesis of cases and connects them to the literature. Chapter 6 “Discussion” attempts to explain new insights, discusses this study’s theoretical contribution and limitations, those of the study itself and of the framework. Additionally, this chapter outlines possible research avenues and recommendations to assist the use of the framework. Chapter 7 concludes, while Chapter 8 “Reflection” refers to the practice and process of writing this thesis.

Since this thesis uses several complex key concepts, Appendix I provides a glossary of those.

2. Literature review: towards degrowth

This chapter is based on the premise of conflict between humanity and nature which results in a situation of unsustainability (Daly and Townsend, 1993; Spash and Aslaksen, 2015; Alexander, 2015b; Jackson, 2017; Moriarty and Honnery, 2017b; Bonnedahl and Heikkurinen, 2019). This chapter's logic is as follows. It firstly focuses on mainstream economics and considers whether it is best equipped to address the issue of unsustainability (Section 2.1). In particular, it will refer to the question of growth on a finite planet. It will also propose an alternative way of thinking for economics (Section 2.2). Section 2.3 focuses on the historical development of societies and asks whether a capitalist, growth economy is a law of nature and is inevitable. It additionally offers insights into the path towards unsustainability. Section 2.4 asks whether sustainable development is sufficient and well equipped to address the issue of unsustainability. Sections 2.5 and 2.6 offer alternative patterns of thinking. Once the need for alternative patterns of thinking is identified and established, the literature review focuses on post-growth and degrowth specifically.

Due to a transdisciplinary nature of this research, a traditional literature review was preferred over a systematic literature review. A traditional literature review is a review where no prescribed methodology is followed as opposed to the systematic literature review which is technical and standardised (Jesson et al., 2011). The study summarises and analyses literature from multiple spheres of knowledge. They include economic anthropology (e.g. Gowdy, 1998), early (e.g. Daly and Townsend, 1993) and modern texts (e.g. Jackson, 2017), articles on biophysical and ecological economics (e.g. Costanza, 1991), and texts and articles on post-growth and degrowth (e.g. D'Alisa et al., 2015). Texts include, but are not limited to, collections of articles edited by seminal authors in the corresponding fields of knowledge. Additionally, since it concentrates on production for degrowth by small firms, this study reviews literature on small firms, including texts (e.g. Reid, 1993) and articles (e.g. Wells, 2018).

Most recent systematic reviews on degrowth literature (Cosme et al., 2017; Weiss and Cattaneo, 2017) were consulted to identify key journals for review. Online sources have also been used (e.g. UK Government, 2017). In addition to the sources mentioned above, valuable insights are derived from open commons sources on degrowth such as e-books written by the scholars of degrowth and shared free of charge (e.g. Kallis, 2017). A traditional literature review allows the author to incorporate valuable academic knowledge produced by research

institutes (e.g. The Simplicity Institute, CUSP [Centre for the Understanding of Sustainable Prosperity]) and think tanks (e.g. New Economics Foundation, Research & Degrowth).

2.1. Neoclassical economics

“Modern economics has become dominated and obsessed with two goals: growth and efficiency [...] Efficiency is in fact a sub-goal of growth.” (Spash, 2011, p. 358)

This section discusses the neoclassical school of economics, its downsides for achieving sustainability and why a deviation from this school of thought may be needed for a radical transformation of societies. This overview is necessary due to neoclassical economics being particularly influential, dominant and mainstream (Thompson, 1997; Gowdy et al., 2010; Spash, 2011, 2012; Coscieme et al., 2019; Eskelinen and Wilen, 2019).

Neoclassical economics envisions the economy as circular flows of goods, factors of production and wages between firms and households (Gowdy et al., 2010). This model does not incorporate or account for complex interaction of individuals in, and within, the society, and between economy and nature. Neoclassical tradition views economic reality as separate from social reality, and the study of social factors is downplayed (Dobbin, 2007; Smelser and Swedberg, 2005; Söderbaum, 2008). A critique of neoclassical economics is thus related to the issue of reductionism or oversimplification of complex and emerging social systems (Bhaskar, 1998; Söderbaum, 2008; Spash, 2017b). What reductions in economics may be problematic in understanding transitions towards sustainability?

Neoclassical economics reduces societies to individuals, individuals to materialistic consumers, wage earners and investors, firms to profit maximisers, and ignores the complexity of relationships within societies (Bhaskar, 1998; Söderbaum, 2008; Gowdy, 2010; Spash, 2017). It considers only market relationships, and its model of market relationship focuses solely on supply and demand forces and is, therefore, mechanistic (Deléage, 1994; Söderbaum, 2008; Eskelinen and Wilen, 2019).

Focusing on market relationships means that ethical, ideological aspects of thoughts and behaviours and the social aspects of market relationships are downplayed or excluded (Söderbaum, 2008). The market represents only a part of society. Focusing solely on the market relationship results in a situation where analysing the depths and nature of things and the causal mechanisms behind the natural and social facts does not receive sufficient attention (Schumacher, 1993; Lawson, 2019).

This approach, which does not account for the complexity of social reality, and particularly the approach of neoclassical economics to people, societies and relationships in societies, provoked a response from other social sciences. They include psychology and sociology. For instance, Lea et al. (1987), coming from the perspective of psychology, argue that real people are central to economics as a social science. They maintain that, for instance, the divide between economics and psychology is artificial since the economy itself is a social creation, and economic behaviour is necessarily social behaviour. Lea et al. (1987) propose that people remain people even when they engage in economic activities, and economy affects them.

This was also noticed by the sociologist Emile Durkheim. For instance, Durkheim (1992) investigated the link between economic life and morality and in particular the effect economic life had on morality of individuals. He observed the disappearance of moral guidance and solidarity with proliferation of economic activity. More recently Gowdy (2006) noted the effect of the economic system on individuals' behaviour, for instance via advertising which can modify individuals' consumption.

Contrary to the view which isolates some social interactions (such as market relationship) from the society as a whole, the real-life social systems are complex (Spash, 2017b; Lawson, 2019). Spash (2017b) captures the oversimplification of the economy by mainstream economics by highlighting the complexity of social systems. He reminds us that goods and services in reality undergo multiple processes of extraction and transportation. In production transformation of nature occurs from one state to another. Goods are used by a range of social actors, and then all the energy and materials are returned into nature. However, in mainstream economics this process is reduced to "production" by a "firm". Spash (2017b) continues to argue that social actors likewise cannot be reduced to "consumers". There are governments, the military, social groups, individuals. Such social complexity necessitates a wide variety of institutions such as norms and rules. The institutions also influence the society and its values which institutions affect by promoting some and destroying others.

Reduction of such complexity may present serious limitations in terms of addressing the issue of unsustainability and a transition towards a sustainable society. Bhaskar (1998, p. 99) explains why reductionist approach in social sciences fails. He notes that successful reduction is possible when the body of knowledge in the domain of the to-be-reduced science is well developed, as it is the case with reduction of chemistry to physics. In social sciences, of which

economics is one, no such body of knowledge exists (Bhaskar, 1998). Thus, reductions become problematic.

Moreover, the assumptions in neoclassical economics are rarely tested empirically and thus represent institutional facts rather than facts based in reality (Eskelinen and Wilen, 2019), which makes it challenging to employ this approach to real social systems and their transformations. Yet, considering the urgency to move towards a sustainable society (Bonnedahl and Heikkurinen, 2019b), it may be more useful to start with assumptions based firmly in reality, such as recognition of limits to human economic activities (Eskelinen and Wilen, 2019), and with an approach which is more holistic and which would incorporate moral, philosophical considerations and goals (Schumacher, 1977).

Moreover, neoclassical economics focuses on quantitative analysis and ignores qualitative distinctions between goods, services and people (Schumacher, 1993). However, the change required to achieve sustainability may in fact be qualitative in nature (D'Alisa et al., 2015). This means, for instance, producing and consuming differently altogether or re-orientating economic activities to different pursuits. This is because economic functions are merely a means to an end rather than ends in themselves (Schumacher, 1977, 1993; Durkheim, 1992).

The focus of neoclassical economics on quantitative analysis may limit the application of this school of thought to the peculiarities of “how” of transition of economies towards sustainability where quantitative analysis and measures may not be as useful. One of such quantitative measures, for instance, is GNP (gross national product). It ignores and does not disclose the quality of growth, whether it is unhealthy or destructive, and who, if anyone, benefited from it (Schumacher, 1993). GDP (gross domestic product), which is currently the central measure of success of economies, has likewise been criticised (Raworth, 2013). GDP as a measure of economic growth does not determine the quality of what is important, such as the quality of the environment, life and health and does not differentiate between costs and benefits, growth and development (O'Neill, 2012; Kosoy et al., 2012; Jackson, 2017).

Another important point of critique is directed at a lack of recognition of embeddedness of the economic within the biophysical, i.e. within nature (Alexander, 2015b). It does not acknowledge that flows between firms and households exist in, and are embedded within, the ecological systems of the planet. Because such embeddedness is ignored, neoclassical economics sustains the idea of possibility of indefinite economic growth on a finite planet (Schumacher, 1993; Spash, 2011). Due to the lack of consideration of the embeddedness within

the biophysical and the primacy and centrality of the market, the services provided by the environment are seen as free. The environment in such theorising becomes a sub-system of the economy (Gowdy and Erickson, 2005), which leads governments adopting the approach of neoclassical economics to downplay the importance of limits to which economic activity can grow.

Due to a lack of recognition of the embeddedness within the social and the biophysical, neoclassical economics does not offer an effective way to address environmental problems, which leads scholars to argue that environmental problems require an inter-disciplinary approach (Spash, 2012). For instance, in addressing environmental problems neoclassical economics uses its own instruments including prices and taxation. However, correcting prices is not a substitute for correcting ethics towards nature and future generations (Gowdy, 2016). Georgescu-Roegen (1974) proposed that the only way to protect future generations from over consumption of resources at present, people need to re-educate themselves to feel sympathy for the future humans.

Connected to the lack of recognition of the biophysical reality and an overall utilitarian approach (Bhaskar, 1989) is anthropocentrism which characterises neoclassical economics (Washington and Maloney, 2020). This means that neoclassical economics prioritises human welfare over the health of the ecosystems and views non-human life as means to human ends (Kopnina et al., 2018). Yet, the dramatic scale of human impact on the biosphere affects non-human species as well as humans, and a different approach is needed to ensure that a transition to a sustainable society leads to positive outcomes for humans as well as non-humans (Adams, 2001; Bonnedahl and Heikkurinen, 2019).

From the overview above it follows that neoclassical economics is not well equipped to address the problem of unsustainability exemplified in crossing of planetary boundaries (Rockström et al., 2009) and ecological degradation caused by human economic activities (Bonnedahl and Heikkurinen, 2019) or to outline ways to deeply transform the current situation (Eskelinen and Wilen, 2019). This is in line with the arguments previously presented in the literature which communicate doubt with regards to this school's ability to solve the issue of unsustainability (Redclift, 1987; Hall and Klitgaard, 2006; Hall et al., 2001; Kosoy et al., 2012; Daly, 1996; Spash, 2017). Moreover, traditionally mainstream economics has not been aimed at environmental contribution (Daly, 1996).

However, this is not to say that there were no attempts to apply neoclassical economics to address sustainability issues. An attempt to apply neoclassical economics to such issues is exemplified in the vision of green economy by UNEP (The United Nations Environment Programme) (Renner, 2012; Assadourian, 2012; Valenzuela and Bohm, 2017; Eskelinen and Wilen, 2019). Overall, such approach results in a hope that greening of existing markets will bring about economic growth (Renner, 2012; Eskelinen and Wilen, 2019).

This indicates preservation of status quo rather than a radical transformation or seeking for radical, transformative solutions which would match the extent of the problem (Assadourian, 2012; Eskelinen and Wilen, 2019). Greening of existing markets, rather than a deep revision of the ways in which economies operate, implies a possibility of a technological fix to multiple societal, economic and ecological problems without calling for a deep understanding of the drivers behind those problems (Costanza, 1989; Kosoy et al., 2012; Maxton, 2018).

Such approach, which emphasises reformation of existing markets, relies on absolute decoupling of economic growth from growth in environmental impact, of which there is no evidence (Jackson, 2009, 2017; Ward et al., 2016). It also preserves a reductionist and utilitarian view of nature (Bhaskar, 1989). Ward et al. (2016) and Jackson (2009, 2017) argue that the idea of decoupling is delusional based on historical evidence and arithmetic of growth. For instance, Jackson (2017) analyses the evidence for decoupling and notes that even though there is evidence of relative decoupling, which refers to the rate of resource use and growth, there is no evidence of absolute decoupling, which would refer to economic growth continuing while the use of a resource would remain at a particular level. Decoupling is closely related to the concepts which aim at reformation instead of transformation of social systems such as ecological modernisation, technological optimism and green growth (Spash, 2012b). Spash (2012b) refers to one of the advocates of these developments, Karlsson (2012), who finds that the ultimate decoupling is space colonisation, which may be no less utopian than reformation of the current social system (Spash, 2012b).

Despite the critique outlined above, understanding the principles of neoclassical economics can be helpful. For instance, it can assist with understanding the operation and management of modern economies and policy-making where neoclassical economics dominates (Söderbaum, 2008; Gowdy et al., 2010). Moreover, some instruments of neoclassical economics, such as taxation, can be useful in terms of transition towards a sustainable society via providing funds for such a transition (Latouche, 2009; Max-Neef, 2014). However, while taxes and other

monetary instruments of neoclassical economics might be able to buy time in dealing with the environmental issues, they are not the solution (Gowdy, 2016; Gowdy and Krall, 2013). This is because they are not aimed at radical, holistic transformation of the economy.

Apart from providing instruments such as taxation, neoclassical economics hardly provides solutions for sustainability (Costanza, 1991; Abrahao et al., 2012). To understand how real, complex societies can transition towards sustainability, how current patterns of production can be transformed, why and to what ends, an assistance from a different school of thought and a different approach is required. An alternative approach should first and foremost recognise the embeddedness of economies within larger systems of society and nature (Spash, 2012). Recognition of such embeddedness and understanding of what it means for economic activities in general may allow for radically different approaches to production.

The assumptions of neoclassical economics have been challenged by several economic schools of thought. Some examples include ecological and social ecological economics (Spash, 2017), institutional economics (Kapp, 1950; Myrdal, 1972; Söderbaum, 2008), behavioural economics (Diamond and Vartiainen, 2007; Burnham, 2013), as well as on critical realist grounds (Bhaskar, 1989, 1998; Lawson, 2019). The following section considers ecological economics as an alternative because ecological economics focuses specifically on the relation between human economic activities and nature (Ingebrigtsen and Jakobsen, 2012; Klitgaard and Krall, 2012).

2.2. Ecological economics

“All economic systems are subsystems within the big biophysical system of ecological interdependence.” (Daly, 1993, p. 39)

The schools of economics that fall outside neoclassical perspectives can be referred to as heterodox schools of economics. What is essential to address in the situation of unsustainability is the relationship between human economic activities and the environment. It is explored by the heterodox school of ecological economics (Ingebrigtsen and Jakobsen, 2012; Spash, 2012). This is of particular importance considering the subject area of this study.

Ecological economics is the only school of economic thought which assumes the economy is a sub-system of the environment (Gowdy and Erickson, 2005). The economic system is normally modelled as flows of labour, goods and investments between firms and households

taking place in a closed, circular system. This view has been claimed to be flawed as it ignores the embeddedness of the economy within the natural world (Costanza, 1991; Zencey, 2013).

Ecological economics was founded on the recognition of the embeddedness of the economy within the biosphere and the need to place it within the biophysical limits (Spash, 2017b). This is while acknowledging the need for societies to respect others, which refers to humans and non-humans, both existing and future (Spash, 2017b). Ecological economists see the economic system as a sub-system of the ecosystem (Daly, 2007, 2015) while the ecosystem itself as “finite, non-growing, and materially closed”, thus imposing limits to growth of the economic system (Daly, 2007, p. 2).

Ecological economics was established in the 1980s based largely on the literature on limits to growth from the 1960s and 1970s (Costanza, 1989) and the efforts of Georgescu-Roegen and the work he became famous for, “The Entropy Law and the Economic Process” (Georgescu-Roegen, 1971). The term “entropy” in thermodynamics is a “measure of disorder that can be shown to be a measure of unavailability of energy” (Ehrlich et al., 1993, p. 72). Georgescu-Roegen (1975) proposed that the Earth’s resources are exhaustible. This led to an assumption that the economic system could not be ever-expanding.

Ecological economics thus emphasises the limits to material and energy throughput in the economy, hence the limits to economic activity (Spash, 2011). It recognises that the economy is subject to the forces and laws of nature, including the laws of thermodynamics, and environmental constraints and requirements (Gowdy et al., 2010). This is to say that any economic activity always produces waste which must then be absorbed by the finite ecosystems, and the resources utilised in the economy are being transformed from low entropy matter to high entropy matter (Georgescu-Roegen, 1975). In other words, materials and energy are being degraded in economic processes, and high-value inputs are eventually turned into wastes (Zencey, 2013). Some of the matter can be recycled and therefore kept within the circular flow of the economy, hence the currently concept of circular economy¹ (Kirchherr et al., 2017; Hankammer et al., 2019). However, recycling itself takes energy which cannot be recycled (Zencey, 2013).

¹For analysis of various [114] definitions see Kirchherr et al. (2017), for critique see Valenzuela and Böhm (2017, p. 49) who, in addition to Zencey (2013) who argues that recycling necessarily requires energy input, argue that “the increase in waste management capacity, and the mastering of recycling at all levels, can only lead to the multiplication of waste”.

The capacity of the planet to absorb waste is recognised by ecological economics as a limiting factor. Therefore, consistency of the scale of the economy should be pursued instead of growth, which led to the proposal of an economy that is non-growing and embedded within the ecological limits, a steady-state economy (Daly, 1996, 2015, 2018; Zencey, 2013). By not including the observations mentioned above into an economic model, societies allow environmental degradation, biodiversity loss and other often irreversible consequences to take place (Kosoy et al., 2012; Bonnedahl and Heikkurinen, 2019b).

Ecological economics views sustaining growth on a finite planet as an impossibility theorem (Daly, 1993c). Daly (1993c) explains that the economy is an open system within the materially finite and closed ecosystem of the Earth. Growth of the economic subsystem results in it incorporating a growing proportion of the ecosystem into itself. This must reach a limit at 100 percent if not before. It follows that growth cannot be sustained (Daly, 1993c).

However, Daly (1993c, 2015) differentiates between growth (a quantitative increase), including “green growth”, and development (a qualitative increase). He notes that even though the economy must eventually stop growing, it can continue to develop (Daly, 1993c). Thus, development is possible if it is development without growth or a qualitative improvement in a physical economic base which is maintained in a steady state. Importantly, in a qualitatively developing economy the throughput of matter-energy must remain within the regenerative and assimilative capacity of nature (Daly, 1993c). This approach to development differs radically from a more familiar concept of sustainable development promoted by the UN, which includes sustaining economic growth in its goals and as a remedy for poverty and climate change (United Nations, 2019).

While ecological economics is a sphere of knowledge which lies mainly between economics and ecology, new developments in the field encourage incorporation of other knowledge (Gowdy, 2006, 2013, 2016). For instance, it incorporates knowledge from sciences including physics (Zencey, 2013) and biology, including the concepts of biological and cultural evolution (Costanza, 1991). An example of incorporation of sociological and ecological knowledge is social ecological economics. It includes the knowledge of the society and the environment (Spash, 2017). Ecological economics is thus transdisciplinary (Costanza, 1991). It has been proposed that even though ecological economics is transdisciplinary, cooperation between ecological economics and other disciplines should be based on the common ontological and epistemological grounds for such cooperation to be effective (Spash, 2012). For instance, in

terms of ontology, first and foremost, ecological economics acknowledges the embeddedness of the economy within nature, as was discussed above.

The premise of ecological economics is broad, and it is used to understand and diagnose the conflict between the economic system and the biosphere. It addresses the relationships between ecosystems and the economic systems in the “broadest sense” (Costanza, 1991, p. 3). Central to ecological economics is, unsurprisingly, the analysis of sustainability and how it can be achieved. It is thus issues-driven (Tacconi, 1997).

However, another notion of the subject matter of ecological economics can be offered that demonstrates the complexity of ecological economics as a field which also includes consideration of the operation of human societies. For instance, Spash (2015, p. 367) states that ecological economics “in its socially aware and critical form, analyses the interactions of the economy with biophysical reality as a fundamental determinant of how human societies operate”. Spash’s mention of the “socially aware and critical form” refers to a sub-field of ecological economics, social ecological economics, which includes social considerations and is a response to the tendency for expressing values of nature in economic and monetary terms (Spash and Aslaksen, 2015).

It should be noted that a separation between neoclassical economics and ecological economics is not completely clear, and ecological economics should not be seen as a homogenous field. For instance, Söderbaum (2008) states that ecological economics accommodates both neoclassical and non-neoclassical views. Some scholars adhering to ecological economics employ market principles such as taxation (Latouche, 2009) or argue in favour of reformation of the market (Latouche, 2009; Jackson, 2009) while others (e.g. Trainer, 2010, 2020) argue against market principles and morality of the market itself and call for alternative strategies for operation of economies. Some may refer to those employing purely market-based instruments to environmental policies and issues as environmental economists rather than ecological economists (Tacconi, 1996).

To categorise the field Spash (2013) defines three main directions within ecological economics which shows a struggle within ecological economics itself and society alike regarding the best ways to address social and environmental problems. Two of those (New Resource Economics and New Environmental Pragmatists) are based on neoclassical tradition and use neoclassical instruments, while the third one (Social Ecological Economics) is a heterodox school which differentiates from neoclassical economics, offers a deep ecological position and “requires

challenging both personal and social pre-conceptions, while taking a campaigning spirit to change public policy and the institutions blocking the necessary transition to an alternative political economy” (Spash, 2013, p. 361). The latter type is, according to Spash (2013), necessary to nurture.

Importantly, ecological economics attempts to deviate from a reductionist approach and aims to introduce complexity into economics alongside rethinking the assumptions about reality, including the relation between human economic activities and environment (Spash, 2012; Eskelinen and Wilen, 2019). For instance, ecological economics takes a holistic approach to humans as part of a larger system where human “preferences, understanding, technology and cultural organization all co-evolve to reflect broad ecological opportunities and constraints” (Costanza, 1991, p. 4). However, ecological economics also acknowledges a special role of humans due to their responsibility to understand their own role in this system. Ecological economics emphasises the study of real humans, thus attempting to address a potential disconnect between reality and science in this domain (Costanza, 1991).

With regards to the tools used by ecological economists, the range is broad, and there is a need for the evaluation of existing tools’ abilities to address issues, and there is also a need for new tools if the existing ones are not effective (Costanza, 1991; Tacconi, 1997). Scientific methods used by ecological economics are characterised by plurality (Spash, 2013), however not unrestrained plurality, thus positivist approaches may be excluded (Spash, 2012). Overall, it can be stated that ecological economics is defined by problems rather than an epistemology or methodology (Spash, 2013).

Following the literature overview above, this study assumes that ecological economics provides a suitable theoretical foundation for addressing the issue of unsustainability and exploring ways to achieve sustainability. It explicitly acknowledges the “interconnections and interdependence of the economic, biophysical and social worlds” (Gowdy and Erickson, 2005, p. 219), thus making it useful for understanding the complex issues associated with the transition to, and achievement of, a sustainable society. In fact, it considers sustainability as its macro goal as opposed to growth being the goal in mainstream economics (Costanza, 1991).

Moreover, a particular type of ecological economics, social ecological economics, appears to be best positioned to address this issue since beyond ecological sustainability social considerations and explanations are included and emphasised (Spash, 2017b). Social ecological economics aims to “develop the theoretical basis for alternative structures, a scientific utopian

vision and a radical social ecological transformation” (Spash, 2017b, p. 27). Openness of this school of thought towards alternatives is evident in its motto which reads: “There are only alternatives” (ibid.).

In terms of looking for and finding the alternatives, ecological economics and the visions of economy based on it deviate from a purely descriptive analysis of the relationship between ecosystems and economic activity (Baumgärtner et al., 2008). Importantly, ecological economics recognises that natural systems are self-regulating, therefore capable of managing themselves without a need for human intervention (Costanza, 1991). Thus, the emphasis is placed on the social sphere and transformation thereof.

Since the project of societal transformation is challenging, one may ask whether it is even possible and whether the structures such as markets, systems such as capitalism and modes of existence such as a conflict between humanity and its environment are themselves natural and necessarily inherent to human societies. The following section aims to inquire into these questions and overview historical development of societies.

2.3. Historical development of societies

This section explores human relationship with nature from co-existence in the Pleistocene and Holocene epochs to the situation of unsustainability in the Anthropocene. The current epoch of the Anthropocene is characterised by human beings and their landscapes making dramatic changes to the biophysical processes such as changing the planet’s climate (Gowdy and Krall, 2013; Bonnedahl and Heikkurinen, 2019; Heikkurinen et al., 2019b).

The organisation of the economy and production as observed in Western societies is not only one of many possible options. It may in fact be an exception. An overview from a historical perspective is helpful to highlight that significant economic expansion and living outside nature’s means is a relatively recent phenomenon. Even though the capitalist, free-market economic system, its tendencies and our practices arising from a perceived opposition between humanity and nature seem natural, and alternatives seem impossible or utopian, it has not always been so (Birnbaum, 1953; Collier, 1994; Spash and Aslaksen, 2015). For instance, in pre-modern cultures people considered themselves a part of nature and its community, including animals, plants, landscapes, while more recently humans began to view nature as an inanimate object or even a human artefact (Spash and Aslaksen, 2015).

The dichotomous opposition between nature and society, which characterises the modern pattern of thinking based on expansion and economic growth (Bhaskar, 1989), is also significantly different to the perception and practice of the nature-society relationship of other existing cultures (Redclift, 1987; Kato, 2007). For instance, in the case of immediate-return hunter-gatherers, their relationship with nature cannot be described by the nature/culture dichotomy inherent to the view Western civilisation has adopted (Bird-David, 1992). To them the world is an integrated entity of nature and people. In contrast, Western civilisation abandons conviviality with nature, denies non-human sentience and human-nature connection, both physical and spiritual (Spash and Aslaksen, 2015).

Where historical insight can provide a valuable example is collapse of nations restricted by territory. In this case a parallel can be drawn between geographically restricted cultures to current civilisation restricted by the territory of the Earth. Gowdy and McDaniel (1999) state that collapse due to over-exploitation of resources is particularly evident in the case of island nations. For instance, Easter Island provides an example of such nation where gradually all trees were cut down. This brought about the collapse of human population as well as irreversible ecosystem devastation (Klitgaard and Krall, 2012; Normander, 2012).

When comparing humanity in a globalised world to small island nations which went extinct, one might want to ask and attempt to answer the following question. "Is our sophisticated technological society different than all the other civilizations that have collapsed in the past?" (Gowdy and McDaniel, 1999, p. 338). This points in the direction of recognition of limits to exploitation of resources and limits to growth and towards the need to consider other potential options, possibilities and lessons from the past. Renner (2012) notes that despite some examples of collapse in human populations, currently humanity is entering an uncharted territory because collapse of civilisation has never happened on a planetary scale before. To avoid collapse, alternative organisations of economies should be explored.

Alternative organisations of economies, production and connection between humanity and nature are supported by economic anthropology's insights into socioeconomic systems of societies beyond industrial ones and other economic systems (Lea et al., 1987). Existence of such alternatives allows one to assume only a relative endurance of current capitalist structures (Collier, 1994). It allows to deviate from the inevitability of current growth economies and capitalism and assume a *possibility* of transformation of societies (Bhaskar, 1989) towards alternatives (Latouche, 2009). Such alternative visions can aim to re-establish the co-existence

between humanity and nature. This section proceeds to a brief historical overview of human existence leading to the modern times.

2.3.1. Hunter-gatherers

"Perhaps an ecological alternative lies not so much in learning things we do not know, as in "unlearning" things we do know?" (Redclift, 1987, p. 110)

Homo sapiens emerged approximately 200 000 years ago (Gowdy, 1998; Gowdy and Krall, 2013). Homo sapiens lived as hunter-gatherers for approximately 99 percent of their existence (Gowdy, 1998; Van Vugt, 2017). During this time people lived in conditions very closely resembling a steady state (Daly, 1993d). Such a state is one where (a) population is maintained at a constant level, (b) stock of artefacts is maintained at a constant level, (c) the level at which (a) and (b) are maintained is sufficient for a good life and is sustainable, and (d) the level of throughput of matter-energy which maintains (a) and (b) is reduced to the lowest level feasible (Daly, 1993d).

Gowdy (1998) argues that it is helpful for the understanding of sustainability, both social and environmental, to look at the ways of life of remaining hunter-gatherers. Multiple examples of existing hunter-gatherer societies can be found in Gowdy (1998) who presents a case of homo sapiens living in harmony with nature. Hunter-gatherers' relationship with the environment are intimate and continuous, which leads to environmental sustainability (Redclift, 1987; Gowdy and Krall, 2013). Sharing, cooperation, stability, gender equality and seeing possessions as excessive or impractical, thus limiting accumulation, are attributes of such a mode of living (Redclift, 1987; Gowdy, 1998; Gowdy and Krall, 2013). As opposed to the modern limits to means (scarcity), hunter-gather societies can be characterised not by scarcity but by "primitive plenty", i.e. an abundance based on needs (Redclift, 1987, p. 115).

In terms of production, the gap between production and consumption in hunter-gather societies is bridged, and very little surplus production takes place (Redclift, 1987). The production that exists is centred around production for livelihood, and in terms of division of labour production is undifferentiated with an exception of age and gender (Gowdy and Krall, 2013). Hunter-gather societies demonstrate that production and distribution can be organised without modern market capitalism (Gowdy, 1998, p. xxiv).

It should be noted that hunter-gatherers did impact the surrounding environment via hunting and using fire (Gowdy and Krall, 2014). However, the population of humans at the time when

all humans lived as hunter-gatherers was only a few million. In this sense it can be said that humans lived in an empty, rather than full, world. Moreover, the reason for impacting surrounding environment via economic activities such as exploiting of plants and animals was subsistence and not surplus production for exchange (Gowdy and Krall, 2014). In comparison, currently humans live in a full world (Bonnedahl and Heikkurinen, 2019). Due to this, and considering the size of the modern population, it is arguably impossible to return to the hunter-gatherer way of living. However, some features of those societies, e.g. living off renewable flows rather than stocks, social security, gender equality, cultural and ecological diversity, and social capital can be implemented to support sustainability (Gowdy, 1998).

2.3.2. Agricultural societies

The Holocene, a geological era which began approximately 10 000 years ago, was very favourable towards the development of humanity, allowing agriculture to emerge and thrive (Folke, 2013). The conditions were favourable due to their comparative stability compared to pre-Holocene and perfect for the development of humanity, which prompted humans to establish villages and cities and start domesticating nature (Folke, 2013).

Living sustainably and individual human wellbeing began to diminish with the transition from a hunter-gather mode of living towards agriculture where surplus production became the main goal (Gowdy and Krall, 2013; Gowdy, 2014). This led to subsequent competition instead of cooperation, human domination of ecosystems, population growth and hierarchical societal structures (Gowdy, 2014). Gowdy and Krall (2014, p. 180) describe agriculture as “a major cultural transition that catapulted our species from a hunter-gatherer lifestyle to a technological and increasingly urban existence, accompanied by an enormous expansion of population”.

Adoption of agriculture by human societies played a very significant role and signified an enormous bioeconomic step in evolution of human societies. The transformation of human societies involved a journey from living as hunter-gatherers in small groups within local ecosystems to a force able to change the planet (Gowdy and Krall, 2014). People became ultrasocial species. Such species dominate and exploit their ecosystem and are characterised by large numbers, an unparalleled degree of division of labour and an economic organisation focused on surplus production (Gowdy and Krall, 2013, 2014). Moreover, agricultural societies can be characterised by sedentary lifestyle and development of market exchange resulting from surplus production (Redclift, 1987).

However, a particular character of agriculture before the 19th century should be noted. Before the 19th century the development of agriculture was centred around mechanisation of processes formerly carried out by hand with addition to some selective breeding of animals (Redclift, 1987). This did not remove agriculture's dependence on nature but emphasised the limits to transformation of nature. It is only the further complex, industrial developments in agriculture, such as plant genetics, biotechnology and genetic engineering, led to transformation of environments, environmental depletion and destruction of natural ecosystems (Redclift, 1987). The ability of humans to transform their environment did not stop with the development of agriculture. Even larger changes occurred over time with the evolution of industry when agriculture became merely one sector of the economy.

2.3.3. Modern times

Before proceeding to describe more recent historical developments, it is useful to note that while the development of agriculture set humanity on the path of transformation of nature, industry in the Middle Ages in terms of its scale and functioning was significantly different to that of more recent times. The English economic historian R.H. Tawney offers an insight. In the Middle Ages, while capitalism thrived in European commercial centres, outside the commercial centres what is referred to as the economics system (e.g. trade, industry, money) was a “mass of individual trades and individual dealings” (Tawney, 2015, p. 38). Monetary exchange was marginal, there was little mobility, little competition and very little large-scale organisation (ibid.). Tawney (2015, p. 41) also highlights the presence of “personal, intimate, and direct” economic relationships which provided a favourable environment for the development of a social ethics.

In the 16th century Bacon² pioneered the idea that not only understanding of the world was important but its improvement via “intervention and manipulation” (McDaniel and Gowdy, 2000 p. 17). Such thinking led to the destruction of natural economy and the nature-culture relationship (Redclift, 1987). Redclift (1987) characterises “natural economy” as a term applicable to small-scale, pre-class societies which were using simple technologies and which can also be described by lack of capital accumulation, small units of production, limited

²Also see the classic book by Tawney (2015) who refers to Bacon (pp. 152-153) who exemplified the pattern of thinking where nature is subject to transformation for the utility of mankind.

monetisation of exchange, lack of private ownership of land and under-development of the market system as it is known to modern humans.

Blunden (1995) offers an insight into the relationship between humans and the environment and in particular industrialisation and the environment. He argues that before the middle of the 18th century the impact of manufacturing on the environment was non-existent to minimal. The discovery of the steam engine and coalfields prompted changes and re-organisation (including mechanisation) of industry which manifested themselves in the factory system. The 18th and the 19th centuries saw the rise of capitalism, and human desire to dominate the nature expanded.

Combustion of fossil fuels associated with carbon dioxide release, the main environmental pollutant (United States Environmental Protection Agency, 2016), powered and continues to power the expansion of the industrialised Western economies. With fossil fuels becoming the primary energy source, significant economic, ecological and societal changes occurred, including population growth and orientation of societies towards economic growth (Alexander, 2015b). In the 19th century an emphasis was placed on human capacities, and productive forces of society and economic growth started to be seen as essential for development (Redclift, 1987).

The effectiveness of limits, the respect to which goes thousands of years ago, was forgotten, which brought about destructive consequences (Jackson, 2017). For instance, in Britain with organisation of sectors into larger operations, locations became specialised and, finally, polluted (Blunden, 1995). In the 19th century the need for heavy industrial chemicals increased, and manufacturing of those chemicals became concentrated, which resulted in severe environmental problems (ibid.). However, the economic gains were evident, and environmental legislation was not strict for this reason (ibid.).

Expansion of economies and transformation of nature characterised the process of industrialisation. Emile Durkheim, a 19th century sociologist, observed that over two centuries economic life became the primary function in societies, and science, instead of disputing the grounds of economic life, began to serve “the business professions” (Durkheim, 1992, p. 11). Starting from the 19th century nature began to be seen purely as a resource to exploit and utilised for production (Reichel, 2017).

However, the conflict between humans and the environment did not go unnoticed. The 20th century saw the emergence of the realisation of the conflict between humans and the

environment. Several influential books and reports, addressing the effect humans have on the environment and the impossibility of indefinite economic growth within the limits of the finite planet, were written in the 20th century. Those include Carson (2000 [1962]) and Meadows et al. (1972). The efforts to address unsustainability and expansion did not stop there. Since the publication of the “Limits to growth” report, “Beyond the limits to growth – An update” (1992) and “Limits to growth: The 30-year update” (2004) have been published (Latouche, 2009). More recently Jackson (2017) returned to the arguments presented in the “Limits to growth” report and subsequent publications. He updated and expanded the limits to growth model.

It might be expected that environmental destruction would at least result in prosperity for humanity. However, it has been argued that while profit maximisation and consumerism facilitated industrialisation, the creation of the modern market economy and material prosperity for some, this prosperity failed to solve important issues including social problems and national conflicts (Bouznik, 2009; Trainer, 2012). Since the mid-20th century economic growth itself, which has caused unprecedented environmental destruction, was pursued and used by governments to address social problems while lack of economic growth was associated with unemployment, debt and poverty (Klitgaard and Krall, 2012).

With the discovery of fossil fuels especially, some dramatic changes occurred. They include increased production of human artefacts, including the ones damaging to the ecosystems. This led to habitat destruction and species extinction (Ceballos et al., 2017). In modern times the conflict between economies and nature is considered to be the most serious problem of civilisation (Gowdy and O’Hara, 1995).

In geology the history of the planet is divided into epochs. The current one, which began after the WWII, has received its own name. The ability of humans to transform the environment they live in is so substantial that the era we live in has been named the Anthropocene (Gowdy and Krall, 2014). Folke (2013) defines the Anthropocene as “the age in which human actions are a powerful planetary force shaping the biosphere³”. Homo sapiens invaded all known ecosystems in the world, transformed the world into a “single ecosystem” (Costanza, 1991, p. 25). In the post WWII period capitalist market economy developed into a growth economy that can be characterised by mass production, mass consumption and the flourishing of growth

³“The biosphere – the sphere of life – is the living part of the outermost shell of our rocky planet, the part of the earth’s crust, waters, and atmosphere where life dwells. It is the global ecological system integrating all living beings and their relationships” (Folke, 2013, p. 19).

ideology (Fotopoulos, 2010). Despite the evidence of environmental consequences, governments still promise and prioritise economic growth (Paulson, 2017).

An important outcome of the discussion above is answering the following question. Is growth economy inevitable? The discussion above suggests that a growth economy and capitalist production are not only recent (Daly, 1993d; Gowdy, 1998) but also cannot be seen as a law of nature (Collier, 1994). An example of hunter-gatherer mode of living suggests an ability of humans to live convivially, cooperatively and to produce for subsistence. Insights into early modern times suggest that economic activities can be personal, direct and not based on market exchange (Tawney, 2015).

In discussing agriculture and the possibility of changing agricultural practices for sustainability Gowdy and Baveye (2019) argue that the agricultural system is not an outcome of natural evolution but is a result of history, technological lock-in, subsidies and path dependence. They state that the change will not be easy, but recognition of reasons for the modern mode of agriculture and deliberate adoption of a different path can facilitate change. Such conclusion can be extrapolated to the economic system in general and, therefore, signify the need for adopting a different path. The following section investigates sustainable development and evaluates whether sustainable development *is* that different path which is needed. It thus attempts to answer the following question. Is sustainable development equipped to address the issue of unsustainability?

2.4. Sustainable development

"Sustainability is no longer a valuable moral precept alone: it is primarily an essential ingredient in human survival." (Redclift, 1987, p. 172)

The previous sections explored the path of humanity from co-existing in harmony with nature for thousands of years to quick expansion over approximately 300 years, causing degradation of the eco and bio systems on which it depends (Gowdy and Krall, 2013; Alexander, 2015b). This section looks at sustainable development. It considers whether sustainable development, as exemplified in UN 2030 agenda (Spash, 2016), is likely to be suitable for restoring former (Gowdy, 1998; Gowdy and Krall, 2013) co-existence between humanity and nature, and whether a deviation from sustainable development discourse should occur in favour of more radical alternatives.

Governments attempted to correct the issue of unsustainability with the pursuit of sustainable development. The original focus of sustainable development was ecological sustainability (Redclift, 1987; IUCN, 1980; Lele, 1991). For example, Redclift (1987) noted that the term “sustainable development” suggested application of ecology to economic activities. However, more recently the concept of sustainability has spread further across other dimensions, including the economic and social (Baker, 2006). Those multiple dimensions of sustainability were brought together and inter-linked by what is known as the Brundtland Report by the World Commission on Environment and Development (WCED, 1987).

One can find the following definition of sustainable development in the Brundtland report: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 43). The Brundtland report mentioned the limited ability of ecosystems to absorb waste and the need to live within the ecological means of the planet (WCED, 1987), the notions which correspond to the arguments of ecological economics (Costanza, 1989). Yet, there are important differences between the position of sustainable development, as advocated in the report, and the position of ecological economics (Spash, 2012).

The need for economic growth, which is argued against by ecological economists, is acknowledged in the Brundtland report, which makes it attractive to various agents, such as governments and businesses (Bonnedahl and Heikkurinen, 2019b). Moreover, European initiatives aimed at sustainability are reminiscent of the Brundtland report in a way that they insist on a co-existence between environmental protection and economic growth, a commitment to weak sustainability⁴ and managerial policy as opposed to more radical solutions (Bonnedahl and Heikkurinen, 2019b). It is an approach where economic growth is not questioned, and where natural capital is imagined to be freely substitutable by manmade capital (Beckerman, 1994; Gowdy and McDaniel, 1999; Heikkurinen, 2013; Bonnedahl and Heikkurinen, 2019b). Such logic encourages increasing use of resources and substitution of manmade capital for natural resources, which in turn leads to diminishing of the natural resource base that supports humanity and its activities (Gowdy and McDaniel, 1999). Greening of the market rather than a radical transformation thereof is seen as desirable, and an emphasis

⁴Also referred to as “unsustainability in progressive disguise” by Ketola et al. (2019, p. 24)

is put on the decoupling of resource use from economic growth (Bonnedahl and Heikkurinen, 2019b).

The continuation of promotion of economic growth as a solution and a desirable path is also evident currently in the UN vision of sustainable development (UN, 2015). Sustainable development, according to the UN (2016), “balances current needs with the needs of future generations”. However, the UN takes an approach characterised by techno-optimism, i.e. a faith that technology and advancements in technology (such as efficiency) will solve the issue of unsustainability. The need to address climate change is acknowledged by the UN, yet the proposed method to address it is economic growth itself (UN, 2015). This means that while efficiency is acknowledged, sufficiency is ignored.

Unsurprisingly, the meaning of sustainability and the ways in which it can be achieved are envisioned differently by ecological economists, from whom the concept of sustainable development has received much criticism (Costanza, 1989). Redclift (1987) states that development is normally defined in terms of economic growth, which ecological economics tends to oppose. For instance, Daly (1996) argues that truly sustainable development means a transition from a growth economy to a steady state economy⁵, an economy where matter and energy throughput are consistently maintained rather than constantly increased (Daly, 2018). As was discussed above, throughput necessarily starts with depletion of resources and ends with pollution. Increasing of throughput results in more pollution, thus limits to throughput need to be introduced in place of pursuit of growth (Daly, 1996).

Some state that development is necessarily unsustainable (Bahro, 1982; Trainer, 1985). Kothari et al. (2014) and Latouche (2009) refer to sustainable development as an oxymoron for this reason. Moreover, Latouche (2009) views development as a sacrifice of populations’ concrete and local wellbeing to abstract wellbeing and an abstract agenda. Considering that the Sustainable Development Goals are not seen as prescriptive but are aspirational in that they recognise that each country is responsible for the implementation/incorporation of those goals on its own (UN, 2015, p. 13.), a critique of sustainable development with regards to a lack of clarity of its pursuits is not surprising (Latouche’s, 2009; Connelly, 2007).

⁵When speaking of steady state economy, Daly means a quasi-steady state, because “any steady-state process is impossible” due to the entropy law (Daly (1993e, p. 378). This quasi-steady state is possible for as long as the resources last. The resources are both the energy from the sun and the terrestrial resources. This situation is complicated by the fact that while the energy from the sun is relatively consistent (in human time scale), the terrestrial resources are subject to the depletion of quality and accessibility (Daly, 1993e).

Connected to the abstract nature of the pursuits, the concept itself is not well defined. There are many definitions of sustainable development in the literature⁶ (Lele, 1991). Sometimes this absence of a concrete definition can be an advantage since it allows a dialogue between groups with different or conflicting interests (Baker et al., 1997). However, the lack of a clear definition at the same time might diminish the usefulness of the concept since the word can be used for almost anything (Baker et al., 1997).

Spash (2016, p. 929) notes that sustainable development is “the new agenda for growth”. He outlines a critique of sustainable development exemplified in the UN 2030 agenda which promotes growth, technological solutions, industrialisation and energy use (Spash, 2016). Considering that the defenders of economic growth have traditionally perceived environmental concerns as blocking projects (Tietenberg, 1990), Spash’s (2016) scepticism towards the agenda of sustainable development is understandable.

Redclift (1987) states that the views on the environment-economic growth relationship range from a position that denies that the environment is a commodity to a position that environmental goods are commodities that should be treated as such. This division corresponds to the concepts of strong and weak sustainability (Biely, 2016; Beckerman, 1994). While the UN’s position is that of weak sustainability (Spash, 2016), to achieve sustainability in the sense of living within the ecological carrying capacity of the planet (Moore and Rees, 2013), strong sustainability is required. Strong sustainability does not see the natural and the human-made as infinitely substitutable (Alexander, 2015b; Bonnedahl and Heikkurinen, 2019b).

Moreover, the Brundtland report itself, which popularised the concept of sustainable development, is anthropocentric (Baker et al., 1997). The anthropocentric approach allows to view ecological systems from an instrumental perspective, i.e. from a perspective of nature necessarily serving human needs, being there for, and being useful to, human beings. This approach does not assign any value to nature itself or to non-human animals (Bonnedahl and Heikkurinen, 2019b). The opposite approach is eco-centric. It recognises the intrinsic value of nature (Kopnina et al., 2018).

Apart from being anthropocentric, the approach of sustainable development is Western-centric, i.e. it is an approach which sees the need to model development of all countries after the

⁶For a discussion on different meanings of sustainable development, see Lele (1991).

development of industrialised Western countries. Schumacher (1993) notes that development imposed on a recipient society depends, for instance, on special education and organisation which are not originally a part of that society. Thus, such activities do not promote healthy development. Healthy activities would be evolving naturally (Schumacher, 1993). Schumacher (1993) emphasises a decentralised approach to development, which would allow all countries to develop organically, i.e. in their own ways. Moreover, the Western-centric model of development and rapid growth can also be seen as a unique historical example which was based on discovery of cheap and abundant fossil fuels. Such one-off situation might be impossible to replicate (Barkin, 2012).

Another point of critique towards sustainable development is a lack of results. Despite an acceptance of the idea of sustainable development, the implementation remains challenging especially due to the association between the development and economic growth and the emphasis which is often put on the quantitative measures (Dasmann et al., 1973). Such association leads to the depletion of natural resources in terms of both supply and quality. Even though the Brundtland report encourages the integration of ecological considerations into decision-making, it does not aim to create a radical change to lifestyles, consumption, behaviours (Bonnedahl and Heikkurinen, 2019b).

Baker (2006) notes that a sustainable development model should be instead characterised by the recognition of the value of biophysical and resource system and by imposition of limits to growth among other characteristics, such as understanding development in terms of quality of life and reduction in consumption. The problem arises when weaker forms of sustainable development are promoted instead of a deeper shift in the social systems (Baker, 2006). This is evident in the EU (Baker, 2006). Sustainable development has been an EU objective since the 1990s. However, the environmental policy in the EU has been based on weak sustainability (Bonnedahl and Heikkurinen, 2019b), which is not surprising considering the economic basis of the EU which includes economic growth and trade in a single market.

Martinez-Alier et al. (2010) state that the sustainable development paradigm is weakening. An *alternative* way of thinking regarding achieving sustainability is proposed by post-growth thought based on ecological economics. While economic growth is central to the traditional approach to sustainable development, ecological economists propose a fundamentally different approach (Costanza, 1989; Klitgaard, 2013). Such alternative aims to ensure sustainability via deviation from the imperative and pursuit of economic growth and is based on the notion of

the impossibility of co-existence of capitalism and sustainability (O'Connor, 1994; Trainer, 2012). This approach avoids equating sustainable development with sustainable growth and instead views development, first and foremost, as a qualitative change in economies (Daly, 1993c).

To conclude, sustainable development can be seen as an attempt to include environmental and social considerations into the functioning of economies. However, sustainable development is based on the growth imperative which arguably was itself the reason for the environmental catastrophe (Gowdy and Krall, 2013). Ecological economics demonstrates the undesirability of economic growth and appears to provide a better ground for addressing sustainability. The visions based on ecological economics are thus *post-growth* since they are based on flourishing beyond and without growth (Jackson, 2009, 2017). The next section explores the positions of post-growth thinkers in depth.

2.5. Post-growth economies

“The principles and ethics of human convention must not run counter to those of thermodynamics.” (Soddy, 1922, p. 9)

The concept of sustainable development discussed in the previous section failed to deviate from the premises of economic growth. Human activities continue to put pressure on biosphere and biodiversity and cause degradation of ecosystems (Angeler and Allen, 2016; Allen et al., 2016; Burthe et al., 2016; Ferreira et al., 2016; Ceballos et al., 2017). Such continued anthropogenic impact includes biological invasion, habitat loss and degradation, the emergence of new diseases and climate change (Allen et al., 2016). This section looks at the need for an alternative vision of development and economy based on ecological economics.

Mazur (2013) argues that the sustainability paradigm failed because the socioeconomic system based on endless growth was not transformed. Renner (2012) similarly observes that the obstacles to sustainability is the emphasis politics puts on growth instead of environmental issues. A lack of transformation is not surprising since the prevailing approach relies on market forces and maximisation of growth (Trainer, 1990). Yet, the focus should be placed on a radically different initiatives including local self-sufficiency, independence from global economic forces and abandonment of materially excessive lifestyles as the goal of development (Trainer, 1990, 2012; Max-Neef, 2014).

As the term “post-growth” suggest, central to the post-growth critique of economies is the critique of economics growth. Economic growth places enormous demands on the planet’s finite resources and the environment (Marshall and O’Neill, 2018). This leads to calls for post-growth alternatives such as degrowth (Latouche, 2009) and steady-state economy (Daly, 2018).

Economic growth can be defined as “growth of the potential output of an economy over the long run” (Stafford, 1981, p. 9). It has been argued that humanity might be addicted to growth and what comes with it, including overconsumption of materials and fossil fuels (Latouche, 2009). Reichel (2017, p. 108) stated that “fixation on growth” is the dominant motif in the modern society. Illich (1973), Mishan (1967, p. 3) and Daly (1993, p. 40) called it “growthmania” while Hinton and Maclurkan (2017) referred to it as “growth fetish”. More precisely, Daly (1993, p. 15) uses the term “Keynesian-neoclassical growthmania synthesis” to highlight the theoretical origins of pursuit of infinite economic growth. It is worth noting that in the post-growth thought it is the narrow, quantitative definition of growth that is criticised. Growth can be seen as a feature of life (Schumacher, 1993). However, growth in economies should be given a qualitative determination, which means that some things should be growing while others diminishing. Paulsson (2017) states that qualitative understanding of growth includes, for example, happiness, wellbeing, healthy planet. Therefore, post-growth thought unites both a deviation from quantitative growth and a qualitative change.

Focus on economic growth is a recent phenomenon. It is a phenomenon of the last mere 200 years, while it is only in the past under 100 years it became the dominant goal of nations (Daly, 1993d; Hubbert, 1993). Klitgaard (2010) states that the current emphasis on growth has been noticeable since the 1930s and developed as a strategy to increase employment and living standards without income redistribution. Economic growth should thus not be considered a law of nature. It is rather a consequence of political decisions (Nørgård, 2013). Hence, growth can be subject to different political decisions which would recognise limits to growth and the need to replace it with aspirations such as life satisfaction and increased free time (ibid.).

In other words, economic growth is a social construct. It needs to be theoretically deconstructed and replaced, thus the major challenges to sustainability are in fact located in the social and cultural domains (Moore and Rees, 2013). Hubbert (1993) also notes the cultural aspect of centrality of growth. During our exposure to growth in the past 200 years, a growth culture has also evolved. The stability of this culture depends on continuing growth and it is unable to deal with the absence of growth (Hubbert, 1993).

Buch-Hansen (2014) finds it encouraging that critics of growth-based capitalist economies do not simply highlight the downsides of growth-based capitalist economies. They also offer visions of alternative types of economy. There are several alternative visions of an economy which relate to each other and reject the centrality of economic growth. Examples include steady-state economy (e.g. Daly, 1996; Maxton, 2018), post-growth economy aimed at prosperity without growth (Jackson, 2009, 2017), and degrowth (Latouche, 2009; Trainer, 2012; Alexander, 2015b). The perspective of a-growth, where “a” signifies being agnostic about GDP growth, i.e. indifference towards GDP growth, is advocated by Van den Bergh (van den Bergh and Kallis, 2012; van den Bergh, 2018). This perspective calls to ignore GDP information and instead focus on environmental, social and economic policies irrespective of their contribution to economic growth (van den Bergh and Kallis, 2012).

The relationship between the visions of a steady-state economy and degrowth can be expressed in degrowth being a process towards a steady-state economy (O’Neill, 2012; Alexander, 2015b). In the 19th century J. S. Mill welcomed the idea of stationary state which is now being developed further by ecological economists (Daly, 2007). In such economy, despite the quantitative restrictions stemming from the biophysical limits, qualitative development still takes place. Therefore, Daly (2007) argues that the economy should transition from the current mode of expansion to a sustainable economy, which he identifies as one which recognises the limits of the global ecosystem, thus maintains a particular state so it can continue to operate into the future.

Daly (2007) clearly differentiates between growth (quantitative increase) and development (qualitative improvement). He states that the main idea behind sustainability is to shift the path of progress from growth, which cannot be sustained on a finite planet, toward development which can be sustained (Daly, 2007). A steady-state economy can develop but not grow (Daly, 1996). In such an economy matter-energetic throughput must be consistent and ecologically sustainable. However, to achieve this ecologically sustainable economy it is not sufficient to stop economic growth, and a stage of degrowth is required (Alexander, 2015b).

Foregoing the growth imperative is not seen as a sacrifice. On the contrary, it is growth that requires sacrifice of future generations of humans, other species, and community (Daly, 1996; Schumacher, 1993). It results in destruction of the moral, social and ecological orders (Daly, 1996). Current pursuit of economic growth is considered unsustainable not only in terms of the environment but also society (Hardt and O’Neill, 2017; Jackson, 2017). Post-growth thought

thus re-orientates the operation of economies towards a logic of wellbeing of ecosystems and humans via a qualitative reinvention of economies.

In the words of Klitgaard (2013), in a post-growth economy “community should replace commerce”. This highlights deviation from the primacy of economic considerations, and reorientation towards values created outside the markets. Indeed, many human goals, common goods, the complexity of aspirations and duties cannot be discussed using the language of economics (Kosoy et al., 2012).

One may ask whether humanity would need to forgo wellbeing resulting from economic growth in the process of reorientation of economies to a post-growth vision. In fact, economic growth has a limited impact on wellbeing (Jackson, 2017). What has a truly positive impact on wellbeing (e.g. trust, common cause, compassion) is non-material (Jackson, 2017).

The pursuit of economic growth, mass consumption and accumulation are not inherent to human nature, and wellbeing and affluence were not originally connected with the amount of material possessions (Gowdy, 1998). However, in growth-based economies an emphasis is put on insatiable material consumption instead (Jackson, 2017). Capellán-Pérez et al. (2015) argue that reduction in consumption may have a positive impact on wellbeing. Overconsumption in wealthy nations has resulted in negative consequences such as the obesity epidemic, long working hours, debt and social isolation (Assadourian, 2012). Deviation from overconsumption an economic growth may bring benefits to wealthy nations (Assadourian, 2012). By deviating available resources from wealthy nations it will also allow other countries to have their basic needs met (Alexander, 2015b).

While the call for deviation from economic growth is uniform among ecological economists and post-growth scholars, the post-growth field should not be seen as completely homogenous. For instance, in post-growth thought there is a debate regarding appropriate instruments to address environmental issues. While some argue in favour of taxation (Latouche, 2009), others argue that such policies will create a new market rather than address the cause of the problem (e.g. Kallis et al., 2012). Another example is a debate between a-growth and degrowth perspectives. The debate is focused around the possibility of political and public acceptance of change. The disagreement arises while considering whether growth should be openly critiqued (Kallis et al., 2015) or ignored (van den Bergh, 2018).

Critics of the dominant economic system have been criticised on the grounds of offering no alternative. However, alternatives are present, and researchers such as ecological economists

are engaging in looking at alternatives to growth-based organisation of economies (Trainer, 2012; Spash, 2015). One such concrete and comprehensive alternative which represents a process towards a steady-state economy (O'Neill, 2012) and incorporates a qualitative change and environmental and social considerations (Schneider et al., 2010) is degrowth.

2.6. Degrowth

“Degrowth signifies, first and foremost, a critique of growth. It calls for the decolonization of public debate from the idiom of economism and for the abolishment of economic growth as a social objective.” (Kallis et al., 2015, p. 3)

The term “degrowth” is a translation of the French word “décroissance” which stands for “reduction” (Demaria et al., 2013). It saw an evolution from existence as an activist movement to becoming a multi-disciplinary academic paradigm (Weiss and Cattaneo, 2017) and a political force with degrowth political parties existing in France and Italy (Assadourian, 2012). Degrowth thought has a complex intellectual heritage. It combines knowledge from different spheres. They include “ecological economics, social ecology, economic anthropology and environmental and social activist groups” (Martinez-Alier et al., 2010, p. 1741).

The intellectual origins of degrowth include the philosophy of Cornelius Castoriadis, who recognised the need for the creation of new imaginary, the anthropological critique of imperialism which concentrated on decolonisation in relation to mentalities, and the ecological critique (Latouche, 2015). Due to its substantial critique of modern economies and its proposal of a radically different vision, degrowth is viewed as a significant turning point for humanity (Quilley, 2013).

Degrowth can be seen as an interpretative frame (Demaria et al., 2013; Paulson, 2017) which diagnoses that social and environmental problems arise from economic growth. Economic growth is seen as unsustainable, undesirable and destructive (Demaria et al., 2013; Latouche, 2009). Degrowth can be seen as an academic paradigm (Weiss and Cattaneo, 2017; Johannisova et al., 2013) or a utopian (yet operationalisable) vision which provides an alternative to the growth society (Latouche, 2009). Economic contraction and creating a society of contraction should be viewed as prominent features of degrowth (Latouche, 2009; Alexander, 2015).

It becomes evident that degrowth is a complex concept. The following section attempts to outline what degrowth is in more detail.

2.6.1. What is degrowth?

Spash (2015) notes that under an umbrella of ecological economics various directions are united. Those include radical grassroots activism, post-growth which includes degrowth, and other concepts including basic income, sufficiency and voluntary simplicity. Spash (2015, p. 366) refers to these directions as a “mix of post-growth ideas”.

It should be noted that the boundaries between various post-growth ideas may not be clear. For instance, sufficiency and voluntary simplicity are central to degrowth (Alexander, 2015b). Grassroots, bottom-up initiatives are also supported by degrowth advocates (Cosme et al., 2017). D’Alisa et al. (2015) state that concepts such as sharing, simplicity, conviviality, care and commons are useful in describing a degrowth society. Flipo and Schneider (2015, p. xxv) mention a number of concepts discussed under the umbrella of degrowth, including “anti-utilitarianism, capitalism, environmentalism, conviviality, Illich’s critique of big institutions, new forms of wealth or happiness, buen-vivir, [...] voluntary simplicity, co-operatives, civil disobedience”. In general, it is useful to see degrowth as both a research and a social movement direction (Pineault, 2016).

Degrowth is not easy to define since it has multiple interpretations (D’Alisa et al., 2015). D’Alisa et al. (2015, p. xxi) argue that degrowth “defies a single definition”. They compare it to other concepts which express aspiration such as freedom and justice and attempt to demonstrate the scope and depth of the degrowth concept via a collection of entries written by various scholars of degrowth, ecological economics, political economy, and others. In this collection of short essays, one finds different definitions and understandings of degrowth. For instance, Alexander (2015, p. 146) refers to degrowth as a process of “planned economic contraction”. Elsewhere, Alexander (2015b, p. 2) emphasises that degrowth should be distinguished from recession and that it “means a phase of planned and equitable economic contraction in the richest nations, eventually reaching a steady state that operates within Earth’s biophysical limits”, thus highlighting the applicability of degrowth to the richest nations. This definition is helpful. It is so because it demonstrates the multi-dimensional character of the degrowth vision and unites the notions of planning or contraction *by design*. It emphasises equity or allowing the poorest countries to meet their basic needs while decreasing over-consumption in the richest nations. It also emphasises direction since degrowth is seen as a stage rather than the end goal.

When defining degrowth, intentionality of degrowing of economies is highlighted, for example, in this definition: “Degrowth is the intentional redirection of economies away from the perpetual pursuit of growth” (Assadourian, 2012, p. 23). This means *planned* and intentional rather than a “brutal and painful” transition away from growth, with a goal of creating a steady-state economy existing within the limits of ecosystems (Assadourian, 2012, p. 24). Dittmer (2015, pp. 149-150) states that “degrowth can be thought of as an intentional departure from growth-based society, meant to pre-empt further environmental destruction and human suffering. Alternatively, in the context of a long-term crisis of global capitalism manifested as chronically deficient growth levels (a scenario that many degrowth advocates consider likely for the not-too-distant future), degrowth can be imagined as a socially equitable adaptation to a society without growth”.

Cosme et al. (2017, p. 323) state that degrowth may be defined as a “voluntary transition towards a just, participatory, and ecologically sustainable society” as it was defined in 2008 at the First International Conference on Economic De-growth for Ecological Sustainability and Social Equity, thus once again highlighting the importance of qualitative and quantitative dimensions of degrowth.

Much of degrowth thought has been developing within the field of ecological economics, hence the primacy of reduction in resource use (Cosme et al., 2017). The debate on degrowth started in the 1970s based on an acknowledgement of limits of resource use and was renewed in the early 2000s with criticism directed at sustainable development (Kallis et al., 2015; Latouche, 2009). Degrowth was largely influenced by the works of N. Georgescu-Roegen. He not only criticised the pursuit of economic growth but also the steady state/stationary state economics of H. Daly and J.S. Mill, respectively, and noted that the “crucial error consists in not seeing that not only growth, but also a zero-growth state, nay, even a declining state which does not converge towards annihilation, cannot exist forever in a finite environment” (Georgescu-Roegen, 1993b, p. 95). He then continued to argue that “the most desirable state is not a stationary, but a declining one” and concluded that growth must be reversed, which indicates the need for degrowth (Georgescu-Roegen, 1993b, p. 98). However, despite Georgescu-Roegen’s critique of the steady-state, the notion of steady state was later embedded within the degrowth vision not as an alternative, rather as a goal of degrowth, i.e. the goal at which the process of degrowth is aimed (Alexander, 2015b; O’Neill, 2012).

It should also be noted that even though degrowth began as a call for reduction in matter-energy throughput, the complexity of the vision of degrowth increased with the addition of the pursuit of wellbeing (Schneider et al., 2010) and a shift in values (Paulson, 2017). Beyond the ideas of planned contraction and ecological sustainability, the notion of wellbeing is important. It is included in the Schneider et al. (2010, p. 511) definition of degrowth as “an equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions at the local and global level”. This definition is useful since it highlights both the ecological and the wellbeing dimensions of degrowth. The reference to both wellbeing and ecological sustainability is also evident in a more recent understanding of degrowth by Kallis et al. (2018) who present degrowth as a vision of economy which emphasises a simultaneous decline in energy/material use and an increase in wellbeing and welfare. It is also evident in an earlier definition by Kallis (2017b, p. 5) who states that “degrowth is a trajectory of decline in resource and energy use, accompanied by an improvement in well-being, welfare, use values”.

Paulson (2017, p. 426) states that “ideals of degrowth call us to shift value and desire away from productivist achievements and consumption-based identities toward visions of good life variously characterized by health, harmony, pleasure and vitality among humans and ecosystems”. Paulson’s (2017) definition highlights the need for a change in values and identities, which is as important as, and should accompany, the physical downscaling of economies (Schneider et al., 2010).

Paulson’s (2017) reference to ecosystems deserves particular attention since degrowth deviates from an anthropocentric logic towards consideration of ecosystems as well as humans. For instance, Latouche (2009) stated that in terms of location on the eco-centrism – anthropocentrism continuum, degrowth is possibly best described in terms of eco-anthropocentrism, thus recognising the importance and value in both ecosystems and human societies.

Degrowth as a vision of an autonomous society which stems from the critique of development⁷ (Latouche, 2009) is viewed as a solution to achieve sustainability (Cosme et al., 2017). As opposed to ecomodernist arguments of solving unsustainability via technological advancement,

⁷Latouche (2009, p. 57) harshly criticised development by stating that “Although there have been a few remarkable micro-successes, development has been a massive failure and what was meant to improve the quality of everyone’s life has resulted in corruption, incoherence and structural adjustment plans that have turned poverty into misery”.

degrowth argues that technology cannot solve the issue of unsustainability which is caused by economic growth (Marion, 2012). This leads to radical proposals such as moratorium on techno-scientific innovation (Latouche, 2009) and releasement from technology (Heikkurinen, 2018). Degrowth is thus distinct from other approaches to sustainability such as “green growth” mainly because it does not accept the goal of increasing GDP as green growth model suggests (Pueyo, 2014).

Currently degrowth covers a range of themes. Cosme et al. (2017) reviewed 128 peer-reviewed articles which focused on degrowth and found three themes running through academic degrowth thought. These include (1) reduction of environmental impact of human activities, (2) redistribution of income and wealth, and (3) transitioning from a materialistic to a convivial society. Weiss and Cattaneo (2017) reviewed 91 articles on degrowth and identified the need for hypothesis testing (input-output modelling, material flow analysis, life-cycle assessments, or social surveys) and identifying potential for non-market value creation and wellbeing benefits which would attract public support and facilitate paradigm shift in social sciences. The post-growth and degrowth visions are researched mainly by European scholars. Examples include the German IÖW⁸ which looks into post-growth society and the Research & Degrowth⁹ academic association whose active members are based in Spain and France.

There are a number of other concepts and visions of economy and society which have much in common with the concept of degrowth. Examples include Jackson’s (2017) prosperity without growth which offers a post-growth vision of economy, Fioramonti’s (2017) “well-being economy” which offers a post-growth vision of economy and governance, Trainer’s (2016) the Simpler Way which argues in favour of localisation and simplicity of life. Deriu (2015) finds Ivan Illich’s convivial austerity to be a term close to degrowth. Ulgiati (2015, p. 102) refers to Odum and Odum (2001) who “have designed patterns of a prosperous way down” or “descent” (similar to degrowth concept) based on their work on emergy [with an “m”], which is “defined as the total amount of available energy (usually of the solar kind) that is directly and indirectly invested by the environment in a process” (Ulgiati, p. 100).

The applicability of degrowth for the global South is contested. This is because reducing, for instance, Africa’s ecological footprint and GDP is not necessary or desirable due to those being low in comparison to the global North (Latouche, 2009). Moreover, those countries could

⁸ <https://www.ioew.de/en/under-the-ioews-spotlight/post-growth-society/>

⁹ <https://degrowth.org>

benefit from growth. However, while it has been argued that post-growth and degrowth visions should be focused on the richest countries, they can still be beneficial to less developed nations (Latouche, 2009; Jackson, 2017).

For instance, Latouche (2009) states that while growth in Africa can be desirable, this should not mean that a society centred around growth should be built there. For the global South Latouche (2009) recommends 5 R's, namely (1) breaking away ("rompre" in French) from economic and cultural dependency on the North, (2) renewing contact with the thread of a history that was interrupted by colonization, development and globalization, (3) rediscovering and re-appropriating the cultural identity of the South, (4) reintroducing specific products that have been forgotten or abandoned and "anti-economic" values that are bound up with the past of these countries. The 5th goal is to recuperate traditional technologies and skills. These 5 Rs are complementary.

2.6.2. Critique of degrowth

Unsurprisingly for a radical vision which calls for a significant transformation of existing structures, degrowth has been criticised. Assadourian (2012, p. 25) acknowledges that a paradigm shift towards degrowth is a challenging enterprise due to economic growth being deeply embedded into the society as a "fundamental sacred myth". For example, Paulson (2017) notes that degrowth is perceived to be ideologically driven imposition to sacrifice self-interest, while in contrast growth and modern markets are perceived to be apolitical, timeless and unbiased. On the contrary, Foster et al. (2010) argue that the prevailing economic ideology of capitalism with its inherent drive for growth and accumulation is the cause for ecological degradation and currently preservation of capitalism is prioritised over sustainability.

Further critique comes from the school of degrowth itself, including the realisation of a mostly theoretical character of degrowth thought. For instance, Domènech et al. (2013) state that degrowth literature is mainly theoretical and is focused on the unsustainability of growth-based economic model. Domènech et al. (2013) highlight the need for exploration of local strategies to move towards degrowth in reality. Trainer (2010) also notes that degrowth does not offer much regarding the transition strategy and offers little beyond a strategy of a voluntary downshifting by individuals and eco-movements by groups. Hörisch (2015) observes that while much of scholarly effort goes into dealing with sustainability transition and emphasising the necessity of transition, agency and actors remain largely ignored. Hörisch (2015) identifies the need for filling this gap because the transition will be carried out by the actors themselves and

their interactions. Where the literature exploring agents of transition exists, it focuses primarily on large companies (Hörisch, 2015).

Moreover, a recent study finds that most degrowth proposals are focused on a top-down, national level approach which sees government as a driver of change rather than the bottom-up approach advocated by degrowth proponents (Cosme et al., 2017). A top-down approach may also not be ideal for liberal capitalist economies such as the UK since the government is unlikely to carry out necessary changes (Buch-Hansen, 2014).

Another point of critique arising from within the field of degrowth itself highlights that even degrowth proponents do not appreciate the extent to which societies need to change (Trainer, 2012, 2014). Trainer (2014, 2020) argues that foregoing growth requires a complete remaking of multiple systems, including economic, social, political, geographical and cultural ones.

The lack of completeness of the degrowth vision is also a critique. For instance, the question regarding a political system for degrowth remains. Some (Trainer, 2010, 2012; Boonstra and Joosse, 2013) state that degrowth economy cannot co-exist with capitalism. Yet, Trainer (2010, p. 12) states that even though co-existence between capitalism and degrowth economy is impossible, private firms are still advocated, e.g. in a form of small firms, farms and cooperatives “operating within a local, community-controlled economy geared to meeting local needs”. Unsurprisingly, degrowth is seen as part of an eco-socialist agenda (Swift, 2014). However, the debate is still ongoing, and alternative visions of corresponding political systems have been proposed, including not only eco-socialism but also anarchism (Trainer, 2014; Alexander, 2015b).

From the calls for a societal transformation above it is evident that there is a need for a fundamental, radical change in society and the institutional arrangement of the economy (Klitgaard and Krall, 2012). This concerns change in the constituents of the economy and the relationships between them.

Several characteristics of a society for post-growth and degrowth can be applied to economies in general. For instance, Trainer (2010, p. 6) states that a society needs to be based on “principles of frugality, self-sufficiency, simplicity, localism, mostly small firms and farms, cooperation, many low-technologies [...] and nonmaterial satisfactions”. The emphasis is put on meeting needs rather than making profits and reduced levels (relative to the levels observed

in industrialised economies) of production and consumption¹⁰. Klitgaard and Krall (2012) similarly emphasise the importance of meeting human needs in a post-growth economy while acknowledging that a downsizing of production in a capitalist economy is challenging. This is because in the neoliberal era the trend is to expand production while reducing employment and wage growth (Klitgaard and Krall, 2012). However, Trainer's (2010) and Joutsenvirta's (2016) observation regarding a lack of pathways for transition should be acknowledged.

2.6.3. Anticipated limitations

Despite the emancipatory nature of post-growth thinking, and that of degrowth in particular, several aspects need to be taken into consideration to prevent an assumption that a transition towards degrowth is an easy undertaking.

Firstly, the idea of a radical transformation itself and proposing a transformation of the whole economy and society may be perceived as utopian (Barry, 2007). Referring to degrowth, Latouche (2009, p. 42) stated: "This utopia is an intellectual construct that functions on an ideal basis, but it is also concrete in the sense that it takes as its starting point elements that already exist and changes that can be implemented". In this sense, degrowth should be seen as a "concrete utopia" (Latouche, 2009, p. 4), a view of society which can be materialised.

Awareness of degrowth as a radically different vision of society and economy may indicate that degrowth is politically improbable. Barry (2007) argues that in the West people will not vote for a radically different type of economy¹¹. This is why the value of grassroots practices in transitioning towards degrowth is considered important (Alexander, 2015b; Trainer, 2012).

Secondly, critique towards the theoretical foundation of degrowth (i.e. ecological economics) has been expressed even from within ecological economics itself. For example, Spash (2017) criticises ecological economics as a school that failed to represent the vision of initial cooperation between socio-economic experts and ecologists, i.e. to incorporate knowledge from social and natural sciences. He also states that ecological economics has not developed a coherent theory and has not linked the social and the economic spheres.

Another point of critique towards ecological economics that Spash notes elsewhere (Spash, 2015) is the growth trap, i.e. inconsistency of arguing simultaneously against growth and in

¹⁰Trainer (2010, p. 11) notes that they "must be cut to probably less than one-fifth of the levels typical of a rich country today".

¹¹This can be explained by preference towards status quo, a bias documented in behavioural economics and finance, see for example Samuelson and Zeckhauser (1988).

favour thereof. Spash (2015, p. 372) states that ecological “crises have been caused by the spread of production and consumption patterns that fundamentally rely on unlimited access to resources, space, labour power and sinks, which implies a globally unequal appropriation of Nature”. He notes that a growth trap is manifested when degrowth is argued to be required in the rich countries while growth is seen as required for development of poor countries, thus still proposing growth as a solution. In relation to this critique degrowth scholars may refer to the notion of sufficiency (Alexander, 2015b), therefore advocating growth in poor countries to meet their needs rather than reach a high level of consumption.

A point of critique towards post-growth positions derives from those assuming a position of technological optimism, technological innovation and market mechanisms being able to solve the issue of limits to growth (Alexander, 2016). One of the most prominent technological sceptics was Georgescu-Roegen whose work gave rise to degrowth. He rejected the possibility of solving the bioeconomic problem with technology (Barkin, 2013).

Thirdly, the complexity of transition towards degrowth cannot be underestimated. It requires a significant shift from current values and ideals (Trainer, 2012; Paulson, 2017). Such shift should arguably happen on multiple levels, in multiple structures and via the agency of multiple actors. For instance, although this thesis focuses on production and small firms in particular, it should be acknowledged that small firms do not account for the entirety of the economy and society. Moreover, the tendency towards growth in the capitalist system may present practical barriers and limitations for those attempting to transition towards degrowth (Frankel, 1987).

Fourthly, a lack of economic growth in a system operating under a growth imperative may lead to adverse effects and social consequences (Hardt and O’Neill, 2017; Jackson, 2017). Jackson (2017) reviews and critiques three proposition in defence of economic growth. The first one is material abundance as a precondition for flourishing. This relates to the benefit for underdeveloped countries where basic material needs have not yet been met. The first proposition also relates to the language of goods, positional consumption and competition. Material consumption plays an important role in people’s lives in the developed countries and developing countries where people are striving for Western style and levels of consumption (Jackson, 2017). Jackson (2017) states that this aspect of growth can be avoided. He notes that multiple meaningful aspects of human life are not in fact material, and those should become the focus in economies beyond growth.

The second proposition in defence of economic growth is correlation between economic growth and basic entitlements (e.g. life expectancy, health, and education). Jackson (2017) analyses a number of trends in those basic entitlements across countries with various levels of GDP. He finds that the same level (e.g. of good education and health outcomes) can be achieved in both lower and higher income countries.

The third proposition concerns the relationship between growth and economic and social stability. Jackson (2017) attempts to answer the question whether economic growth is essential for economic stability. He argues that modern capitalist growth-based economies are dependent on growth. In a declining economy feedback mechanisms contribute to recession. This means that declining consumption leads to unemployment, reduction in taxes and increase in public spending, increased debt and further decline in consumption. He identifies two prominent dynamics of such an economy, the tendency to expansion or collapse.

Therefore, degrowth can be seen as unstable (Jackson, 2017, p. 83). To counteract this, there is a need for pathways which would be socially sustainable (Hardt and O'Neill, 2017). Potential disruptions and major changes brought about by degrowth must be recognised and anticipated. Assadourian (2012) proposes that changes such as contraction of polluting industries, ecological restoration, transition to renewable energy, replacing car-centric infrastructure, creation of public goods can be financed by ecological taxes and adding tax on advertising.

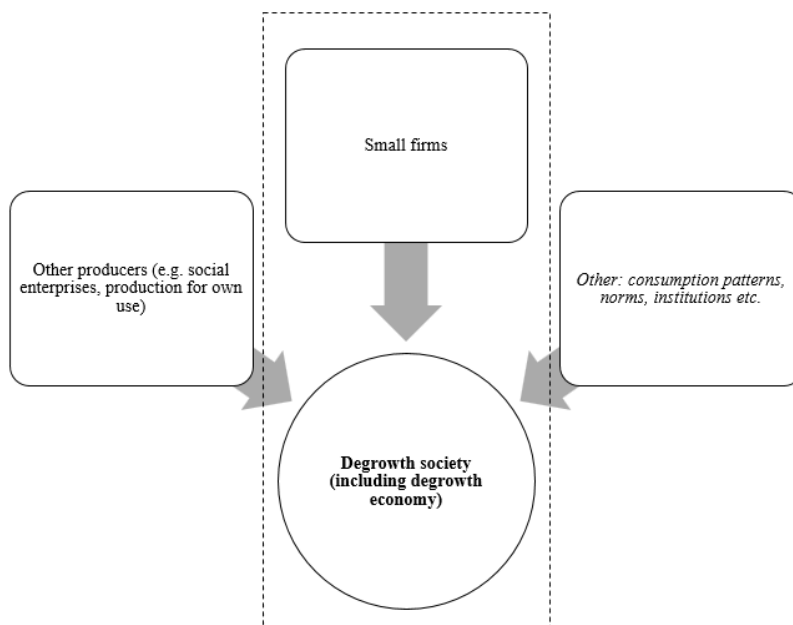
To address the disruptive nature of transformation towards degrowth, the *planned* nature of contraction needs to be highlighted (Alexander, 2015). However, planning of economic contraction requires understanding of various parts of the economy and what the vision of those parts and structures for degrowth should entail. The following chapter begins to address this task and discusses production and degrowth and the link between small firms and degrowth in particular.

3. Literature review: production for degrowth and small firms

Recent years have seen a revival in growth scepticism. However, macroeconomic level (Hardt and O'Neill, 2017; Leonhardt et al., 2017) and theoretical issues (Domènech et al., 2013) have received almost exclusive attention. This created a lack of literature on institutional constraints and degrowth implementation possibilities including comprehensive alternative business models for degrowth (Reichel and Seeberg, 2011; Johanisova et al., 2013; Wells, 2018; Joutsenvirta, 2016; Leonhardt et al., 2017; Hankammer and Kleer, 2018). This is despite the need for firms to deviate from business-as-usual and adapt to be part of an economy operating within limits of the planet (Dietz and O'Neill, 2013).

With more recent attempts (e.g. Khmara and Kronenberg, 2018; Schmid, 2018; Rommel et al., 2018) to explore the link between post-growth and degrowth and producing organisations, this lack of knowledge is being addressed. However, more questions arise than are being answered. This is further complicated by the fact that macro-level analysis, which is abundant in post-growth literature, cannot simply be applied to the micro level (Cyron and Zoellick, 2018). This work contributes to addressing this **gap in knowledge** and concentrates on economic actors rather than the macroeconomic level. This chapter focuses on production for degrowth and specifically that by small firms and their potential role in a transition towards degrowth. Fig.1 outlines the focus of this thesis.

Fig. 1. The focus of this thesis



There is a debate about the role of various actors in addressing environmental problems. Some emphasise the primary role and authority of the state in relation to the environment (Young, 1997). Others (e.g. Assadourian, 2012) emphasise the role of both government and business. However, Renner (2012) notes that the role of governments has been weakened. Scholars (Baker, 2006; Speth, 2009; Renner, 2012; Trainer, 2012; Well, 2016; Alexander, 2016) began to emphasise the role of business and social actors in transition and the importance of their role in leading from below.

Sukhdev (2013) represents the views of the latter group and states that inter-governmental efforts to address environmental risks have been insufficient. Therefore, private sector should play a vital role in determining economic direction and resource use. Even though a transition towards a more sustainable society arguably cannot be reduced to a single level or an actor (Geels, 2002), institutions in the society are developed and shaped with a pro-growth message in mind, they have a pro-growth structure. This might suggest that sustainability initiative should develop from the bottom-up where agents can shape the society (Alexander, 2016). This reshaping includes production and the ways it is carried out. What would production for degrowth entail? To answer this question, it is essential to understand what production is.

Altvater (1994) states that production can be defined in two ways. Firstly, as transformation of matter and energy. Secondly, as creation of surplus measured in monetary terms. Such creation of surpluses separates the process of production from use value which relates to satisfaction of needs, and from contexts in which production takes place, including human and ecological (Altvater, 1994). Thus in other words, production is related to transformation of nature and also to profit seeking which is the aim of production in a capitalist setting (Altvater, 1994; Foster et al., 2010).

As was discussed in the previous chapter, degrowth signifies not only a quantitative but also a qualitative change in economies and societies (Kallis et al., 2015). Therefore, it aims to address both of those aspects, including in relation to production. To address the quantitative, ecological aspect, or the question of transformation of matter and energy, degrowth aims at a reduction of resource extraction, use and disposal. In other words, it aims at dematerialisation (Kallis, 2017; Kallis et al., 2018).

Downscaling of production is essential considering that business activity is the primary driving force behind economic growth (Khmara and Kronenberg, 2018; Roman-Alcalá, 2017). The pursuit of economic growth globally increased the volume of production and changed the

natural environment which resulted in a situation where the state of economic activity, due to its large scale, and the state of natural environment are inter dependent (Bonnedahl and Heikkurinen 2019b). Environmental sustainability is thus impossible to achieve via growing production and downscaling of production should be pursued to achieve environmental sustainability (Hueting, 2010).

However, downscaling of production as a whole may mean that some sectors will grow, and others will diminish. This relates to undesirability (e.g. of the fossil fuel industry) and desirability (e.g. of organic agriculture) of certain sectors identified in post-growth and degrowth literature (Alexander, 2015b; Assadourian, 2012; Jackson, 2017; Kallis et al., 2015). Thus, downscaling of production as a whole should be seen in a complex and emerging way rather than simply equated with downscaling of all production, e.g. of all individual firms or all industries.

Degrowth questions the capitalist organisation of the economy in general (Trainer, 2012) and calls for a shift in values away from productivism (Paulson, 2017). This is because a capitalist economy facilitates continuation of the cycle of material use, profit seeking and material accumulation (Altvater, 1994; Foster et al., 2010; Kallis, 2017; Gowdy, 2014). Thus, production for degrowth should undergo a qualitative change (Alexander, 2015b; Kallis et al., 2015; Trainer, 2010, 2014) in addition to the quantitative change of downscaling. Qualitative change in production manifests in reorientation towards caring activities, happiness and in general towards wellbeing (Schneider et al., 2010; Nørgård, 2013; Kallis et al., 2015, 2018; Jackson, 2017). It is essential to note that this re-orientation signifies deviation from profit maximisation (Trainer, 2012).

It is important to highlight that degrowth advocates downscaling of both production and consumption (Schneider et al., 2010). While this thesis concentrates of production, it has also been argued that businesses can affect the scale of consumption, for instance, by moderating consumer choice (Assadourian, 2012; Heikkurinen et al., 2019c).

3.1. Agents of production for degrowth

An important aspect of production for degrowth are the agents of production, the study of which is essential since these actors are the ones carrying out production and, thus, transformation of the economy (Hörisch, 2015). The prevailing production actor in the growth-based economy is a large and growing company motivated by profit and owned by shareholders (Johanisova et al., 2013; Roman-Alcalá, 2017). Such companies in a pursuit to minimise costs and maximise

profit externalise their costs to workers, the environment and future generations and create demand which does not take into consideration real needs of communities (Johanisova et al., 2013; Spash, 2013c). Johanisova et al. (2013) further note that in the growth-based capitalist economies such behaviour promotes competitiveness. This is contrary to degrowth and cooperation in economies which it aims to achieve instead of competition (Klitgaard, 2013; Trainer, 2012, 2014).

Therefore, growth critics see such entities not as agents for change but as powerful obstacles towards an alternative model of economy (Buch-Hansen, 2014; Alexander, 2015b). This is not to say that businesses in any form are not a part of a degrowth vision of economy (Trainer, 2012). It means that the type of business, how it is done, and in combination with what other modes of production, must be radically different.

Examples of deviation from the current norm offered in the literature include not profit-orientated companies (Johanisova et al., 2013; Buch-Hansen, 2014; Hinton and Maclurkan, 2017) such as social enterprises (Johanisova and Wolf, 2012; Johanisova et al., 2013) and eco-social enterprises (Johanisova and Franková, 2017). In addition to a social enterprise other modes of production for degrowth can be possible, e.g. production for own use (Alexander, 2015b) including production in backyards (Trainer, 2012), amateur production (Nørgård, 2013), artisanal production (Alexander, 2015b), hobby businesses (Trainer, 2012), production by communities of associated producers (Klitgaard, 2013), cooperatives (Novkovic and Webb, 2014; Johanisova et al., 2015) such as energy cooperatives (Rommel et al., 2018), small scale farmer cooperatives (Boillat et al., 2012), peer production (Kostakis et al., 2015; Kostakis et al., 2018) and production by small firms (Alexander, 2015b; Trainer, 2010, 2012). These have been highlighted as desirable for the transformation of the economy towards degrowth due to their deviation from business-as-usual in terms of, for instance, orientation (such as environmental or social enterprises), ownership (such as cooperatives), scale (such as small producers), reasons for engaging with production (such as hobby businesses or amateur production).

Which mode of production is most suitable for a degrowth economy? Some authors do not advocate a particular single type of an enterprise or mode of production but instead concentrate on a general orientation towards human flourishing. For instance, Victor and Jackson (2016) argue in favour of a variety of organisational forms that benefit communities such as

cooperatives and community interest companies that provide meaningful employment and improve the quality of life.

Trainer (2012) offers a wealth of examples of how production in a degrowth economy can be organised. While he advocates small firms such as local bakers and small farmers, he also proposes production by family businesses which would produce, for instance, fruits, vegetables, and furniture. Additionally, production in backyards would involve vegetable gardens, fruit trees, workshops (Trainer, 2012). Production by communities utilising previously used infrastructure such as factories and roads could focus on permaculture, orchards, herb patches.

This path of thinking which does not aim to isolate an ideal mode or an ideal agent of production for degrowth can be beneficial at this *early stage* of theorising on production for degrowth. This early stage can, and perhaps should, be aimed at exploring the wealth of options in terms of modes and models of production rather than at outlining and defending one particular type. For instance, there is no reason to assume why small firms may not co-exist in a degrowth economy with backyard production as suggested by Trainer (2012).

What becomes evident is that an economy which deviates from the pursuit of economic growth looks radically different from a growth-based economy, and it is reflected in the patterns and agents of production proposed (Trainer, 2010, 2012). Moreover, transition towards degrowth requires a radical transformation of multiple structures such as societal systems and norms and involvement of multiple agents such as firms, consumers, policy-makers (Trainer, 2014; Maxton, 2018). As Heikkurinen and Bonnedahl (2019, p. 298) highlight, “responsibility is everywhere”. Thus, rather than theorising on the ideal mode of production for degrowth, arguably multiple agents and models of production for degrowth should be examined. Among those, small firms should be investigated. The following section looks at why this may be the case.

3.2. Small firms and degrowth

Barry (2007, p. 447) is correct to say that building a sustainable economy from the beginning is unrealistic and it is necessary to start “from where we are, with the structures, institutions, modes of production, laws and regulations that we already have”. One potential and abundant resource for transition towards degrowth may be small firms. It is abundant because small and medium sized firms represent 99% of all firms in the EU (European Commission, 2019). In the past 5 years they have created around 85% of new jobs and provided 2/3 of the total private

sector employment in the EU (European Commission, 2019). Moreover, micro and small firms account for the majority of businesses in the most developed economies (Campin et al., 2013; Leonhardt et al., 2017) and in many countries in general (Bjerke and Hultman, 2002; Bouznik, 2009). In the UK small businesses accounted for 99.3% of all private sector businesses in 2018 while SMEs accounted for 99.9% (or 5.7 million) of all private sector businesses and provided 60% of all private sector employment (DBEIS, 2018).

In relation to sectors where small firms may be found, while degrowth does not outline a specific list of degrowth compatible sectors, one approach to sectors can be based on the emphasis post-growth and degrowth put on satisfying and serving needs of the society (Illich, 1973; Klitgaard and Krall, 2012; Gorz, 2012; Trainer, 2012). Such needs include water and food, clothing and shelter, medicine, education, energy (Alexander, 2012). Organic agriculture and agriculture in general have been looked at in relation to degrowth specifically due to high importance of this sector in terms of satisfying human needs (Infante Amate and González de Molina, 2013; Gomiero, 2018). In the sector of agriculture small producers operate 12% of the world's agricultural land, and family owned farms operate 75% of the world's agricultural land (Lowder et al., 2016). Even though this thesis does not focus on one particular sector of economy, this points in the direction of importance to investigate small firms and producers in relation to degrowth due to their significant contribution to, and even prevalence, in the economy.

Moreover, up to 95% of construction, architecture, civil engineering firms in the EU are SMEs (small and medium size enterprises) including micro firms (European Commission, 2019b). Due to their close relation to shelter as a need such firms may become a source of transformation towards a degrowth economy. While the nature of construction may indeed be different in degrowth including, for instance, straw bale systems (Nelson and Schneider, 2019), flexibility of small firms (discussed below) can be beneficial and helpful in transition towards degrowth. In the UK approximately one fifth of all SMEs operate in construction sector (DBEIS, 2018). It may be of a particular importance in future studies to investigate the transition of this sector towards degrowth.

However, it is not necessarily the sectors where small firms operate currently that should be of interest. It can be said that they are prevalent in almost *every* sector with an exception of mining, quarrying and utilities (DBEIS, 2018). For instance, in the UK SMEs account for at least 99.5% of the businesses in every main industry sector (DBEIS, 2018). Moreover, with

the nature of production for degrowth being substantially different to that observed currently (Trainer, 2012), small firms may begin to prevail in sectors where large firm currently prevail, such as energy market (Boots et al, 2004). With degrowth economy aiming to use renewable energy sources instead (Trainer, 2012), small firms may play an increasingly important role in production of energy and even replace large firms in this sector.

Additionally, with an exception of large-scale industries such as steel works and railways, large firms in a degrowth economy are suggested to be broken down into smaller ones (Trainer, 2012). Therefore, it can be assumed that small firms in a degrowth economy may operate in any sector with some exceptions which would depend on the nature of degrowth society and economy as it emerges.

Traditionally SMEs have been an object of interest and studied from a perspective of their contribution to economic growth (Blackburn and Jennings, 1996; Johnson, 2007; UN, 2015). This tendency continues with, for instance, the European Commission (2019) viewing SMEs as key to ensuring economic growth.

However, this thesis deviates from this tendency and focuses on small firms as potential agents for change towards a degrowth economy. Leonhardt et al. (2017) argue that SMEs are a missing link in a discussion on alternatives in economy beyond growth. A reason for such neglect can be that small firms are still seen as passive respondents to economic signals, unable to influence their external environment (Johnson, 2007; Chaston, 2010; Leonhardt et al., 2017).

Prior to discussing small firms' potential in relation to degrowth it may be useful to identify what the term "small firm" in this thesis refers to. While some (North, 2010; Trainer, 1995, 2010, 2012; Alexander, 2015b) view small firms as suitable for degrowth, the exact quantitative descriptors (e.g. the size of those firms) are not specified. In fact, the term itself is poorly defined and covers multiple sectors and sizes (Warren, 2017). It can be said that it defies clear definition (Bjerke and Hultman, 2002). Due to this, some prefer not to define small firms where the exact limits are not important. Rather, it is the fact that there are limits that should be acknowledged (Bjerke and Hultman, 2002).

While multiple definitions of small firms [1], in particular as a constituent element of an SME, in precise quantitative terms can be found in the literature (OECD, 2015; European Commission, 2017; UK Government, 2012), it is primarily the qualitative aspects of such firms, such as aspirations and flexibility (discussed below), that point towards their suitability for degrowth.

Outlining the ideal size of a small firm for degrowth is beyond the scope of this thesis. The term “small firm” in this thesis is thus used primarily in the manner of Bjerke and Hultman (2002), Alexander (2015b) and Trainer (2010, 2012), who do not emphasise the exact number of employees, turnover or balance sheet total and leave such limits implicit. This is done to avoid suggesting a seemingly conclusive, ideal or final size of a firm for degrowth prematurely. The term “small” is also used here for simplicity similarly to, for instance, Čater et al. (2009). As an indication but not an emphasis, and for the purpose of the primary investigation, “small firm” as seen in this thesis as one which employs 0-49 people as defined by DBEIS (2018). This also includes micro firms as done elsewhere (European Commission, 2017; Gebauer, 2018). The term “SME”, which includes medium sized firms and is defined as an independent entity employing “fewer than a given number of employees” (OECD, 2015, p. 17), remains useful for this work for literature overview.

3.3. Could small firms have a potential for becoming part of degrowth?

Production by small firms for degrowth has been advocated by several authors (e.g. Alexander, 2015b; Trainer, 1995, 2010, 2012), and the degrowth movement identifies them as an integral part of a degrowth economy (Trainer, 2020). This relates to a localised nature of many small firms which corresponds well with a more localised, more frugal, smaller scale economy that post-growth and degrowth advocates envision (Klitgaard, 2013; Max-Neef, 2014; Novkovic and Webb, 2014b; Trainer, 2012, 2014). In other words, business operations need to be fitting for smaller economies, thus become smaller themselves (Alexander, 2015b; Trainer, 1995, 2010). In relation to this argument there have even been proposals to limit the size of firms in terms of number of employees or turnover (Ulvila and Pasanen, 2009). As the name would suggest, since small firms are already within such limits, they may become potential producers in a degrowth economy. In fact, Trainer (1995) envisions *all* firms being small and embedded in local communities, serving local needs and using local resources.

Smallness itself, whether smallness of units of production or economies in general, has interested economists exploring alternatives (e.g. Schumacher, 1993; Max-Neef, 1992). For instance, for Max-Neef (1992) smallness or human scale indicates transparency, lack of bureaucracy, a relative ease to solve problems as they become manageable. Yet, degrowth indicates a deep and complex qualitative transformation (Kallis et al., 2015). Thus, it is beneficial to investigate further the characteristics which may make small firms suitable for a degrowth economy. In this regard, the size or smallness of a firm itself may not necessarily be

the qualifier or *the only* qualifier for becoming part of degrowth. However, additional characteristics related to smallness of such firms may indicate their compatibility with a vision of degrowth.

Prior to delving into the characteristics of small firms which may point at their suitability for degrowth, several warnings need to be outlined. Firstly, small firms are not simply scaled down versions of large firms. For example, in small firms the owner may play a very prominent role (Boswell, 1973; Levy and Powell, 2005; Fleischer and Felsenstein, 2004). It may be reflected in a firm's uptake of technology depending on the owner's attitude towards it (Levy and Powell, 2005). Moreover, diversity in small firms is wide. Small firms are not a homogenous group of agents. For instance, small firms may or may not have global links, their orientation may be global or local, they may be suppliers of large firms or independent agents serving local markets (Griffiths et al., 2007). Thus, making assumptions and generalisations about a "typical" small firm (e.g. Reid, 1993) may be hazardous. This is not only because it diminishes the importance of recognising the diversity in human beings who are central to firms (Levy and Powell, 2005). It is also because making generalisations about social systems and presenting them as laws may not be appropriate for the complex and emerging nature of social systems (Collier, 1994; Lawson, 2019).

Thus, the arguments presented below merely serve as general tendencies which *may* be the case with small firms. It remains important to consider each small firm, its potential and nature thereof to transition towards degrowth individually. For this reason the "responsibility is everywhere" argument (Heikkurinen and Bonnedahl, 2019, p. 298) perhaps provides a stronger support for focusing on small firms than specific tendencies are able to provide. However, they may serve as indicators.

Ecological sustainability. In relation to the environment some propose that global corporations are excessively powerful and destructive to the environment and society, and that businesses need to be scaled down (Schumacher, 1993). This is not only due to the size of corporations, but also due to their prevalence in ecologically destructive industries such as petroleum and mineral extraction and processing (Levy, 1995).

Schumacher (1993) suggests that small scale operations are less likely to be harmful to the environment than large scale ones because their force is smaller in relation to the forces of nature. He continues to say that people organised in small units would take better care of natural resources than "anonymous companies" which perceive the universe to be their quarry

(Schumacher, 1993, p. 23). Likewise, Foster et al. (2010) note that, for instance, small scale agricultural production rather than agricultural production by agribusiness helps reduce alienation from nature.

On a practical note, plentiful small firms could reduce the time and energy required for individuals to reach their workplace (Trainer, 2012). This relates to travelling shorter distances to work without relying on transport with high emissions which could be the case with more centralised production by large firms. This could also avoid congestion associated with transport (Schumacher, 1993b).

Power decentralisation. The size of small firms, beyond potentially being less harmful from an ecological perspective, is also beneficial to degrowth in terms of decentralisation of power (Johanisova and Wolf, 2012; Trainer, 2014; Gebauer, 2018). For instance, large corporations are able to influence political processes, thus reinforcing capitalism and growth (Ulvila and Pasanen, 2009).

On the contrary, small firms are less powerful in comparison, thus allowing power to be decentralised. However, it should also be noted that it is not only who holds the power is important. Rather, it is the assumptions about sustainability that power holders themselves hold that matter (Heikkurinen and Bonnedahl, 2019). If the assumptions about sustainability are in line with weak sustainability, it will result in ecologically unsustainable outcomes. This relates to the need for a shift in values degrowth calls for (Paulson, 2017). Thus, neither smallness itself nor small firms' relatively small power on their own should count as qualifiers for transition towards degrowth or for becoming part of degrowth society. Rather, it is a combination of those, and the values small firms hold or represent.

Related to the question of decentralisation is small firms' potential contribution to decentralisation of production in general. For instance, Schumacher (1993b) argues that small units of production can be used for this purpose which would lead to a more even distribution of population and better use of space beyond reduction of carbon in relation to travel mentioned above. The independence of small firms (OECD, 2015) may further contribute to decentralisation. It corresponds to the autonomy of business operations emphasised in post-growth and degrowth literature (Alexander, 2015b; Kallis, 2017; Kallis et al., 2015; Schumacher, 1993b, 1993c).

Qualitative aspirations. Considering that business activity is a key driver behind economic growth (Khmara and Kronenberg, 2018), deviation from quantitative growth aspirations is

desirable. A lack of quantitative growth aspirations and focus on qualitative aspirations in small firms has been noted by several authors (Hakim, 1989; Johnson, 2007; Liesen et al., 2015; North and Smallbone, 1996). For instance, Liesen et al. (2015) find that in their management practice SMEs have a preference towards better rather than more. Pursuit of qualitative aspirations rather than growth can be manifested in sufficiency in size.

Sufficiency in size. Small firms may be content with their existing size (Johnson, 2007) and become non-growing (Gebauer, 2018). This relates to the notion of sufficiency which is emphasised in post-growth and degrowth literature (e.g. Alexander, 2015b). Sufficiency can also be manifested via satisfaction with profit rather than striving for its increase. Söderbaum (2008), for instance, notes that small firms emphasise non-monetary objectives rather than pursuing profit maximisation. The profits they look for are satisfactory, since high profits may be a sign of company exploiting suppliers, employees, customers (ibid.).

One example of sufficient size given in the literature is 5-9 employees (Davidsson, 1989). At this point the deterring forces such as loss of employee wellbeing overrides motivating incentives (Davidsson, 1989). While growth in individual firm transitioning towards degrowth should not automatically and necessarily be seen as an issue because degrowth encompasses a qualitative change and reduction in the *overall size* of the economy rather than necessarily in *every firm*, a lack of desire to grow beyond a certain size may be beneficial. This is due to the primacy of qualitative motives and aspirations which degrowth introduces.

Flexibility and experimentation. Small firms can be characterised by their flexibility and experimentation (Acs, 1999). Due to their flexibility they may be more responsive to changes in economic conditions (North and Smallbone, 1996; Bjerke and Hultman, 2002). While traditionally this character of small firms may be of interest in terms of their contribution to productivity growth (Acs, 1999), flexibility can help small firms adapt to an economy undergoing transformation towards degrowth. It can also help them become facilitators of transition via becoming niches of social innovation. For instance, flexibility and experimentation can assist in adoption of innovative, localised initiatives for sustainability such as the one described by Koppelmäki et al. (2019) who provide an example of an agroecological symbiosis. Other examples of innovative initiatives small firms may participate in include permaculture and organic agriculture (El Bilali, 2019). However, as was discussed above, flexibility of small firms should not be seen a law of nature, and the willingness to experiment may depend on the owner-manager of the firm.

Contribution to wellbeing. Due to their size small firms can also contribute to wellbeing. Using insights from evolutionary psychology, Van Vugt and Ahuja (2011) argue that people are happier in smaller companies than large ones. Evolutionary psychology postulates that human minds, including our preferences, have evolved throughout history similarly to the way our bodies and organs have evolved as a response to certain evolutionary challenges and the environment in which we lived (Saad, 2011). As was argued earlier in this work (Section 2.3.1), for the majority of human existence people lived as hunter-gatherers. This means that the human brains evolved in corresponding conditions. Among such conditions is that people have evolved in small groups (Van Vugt, 2017). From this perspective some forms of firms are better fitting for humans as species than others (Nicholson, 2008). This relates to small firms being human scale in virtue of their size, thus in line with human nature (Van Vugt, 2017). From the evolutionary perspective, the better fitting firms are ones which avoid a mismatch between human nature as species and the circumstances people find themselves in (Van Vugt, 2017). Thus, large, hierarchical organisations are less fitting than small scale ones.

Employee happiness in small firms may also relate to non-economic pursuits that are prominent in small firms (Campin et al., 2013) such as concern for employee wellbeing which may dissipate when a firm grows (Wiklund et al., 2003) and as the atmosphere at the workplace changes with growth (Davidsson et al., 2006). Wiklund et al. (2003) and Davidsson et al. (2006, p. 11) propose that concern for “soft” qualities, e.g. employee wellbeing, can be a cause of conflict for owner-managers of small firms when making decisions regarding growth. However, in a degrowth society which abandons the pursuit of growth and challenges the need to grow arising, for instance, from the necessity to repay debt (Trainer, 2012), such concerns may no longer apply. Thus, small firms’ owner-managers can focus on employee wellbeing rather than growth.

Apart from employee wellbeing, small firms can be beneficial to wellbeing of communities (Campin et al., 2013). Small firms typically are embedded within their local communities (Trainer, 1995; Söderbaum, 2008; Campin et al., 2013). Since local communities are central to degrowth (Klitgaard, 2013; Trainer, 2012, 2014), such embeddedness can facilitate cooperation between firms and their communities, for instance, in terms of employment provision and satisfaction of needs.

Considering the discussion above, it can be assumed that small firms may become suitable agents of production for a degrowth economy. This is in line with previous literature (e.g.

Alexander, 2015b; Trainer, 1995, 2010, 2012; Klitgaard, 2013). It is essential to highlight that it is not simply the size of a firm that matters. While the points discussed above may apply to small firms, they should not be seen as necessarily applicable to every small firm. What also matters in transition towards degrowth is a qualitative change exemplified in deviation from growth structures, change in behaviour in people involved (Klitgaard, 2013), seeking content with the status and deviating from equating success with material success (Jackson, 2017).

Thus, beyond small firms' potential for degrowth which may or may not be present in each individual small firm upon close examination, it is arguably more important to discuss the *how* behind their transition towards degrowth. How can small firms transition towards degrowth? To begin to answer this question, a framework of a degrowth business is developed in the following section which connects the notions of degrowth and production in a structured way.

3.4. Towards degrowth business framework

To achieve a sustainable society multiple structures and agents need to undergo a deep transformation (Maxton, 2018). This includes firms. The relationship between firms and the environment should be reimagined (Wells, 2013; Johnsen et al., 2017). There is a realisation that firms are parts of civil society which involve more than profit maximisation (Wells, 2013; Söderbaum, 2008). Such realisation opens up opportunities for rethinking firms, what role they could play and what change they need to undergo to transition towards degrowth.

In this section theoretical elements of a degrowth business, i.e. a business suitable for a degrowth economy, are identified from the literature. Subsequently a framework of a degrowth business is developed. Due to centrality of the *how* behind transition towards degrowth in this thesis, understanding of what a degrowth business could be is paramount.

Envisioning what a business for a degrowth economy should entail can be placed within the answer to broad questions posed a while ago in the field of ecological economics. "What kinds of actions can benefit the future without harming the present?" (Costanza et al., 1991, p. 9), "should this generation care about its actions that result in a degraded environment in the distant future? If we do care, what should be done?" (Spash, 1993, p. 117). Such questions remain relevant. Even though a simple answer may be in the acknowledgement of the primacy of the ecological and the social over the economic (Gorz, 2012), it is essential to investigate concrete actions which will allow to manifest care that Spash (1993) refers to.

Recently attempts were made to link post-growth and degrowth and business. For instance, Schmid (2018) explores post-growth organisations and defines post-growth organisations in general as those addressing social and environmental concerns and those simultaneously engaged in post-growth politics. While important for understanding of post-growth in general, and post-growth in relation to organisations in particular, beyond the relatedness of organisational practices to diverse logics (e.g. economies, ecology), further steps are needed and can be exemplified in understanding of pathways firms can take to transition beyond a growth orientated economy. Without a map of characteristics and knowledge of pathways for transition towards degrowth, which can be used by researchers, firms and policy-makers, theorising on organisations for degrowth is not sufficient.

Khmara and Kronenberg (2018) attempt to do just that. They review criteria from existing literature including Burlingham (2016), Liesen et al. (2014 [2015]) and Bocken and Short (2016). Their criteria aim to help determine whether a firm follows the degrowth paradigm. They state that the criteria are general and proceed to propose operationalisation criteria for degrowth, which according to Khmara and Kronenberg (2018) are not comprehensive but rather reflective of their understanding of previously outlined criteria and are aimed at further discussion.

While such criteria may be useful to advance research on production and degrowth, Khmara and Kronenberg (2018) aim to operationalise degrowth for existing business models rather than to demonstrate a set of elements that existing business models must comply with to be fitting for degrowth. A similar compliance with existing structures is evident in Wells (2018) who argues that business innovation for degrowth can stem from capitalist structures despite the call from degrowth and post-growth literature to deviate from capitalism (Foster et al., 2010; Klitgaard, 2013; Trainer, 2010, 2012; Boonstra and Joosse, 2013; Kallis, 2017c).

Thus, in exploring firms and degrowth it may be necessary to ask the following question. What should business be like for a degrowth society and economy to be possible? This allows to begin with degrowth and work backwards. For instance, since Khmara and Kronenberg (2018) do not begin with degrowth as the aim of firms and societies, in their proposed set of criteria on business for degrowth they forgo matter/energy throughput reduction in absolute terms which is central for degrowth (Schneider et al., 2010). Moreover, one of the studies they rely on (Bocken and Short, 2016) does not mention degrowth. Thus, the strategies proposed for firms may be in line with some aspects of degrowth but not necessarily the whole vision.

In other words, a holistic approach is needed. A holistic approach should view firms as part of an overall vision of society for degrowth. It will allow to propose a map of concrete characteristics of business for a degrowth economy and reimagine business qualitatively (Cyron and Zoellick, 2018). A holistic approach to a firm, alongside recognition of complexity of degrowth and transition towards it, will also allow to avoid shortcuts. For instance, while non-growth can be beneficial and many small firms are non- or slow growing (Gebauer, 2018), degrowth business is not synonymous to a non-growing company or the opposite of growing business. Moreover, a holistic approach requires seeing a firm as an agent inseparable from the structures it exists within and which can constrain it (Bhaskar, 1989, 1998). Therefore, a framework should account for barriers firms are likely to face.

3.5. Elements of production for degrowth

What exactly should production for degrowth by firms entail? To answer this question, firstly, the elements of production for degrowth are summarised in Table 1. These are derived from existing literature on degrowth, steady state economy, biophysical economics and other schools of thought whose views correspond to or derive from the above-mentioned traditions. Secondly, framework 1 [F1] is developed based on the elements identified in Table 1.

For the purpose of framework construction degrowth applied to production is taken to have the same meaning that it has for the economy as a whole. Thus, it is not simply equated with a reduction. Rather, it signifies a qualitative change, an ecological transformation alongside consideration towards wellbeing, and a shift in underlying values (Schneider et al., 2010; Paulson, 2017; Kallis et al., 2018). Overarching principles of production for degrowth stem from the vision of degrowth as a critique of growth being an end in itself, a critique of market logic and commercialisation, and the focus on needs and sufficiency rather than insatiable wants and luxury (Alexander, 2015b; Klitgaard, 2013; Trainer, 2012, 2014).

First and foremost, the ecological transformation is captured in degrowth literature via a call for **material and energy throughput reduction** (Gorz, 2012; Flipo and Schneider, 2015; Kallis, 2017, 2017b; Schneider et al., 2010) where reduction of both inputs and outputs is emphasised. From the macro-economic perspective such reduction may firstly arise from questioning the need for the existence of certain industries or sectors. Therefore, a question of desirability of certain industries and sectors should be asked, and the whole economy in general should undergo an ecological reshaping (Gorz, 2012). Simply put, this means that growth is desirable in what is good, aimed at satisfying needs and improving quality of life (Schumacher,

1993b; Gorz, 2012). On the other hand, activities which are hindering towards the quality of life and threaten the environment need to disappear (Schumacher, 1993b, Gorz, 2012). Such reshaping requires a qualitative evaluation of the direction in which economies are moving (Schumacher, 1977, 1993b).

While identifying a concrete list of desirable and undesirable industries is not the aim of this research, it is an important consideration for production for degrowth nevertheless, and the desirability of a particular industry should always be considered prior to implementing the elements of the framework proposed. Some examples of undesirable industries offered in the literature are fashion and marketing (Alexander, 2015b), while desirable ones may include organic agriculture, renewable energy (Marshall and O'Neill, 2018), low productivity sectors (Jackson, 2017).

On the micro-level reduction in material and energy throughout can be achieved via the practice of frugality (Alexander, 2015b; Daly, 1993, 1993d; Kallis, 2017b; Latouche, 2009) and its manifestations including, for instance, reuse (Alexander, 2015b) and recycling (Latouche, 2009). Frugal use of resources also presupposes a preference towards recycled and renewable materials (Maxton, 2018). Producing higher quality, durable goods or adopting durability as a principle (Daly, 1993; Latouche, 2009; Gorz, 2012; Georgescu-Roegen, 1975; Assadourian, 2012; Renner, 2012; Maxton, 2018) can assist consumers in lowering the rate of replacement, thus contributing to throughput reduction.

However, while frugality mentioned above is important, it is also necessary to see it as part of a whole process of transformation of production rather than a single element to pursue. Schumacher (1993b), for instance, argues that in a pursuit of material efficiency, increase in scale is pursued and more specialised equipment is introduced. This facilitates division of labour and growth of production units, and growth in their complexity and expense associated with them. People internalise the aims of such a system of production, and it begins to shape society and prevents people from adopting different aims and values.

To transform the system of production towards one which is smaller overall, smaller units of production can be pursued. Small firms and their suitability for degrowth were discussed earlier in this thesis. However, it is not only the size of firms but also the ownership patterns and business models for degrowth that may be different (Alexander, 2015b; Bayon, 2015; Hardt and O'Neill, 2017; Hinton and Maclurkan, 2017; Kallis et al., 2015; Marshall and O'Neill, 2018; Schulz and Bailey 2014; Speth, 2009). Such different patterns can be considered by

owner-managers of small firms. Apart from ownership patterns and business models, growth aspirations can be modified. This may include becoming a non-growing firm (Liesen et al., 2015; Leonhardt et al., 2017).

Another principle of operation concerns technology that firms choose to use. Business for degrowth may aim to utilise appropriate, simplified technology (Illich, 1973; Daly, 1993; Schumacher, 1993; Heikkurinen, 2018), technology which facilitates conviviality¹² (Illich, 1973). Firms may also strive for the democratisation of technology (Gorz, 2010; Wells, 2018). This can be done via making their software open-source (Gorz, 2010) should a firm engage in software industry or production.

An important and widely mentioned principle which may apply to degrowth firms is localisation of production (Alexander, 2015b; Dittmer, 2015; Fournier, 2008; Kallis, 2017; Latouche, 2009; North, 2010). It relates to firms being attentive to local resources and needs (Schumacher, 1993c). Related to localisation is embeddedness of a firm within its local community (Söderbaum, 2008; Trainer, 1995) which smallness of a firm can assist with (Söderbaum, 2008). Becoming attentive to a local area may lead to decentralised production (Schumacher, 1993b). The emphasis on needs rather than creation of demand is reflected in the undesirability of advertising (Alexander, 2015b; Daly, 1993; Latouche, 2009; Marshall and O'Neill, 2018; Spash and Dobernig, 2017). This may require a significant change in firms' marketing efforts and strategies.

Since **wellbeing** is an essential part of the post-growth vision in general (Jackson, 2017; Daly, 1993) and the degrowth vision in particular (Schneider et al., 2010), the notion of wellbeing can be applied to production. This should include wellbeing in a broad sense (Bonnedahl and Heikkurinen, 2019). Incorporating wellbeing within business operations may include provision of meaningful employment (Alexander, 2015b; Fournier, 2008; Schumacher, 1993b) and pursuit of fulfilment in the process of production (Illich, 1973; Schumacher, 1993c; Klitgaard, 2013), including the development of human creative capacity (Gorz, 2012; Illich, 1973) and reduced working hours (Alexander, 2015b; Fournier, 2008; Gorz, 2012; Kallis, 2017). This

¹²Illich explains the meaning of conviviality which he employs in his 1973 work where he explores the tools (in a broad sense) for such a vision of society: "I choose the term "conviviality" to designate the opposite of industrial productivity. I intend it to mean autonomous and creative intercourse among persons, and the intercourse of persons with their environment; and this in contrast with the conditioned response of persons to the demands made upon them by others, and by a man-made environment" (Illich, 1973, p. 12).

corresponds to a recognition of human needs beyond economic needs and also their significance (Tawney, 2015).

Related to wellbeing is a prominent in post-growth notion of reduced productivity (Jackson, 2017; Kallis, 2017; Jackson and Victor, 2011; Latouche, 2009; Nørgård, 2013; Heikkurinen et al., 2019). It corresponds to deviation from productivism, i.e. production for its own sake (Spash, 2017b; Paulson, 2017) or “the worship of production” (Tawney, 2015, p. 247). This deviation from the pursuit of increased productivity does not mean that production itself must become purposefully inefficient or wasteful. It means that productivity should not be pursued as the primary objective in an economic system which deviates from the primacy of economic reason (Tawney, 2015). In this sense lower productivity may at once be related to wellbeing and shift in values.

As a **qualitative change** (Kallis et al., 2018) degrowth presupposes a shift not only in the principles of operation but also in values (Paulson, 2017). For instance, the meaning of success¹³ can be found outside material success (Jackson, 2017) or “idolatry of wealth” (Tawney, 2015, p. 280). In relation to production, this may apply to firms’ owner-managers and employees and can be manifested in deviation from profit maximisation and reorientation towards motives beyond profit (Alexander, 2015b).

A shift in values can also be manifested via pro-environmental workplace behaviour including modes of travel (Moriarty and Honnery, 2013). The value of cooperation (Nørgård, 2013; Max-Neef, 2014; Tawney, 2015) may be manifested in firms towards other firms (Assadourian, 2012; Hudson, 2007) or within firms via collaborative work (Schumacher, 1993c). Another important value to note is non-violence towards the environment and non-human life (Schumacher, 1993b, 1993c) which may become a consideration in degrowth firms.

The literature discussed above can be summarised in the following Table 1 which offers an overview of what production for degrowth may entail. The full version is available in Appendix II. Since the literature is extensive, each entry is assigned a number to subsequently assign the elements into several groups (see Section 3.7 “Construction of degrowth business framework

¹³An example of orthodox vision of “corporate success” is represented by Kay (2001, p. 33) who states that “Some people judge success by size. They look at firm’s sales, its market share, and its value on the stock market. Sometimes performance is assessed by reference to rate of return. This can be measured as return on equity, on investment, or on sales. And sometimes success is measured by growth, reflected in increase in output, movements in earnings per share, or prospectively, the firm’s price-earnings ratio. All of these are aspects of successful performance”. Note the absence of, for instance, judging success in terms of human happiness (Nørgård, 2013), wellbeing or dignity (Maxton, 2018)

F1”), corresponding to the premises of degrowth (matter-energy throughput and waste reduction or the environmental premise – 1, internal business operations, which correspond to changes in governance, wellbeing, production – 2, societal considerations – 3, considerations related to growth – 4, considerations related to shift in values, attitudes, motives – 5).

Table 1. Production for degrowth

Element	Reference	No
Output reduction (producing less), deviation from productivism. Possible strategies - de-division of labour and de-specialisation (Kallis, 2017b). Existing production centred around needs (Alexander, 2015b)	Gorz (2012), Flipo and Schneider (2015), Kallis (2017b), Schneider et al. (2010)	2, 3
Input reduction, combined with the entry above, energy and matter throughput minimisation, dematerialisation as input-orientated strategy (Lorek, 2015).	Boulding (1966), Daly (1993), Kallis (2017), Lorek (2015), Maxton (2018)	1
Frugality in resource use. Possibly exercised via: better sharing of resources (Kallis, 2017b), reuse (Alexander, 2015b; Latouche, 2009) and recycling (Latouche, 2009).	Alexander (2015b), Daly (1993; 1993d), Kallis (2017b), Latouche (2009), Maxton (2018)	1
Durability. Related to durability: reparability (Georgescu-Roegen, 1993b).	Daly (1993), Latouche (2009), Gorz (2012 [1994]), Georgescu-Roegen (1975; 1993b), Assadourian (2012), Renner (2012), O’Neill et al. (2018), Schumacher (1993c), Reichel (2018), Maxton (2018)	1
Preference towards renewable resources	Schumacher (1993c), Maxton (2018)	1
Addressing waste and pollution	Daly (1993d), Kallis et al. (2015), Maxton (2018)	1
Renewable energy	Alexander (2015b, 2016), Kallis et al. (2015), Maxton (2018), O’Neill et al. (2018)	1
Frugal energy use. Avoidance of energy waste (e.g. overheating, over-lighting), reduction of unnecessary waste (O’Neill et al., 2018).	Georgescu-Roegen (1993b), O’Neill et al. (2018)	1
Qualitative change, reorientation towards care and caring activities (Kallis et al., 2015) and service rather than profit (Tawney, 2015).	Alexander (2015b), Kallis et al. (2015), Trainer (2010), Tawney (2015)	2, 5
Deviation from profit maximisation	Alexander (2015b), Spash, (2017b)	5
Drivers other than profit. A complex category which also entails deviation from competition and a vision of success as material success.	Jackson (2017), Liesen et al. (2015)	5
Motives beyond profit can be manifested in the legal form of a firm such as a not-for-profit business.	Hinton and Maclurkan (2017)	5
Re-defining the meaning of success (away from material affluence).	Jackson (2017), see also Tawney (2015, p. 280)	5
Orientation towards wellbeing (including employees and communities).	Daly (1993), Jackson (2017), Mill (1857)	2, 3

Simplicity, autonomy. Also connected to sufficiency and producing simpler – for local needs from local resources (Alexander, 2015b).	Alexander (2015b), Kallis (2017), Kallis et al. (2015), Schumacher (1993b, 1993c). Emphasised by the school of degrowth and Schumacher’s Christian and Buddhist economics view.	2
Smallness of business units/operations.	North (2010), Schumacher (1993, 1993b), Spash (2017b)	4
Small private businesses. Several post-growth/degrowth theorists state that small firms and staying small would become the norm (North, 2010; Trainer, 1995).	Alexander (2015b), North (2010), Trainer (1995)	4
Non-growing business, size sufficiency, “avoiding investment in capacity, but maintaining size” (Leonhardt et al., 2017, p. 270).	Liesen et al. (2015), Leonhardt et al. (2017)	4
Capital saving (relates to sufficiency, simplicity and frugality).	Schumacher (1993b)	2
Alternative ownership patterns and business models such as worker-run cooperatives (which would facilitate democratic decision-making).	Alexander (2015b), Barca (2019), Bayon (2015), Hardt and O’Neill (2017), Hinton and Maclurkan (2017), Kallis et al. (2015), Marshall and O’Neill (2018), Schulz and Bailey (2014), Speth (2009)	2
Localisation of production and exchange, also eco-localisation (ecologically and politically motivated (Dittmer, 2015).	Alexander (2015b), Dittmer (2015), Fournier (2008), Kallis (2017), Latouche (2009), North (2010), Schumacher (1993c), Marshall and O’Neill (2018)	2
Embeddedness within community	Söderbaum (2008), Trainer (1995)	3
Selectivity in relation to sectors	Alexander (2015b), Assadourian (2012), Jackson (2017), Kallis et al. (2015), Maxton (2018), Trainer (2010)	4
Serving the needs of society	Illich (1973), Klitgaard and Krall (2012), Masaka (2008), Novkovic and Webb (2014), Schumacher (1993c), Speth (2009), Victor and Jackson (2016)	3
Decreased productivity, slowing down (Nørgård, 2013)	Heikkurinen et al. (2019), Jackson (2017), Kallis (2017), Nørgård (2013), Jackson and Victor (2011), Latouche (2009)	2
Reduction in working hours	Alexander (2015b), Fournier (2008), Gorz (2012), Kallis (2017), Nørgård (2013)	2
Meaningful work	Alexander (2015b), Fournier (2008), Schumacher (1993b)	2
Fulfilment in the process of production, also self-fulfilment or “liberation in work” (Gorz, 2012, p. 58)	Illich (1973), Klitgaard (2013), Nørgård (2013), Schumacher (1993c)	2
Adopting the value of non-violence (to human, non-human life, the environment)	Schumacher (1993b, 1993c)	5
Appropriate, simplified technology and democratisation of technology (e.g. open-source) (Gorz, 2010; Wells, 2018)	Daly (1993), Heikkurinen (2018), Illich (1973), Schumacher (1993)	2
Undesirability of advertising	Alexander (2015b), Daly (1993), Latouche (2009), Marshall and O’Neill (2018), Spash and Dobernic (2017)	3
Workplace pro-environmental behaviour (including travel)	Caillaud et al. (2016), Moriarty and Honnery (2013)	1
Cooperation, e.g. networks of firms	Assadourian (2012), Hudson (2007), Max-Neef (2014), Nørgård (2013)	2, 5
Collaborative work	Schumacher (1993c)	2
Decentralised production (small units)	Schumacher (1993b)	4

Table 1 above demonstrates the multi-dimensional character of a degrowth thought broadly corresponding to the environmental considerations of degrowth alongside an increase in wellbeing and a shift in values (Schneider et al., 2010; Paulson, 2017). This complex character of degrowth thought, which has also been noted by Weiss and Cattaneo (2017), presupposes and encompasses a multifaceted qualitative and quantitative change, of which concrete principles of production for degrowth are examples and manifestations.

While degrowth is rooted in the biophysical and ecological critique of economic growth (Georgescu-Roegen, 1975), it expands far beyond material and energy flows to incorporate other dimensions, notably the social dimension where a particular attention is paid to wellbeing (Jackson, 2017; Schneider et al., 2010) in its different forms. Those include individual and community wellbeing and different ways to achieve and maintain wellbeing, e.g. meaningful work and fulfilment in the process of production.

The process of production is no longer seen as mechanistic, i.e. an efficient conversion of inputs into the maximum amount of outputs aimed at profit and growth. It becomes a creative, rewarding, collaborative and ecologically sustainable process aimed at satisfying needs. This requires a change in values and motivations, a deviation from competition and material success and excess. For example, Paulson (2017) captures the difference between degrowth and capitalist logic and states that degrowth calls for a shift from productivism and consumption-based identities toward visions of good life. Kallis (2017) notes that while ecological economics concentrates on the materiality of economy, degrowth should concentrate on transformation and action. This explains the presence of concepts such as wellbeing and fulfilment.

The multi-dimensionality and complexity of the elements identified above point in the direction of a “major systemic change” (Spash, 2017c, p. 411) of which firms are seen to be a part. This change requires a revision of business principles, aims and orientation, and therefore deviation from the mainstream understanding of business.

3.6. Understanding the barriers

While investigating transition of small firms towards degrowth it is essential to highlight that such transition may not be smooth or easy. Even those sympathetic to degrowth acknowledge the difficulties associated with a transition towards degrowth in the real world (Assadourian, 2012; Joutsenvirta, 2016; Kallis et al., 2018; Büchs and Koch, 2019). Such difficulties are largely based on the tension between post-growth, including degrowth, and the growth based

and growth orientated capitalist system (Gorz, 2012; Boillat et al., 2012). The barriers to degrowth, including degrowth firms, may go far beyond the barriers that less radical alternatives, such as sustainable development or cleaner production (e.g. Oliveira Neto, 2017), may experience. This section aims to outline the multitude of barriers firms may face in transitioning towards degrowth.

First and foremost, the *capitalist system* itself presents a significant barrier. Such system is based on accumulation and a pursuit of profit (Foster et al., 2010; Kallis et al., 2012; Novkovic and Webb, 2014b). In fact, it has even been argued that the capitalist system will undermine, oppose and oppress those not willing to participate in it any longer (Kallis, 2017c).

The capitalist system is well supported by multiple other systems. It is supported by the dominant economic thinking which facilitates accumulation (Max-Neef, 2014), education which facilitates status quo (Vargas Roncancio et al., 2019), prevailing culture (Assadourian, 2012) and discourse (Domènech et al., 2013) which revolve around economic growth, and policies and institutions that focus around short-term economic goals and pursuits of profit (Novkovic and Webb, 2014b; Spash and Aslaksen, 2015; O'Neill et al., 2010b). Firms deviating radically from business-as-usual in a capitalist system are likely to face barriers which may prevent them from practising degrowth in their operations to the fullest potential or even make it challenging for them to survive (Johanisova et al., 2015).

Policies require particular attention since firms exist within a certain political and regulatory environment. The idea of growth dominates not only the economic thought but also the design of economic institutions and their documentation (Söderbaum, 2008; Alexander, 2016; Johnsen et al., 2017; Bonnedahl and Heikkurinen, 2019). For instance, the UN, which adopt a mainstream economic approach, argue that to achieve sustainability, economic growth is necessary (Alexander, 2016). Such economic institutions thus base their policies on mainstream, market approaches (Spash, 2017c). Political leaders promote mainstream, market instruments to address the issues of unsustainability (Moriarty, 2016).

Transition of firms towards degrowth can be difficult in the absence of corresponding political actions and in the presence of policies informed by status quo and pragmatism and not by the biophysical discourse (Spash and Aslaksen, 2015). Rather than aiming at degrowth, policies facilitate capitalist structures (Kunze and Becker, 2015). Existing firms, which incorporate degrowth business elements, may therefore become discriminated against in such environment, for instance, in terms of financing.

Competition. Firms aiming to transition towards degrowth may face competition with other firms which do not share the same goal of transition towards degrowth. This has been noted, for instance, by Johanisova et al. (2015) in relation to cooperatives which under a pressure from the competitive environment may deviate from their original ethos. Compliance with degrowth could mean that business-as-usual firms may out-compete those who comply via, for instance, sourcing cheaper materials, driving wages down, externalising costs, planned obsolescence (Schmid, 2018). Moreover, in the face of competition, degrowth business is not supported by policies, as was discussed above.

Profit. Even though in a post-growth economy profit maximisation would cease to be the aim of business activities (Trainer, 2012; Alexander, 2015b), the question of profit making in transition towards degrowth is complex. In relation to the capitalist setting, firms may face dilemmas such as the necessity to make some profit even if they attempt to deviate from profit maximisation. This may result in a need to balance profit and transition towards degrowth. This is because deviation from the logic of profit maximisation (Alexander, 2015b; Dietz and O'Neill, 2013; Spash, 2017b) is desirable for degrowth. Yet, the capitalist economy necessitates profit making (Pineault, 2016) and continuously searches for it (Kallis et al., 2012).

Due to firms' embeddedness within the capitalist system the need to make some profit should not be seen as unusual or necessarily disqualifying from becoming an agent of transformation (Bhaskar, 1989) or becoming part of a degrowth economy and society. This should not be seen as an apologia for profit seeking, rather a need for a change at multiple other levels. To address this, what becomes necessary is creation of political, financial, regulatory, cultural environments which can support firms deviating from the growth discourse and aspirations (Gebauer, 2018).

At this stage of transition, however, the category of profit should be seen as more nuanced and coupled with the attitudes, motivations and behaviours rather than in categorical terms such as seeing profit as necessarily the end in itself (e.g. Friedman, 2007) or as an indicator of immediate unsuitability of a firm for transition towards degrowth. As transition from a growth-based capitalist economy towards a degrowth or even a steady-state economy will not be instant, firms can seek right-sized profit for the purpose of financial viability (O'Neill et al., 2010). While the notion of being right-sized may be vague, it may facilitate seeing business differently and qualitatively.

Complexity. Another challenge on the way towards degrowth can be summarised as complexity of the system or a lack of possibility to reduce transition towards degrowth to a single variable (Kemp et al., 1998; Geels, 2002; Heikkurinen and Bonnedahl, 2019). It does not only concern the economic or financial system, it concerns humanity in general (Max-Neef, 2014). It concerns the public, private and third sector, multiple levels from individual to global, and takes place in and between those (Heikkurinen and Bonnedahl, 2019).

This relates to the need for deep transformation on multiple levels and in multiple spheres of economies and societies (Trainer, 2014; Max-Neef, 2014; Maxton, 2018) not limited or reduced to firms. This is due to an inter-connection between the systems and agents in the economy and society (Bhaskar, 1989, 1998; Collier, 1994). It appears that there is no single solution such as a technology, a policy or a process than can be changed to achieve degrowth. This is expressed well in the title of Maxton's (2018) article which states that "everything" needs to be re-thought, and that a sustainable economic system requires a "radical change in almost everything people consider normal".

However, complexity should not be seen as a single barrier, rather as a property of the social system in which firms operate (Lawson, 2019). This necessitates overcoming the current system collectively. For instance, adoption of voluntary simplicity (e.g. Alexander, 2015c) may lead to diminished wants and simplified lifestyles which could result in less need for firms to produce more. Likewise, with deviation from producerism or "production of consumers" (Read and Alexander, 2019, p. 67), firms actively involved in shaping consumer demand can facilitate the transition towards simpler lifestyles, thus again reducing the need to produce more. This could increase the possibility of doing business in line with degrowth.

Schmid's (2018) empirical study of post-growth organisations in Germany, which attempt to break away from the growth-based economy they exist in, offers an example of how multiple and complex structures within a capitalist economy constrain. Schmid (2018, p. 302) notes: "all the organisations are embedded in growth-based economic, political and cultural constellations and their everyday enactment is rife with ambiguities and compromise. In particular financial and administrative restraints limit the organisations' scope to enact postgrowth economies". He argues that such struggling with multiple barriers may result in a compromise. This should not be viewed as a sign of impurity, rather for what it is, a sign of a struggle (Schmid, 2018). Similarly, Rommel et al. (2018) note the difficulty organisations may

face when attempting to separate from capitalist economies due to their embeddedness within the structures of those economies.

Beliefs. Another barrier which may prevent firms from transitioning towards degrowth, are commonly held beliefs. For instance, owner-managers of firms considering to transition towards degrowth may hesitate to do so due to prevalent beliefs. Those can include, for instance, beliefs that wellbeing and growth are interconnected (Büchs and Koch, 2019), that producing firms cannot be non-growing (Liesen et al., 2015) or viewing success in monetary terms (Jackson 2017). Such hesitations regarding transition and becoming a degrowth business should not be surprising considering the radical nature of degrowth (Kallis et al., 2018). However, the mismatch between prevalent beliefs and degrowth discourse indicates the need for education for degrowth and yet again indicates the necessity to deviate from viewing each firm or each individual in isolation from the socio-economic setting they are based in.

Behaviours. An important barrier related to people within the system was expressed by O'Neill et al. (2010b, p. 93) in the statement “[c]hanging the system doesn’t change people”. This indicates that though the system can be changed, it does not mean change in behaviour. For instance, greed can remain despite the change in systems (O’Neill et al., 2010b). Max-Neef (2014) argues that the dominant economic paradigm stimulates greed and accumulation. This links back to the need to change everything (Maxton, 2018) outlined above. *Everything* includes systems *and* culture. Such change in culture signifies a transition way from greed and accumulation towards community, care, personal responsibility, sympathy, conviviality, cooperation (Bloemmen et al., 2015; Leonhardt et al., 2017).

While barriers discussed above may be seen as barriers to transitioning towards degrowth in general, some barriers may also be specific to small firms. These include resource, including financial, restrains small firms face (Richert, 2017; Testa et al., 2017). In comparison, large companies can afford, for instance, environmental training for their employees. This can result in more sophisticated environmental strategies in large companies in comparison to small ones (Čater et al., 2009). This is not helped by the fact that policies, as discussed above, may discriminate against small firms transitioning towards degrowth, thus making their circumstances worse in addition to existing struggles. Moreover, research on firms in relation to sustainability normally focuses on large firms rather than small ones (Leonhardt et al., 2017; Wahga et al., 2018). Thus, not only may the barriers constrain small firms’ transition towards degrowth, but they may also continue to be overlooked by researchers.

It becomes evident that a transition of small firms towards degrowth is likely to face multiple barriers. Such barriers are formidable with capitalism itself being possibly the most prominent and persistent one. Should this be taken as an indication not to transition? As was discussed earlier in this work, the transition towards degrowth is necessary. Moreover, alternatives to capitalist structures have managed to exist alongside capitalist structures throughout history (Kallis, 2017c). Therefore, barriers degrowth business may indeed face should not be seen as an indicator not to attempt to transition towards degrowth, rather as something to be aware of, to foresee, to understand, to research, to discuss, and ultimately, to collectively address.

3.7. Construction of degrowth business framework F1

To proceed with framework construction, a degrowth business framework is initially developed on the grounds of the literature identified in the Section 3.5. The elements of Table 1 are translated into a degrowth business framework and thematically grouped together using the numbers in column 3 of Table 1. This theoretical framework is referred to as degrowth business framework 1 (F1). F1 is outlined below (Table 2). To construct the framework, the elements identified in Table 1 are assigned into six groups to allow an in-depth and comprehensive further investigation. The groups are (1) Material and energy throughput and waste, (2) Internal business operation which for the purpose of deeper understanding includes governance (2.1), wellbeing (2.2.) and production principles (2.3.), (3) Wider society, (4) Growth-related, (5) Values, attitudes, motives, (6) Barriers, which is informed by the previous Section 3.6.

Group 1 “Material and energy throughput and waste” reflects ecological aspect of degrowth and broadly relates to the environment, hence the elements are environmental. Group 2 “Internal business operation” broadly corresponds to business activities and principles of management. It aims to capture a shift in governance, employee wellbeing and production principles. It separates employee wellbeing in a sub-category due to centrality of wellbeing to degrowth (Schneider et al., 2010; Kallis et al., 2018). Group 3 “Wider society” is likewise related to wellbeing, yet in a broader sense than employee wellbeing, and captures the societal elements of production for degrowth in terms of community and wider society. Group 4 “Growth-related” captures the notion of smallness and sufficiency in relation to production and aims to allow for new and unconventional degrowth strategies related to growth on a firm level to emerge. Even though this group is related to the shift in principles of governance, it is separated from Group 2 to allow an in-depth investigation of growth orientation on the micro

level. Group 5 “Values, attitudes, motives” captures the why behind a firm’s operations and relates to a shift in values (Paulson, 2017).

Group 6 captures the barriers firms may face in transition towards degrowth. Firms should not be seen as isolated from the structures they exist and operate within. For this reason barriers are included in F1. Such understanding of an inter-relation between agents and structures stems from the philosophy of critical realism (Bhaskar, 1989, 1998; Collier, 1994; Lawson, 2007, 2019) discussed in depth in the following chapter “Methodology”.

Table 2. Degrowth business framework (F1)

<p>1. Material and energy throughput and waste (Environmental elements)</p> <ul style="list-style-type: none"> • Throughput minimisation • Frugal use of resources and energy & its manifestations: • Sharing of resources, networks of enterprises • Recycling • Preventing waste and pollution • Renewable energy • Avoidance of energy waste (can be manifested in over-heating, over-lighting) • Durability of product, reparability • Pro-environmental workplace behaviour and travel modes 	<p>2. Internal business operation</p> <p>2.1. Governance:</p> <ul style="list-style-type: none"> • Emphasis on qualitative change • Simplicity and autonomy of operation • Alternative ownership patterns • Democratic decision-making • Consideration of other business models (e.g. not-for-profit) <p>2.2. Wellbeing:</p> <ul style="list-style-type: none"> • Orientation towards wellbeing • Development of human potential (not exploitation) • Reduction in working hours • Meaningful jobs • De-specialisation <p>2.3. Production:</p> <ul style="list-style-type: none"> • Decreased productivity • Localisation of production, sourcing and exchange (including production for local needs) • Preference towards appropriate, simplified technology • Collaborative work
<p>3. Wider society (Societal elements)</p> <ul style="list-style-type: none"> • Embeddedness within community • Consideration of community wellbeing • Restriction on advertising (in a capitalist setting – more ethical advertising, information-based) • Serving the needs of society 	<p>4. Growth-related</p> <ul style="list-style-type: none"> • Smallness of business units/operation • If growth, then venturing into desirable [those serving the needs], low productivity, not-for-profit sectors, not profit motivated • Adoption of non-growth or lifestyle mode of business
<p>5. Values, attitudes, motives (Shift in values)</p> <ul style="list-style-type: none"> • Redefining the meaning of economic activities • Seeking alternatives to productivism • Adopting the value of non-violence towards the environment and non-human life • Motives other than profit, redefining the meaning of business success, desire for social and environmental change 	<p>6. Barriers</p> <ul style="list-style-type: none"> • Capitalism and its manifestations (competition, profit) • Policies orientated towards growth • Beliefs and behaviours • Complexity of transition • Small firm specific (resource constraints, lack of research)

3.8. Towards degrowth business

It becomes evident from F1 above that the notion of a “firm” fit for degrowth deviates from an understanding of a firm as a profit maximiser as exemplified in Friedman¹⁴ (2007) and further adopted by theorists, for instance, of stakeholder approach (Heikkurinen and Ketola, 2012). Similarly to a degrowth economy being qualitatively different from a capitalist growth economy, a degrowth business is qualitatively different from a firm as an isolated, mechanical, profit maximising device (Spash, 2017b). This qualitatively different aspect of degrowth business should be emphasised.

Deviating from theorising on a firm as a mere profit maximiser allows to comprehend a firm as inherently human, as a community of people within a larger community (Lawson, 2014). It is not simply a sum of individuals, a people-less and structure-less profit maximiser (Spash, 2017b) or a mere “collection of activities” (Porter, 2001, p. 51) performed by faceless subjects.

Kallis et al. (2015) stress that a degrowth economy is not simply smaller, it is an economy with different structures, functions, aims. A business for such an economy should likewise not be seen as business-as-usual-but-smaller, even though smallness can indeed be desirable as discussed above. Therefore, a concept of a “degrowth business” is proposed in this study. A working definition of a degrowth business is a business for a degrowth economy.

It is proposed that to transition towards a degrowth economy and to eventually become part thereof, small firms should become degrowth businesses. In doing so, small firms (and their networks) can become niches or spaces where radical social innovation originates (Geels, 2002). Such innovation concerns change in technology, practices, beliefs, values, ideas, organisations, networks, policies, rules, projects, concepts (Geels, 2002; Loorbach, 2007).

Of course, the path of such transition is not linear, and the effect of innovations on the niche level on the overall transition is not straightforward. It involves multiple layers, agents and structures (Kemp et al., 1998; Geels, 2002; Kern and Markard, 2016; El Bilali, 2019). Moreover, some innovations may indeed fail (Geels, 2002) or require support (Kemp et al., 1998; El Bilali, 2019). In fact, the use of the word “complexity” (Geels, 2002; El Bilali, 2019)

¹⁴ Friedman (2007) notes, however, that “[t]he situation of the individual proprietor is somewhat different. If he acts to reduce the returns of his enterprise in order to exercise his “social responsibility,” he is spending his own money, not someone else’s. If he wishes to spend his money on such purposes, that is his right and I cannot see that there is any objection to his doing so. In the process, he, too, may impose costs on employees and customers. However, because he is far less likely than a large corporation or union to have monopolistic power, any such side effects will tend to be minor”. Here, however, it is the narrow notion of responsibility (“there is one and only one social responsibility of business -to use its resources and engage in activities designed to increase its profits” (ibid.)) and the utilitarian approach that are argued against.

in relation to transitions appears appropriate. It is important to note that the step from niches to a higher level of transition is gradual, with various forms, e.g. of technology, both old and new co-existing at the same time (Geels, 2002).

With the complexity of the path of transition of firms towards becoming degrowth businesses outlined, the question of the particularities of transition, i.e. of exact characteristics of such “innovation”, remains. While experiments in social sciences akin to ones in natural sciences cannot be carried out (Bhaskar, 1989, 1998; Lawson, 2019) and degrowth society does not yet exist, which adds to the overall difficulty of transition, to outline the path of transition towards degrowth as precisely as possible and to capture as many elements of degrowth business as possible to clarify this path, it is necessary to inform F1 which is so far theoretical.

Thus, further investigation is needed. Despite the already existing complexity of F1, the elements of degrowth business may not be exhaustive, and our understanding of what degrowth business entails may not be comprehensive. Existing small firms can inform F1 and enhance our understanding of elements of degrowth business. Moreover, it was suggested that firms deviating from business-as-usual may face barriers which can make transition towards degrowth difficult. Investigation of existing small firms, which already incorporate degrowth business characteristics, may be helpful in understanding of such barriers, whether they exist and how they are manifested. The following and final section of the literature review outlines the setting in which firms investigated in this study exist.

3.9. Setting the scene

An important consideration for this thesis is the recognition of the capitalist and growth orientated nature of the British economy. This relates to a proposition outlined in Section 3.6. that capitalism itself can be a barrier for transition of firms towards degrowth.

Historically the UK, England in particular, and capitalism have been closely tied (Gowdy and Krall, 2013). In its orientation towards economic growth, a hallmark of capitalism (Foster et al., 2010), the UK is not an exception. This orientation has been a prominent feature of all modern economies since WWII (Fotopoulos, 2010). Economic growth remains the main goal of all countries and the majority of politicians (Farley, 2015). Due to the nature of capitalist economy, a lack of economic growth results in unemployment and poverty (Klitgaard and Krall, 2012; Gowdy and Krall, 2013). Unsurprisingly, slow economic growth results in public bewilderment, despair, anxiety and even fear (Stafford, 1981). In the UK economic growth is presented as an indicator of health of the economy (ONS, 2017). This is despite the fact that

economic growth is strongly correlated with the use of resources, it does not reflect the state of natural capital or its depletion, or the levels of wellbeing and distribution (O'Neill, 2012).

It is believed by the British government that capitalism, free market, high productivity, free trade and economic growth will create prosperity (UK Government, 2016, 2017) where prosperity is understood in terms of higher consumption (ONS, 2013). This goes against the findings from ecological economists who propose alternative systems, goals and indicators of prosperity (Jackson, 2017). Moreover, the internal dynamics of growth and biophysical limits and forces which impose limits to growth are ignored (Klitgaard and Krall, 2012).

How is an orientation towards growth manifested in policies in the UK? In January 2017 the Government released a Green paper which seeks to define the way the British economy will develop post-Brexit (UK Government, 2017). Ten pillars, i.e. the drivers of industrial strategy, have been identified by the Government. They include the following growth-orientated ones among others which were also selected due to their benefit to economic growth: business growth and investment and driving growth across the whole country (HM Government, 2017).

A further overview of the British Government's industrial strategy demonstrates an orientation towards increased productivity and business growth in terms of both the number of businesses and capacity alongside community prosperity (UK Government, 2017b). While the importance of community prosperity¹⁵ is recognised by both the UK government and the advocates of degrowth and post-growth economy (e.g. Klitgaard, 2013; Kallis et al., 2015; Jackson, 2017), many elements are not part of post-growth and degrowth visions of economy and society. For instance, increases in productivity and productive capacity are seen by post-growth scholars as undesirable (Leonhardt et al., 2017; Jackson, 2017). Increase in business capacity can be done via hiring new staff (Leonhardt et al., 2017), which the UK Government (2017b) emphasise. However, degrowth scholars advocate alternative policies for employment, such as work-sharing (Kallis et al., 2012).

Moreover, alongside the orientation towards economic growth, pro-market stance and market-based behaviours such as competition, capitalisation on opportunities, risk-taking are highlighted in UK Government (2017b). It is exemplified in the following: "We believe in the power of the competitive market - competition, open financial markets, and the profit motive

¹⁵It is important to note that the understanding and the vision of prosperity are different in the UK Government (2017) and as conceptualised by the scholars of degrowth. The UK Government (2017) refers mostly to the economic prosperity.

are the foundations of the success of the UK” (UK Government, 2017b, p. 21). This goes against cooperation and deviation from profit motive which degrowth aims to achieve (Trainer, 2012).

Referring in particular to small firms, the UK Government (2017b, p 172) recognises some small firms’ willingness to remain small, however they equate achievement of “full potential” with reaching a large scale. On the contrary, advocates of post-growth visions of the economy apply a critique of growth to business level and identify small firms as important players in the transition towards a post-growth economy (Leonhardt et al., 2017). Moreover, in post-growth in general achieving full potential is not equated with reaching a larger scale (Schumacher, 1993; Liesen et al., 2015).

With regards to environmental strategy and greening of the British economy in particular, orientation towards growth is also evident. Achieving “clean” economic growth is identified as one of the challenges and is planned to be done via cheaper than alternatives low carbon technologies and efficient use of resources (UK Government, 2017b). However, degrowth argues that economic growth is not environmentally sustainable, and, for instance, carbon dioxide emission reduction can only be achieved via a “socio-ecological transition to lower levels of energy and material use” (Martinez-Alier, 2009, p. 1100).

The importance of renewable resources and nature regeneration is noted by both the UK Government (2017b) and by the advocates of degrowth (e.g. Trainer, 2012). However, the transition to low carbon economy in the UK is seen to be happening via technological improvement, including energy efficiency (UK Government, 2017), rather than via degrowth. Thus unsurprisingly, ecological modernisation is the approach to sustainability in the UK (Barry, 2007).

Moreover, the UK is committed to UN sustainable development goals (UK Government, 2018), including Goal No 8 which promotes decent work and economic growth. While decent, meaningful work is certainly part of post-growth and degrowth visions (Schumacher, 1993b, 1993c; Gorz, 2012; Klitgaard, 2013; Jackson, 2017), economic growth is not (O’Neill, 2012).

In order to understand economic policies in the UK it is helpful to understand what type of capitalist system one finds in this country. It is also helpful in envisioning the transition of the UK towards degrowth. Buch-Hansen (2014) states that when envisioning such transition growth critics forego the analysis of the type of capitalism inherent to a particular national economy.

Buch-Hansen (2014, p. 169) classifies capitalism in the UK as “liberal capitalism”; it is market-orientated and is characterised by the belief that “competitive relations between businesses are essential to maximising wealth in society”. The state intervention is minimal, and societal redistribution is modest, an emphasis is put on individualism and liberalism (Buch-Hansen, 2014). Regarding the transition to an alternative economic model, Buch-Hansen (2014, p. 170) notes that in countries characterised by this form of capitalism, “neither the state nor a societal coalition cutting across the traditional class divide are the most likely driving forces behind de-growth transitions”. Buch-Hansen (2014) offers an example of the Transition movement and highlights that it was initiated in the UK, and that its initiatives, e.g. home-based production, local currencies, micro enterprises, food cooperatives, car sharing, prevail in countries with liberal forms of capitalism.

What is evident is that the barriers discussed in the literature (Section 3.6) such as capitalism and its manifestations, and policies supporting the growth discourse, are prevalent in the British context. Understanding the context is essential for those adopting a critical realist perspective (Bryman, 2012), especially considering the importance of interaction between agents and structures within which agents exist (Bhaskar, 1989, 1998; Lawson, 2019). Having understood the context, this work proceeds to the Methodology.

4. Methodology

“In general, treating environmental issues as just a technical or modelling problem for economic and ecological scientists to solve is far too reductionist and mechanistic.” (Spash, 2011, p. 358)

This chapter outlines the process of selection and use of the method most suitable for the nature of this research and the research question. A particular method follows from a philosophy of science. Thus, this chapter begins with outlining the author’s position regarding philosophy of science (Section 4.1). It then justifies a deviation from the commonly adhered to philosophical framework of positivism and outlines the approaches of ecological economics within the premise of which this thesis is set (Sections 4.2 and 4.3). Subsequently it proceeds to this study’s approach (Sections 4.4, 4.5, 4.6), the use of F1 in this study (Section 4.7), discusses biases in relation to this research (Section 4.8), outlines research design tests (Sections 4.9 and 4.10). It then focuses on the cases for this study (Sections 4.11 and 4.12), ethical considerations (Section 4.13), interview questionnaire construction (Section 4.14), data collection and analysis process (Section 4.15) and outlines other possible methodological options (Section 4.16).

4.1. Ontological, epistemological, axiological, methodological positions

To maintain transparency, an outline of important insights into the philosophy of science guiding this research is offered alongside the authors’ axiological position which influences this research since the author is a human being with certain values. Apart from transparency, this section is part of an ongoing effort to practice reflexivity (Burke Johnson, 1997), i.e. the practice of self-reflection when practising research.

The author’s position is in line with Schumacher (1993b) who notes that accumulation of scientific facts by itself is meaningless. Such facts need to be evaluated and fitted within a particular value system. With regards to the relationship between values and science, Spash (2017b) notes that communicating and defending a worldview is an academic position and a political act which are aimed at transformation of societies and at human emancipation. Thus, the scientific position is influenced by the overall worldview of the researcher. In line with Bryman (2012) the term “scientific” in this research is not equated with the term positivist. This means that academic pursuits outside positivism can also be scientific.

The theory of science is summarised by Spash (2012, p. 37) as a “progression from ontology to epistemology to methodology to methods”. Ontology, epistemology and methodology

characterise a paradigm of inquiry (Tacconi, 1998). A researcher is guided by this system of beliefs which is defined by their ontological, epistemological and methodological positions (Wynn and Williams, 2012).

Regarding **ontology**, the author of this thesis assumes a realist position. However, the author differentiates between physical and social realities. Those are studied by natural and social sciences respectively. They differentiate in terms of people's ability to study them due to openness of social systems and a relative closure of physical systems (Lawson, 2002). While natural sciences search for and describe tendencies operating in the physical reality, social sciences, including economics and related spheres of knowledge, study tendencies operating in social reality. These realities are parts of one emergent reality (Bhaskar, 1989), hence the primacy of the physical reality. This means that the physical reality exists prior to the social. Yet the "social" cannot be reduced to the "physical". Social reality is reproduced and transformed but is not created by humans (Bhaskar, 1989, 1998). It exists in virtue of individuals' activity (Bhaskar, 1998). The notion of the society not being made or created by individuals refers to them being born *into* an existing social system. The physical and social realities are inter-connected since the latter is embedded within the former (Bhaskar, 1989; Spash, 2012).

Complex, emergent and evolving systems operate in social reality where constant change and complexity contribute to unpredictability. This goes against the positivist notion of prediction. Despite economics being a social science, recognition of the physical reality and society's dependency on it is central to ecological economics (Spash and Dobernig, 2017). In fact, it is a basic ontological position of ecological economics that physical reality imposes limits to human activities (Spash and Dobernig, 2017). Therefore, ontological realism is central to this research.

Ontological realism is a position of critical realists. They recognise the existence of objective physical reality and either reproduced or transformed social reality (Bhaskar, 1998; Lawson, 2019). In some cases it is also a position of scholars advocating constructivism (Tacconi, 1997). Ontological realism, expressed in the presence and primacy of the biophysical reality (Bhaskar, 1989), has an important implication for this study as it corresponds to the necessity of inclusion of the environmental considerations which impose limits to degrowth business operations.

Another implication which arises from the acknowledgement of existence of social reality is the necessity to include social considerations in the degrowth business framework. This

corresponds to Spash and Aslaksen (2015, p. 250) who note that the “appeal for a transformative approach, that integrates the social and economic with the ecological and sustainable, is a vision of human society and Nature in balance. Rather than the economy being seen as an independent entity a social ecological economic ontology recognises the ordered structure of reality in which the economic is embedded in society which is in turn embedded in the biophysical”.

This thesis concentrates on the transformation of the society and its economic activities via business practice to achieve balance and co-existence between humanity and nature, thus deviating from a utilitarian and human-centric approach (Spash and Aslaksen, 2015; Bonnedahl and Heikkurinen, 2019b). The notion of balance deviates from a green growth, utilitarian, reformative perspective which seeks to maintain status quo (Spash, 2020). It leads to a different set of requirements of what degrowth business should be in an economy which is transformed towards strong sustainability (Beckerman, 1994) and a sustainable co-existence between humanity and nature. In such economy nature is not viewed as substitutable by manmade capital (Bonnedahl and Heikkurinen, 2019b). Despite the notion of balance, the relationship between humanity and nature should not be seen as a dichotomous opposition but as a “dynamic causal interaction” (Bhaskar, 1989, pp. 6-7).

Spash and Aslaksen (2015, p. 250) elaborate on the transformation based in the understanding of ontology outlined above and call for a transformative approach: “The transformation looks for new institutions for value articulation as well as different means for organising society to reflect the values of human-Nature relationships currently being purposefully excluded under systems of capital accumulation and resource extractivism”. The notion of radical transformation allows to seek and propose pathways for change to the social system outside the current capitalist system and what is considered to be the norm (Maxton, 2018).

With regards to the study of business itself, business is seen as an aspect of social reality. This corresponds to Bhaskar’s (1998, p. 40) observation that firms themselves are social forms which consist of relationships between people and “between such relationships and nature”. An implication of this complex understanding of reality is the need to study firms necessarily within the premise of an interdisciplinary social science, ecological economics in the case of this thesis.

With regards to **epistemology**, the author of this thesis acknowledges that absolute truth cannot be discovered (Spash, 2012). Therefore, discovery of absolute truth is not claimed, and the

findings and even the conclusions must always be subject to critique and further discussion and debate. It needs to be highlighted that objectivity is not claimed. The presence of subjectivity in social science and in this thesis is acknowledged. This position regarding objectivity corresponds to a critical realist position which questions the possibility of objectivity in social sciences (Bhaskar, 1989). For instance, Bhaskar (1989, p. 112) states that subjectivity in social sciences is “not an obstacle; it is (an essential part of) the datum”.

However, the researcher strives for high quality of research and an in-depth understanding of the subject under study while accepting the impossibility of the discovery of truth. Such epistemological position allows the researcher to remain open to alternative explanations and even argue against the finality of their own theory (Collier, 1994) and certainly of their knowledge (Spash, 2012). Rigor is important and is ensured by considering alternative perspectives and critique, presenting the findings to other researchers and members of the public with both conflicting and sympathetic perspectives, and embedding tests to ensure quality of research.

Since epistemology concerns with knowledge, it is important to note that knowledge depends on the context and culture. It is also historically dependent which applies to the knowledge gained from this research. This relativist epistemological position corresponds to a post-positivist view in general and has been outlined by Spash (2012) as an important insight into epistemological claims of ecological economics. Since knowledge is culture-, context- and history- specific, applying knowledge gained from this research to other contexts should be carried out with caution and respect to culture. This is particularly important for further application of the findings of this research by those advocating a positivist position.

The framework proposed in this study should not be perceived as universally and directly and uncritically applicable to other contexts. The social dimension specifically may require adjustments appropriate for other cultures, including other cultures’ ideas of good life and wellbeing.

In terms of **axiology**, the researcher’s set of values affects the research undertaken. This is because the researcher is an instrument in the research and a human subject. The author considers disclosure of her axiological position important for the purpose of transparency.

With regards to ethics, the author assumes a deontological position rather than a utilitarian one where value is expressed in terms of value for humans. A deontological position supposes that non-humans, nature and humans have intrinsic value (Spash, 1997). This perspective may have

implications for this research. First and foremost, this is reflected in the author's choice of the science of ecological economics itself. Ethical and value neutrality are therefore rejected.

The author rejects the anthropocentric position and acknowledges the importance of environmental values. This can be described as an eco-centric position (Kopnina et al., 2018). Such eco-centric and non-anthropocentric positions are not uncommon in ecological economics. Apart from Spash (2012) and Latouche (2009), Daly (1993e, p. 381) also acknowledges "an extension of brotherhood" to people as well as non-human life. This corresponds to a critical realist perspective where environmental sustainability, the notion of co-existence between humanity and nature, and natural limits to social production are acknowledged alongside the need for human emancipation (Bhaskar, 1989; Spash, 2012).

The methodological position arises from the ontological and epistemological positions outlined above. While ecological economics' ontological position is strongly realist, its approach to **methodology** is characterised by plurality (Spash, 2013; Goddard et al., 2019) as opposed to experimental methodology of mainstream economics (Tacconi, 1998). Since ecological economics is not prescriptive with regards to methods, and this field is characterised by the problems it addresses (Costanza, 1991) rather than its methodological approaches, the method is selected which is considered by the author of this research to be most suitable for the research aim.

The author rejects the mechanistic and reductionist approach of positivism and its methods aimed at quantification (Lawson, 2002) on the grounds of their unsuitability for this study and also on the grounds of their philosophy conflicting with the author's philosophical position outlined in this section. In other words, methods aimed at quantification (e.g. surveys) are rejected for this research on the grounds of existing complexity of social reality as acknowledged by critical realism (Lawson, 2019). Such position is exemplified in the following excerpt from the critical realist Collier (1994, p. 253): "At the purely methodological level, the tendency to focus on what can be measured leads to systematic blindness to certain features of the human world". In an attempt to prevent this systematic blindness, the author chooses a qualitative approach which is, as is argued below, the most suitable approach for the research question posed.

The importance of *usefulness* of research findings should be highlighted since this research aims to contribute to transformation, as opposed to reproduction, of the society in a sense of Bhaskar (1989, 1998). Based on this approach, a **method** is chosen which offers in-depth

insights and ultimately results in findings which provide an academic and a practical contribution, including stimulation of “reflection among practitioners” (Heikkurinen, 2018b, p. 403).

Since the field of ecological economics is interdisciplinary and concerns multiple aspects of reality, a single method is not expected to provide a multitude of answers for the full and final understanding of degrowth business. Therefore, in the end of this chapter other possible methods will be proposed for future research to further illuminate the subject matter of this work and to suggest a variety of methodological options one may take.

To summarise, an approach is chosen on the grounds of gaining access to the best insights possible considering the possibility of pluralism in ecological economics (Spash, 2013) and considering the author’s ontological realist and epistemological relativist positions corresponding to the philosophical position of critical realism.

With regards to logic used in this research, a deviation from a purely deductive approach is pursued. Such an approach in its pure form separates a researcher from “actual and empirical economic systems and their operations” (Spash, 2017b, p. 6). Even though this research begins with a deductive approach, i.e. the author deduces the elements of the degrowth business framework F1 from the literature, inductive logic is also used at the data collection and analysis stage. This allows new lines of enquiry to emerge to develop a comprehensive framework based on complex and nuanced aspects of reality. Such use of a variety of logical inferences is possible in critical realism as part of scientific discovery (Wuisman, 2005).

Finally, complexity of interpreting the reality is acknowledged and preservation of nuance and detail is pursued (Flyvbjerg, 2006). The chapter proceeds to explore the traditional approach of neoclassical economics and subsequently the approaches of ecological economics.

4.2. Approach of neoclassical economics

“Dominant societal organisations have made numbers the obsession of our age.” (Spash, 2007, p. 143)

This section discusses the positivist approach which has been commonly used as a philosophy of science by economists, including neoclassical and environmental economists, and other social scientists to address questions arising in the economic domain (Hovenkamp, 1990; Tacconi, 1997). This common use of positivism as a philosophy of science in economics provides ground for this section. Since this thesis still concentrates on the economic domain

and yet deviates from mainstream economics in terms of understanding of the economy, its parts and its aims and also in terms of philosophy of science, a more in-depth investigation of unsuitability of this philosophical approach is necessary. This is not to diminish potential usefulness and a possible application of positivism to natural sciences where the nature of systems, e.g. biological systems, is such (i.e. relatively closed) that can afford positivist approaches such as accurate mathematical models capable of predictions and experiments (Bhaskar, 1989, 1998).

The approach of neoclassical economics has traditionally been a positivist one (Tacconi, 1998). Positivist philosophy is characterised by realist ontology, objectivist epistemology and experimental methodology. It was aimed at assisting economics to become more objective and value-free in its pursuit to imitate physics (Georgescu-Roegen, 1975, 1993; Tacconi, 1998; van den Bergh and Gowdy, 2003). Positivism, in the words of Bhaskar (1989, p. 51), “presupposes an ontology of closed systems and atomistic events constituting the objects of actual or possible experiences and a conception of people as passive sensors of given facts and recorders of their given constant conjunctions”. Bhaskar (1998) observes that advocates of a positivist approach attempted to apply the same rationale to social sciences as they had applied to natural sciences. Social scientists, including economists, then became misled by a misunderstanding of natural sciences and were trapped in the positivist paradigm which led them to refrain from addressing issues that did not suit positivist methods (Collier, 1994; Tacconi, 1997).

Spash (2011, p. 357) notes that economists of the late 18th century and the early 19th century “wished to match the apparent progress of the natural sciences in discovering universal truths”. However, in this attempt economists adopted certain values. For example, Tacconi (1996, 1997) notes that due to the pursuit of value neutrality economists adopt the values of their employers and a particular ethical stance such as foregoing the issues of equity.

Gowdy and Erickson (2005) note that neoclassical models are not based on scientific objectivity but instead reflect personal views of the analyst and neoclassical economics’ assumptions while ethical considerations are set aside. They state that understanding of the economy “requires an appreciation of the importance of hierarchies, contingency and self-organisation, and recognition of the fragility of market economies in biophysical space and cultural specificity” (Gowdy and Erickson, 2005, pp. 218-219). Moreover, understanding of human economy would require understanding of individuals and societies which is not enhanced by envisioning societies as collections of atomised individuals whose freedom is

reduced to perform optimising calculations in pursuit of self-interest (Bhaskar, 1989; Lawson, 2019).

The claim of discovery of universal truths can be used to defend particular kinds of organisation of society, e.g. capitalism. For instance, Collier (1994, p. 104) notes that the results of the social scientific practice may be presented as “uncriticizable natural givens” and “universal features of human condition” rather than as being historically specific. Therefore, despite its claim of value neutrality, positivism “can act as an ideology for science and other social institutions, including those of the capitalist economy” (Bhaskar, 1989, p. viii). The notion of capitalism as a universal feature of human condition is particularly important for this work since it questions capitalism’s premises such as primacy of profit making and economic growth (Trainer, 2012).

The preference of mainstream economics towards a particular methodology which favours statistical analysis, statistical tools, mathematics and deduction, all being hallmarks of positivism, is pursued at the expense of epistemology, i.e. testing assumptions against reality, and pursuing usefulness for policy-making (Söderbaum, 2008; Gowdy, 2016; Spash, 2011, 2017b; Lawson, 2019). Mainstream economics defines itself by the methodology rather than the object of study (Spash, 2017b), and mathematics is used as “a doctrine of rigor” irrespective of its relevance (Spash, 2011, p. 349). Spash (*ibid.*) argues that mathematical formalism does not in reality result in learning and useful interdisciplinary research. He notes that it leads to a situation where “primary data collection is rare, theory is conducted without application or hypothesis testing and evidence contradicting theory is ignored or explained away” (Spash, 2011, p. 365).

However, equation of rigor with a skilful use of mathematics should be avoided, and a gap between evidence and theory should be bridged for economics as a science to assist in finding real-life solutions for human emancipation (Bhaskar, 1989, 1998). Deviation from mainstream economics towards a more reality-based investigation is welcomed in the heterodox economics domain. While Georgescu-Roegen (1993) noted that nothing happened to deviate economics from its mechanistic epistemology, more recently Gowdy (2016) finds consideration of reality and incorporation of concerns for reality into research design in heterodox economics. He welcomes this positive tendency and offers an example of behavioural economics where an interplay between theory and evidence emerges. For example, Gowdy (2016) states that in order to understand how consumers actually make decisions, one needs to follow them around.

Following from the discussion above, adopting a qualitative method is not seen as a disadvantage since this deviation addresses the common disadvantages of positivist methods.

One may ask why the “attachment to a mechanistic view of science” (Redclift, 1987, p. 33) in economics fails to reflect the reality. Critical realists criticised the use of mathematics and statistics in social sciences due to the nature of the systems studied by these sciences. Social systems are open systems, which means they are complex, interacting and emerging (Lawson, 2002, 2019). Thus, social sciences, i.e. those sciences which deal with such systems, are always “sciences without closure” (Collier, 1994, p. 161).

Collier (*ibid.*, p. 162) notes that¹⁶ “while we may postulate quantitative variations, we can’t measure them. Any attempt in the social sciences to imitate the use of maths that is so central to the natural sciences is a blind alley”. He further notes that in natural sciences where experiments establish closed systems, measurement and quantification are possible. Therefore, the value of mathematics for natural sciences cannot be denied (Collier, 1994). However, in social sciences, due to openness of the systems, the situation is different. The outcomes cannot be calculated, and quantification becomes ambiguous (Collier, 1994; Lawson, 2007, 2019). Collier (1994) pays particular attention to implications of quantification in economics. He states that quantitative calculations in economics are a philosophical error rooted in market economy, and economic decision-making necessarily involves qualitative judgement. This should be recognised as “life on earth could depend on the recognition of this” (Collier, 1994, pp. 252-253), as ecological economics more recently argued (Spash, 2012). Such qualitative judgment may include the question of the ends of economic activities.

For instance, Smith (1993, p. 185) highlights the presence of utilitarian ethics in mainstream economics which views production and consumption and their increase as an end in itself. This omits the study of humanity’s final goal. Smith (1993, p. 204) argues that “although one may show much scholarship by manipulating vast amounts of data with precision and rigor in the largest of computer models, it may not lead to wisdom”. Nor will it lead to ecological sustainability, as Collier (1994) observes.

In general, avoidance of inclusion of morality and separation from ethics and moral considerations in economics is notable and problematic (Tacconi, 1997). While appeals to

¹⁶This should not be taken as an indication of impossibility of meaningful science with regards to social sciences. Social sciences can (1) inquire into open systems, (2) “find a partial analogue to experiment” (Collier, 1994, p. 162) and (3) “find a compensator for its absence” (Collier, 1994, p. 162). Social sciences, in the view of critical realism, are aimed at explanation.

morality are evident in the ideological position of ecological economics proposed by Spash (2012), they are not part of a positivistic worldview of economists. Daly (1993d, p. 354) notes that social scientists who are biased towards positivism “consider appeals to morality as cheating, as an admission of intellectual defeat, like bending the pieces of a jigsaw puzzle”. Instead, Daly (1993d, p. 357) calls for a paradigm shift towards the wholeness of knowledge which would incorporate the three dimensions of the physical, the social and the moral. He argues that unless this happens, solutions to humanity’s problems are unlikely.

Following the discussion above, it should not be surprising that the adoption of positivism by economists received a considerable amount of criticism, and deviations from positivist views took place. A shift in social sciences occurred as it became evident that methods of research used in natural sciences were “unworkable and inappropriate in the real world” (Gillham, 2000, p. vi). In the end of the 20th century positivism came under attack (Patomaki and Wight, 2000; Tacconi, 1998). Tacconi (1998) notes that even though positivism dominated scientific research for the majority of the 20th century, in the 1970s alternatives to positivism emerged, including post-normal science, constructivism, critical realism, postmodernism and soft system science. This coincided with the environmental critique of the 1970s (Spash, 2011).

Some branches of ecological economics, particularly ones emphasising pragmatism and resource economics, demonstrate acceptance towards plurality and still include positivism (Spash, 2012, 2013). It has also been argued by Goddard et al. (2019) that acceptance towards such unrestrained pluralism, which by definition includes positivism, is beneficial for diversity and a healthy development of the science of ecological economics. However, the discussion of positivism above, and considering the nature of this research and its aim to understand the transition of *real* firms in a complex setting towards degrowth, which necessarily introduces an ethical position, positivist approach is rejected and thus not used in this particular study.

4.3. Approaches of ecological economics

In line with the discussion in the previous section, Hodgson (2004, p. 61) similarly states that “many economists have lost their way in mathematical puzzles, forgetting that their science should be principally concerned to understand and explain economic phenomena in the real world”. However, ecological economics can be seen as an example of a school of thought which concerns with reality and thus attempts to deviate from positivism (Spash, 2012) or at least to view it as a merely one option among many (Goddard et al., 2019). However, Lawson

(2007) argues that if any alternative approach to economics is to perform better than the mainstream, a different philosophical orientation is needed.

Therefore, this section outlines what deviation from neoclassical economics may mean for ecological economics and what approaches can be taken. An attempt to integrate the physical, the social and the moral dimensions (Daly, 1993d), central to ecological economics, has been made by scholars of ecological economics. The development of ecological economics, starting from the environmental critiques in the 1970s (Spash, 2011) introduced a different thinking regarding the economic system. Ethical judgement became an integral part thereof, and this new thinking could no longer fit within the orthodox framework which on the contrary avoids ethical judgement (Spash, 2012).

However, a deviation from the orthodox framework should not be seen as a clean break. Some ecological economists, e.g. new resource economists, retained a preference towards orthodoxy while many explicitly aimed to deviate from it (Spash, 2011, 2013). For instance, Schumacher (1993) criticised a purely quantitative analysis of economists because it ignores qualitative distinctions between goods, services and people and advocated deviation from this pattern of thinking. Tacconi (1998), who explored adoption of post-normal science and constructivism by ecological economists, encouraged ecological economists to deviate from positivism and explore alternatives. Spash (2017b) encouraged to integrate the ecological, social and ideological dimensions and presented a comprehensive transition away from orthodox economics termed social ecological economics.

Despite some ecological economists avoiding a clean break from the mainstream (Spash, 2020), a deviation of ecological economics from mainstream premises across multiple domains of economy is evident. For instance, in neoclassical economics the theory of production is dominated by the goal of efficiency in profit maximisation supported by the notion of perfect competition (Gowdy and Erickson, 2005). Deviation from neoclassical economics allows a different understanding of firms as complex social forms (Bhaskar, 1998; Lawson, 2019). While neoclassical economics views economic processes in mechanistic terms, ecological economics views production as at once a social and a biophysical process to which the laws of thermodynamics apply (Georgescu-Roegen, 1975; Gowdy and Erickson, 2005).

Apart from deviations in understanding of agents of economy such as firms, ecological economics offers a wider range of methods for the study of those agents. While neoclassical economics adopts mathematical deductivist approaches, deviation from neoclassical

economics allows methodological plurality and an inter-play between theory and practice (Collier, 1994; Gowdy, 2016; Spash, 2017; Goddard et al., 2019). Overall, however, ecological economics can be characterised by the heterogeneity of approaches, and scholars of ecological economics adopt different approaches to the philosophy of science since ecological economics is defined by a set of problems rather than concrete epistemology or methodology (Costanza, 1991; Baumgärtner et al., 2008; Spash, 2013).

For instance, Spash (2012, 2020) and Puller and Smith (2017) note that breaking from the mainstream theory means refraining from its core assumptions and methodology, therefore excluding positivist approaches. Tacconi (1997, 1998) and Goddard et al. (2019) argue in favour of methodological pluralism in ecological economics. Spash (2012) argues against unrestricted methodological pluralism and calls for an acceptance of realism and empirical epistemology by ecological economists. He reviews the philosophy of science which underpins ecological economics and highlights the importance of clearly differentiating the worldview of ecological economics from the worldview of orthodox economics. Spash (2012) also states that a successful interdisciplinary inquiry requires a common understanding of ontology and epistemology which would provide a ground for cooperation between different sciences. Additionally, he advocates the inclusion of ideological considerations into the foundations of ecological economics, e.g. deviating from a utilitarian position towards nature.

Following the discussion above, it can be observed that while ecological economics as a heterodox school deviates from neoclassical economics, no single approach is advocated or adopted by this field, and pluralism is often encouraged. Paulson (2017, p. 436) states that deviation from current paradigm is “opening epistemological horizons” and that heterodox practices and systems need to be explored. This may concern not only the visions of economics but also the practice of the science of economics itself. Below the main non-positivist approaches to the philosophy of science proposed for ecological economics are explored in more detail.

Tacconi (1998) explores application of post-normal science and constructivism to ecological economics. The term “post-normal science” was introduced by Funtowicz and Ravetz and signifies an extension, a complement to normal science which deals with problems characterised by high uncertainty and urgency of decision-making among other characteristics (Tacconi, 1998). In post-normal sciences “quality” replaces positivist “truth”, values are

explicit, views of stakeholders are included in research, methodology corresponds to the context (Tacconi, 1998).

The urgency of decision-making with regards to environmental unsustainability should be recognised. Tacconi (1998) notes that the approach of Funtowicz and Ravetz is still rooted in the methodology of natural sciences while in the area of social sciences a different approach is required. He then goes on to explore constructivism, which is described by relativist ontology, subjectivist epistemology and hermeneutic, dialectic methodology (Tacconi, 1998). However, Tacconi (1998) acknowledges criticism presented by critical realists and ecological economists towards the relativist ontological position of constructivism. While Tacconi offers a modification to a constructivist approach that would acknowledge the existence of physical reality interpreted differently by different people, critical realism *starts* with the assumption of the existence of physical reality (Bhaskar, 1989). This corresponds to the biophysical limits to human activities recognised by ecological economics (Georgescu-Roegen, 1975; Spash, 2012, 2017). The following sub-section explores critical realism which, as opposed to constructivists' relativist ontology, is based on realist ontology.

4.4. Critical realism

Critical realist approach “posits the existence of an objective reality that is knowable and can be described, whilst accepting that all knowledge claims are fallible” (Spash, 2012, p. 40). Critical realism is a relatively new philosophical position (Easton, 2010). It is an alternative to both positivism and interpretivism (Wynn and Williams, 2012). As a realist philosophy critical realism deviates from positivism in terms of its ontological position in a sense that it assumes a transcendental realist ontology, which means that the reality and our knowledge of it are not the same, a position different from epistemological realism (Easton, 2010). It also deviates from positivism in its epistemological position (Mir and Watson, 2001) by assuming epistemological relativism (Groff, 2004) and its axiological position by assuming an emancipatory axiology (Easton, 2010). Overall, critical realist position can be described in terms of “ontological realism, epistemological relativism and judgemental rationality” (Groff, 2004, p. 10).

The term “critical realism” is associated with R. Bhaskar and his early work in the 1970s (Groff, 2004). The name “critical realism” is derived from a combination of transcendental realism as a general philosophy of science and critical naturalism as a philosophy of social sciences (Bhaskar, 1989). Thus, critical realism is the name not originally given to Bhaskar's philosophy

by Bhaskar himself. However, he adopted the name later on. This is evident from his statement: “I had called my general philosophy of science "transcendental realism" and my special philosophy of the human sciences "critical naturalism"”. Gradually people started to elide the two and refer to the hybrid as "critical realism". It struck me that there were good reasons not to demur at the mongrel" (Bhaskar, 1989, p. 190).

Since this thesis studies an aspect of an economy, thus an aspect of the social reality, the critical naturalism part of critical realism requires further explanation. Critical naturalism is a philosophy of social science specifically, where “social objects can be studied scientifically like natural ones – but only on the condition that we accept a realist (non-positivist, non-conventionalist and non-idealist) account of science and respect the specificity of the subject-matter of the social sciences” (Bhaskar, 1989, p. viii). Important specificity of social reality in particular is its openness. It has implications for the methods that can be used by social scientists (Lawson, 2002). Here Lawson’s (2002, p. 2) reference to Marx is useful: “As Karl Marx once observed "in the analysis of economic forms neither microscopes nor chemical reagents are of assistance"”.

However, with regards to methods or direct application of critical realism to research, critical realism, which is mostly concerned with the nature of reality (i.e. ontology), is not prescriptive beyond outlining the general direction and constrains for methods (Lawson, 2002). Wynn and Williams (2012) observe that there is a dearth of literature which guides one to employ critical realism to research. However, Easton (2010) argues that critical realism provides a philosophical justification for a case study research. This is due to critical realism’s sensitivity towards the context and recognition of importance thereof (Bryman, 2012).

There appears to be a natural fit between post-growth critique of the practice of economics (and economy itself) and critical realist philosophy. This is due to a similarity between the critical realist view of reality, i.e. embeddedness of the social within the ecological (Bhaskar, 1989), and a corresponding view of ecological economists of the social and the ecological (Spash, 2012). Moreover, ecological economics as a field which theoretically re-connects the society and the environment, can be defended from a philosophical perspective of critical realism with its position of stratified reality. Critical realism sets humanity “*in nature*”, as Bhaskar (1989, p. 25) notes. This is also consistent with the vision of ecological economics and degrowth. It is especially evident is the following:

“The social and the socially conditioned or affected parts of the natural world are potentially transformable by human beings. But there may be some absolutes (universals, constants) of significance for human beings – which they just have to accept or “recognize”. For example, fundamental laws of nature, the scarcity of some natural resources, upper limits to ecologically sustainable economic growth, aspects of human nature, the fact of the finitude (if not the precise duration) of human existence” (ibid. p. 176).

This recognition of natural constraints to human economic activity is also evident in Bhaskar’s statement that “the social structure is embedded in, conditioned by and in turn efficacious on the rest of nature, the ecosphere” (ibid. pp. 6-7). A similar strand of thought can be found in the writings of the critical realist Collier. As Collier (1994, pp. 160-161) notes: “the life of society is governed by laws which can interact and codetermine events with other laws; these laws operate at a multiplicity of emergent strata, rooted in but irreducible to natural strata. Since social entities presuppose a natural environment and natural components, and since they exist only in symbiosis with social entities at other strata (societies with people, and so on), we can find only open systems here”.

These excerpts from Bhaskar (1989) and Collier (1994) signify not only the ability of people to transform their societies, but the need for recognising the natural limits. This recognition of limits, in line with the critique of ecological economics towards neoclassical economics’ failure to recognise the environmental constraints, makes critical realism a suitable philosophical lens for investigation of matters of sustainability and for ecological economics (Spash, 2012). Importantly, Spash (2012) rejects the view that all reality is socially constructed as applicable to ecological economics because of the importance of laws of thermodynamics which scientifically underpin ecological economics’ arguments in the economics vs biophysical reality problem.

Apart from environmental sustainability, the ends of scientific and research activity, exemplified in human emancipation, need to be considered. Human emancipation is an important aspect of critical realist philosophy. It “depends upon the transformation of structures rather than just the amelioration of states of affairs” (Bhaskar, 1989, p. 178). Bhaskar (1989, p. 178, italics original) carries on to say that “emancipation is *necessarily* informed by explanatory social theory. The emancipatory social sciences may, for their part, take as their starting point some human need or aspiration (say for poetry) and inquire into the natural and social conditions (if any) of its non-fulfilment. Or they may begin with an immanent critique

of prevailing social theories or ideologies, which may move on to the explanatory critique of falsity-generating [...] or other malevolent (ill-producing) social structures [...] In either case, the social sciences will be participants in a theory-practice dialectic or spiral with the emancipatory practices concerned”.

This observation is essential for the present research not only from the perspective of emancipation of the society from mainstream ideology and addressing the need for co-existence between humanity and nature, but also from the perspective of rejection of objectivity, since assuming a position of “emancipation” already presupposes a bias towards it.

The scientific practice of degrowth appears emancipatory in a sense that degrowth explicitly aspires for co-existence between humanity and nature, or humanity *within* nature, and critiques existing capitalist, growth orientated and destructive structures of modern societies and economies (Trainer, 2012). In this respect it is not value neutral, and neither is it required to be, since the positivist aspiration for value-neutrality is abandoned. Following from the discussion above, this chapter proceeds to outline the approach of this study based on philosophy of critical realism which provides a suitable philosophical framework for ecological economics (Spash, 2012; Puller and Smith, 2017) and corresponds to the author’s position outlined in the beginning of this chapter.

4.5. The approach of this study and methods of existing studies

“Go to the practical people [...] and learn from them: then synthesise their experience into principles and theories; and then return to the practical people and call upon them to put these principles and methods into practice so as to solve their problems and achieve freedom and happiness.” (Schumacher, 1993, p. 213, quoting Selected Works by Mao Tse-tung, Vol. III).

First and foremost, critical realism is concerned with ontology and is not committed to any particular theory or method beyond outlining a general direction (Collier, 1994; Lawson, 2002). While it helps one defend a theory from positivism and interpretivism, it is not prescriptive. In fact, it is encouraged that one starts with a research question rather than attempts to match it to a particular philosophy (Collier, 1994). In other words, critical realism does not provide guidance with regards to the practical aspects of research activity itself (Wuisman, 2005).

As discussed in the previous section, critical realism helps to defend an emancipatory nature of this research as well as the need for recognition of embeddedness of economy in the physical

and social realities. While critical realism does not prescribe any particular methodology, can critical realism still be helpful in identifying a method suitable for the research question posed in this study?

Lawson (2007, p. 255) states that “the problems of modern economics stem largely from its failure to match its methods to the nature of its subject matter”. This especially relates to the use of mathematical methods where they are not applicable. Lawson (2007) argues that using inappropriate methods in economics results in theories which fail to contribute to our understanding of reality. This observation is useful since critical realism allows to choose a method which is most helpful in understanding of reality rather than one commonly preferred by a particular science. Spash (2012) also notes that it is the value of insight from reality that distinguishes the mainstream economics from heterodox schools, including ecological economics, thus doing research in a heterodox tradition allows to deliberately choose a method based on the pursuit of reality-based insights.

This study aims to understand how small firms could transition towards degrowth, i.e. what being a degrowth business could entail. This necessitates an investigation of potential elements of degrowth business manifested in real small firms. Such investigation can not only enhance our understanding of degrowth business but also the barriers firms possessing degrowth business characteristics may face in a capitalist setting. This necessitates a study of real firms not in isolation or while ignoring or downplaying the importance of the reality in which firms exist, but while necessarily acknowledging the context. The need for primary data collection from firms was also expressed by Hausman (2008) who notes that there is no way to learn about them without studying them. Likewise, Reid (1993, p. 8) advocates application of field research methods to study small firms and argues that “an important feature of field work is that it enables the empirical investigation to be well grounded in reality, in a way that using official secondary statistics does not”.

This research thus calls for qualitative data and analysis, from which the findings will be derived. Reid (1993) finds that economists see a distinction between soft and hard analysis, i.e. qualitative and quantitative analysis, respectively. However, qualitative analysis of small firms can be as “intellectually keen” as quantitative (Reid, 1993, p. 5).

The findings are expected to inform F1 and enhance our understanding of degrowth business. Enhanced understanding of degrowth business elements will allow to reconstruct F1 into a more comprehensive framework F2 which will provide an answer to the research question and

useful and usable practical insights. Since the possibility of discovery of absolute truth was rejected, the answer resulting from this research should be seen as a subject for critique, further discussion and further research.

Following from the discussion above, the approach for this study needs to at once offer an insight into real small firms, allow an in-depth investigation, a qualitative data collection and analysis. Moreover, it needs to allow a consideration towards the setting in which the firms are based. Based on these requirements a case study approach is considered most suitable. For instance, Yin (2014) states that a case study approach is particularly useful when a complex social phenomenon is explored in its context.

However, to finalise the approach an overview of existing studies (Appendix III) with a focus on sustainability, small firms and degrowth was carried out for the purpose of identifying the range of methods used by the researchers operating in this field. Appendix III demonstrates an overview of existing studies closely related to the themes of the present research, including degrowth and post-growth perspective, SMEs and pro-environmental business behaviours. The studies selected are empirical rather than conceptual, as it is the method used in the studied that at this stage is of a particular interest.

It should be noted that many studies identified in Appendix III were published in the Journal of Cleaner Production. This is not surprising. For instance, Cosme et al. (2017) review peer-reviewed articles on degrowth and find that the majority¹⁷ of the articles which the search yielded were published in the Journal of Cleaner Production (23), Ecological Economics (19) and Futures (12). Similar results are evident in Weiss and Cattaneo (2017) who reviewed 91 articles in the period of 2006-2015. Weiss and Cattaneo (2017) observe that while until 2012 studies on degrowth were mainly conceptual, more recently studies began to focus on modelling, empirical assessment and implementation.

¹⁷As a first step the authors identify a set of following criteria – (1) studies published in peer-reviewed journals, (2) words cited include degrowth, de-growth or décroissance, (3) written in English, (4) published in 2007-2014. The search in step one yielded 90 studies. Beyond the journals identified in the main text above, the search yielded the following results: Environmental Values (8), Capitalism Nature Socialism (7), Sustainability (6), Environmental Politics (2), Journal of Sustainable Tourism (2), and 1 result in each of the following: Annals of the Association Of American Geographers, Development and Change, Environment and Planning C: Government and Policy, Environment Development and Sustainability, Global Environmental Change: Human and Policy Dimensions, Journal of Economic Issues, Journal of Environmental Protection, Journal of Industrial Ecology, Monthly Review - An Independent Socialist Magazine, Trends in Genetics, Urban Studies. Further analysis was performed by the authors, such as context analysis, see study Cosme et al. (2017). Context analysis is helpful, since the term “degrowth is used in other sciences, for instance biology (such as this paper: González-Estévez, C., Felix, D.A., Rodríguez-Esteban, G., and Aboobaker, A.A. (2012) Decreased neoblast progeny and increased cell death during starvation-induced planarian degrowth. International Journal of Developmental Biology, 56 (1-3), pp. 83-91.)

Appendix III is the result of a search which resulted in 933 articles published between 1974 and 2017 which satisfy a “degrowth” search criteria using internal library resources from the University of Derby. A context analysis was performed to exclude the articles from other spheres of knowledge (e.g. biology). Articles were chosen where original, primary research was carried out. This is (1) to identify the methods currently used by degrowth and post-growth scholars and methods used to study small firms in relation to environment and sustainability, especially used by degrowth and post-growth scholars, and (2) to identify whether the wealth of insights and findings which resulted from those methods is at the level desirable for the present research.

An overview of studies in degrowth and closely related domains reveals a multiplicity of methods used by the scholars. They range from surveys to case studies, to action research and ethnography. A move from a purely conceptual and primarily macro vision of degrowth (Georgescu-Roegen, 1975) and steady-state economies (Daly, 1993) to exploration of the reality of degrowth via case studies, action research and ethnography in the more recent studies is evident.

From the overview of existing studies performed it is evident that a case study method is currently used widely by degrowth scholars who derive implementation orientated findings which result in both practical and theoretical contributions. For instance, Bloemmen et al. (2015) select a case study approach for their exploratory, theory-building research in degrowth, as do other scholars exploring business and business models for a degrowth economy in more recent studies (Wells, 2018; Khmara and Kronenberg, 2018).

Using a case study method in studying of businesses is not unusual. For instance, Yin (2012, p. 103) notes that research on firms “frequently has assumed the form of case studies”. Based on the consideration of needs of this study and an overview of existing studies, a case study method was selected. Other methods, e.g. action research and ethnography, may be used to further explore the multiple aspects of degrowth business in detail and from different perspectives in future research. Those are proposed in Section 4.16. However, for the purpose of this study which explores, further develops and aims for a comprehensive framework of degrowth business, a case study research is considered most useful. It is expected to provide a better understanding of degrowth business as a whole.

4.6. Case study approach and research design

This section outlines a case study approach, then discusses its usefulness for this study in more depth and outlines this study's research design. Easton (2010, p. 119) defines case study research as "a research method that involves investigating one or a small number of social entities or situations about which data are collected using multiple sources of data and developing a holistic description through an iterative research process". In case study research the researcher becomes an instrument of inquiry and seeks out data which supports in-depth understanding of the matter under investigation (Gillham, 2000).

A case study method is a major form of inquiry in social sciences (Yin, 2012). Similarly to any other method, a case study approach is not perfect and has its disadvantages. With a lack of guidance related to the "how" of carrying out a case study research, and connected with the fact that in a case study research the researcher is an inherently human instrument of inquiry, case study introduces a possibility of biased views into an investigation which may influence the study (Yin, 1984). Moreover, those coming from a positivist perspective may seek generalisations and predictions from a scientific inquiry (Hovenkamp, 1990) which a case study research does not aim to provide (Yin, 1984). Yet another disadvantage of this approach is practical and relates to the great quantity of data which normally results from case study research and which requires appropriate management (Yin, 1984).

Despite its disadvantages, a case study approach has been applied in multiple disciplines including political science, psychology, education (Longhofer et al., 2017), ecological economics (Tacconi, 1997), industrial marketing (Easton, 2010), sociology, anthropology, political science (Yin, 2014). It is accommodating towards a realist perspective (Yin, 2014) and critical realist perspective (Easton, 2010). The viability of studying small businesses and organisation is general due to their complexity via a case study method has been previously noted (Yin, 2003, 2010, 2012; Easton, 2010).

A case study method is identified by Tellis (1997) as ideal when an in-depth, holistic understanding is required. It provides an opportunity to understand a phenomenon in its complexity, depth and its own context (Baxter and Jack, 2008; Easton, 2010; Bryman, 2012; Yin, 2014). This is expected to facilitate a deeper understanding of degrowth business elements and also relate it to the setting in which they are or would be manifested. The appreciation of the setting where the cases are embedded is important as the firms exist within a particular, growth-based environment. Understanding of this context and its implications helps to

understand the challenges associated with adoption of degrowth business elements and to provide further recommendation.

This method allows a researcher to use a variety of data sources (Baxter and Jack, 2008; Yin, 2014). Gillham (2000) argues that this wealth of sources of information is a key attribute of case study research. Sources of data may include archives, interviews, documents, observations, artefacts and others. This not only allows a holistic understanding of a phenomenon to occur but also a more comprehensive understanding of reality (Baxter and Jack, 2008; Tellis, 1997). Case study and multiple data sources provide an opportunity to study a firm in its complexity rather than as a set of separate variables (Yin, 2012). This allows the author to investigate a firm as a real-life social entity, as viewed from an ecological economics and critical realist perspectives (Bhaskar, 1989; Lawson, 2014, 2019; Spash, 2017b).

Yin (2012, 2014) offers a comprehensive overview of a case study method and identifies a number of procedures one needs to undertake to do a case study research. Those include design, data collection, data analysis, result presentation, and reporting. Yin (2014, p. 26) highlights the importance of following systematic procedures and notes that “research design is the logic that links the data to be collected and the conclusions to be drawn to the initial questions of study”.

In this study, the research question leads to a proposal of a theoretical framework of a degrowth business (F1) which guides this investigation. Primary data collection is aimed at informing all groups of F1 comprehensively, therefore F1 plays an important role. To maintain consistency, throughout the investigation the groups of elements of F1 (Environmental, Internal business operation, Societal, Growth, Values, attitudes, motives, Barriers) are referred to.

According to Yin (2012) three steps are included at the design stage. They include (1) defining a case, (2) selecting a type of design, (3) using theory in design work. At the first stage bounding a case is important. It allows to distinguish between the data about the phenomenon from the data about the context (Yin, 2014). In this investigation a unit of analysis is a small firm since the investigation focuses on transition of firms towards degrowth. With regards to the type of design, multiple-case (n=7) design is used. All firms comply to the same selection criteria. They are discussed in detail in Section 4.11. Data collection and analysis are aimed at understanding of operations of firms rather than at meaning and its complexity, multiple realities and their perception and interpretation. However, due to firms being social entities or

communities of people (Bhaskar, 1989; Lawson, 2014, 2019), the important role of their owner-managers and their worldviews is acknowledged.

In terms of using theory in design work, theoretical propositions are helpful and assist in staying within feasible limits (Yin, 2014). However, it should be noted that theoretical propositions can be questioned in light of new data collected (Yin, 2014). They even should be questioned due to knowledge always being subject to critique which stems from a critical realist epistemological position (Collier, 1994; Spash, 2012). The following section discusses theoretical propositions and the use of F1 in this study.

4.7. Use of F1 in this study

The case study approach can be seen as a part of the following progression which this study follows: (1) literature review, (2) degrowth business framework F1, (3) primary data collection via case studies, (4) degrowth business framework F2, (5) knowledge sharing.

The study began with a literature overview, and a possibility of contribution was identified in the realm of production for degrowth, particularly production by small firms and what it could entail. The aim of this research is to understand how small firms could transition towards degrowth to become an integral part thereof. With the “how” question posed, the focus of this research becomes a deeper understanding of what degrowth business could be. To better understand what firms for degrowth can be, a degrowth business framework (F1) was constructed based on deduction of elements and characteristics of production for degrowth from the literature. This section explores the use of F1 in this study and the role it plays in further investigation. Since F1 is based on the literature, it is a theoretical framework. F1 begins to answer the question of what business should be like for degrowth to be possible. While it begins to answer this question, it does not provide a comprehensive answer.

Before outlining the use of F1, two warnings should be noted. Firstly, since it was argued that a transition towards degrowth is complex and encompasses a multitude of agents and transformation of multiple structures, the transition towards degrowth is not merely a function of small firms and not merely a matter of adoption of F1. In other words, it cannot be assumed that if firms become degrowth business then degrowth will necessarily occur. Thus it is not the role of F1 to outline the path towards degrowth. Even if the elements of F1 can be generalised, this should be done with caution and attention to complexity of social reality.

Secondly, as critical realism outlines, due to the social system being open, experiments in social sciences akin to those in natural sciences are not possible (Bhaskar, 1989, 1998; Collier, 1994; Lawson, 2019). Such openness leads to systems constantly acquiring new, emergent properties. This understanding can be applied to a transition towards degrowth. Therefore, even the elements in F1 may need to be modified in light of new properties of societies transitioning towards degrowth over time.

However, F1 is helpful in outlining a set of propositions for an ongoing degrowth research agenda rather than a set of hypotheses to be tested in this investigation in an attempt to discover universal laws. In this sense, this investigation is part of a cycle of scientific discovery (Wuisman, 2005). It should thus be seen as part of degrowth research agenda as a whole. The propositions can be outlined as:

- (1) If firms are to transition towards degrowth and become parts thereof, they need to become degrowth businesses. This means that they need to mirror the key premises of degrowth, thus, to incorporate environmental, social considerations (including in their internal business operations) and shift in values, attitudes, motives (including shifting the focus away from quantitative growth). Thus, for a degrowth business to be possible, the first 5 groups of F1 should be adopted to the fullest extent and where applicable. This proposition aims to suggest a relationship between degrowth and degrowth business.
- (2) In transition towards becoming degrowth businesses, firms are likely to face barriers in a capitalist setting. In other words, if firms adopt F1, they will face a variety of barriers as outlined in group 6 of F1. This proposition aims to suggest a relationship between degrowth business and a capitalist setting.

Figure 2 below schematically demonstrates the relationships between concepts (firms and degrowth society, firms and barriers) proposed in this study.

Fig. 2. Transition of small firms towards degrowth

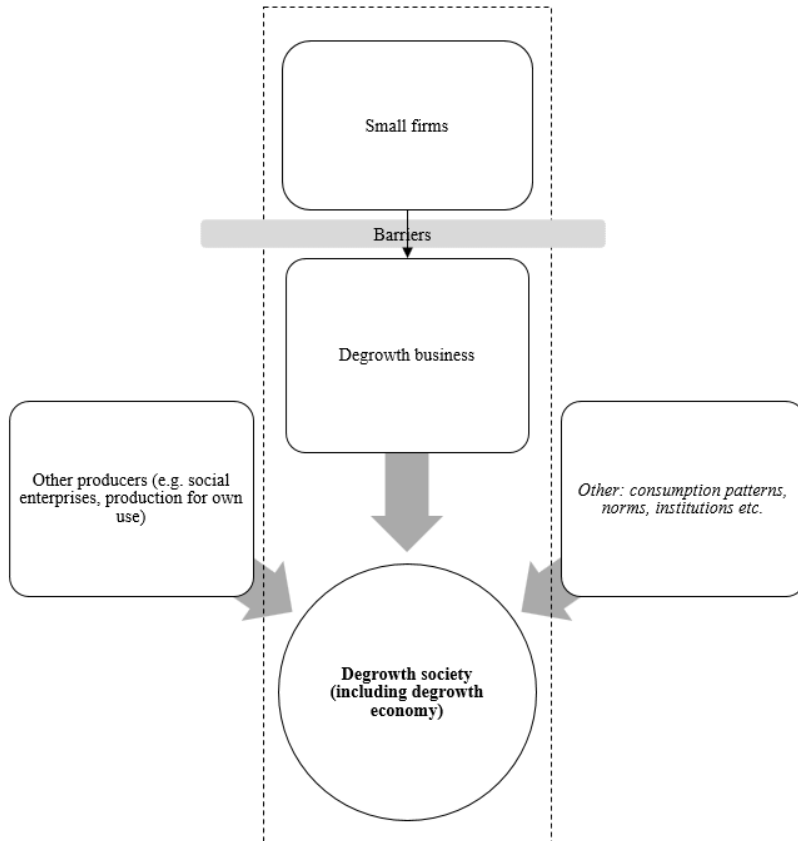


Figure 2 above demonstrates (1) a transition towards a degrowth society is not simply a function of small firms, it is a function of multiple agents, including other agents (e.g. other producers) and structures, (2) to transition towards a degrowth society, small firms need to become degrowth businesses, (3) in becoming degrowth business, small firms face barriers. The dashed line outlines the premise of this study.

Due to an impossibility to run a critical realist social experiment (Bhaskar, 1989, 1998; Collier, 1994; Lawson, 2019), i.e. to test whether adoption of F1 will indeed lead, or facilitate, a degrowth transition, other possibilities in relation to F1 and transition towards degrowth of firms need to be explored. For instance, the first proposition can be refined, and the second one can be invalidated or supported and consequently further refined.

To refine those propositions in order to advance our knowledge of what degrowth business may entail and to understand how firms can transition towards degrowth in real life, F1 can be further enhanced via insights from existing small firms. This assists in making F1 more comprehensive, more nuanced, more useful and practice orientated. Moreover, an investigation of cases which incorporate characteristics of degrowth business can be useful in understanding whether the barriers outlined in F1 are manifested in a real-life capitalist setting. In this sense, a case study method allows to establish a *dialogue* between the theory and practice (Flyvbjerg, 2006; Yin, 2014). This is particularly important for connecting the theoretical degrowth business framework F1 and real small firms.

Those propositions are also helpful in data collection and analysis. Indeed, in case study research data collection and analysis are guided by prior development of theoretical propositions (Yin, 2014). In the case of this study, F1 guides this investigation, including data collection and analysis. For instance, as will be discussed below, the interview framework is based on F1.

Thus, this investigation does not test whether adoption of F1 results in degrowth or aims to evaluate the outcomes of adoption of F1 or its elements. Rather, it contributes to an ongoing process of understanding of how degrowth can come about and an ongoing refinement of theoretical propositions.

Since F1 is used to guide this investigation but not restrict it, new lines of inquiry are allowed to emerge. Since the elements identified in the literature are broad and general, and since the practical value of informing F1 is being pursued in this investigation, new lines of inquiry and pursuing a more nuanced understanding of existing ones are important. Once the case study is complete, the insights inform the theoretical framework F1. The framework is then updated and revised into a more comprehensive framework F2. F2 is a theoretical contribution with practical implications as it supersedes F1. F2 aims to be useful for firms, policy-makers and in education.

Since theoretical propositions in this study are aimed at an ongoing research agenda in degrowth not limited to this study, knowledge sharing is an essential part of this work. Throughout the data collection and analysis process the theoretical framework F1 and preliminary findings were shared with the academic community, including a workshop in the University of Surrey in July 2018, CUSP summer school in September 2018, and the University of Leeds research meeting in September 2018. Likewise, this work also benefited from discussions that took place during those events. The refined theoretical propositions and an enhanced understanding of a degrowth business will be shared further with the wider academic community and the general public to invite discussion, critique and further research. This is in line with the relativist epistemological position outlined in the beginning of this chapter.

Another aspect of research which closely relates to a relativist epistemological position is a complex relationship between humans and reality, exemplified in subjectivity and inability to reach absolute truth, as was discussed in the beginning of this chapter. For the reasons of transparency (Guba and Lincoln, 1994) and reflexivity (Mason, 2002), the following section engages in a discussion regarding biases which affect this research.

4.8. Biases in research

This section discusses the researcher's bias, i.e. a systematic error that can be expected to occur in research (Collier and Mahoney, 1996). It looks at subjectivity in relation to this research in general and biases in relation to different stages of research. This is to engage in a further discussion on reflexivity (Mason, 2002), i.e. active and ongoing self-awareness of being involved in a research process (Palaganas et al., 2017), and reflect on the biases in this research. It is in addition to the author's position outlined in the beginning of this chapter and Chapter 8 "Reflection" of this work. Those form a reflective process of exploring the author's own position and reflecting on the practice of research itself as, for instance, was done previously by Palaganas et al. (2017).

Flyvbjerg (2006) states that it is a common critique towards case study research that it gives space for a researcher's subjectivity and a bias towards verification. Though such critique can be applied to any other approach (Flyvbjerg, 2006), it appears to be particularly applicable to case study research where a researcher themselves becomes an instrument of inquiry (Yin, 2012, 2014).

Subjectivity. Mason (2002), while advocating reflexivity, discourages introspection. However, one's philosophical position, and in particular a position which also incorporates an ideological stance (Spash, 2012), should be reflected upon and made transparent (e.g. Guba and Lincoln, 1994).

With regards to subjectivity, it is a position of critical realism that subjectivity in social sciences is not an obstacle but an essential part of research (Bhaskar, 1989). For instance, the choice of a particular subject area or a research question is subjective. Such realisation allows critical realists to assume a relativist position with regards to epistemology. This position means that instead of assuming a final theory, critical realists maintain that our knowledge is uncertain, and what we discover in our scientific understanding is not claimed to be *the* truth (Spash, 2012; Collier, 1994). Knowledge is thus always subject to critique and empirical investigation (Spash, 2012). Since a philosophical position comes prior to field research itself and prior to data analysis, this research benefitted from a critical realist position of the author. This relates to an awareness of fallibility of knowledge. Such awareness, alongside the realisation of the need to attempt to approach truth even though its discovery cannot be claimed, was helpful in starting this research with a lengthy development of theory.

Moreover, since expert knowledge is not perceived by critical realists to be superior to other types of knowledge such as lay and indigenous (Spash, 2012), it was important to approach research participants as human being possessing knowledge of equal value to those of experts. In this regard, throughout data collection and analysis a conversation with the participants was maintained, and individual frameworks were shared for reflection and critique by participants rather than for the purpose of validation.

Subjectivity in the case of this research relates not only to the philosophical position as a whole but also the method of case study itself. Yet, despite a critique towards case studies for introducing subjectivity into science, it is an approach that thanks to its proximity to reality (Flyvbjerg, 2006) gives an advantage of exploring real life phenomena in their richness and in their context. Thus, critique should be acknowledged rather than an alternative, seemingly more objective method preferred. This is because a deeper understanding of degrowth business at this initial stage of theory development is needed. This is in addition to the need for practical insights to transition towards in degrowth in reality. Despite the prevalence of such critique, i.e. subjectivity of case study research, Flyvbjerg (2006) argues that case studies can indeed be strict and rigorous. This includes becoming self-conscious of a variety of biases at different stages of research.

Design and participant selection. As discussed above, case study is chosen for this research for its value in informing F1. It is considered to be the most suitable method for the aim of this research. However, to advance theory other methods are also suggested for further investigation (Section 4.16). Since a case study requires selection of cases, another bias concerns case selection (Collier and Mahoney, 1996). For instance, it can stem from self-selection of cases (Collier and Mahoney, 1996). In this research cases were selected by the researcher based on a precise set of criteria underpinned by prior developed theoretical understanding of degrowth business (discussed in detail in Section 4.11). Moreover, though the initial characteristics of the cases are the same, using multiple cases allows to derive additional insights which do not feature in the previously developed framework F1.

Data collection. Data collection was guided by the theoretical framework F1 to eliminate personal beliefs as much as possible and to eliminate arbitrariness of questions. Each question was underpinned by literature, and an attempt was made to construct questions in a manner so that the questions are not leading but inviting the respondents to discuss and explore their area of expertise (Leech, 2002). However, the choice of semi-structured interviews was preferred

at an expense of a structured questionnaire which would generate more precise answers. This was done to allow rich insights to emerge. This can be considered a hallmark of case study as a method (Flyvbjerg, 2006). Moreover, during data collection the researcher was accommodating towards insights which were not expected.

However, reflecting back on the interview questions leads to assume that though guidance of theory was very useful, in particular in terms of giving structure to this investigation, and each question was underpinned by theory, asking questions beyond the questionnaire could have been beneficial. In this respect an interview could take a shape of a conversation rather than a semi-structured interview (Leech, 2002). It could also be less in line with the precise elements of F1 and more in line with a qualitative interview or a dialogue as described by Mason (2002). Even though the interview in this study was semi-structured, each question focused on a precise aspect of business, thus perhaps not leaving much room for exploration.

Coding. It is important to note that the researcher was the only coder in this study. Since coding requires reflection on patterns and meaning of human experiences (Saldana, 2015), it may provide space for subjectivity. Awareness of this led to the necessity for a rigorous reading of data line by line over a sufficient amount of time which would also allow an opportunity for re-visiting of data to ensure that insights relevant to this research and particularly its question were not overlooked. Furthermore, coding was assisted by the theoretical framework F1. This minimised deviation from the premise of this research. Coding was also done to summarise the statements from respondents (Saldana, 2015) rather than interpret them.

A positive aspect of the fact that coding was carried out by the researcher herself relates to prior knowledge of degrowth and ongoing overview of literature in this domain. This allowed to minimise missing out on important and relevant insights. A negative aspect of being the only coder arises from a possibility to miss important insights which could have been noticed by another coder.

Data analysis. The entire data analysis procedure is available to the readers in the Appendix VII. Data analysis itself is available in Appendix XI. Even though case studies provide richness of data, and multiple insights arise during a case study research, it was important to focus on the research question itself rather than to deviate towards insights which may be subjectively interesting to the researcher but not relevant to this particular investigation. For this purpose the elements and groups of the theoretical framework F1 were useful. This did not prevent new and relevant insights from emerging. Checking the relevance of insights was assisted by F1.

However, relevance does not equal confirmation. For instance, though it was suggested in this research that firms deviating from business-as-usual would face barriers in a capitalist setting, it was discovered that the category of barriers and structures within which firms operate is more nuanced than was expected before the investigation.

A bias towards verification is often mentioned in relation to case study research (Flyvbjerg, 2006). In the case of this study it is not the verification of F1 resulting in degrowth that is sought. On the contrary, it is the modification of F1. In other words, this study is orientated towards informing F1 for advancing theory and advancing transition towards degrowth. In this pursuit all procedures followed in this research, from construction of elements in F1 to reconstructing it into F2 in an attempt to offer a more comprehensive understanding of degrowth business, are disclosed. However, what is essential when following such procedures is to be open to ambiguities, richness and complexity of reality and insights (Flyvbjerg, 2006). Thus, emergence of new insights is not necessarily a manifestation of subjectivity or interest in a particular aspect. Rather, it is a manifestation of recognition of complexity which necessarily characterises social systems (Lawson, 2019).

Palaganas et al. (2017) note that for the purpose of reflexivity the process of doing the research should be documented. Since data analysis was an important part of translating the raw data into, eventually, the findings which would inform theory construction, data analysis notes were incorporated in data analysis files alongside analytical memos containing additional insights. This was done not only to make data analysis process more transparent but also for the researcher to keep track of ideas and links between, for instance, new insights and theory. Though such notes may indeed be imperfect and only supplementary to construction of elements and groups, they provide an insight into a complex and intimate experience of a researcher with the case studied in depth (Flyvbjerg, 2006).

Data reporting. To minimise bias and prevent obscurity, a level of openness was maintained (Flyvbjerg, 2006). Maintaining of complexity and diversity of insights and findings was preferred to attempting to summarise. This is evident in the data analysis files in the Appendix XI. Where questions remain regarding further interpretation or theorising and require a further inter-disciplinary attention, it is stated so explicitly. This prevents a bias towards one's own discipline and an attempt to find explanation within that particular discipline or an academic specialisation (Flyvbjerg, 2006). Making data analysis files available to readers can also assist

readers in drawing their own conclusions (Flyvbjerg, 2006), thus advancing our understanding of degrowth business in this manner instead of imposing the researcher’s own interpretation.

4.9. Research design tests

Yin’s (2012, 2014) works were consulted to ensure the quality of research. In relation to research quality, Yin (2012, 2014) recommends addressing the following methodological challenges, (1) construct validity, (2) internal validity, (3) external validity, and (4) reliability. To ensure and maintain the quality of this research, the author included the design tests (Table 3) and study preparation guide (Appendix IV). The study preparation guide, outlined prior to conducting primary data collection, was helpful in foreseeing as much as possible the difficulties that could arise during the research process. While retrospectively none of those difficulties materialised, anticipating those and having a plan for addressing them could help maintain the quality of research despite challenges. Therefore, it was used as a risk management tool.

Table 3. Research design tests

Test	Case study tactics recommended by Yin (2014, pp. 45-49)	Tactics used in the present study
Construct validity – “identifying correct operational measures for the concepts being studied” (Yin, 2014, p. 46).	Using multiple sources of evidence, establishing chain of evidence, key informants review draft case study report	While this thesis does not measure a degrowth business, the construct itself is important since it was introduced in this work. To identify the descriptors of a newly introduced construct, an extensive literature overview was carried out. Data collection was based on the theoretical framework F1. The procedures of reconstruction of the framework itself, including the questionnaire (Appendix VI) and reconstruction of the framework (Appendix VII) are made available to the readers.
Internal validity – “(for explanatory or causal studies only and not for descriptive or exploratory studies): seeking to establish a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinguished from spurious relationships” (Yin, 2014, p. 46).	Pattern matching, explanation building, rival explanations to be addressed, logic models	Potential causal links: between degrowth business and degrowth, between degrowth business and capitalism and between degrowth business and worldviews (discussed in the following section). Explained in more detail in Section 4.10. below.
External validity – “defining the domain to which a study’s findings can be generalized” (Yin, 2014, p. 46). Yin (2012) argues that the type of generalisation that applies to case study research is analytic rather than statistical. He states that “analytic generalisations depend	Using theory in single-case study and replication logic in multiple-case studies. Avenier and Thomas (2015, p. 13) state that “replication aims at verifying that the pattern initially identified holds across cases”.	Analytic generalisations (Yin, 2014) or generalisation from empirical to theoretical statement (Avenier and Thomas, 2015) are used in this study and limits to application of knowledge to other contexts is recognised. Analytic generalisations are assumed to be applied to the production for degrowth domain.

on using a study’s theoretical framework to establish a logic that might be applicable to other situations” (Yin, 2012, p. 18).		Explained in more detail in Section 4.10. below.
Reliability – “demonstrating that the operations of a study – such as the data collection procedures – can be repeated, with the same results” (Yin, 2014, p. 46)	Case study protocol, case study database	All procedures followed were documented and explicitly stated and described in this thesis, a database for each firm was maintained for the purpose of reliability and transparency. See Appendix XI.

4.10. Validity

This section focuses on internal and external validity. Internal validity concerns causal links in research and the degree to which it can be said that the relationship observed by researcher is causal (Burke Johnson, 1997). While qualitative researchers usually do not focus on cause and effect relationship between variables, potential causes and effects can be proposed, identified and discussed (Burke Johnson, 1997).

This work broadly concerns the following three relationships: (1) degrowth business and degrowth, (2) degrowth business and capitalism and (3) degrowth business and worldviews. Here it should be noted that the relationships are proposed (see Section 4.7 “Use of F1 in this study”) and not claimed. With regards to the first relationship, as was discussed above, degrowth business may, among other agents and changes in structure, lead to degrowth or be among the causes. However, complexity of human societies should be remembered (Lawson, 2019). It is not claimed that degrowth business would lead to degrowth on its own.

With regards to the second relationship it is proposed that capitalism imposes barriers or constraints to degrowth business. Since barriers are studied as part of this investigation, this relationship is explored in more detail in the following chapters. One of the benefits that exploring multiple cases can provide is supporting (or refuting) the proposition made in this study that capitalism imposes barriers to firms whose operations deviate from business-as-usual.

With regards to the third relation, based on the emergent nature of reality as understood by critical realism (Collier, 1994), it can be proposed that the practice of degrowth business may arise from the worldviews of owner-managers. This investigation does not focus on this link, yet it remains essential to theorise on this relationship. With the concept of worldviews belonging to the premise of other sciences beyond ecological economics, a transdisciplinary study can be useful in understanding the link between degrowth business and worldviews. This is discussed in more detail in Section 6.1 “Worldviews”.

Apart from internal validity, the concern for generalisation or external validity requires exploration. Multiple cases were selected for the purpose of informing F1 and providing a wealth of insight to enhance our understanding of degrowth business and what it may entail to be one in practice. However, they were not selected to maximise statistical usefulness. Avenier and Thomas (2015, p. 12) argue that “case study or small-N studies do not allow generalization from the characteristic of a sample to those of the corresponding population (in other terms, statistical generalization)”. Therefore, case studies are not generalisable to populations or universes since they are not samples, and case study research is not aimed at statistical generalisations (Yin 2014). Yet, generalisation can take various forms (Avenier and Thomas, 2015). Even though data are specific to a particular case, *theories* derived from a case study research can be generalisable (Gillham, 2000). Case studies thus can be generalisable, but to theories and theoretical propositions (Yin, 2014). In this sense a logic of generalisability in case study research considerably differs from the research directed at statistical representativeness of a sample and further generalisation (Easton, 2010). It should be noted that no single way to generalise is better than another (Flyvbjerg, 2006).

The goal, according to Yin (2014, p. 21), is to “expand and generalize theories (analytic generalizations) and not to extrapolate probabilities (statistical generalizations)”. Considering statistical generalisation when doing case studies is a “fatal flaw” (Yin, 2014, p. 40). This is because cases are not sample units and the number of them is not representative of larger population and increasing a number of cases is not directed at representativeness (Easton, 2010). Yin (2014, p. 40) recommends the following instead: “Rather than thinking about [...] case as a sample, [one] should think of it as the opportunity to shed empirical light about some theoretical concepts or principles”.

In the case of this study analytic generalisations are appropriate. The findings from this study and in particular the revised framework of degrowth business can have wider applicability. For instance, one application can be in terms of production for degrowth not limited to that by small firms. In other words, while this study aims to contribute to an understanding of business for a degrowth economy and what it entails and aims to be useful for small firms in their transition towards degrowth, it can advance the theory concerning producers in general. Such producers can include social enterprise, cooperative, and even production for own use. Apart from this, the study of barriers as part of F2 can find a wider applicability for economic actors which attempt to deviate from business-as-usual within a capitalist setting. This is schematically represented in fig. 3. A possibility of generalisation to theory is represented in moving from

theorising on small firms for degrowth towards theorising on producers for degrowth in general. Theory regarding production for degrowth developed in this study can be used in a broader sense.

Fig. 3. Generalisation possibility

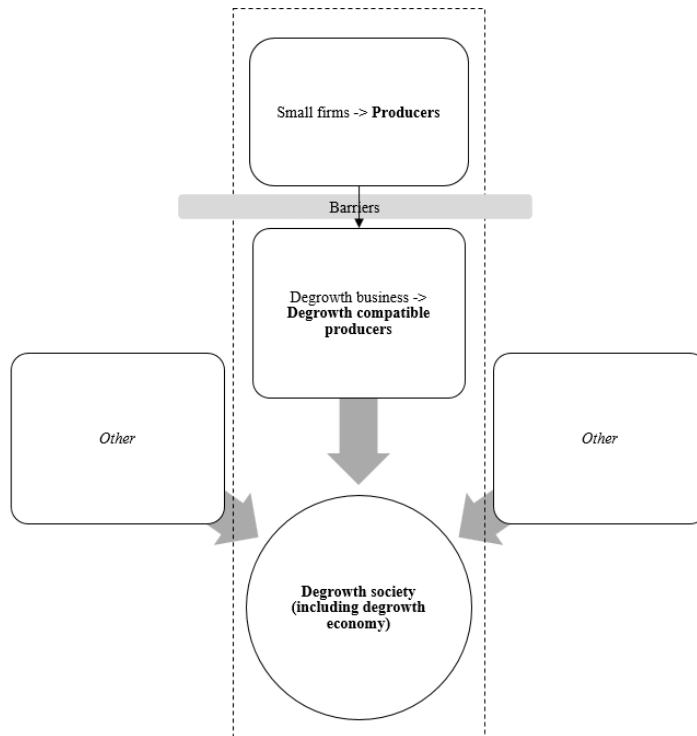


Figure 3 above is based on Figure 2 and demonstrates the same relationships outlined in Fig. 2 which are investigated in this study (firms and degrowth, firms and barriers, degrowth being a function of transformation of multiple agents and structures, not limited to small firms). Here, it is proposed that a theoretical generalisation can take form of applying (and critically modifying, accordingly) the theory of what degrowth business could be to producers in general beyond small firms. In such case producers may become degrowth compatible producers.

From a philosophy of science perspective, another aspect of generalisations should be noted. In positivism “universal generalizations are purchased at the price of restricted laws” (Bhaskar, 1989, pp. 59-60). In terms of this study aiming at statistical generalisations would restrict the depth and richness required for understanding of degrowth business which are the attributes this study pursues.

A lack of application of case study in terms of statistical generalisations should not necessarily be viewed as a downside or an indication of inability of a study to contribute to knowledge (Flyvbjerg, 2006). Apart from providing an opportunity for analytic generalisations, i.e. a wider application of the theory to production for degrowth in general, a case study method provides practical insights and knowledge that is useful both in terms of science and knowledge that can be readily used by the public.

The final reflection regarding generalisations concerns a warning that generalisations should not be made with certainty. This not only relates to a relativist epistemological position of critical realism but also a treatment of generalisations merely as working hypotheses in other philosophical positions (Polit and Tatano Beck, 2010). This means that they always need to be tested and treated with caution, e.g. with respect to new conditions.

4.11. Case selection, pilot and the number of cases

Case selection, pilot and the number of cases are important considerations for this study. It should be noted that every unit of analysis, i.e. an object of scientific inquiry, is characterised by complexity. This is normally the case with social sciences (Lawson, 2019). As Bhaskar (1998, p. 13) describes, “the objects of scientific inquiry are neither empirically given nor even actually determinate chunks of the world. Rather, they are real structures, whose actual presence and appropriate concept have to be produced by the experimental and theoretical work of science”. Therefore, bounding a case is somewhat reductionist, since no clear boundary exists between, e.g. a firm as a community of individuals (Lawson, 2014) and a community around it, or a firm founded by its owner-manager and their worldview.

This study focuses on a firm rather than individuals, though since the firms studied are small, a firm may not be readily separated from its owner-manager. For instance, this can be said in relation to values of a “firm” and a worldview of its owner-manager. Because a case for this study is a firm rather than an owner-manager, data collected relates, first and foremost, to the operations of firms. However, data about values, attitudes and motives relates to owner-managers of firms. These data were collected to enhance our understanding of the shift in values aspect of degrowth (Paulson, 2017) and due to a critical realist understanding of reality as emergent (Bhaskar, 1989, 1998; Lawson, 2019) which signifies that firms cannot be isolated from people (Lawson, 2014). The worldviews aspect of the case studies due to it being on a verge between the “firm” and the “individuals” is most open to further discussions and interdisciplinary inquiries. It is presented in this study in a way where diversity, richness and complexity can be maintained (Flyvbjerg, 2006).

To finalise the approach to research design, one firm (C1 [Case 1]) was used for a pilot study as recommended by Yin (2014). The purpose of the pilot study was to test and re-evaluate the interview questions and estimate the approximate time to be spent with each firm and to make necessary adjustments. Those could relate, e.g. to the language used, to clarity of questions and the length of the questionnaire. Due to selecting case study as a research method for this study,

such feedback became possible. This is due to proximity of the investigator and the investigated that this method provides (Flyvbjerg, 2006).

Following the pilot study no changes were made to the original questionnaire which was used as a guiding data collection tool throughout the study. Beyond this special role as a testing ground, the pilot was also treated as a case. The data from the pilot was included in the study.

Identification and recruitment of all businesses for this study was carried out via contacts in Derby Business School which emerged during the investigator's work as a project coordinator of an ERDF project which was aimed at supporting small low carbon firms. The firms were thus purposefully selected by the researcher from the contacts she became exposed to. While this may introduce bias in terms of selection of cases, such exposure during the project to multiple firms, which already incorporated environmental considerations, allowed to identify firms which would comply with the precise selection criteria for this study.

With regards to the process of selection, since the study focuses on small firms, all firms selected are small, including micro firms (e.g. DBEIS, 2018; Gebauer, 2018). To avoid ambiguities, all firms selected also comply to the definition of SME by European Commission (2017) and DBEIS (2018), which includes micro and small firms. Thus, all firms selected had to employ 0-49 people (DBEIS, 2018). The legal form of a small firm (BIS, 2011) was not a selection criterion since this thesis does not focus on an identification of the most suitable legal form of a firm for degrowth.

Furthermore, case selection criteria mirrored the key premises of production for degrowth as discussed in Section 3.5 "Elements of production for degrowth". The first two premises include the environment (Schneider et al., 2010) which represents the ecological critique of degrowth towards business-as-usual, and the social element exemplified in the orientation of degrowth towards wellbeing (Schneider et al., 2010). Since the notion of wellbeing in degrowth is broad, and perhaps rightly so at this still early stage of theorising on degrowth in academic circles, wellbeing as a selection criterion is equated with being good/beneficial (i.e. broadly enhancing towards wellbeing) for the society. In other words, businesses for the study needed to include "socio-ecological" principles as exemplified in Demaria et al.'s (2013, p. 203) description of examples of degrowth alternatives to business-as-usual. This also corresponds to firms compatible with a post-growth economy which would be ones creating environmental and social benefits (Victor and Jackson, 2016). The third premise concern shift in values (Paulson, 2017).

Since the purpose of the primary investigation was not to validate the framework F1 but to inform and enrich it with practical insights to increase its usefulness, it was important to select cases based on the criteria described above. Selection of cases was aimed at illuminating theories (Yin, 2014) and maximising what can be learned at the time available (Tellis, 1997). Selection was done to ensure that the cases selected would be rich sources of data and favourable for this study (Flyvbjerg, 2006). This refers to reconstruction of the theoretical framework F1 into F2. Case selection criteria therefore required for a firm to be (1) pro-environmental, (2) pro-social and (3) driven by values, in addition to the firm being small. The same case selection criteria applied to the pilot and the other firms selected for this study.

To judge a firm’s suitability for the study, three steps were taken. Firstly, the environmental orientation was considered. Secondly, the social orientation was considered. Thirdly, the primacy of values rather than profit was considered. This was arguably the most challenging category to capture. It reflects motives behind doing business rather than a set of initiatives, practices or services that can be aimed directly at the environment or the society. The term “values” was treated broadly, since the pursuit of values can be manifested in a multitude of ways such as pursuing qualitative growth (Liesen et al., 2015). Since it is doubtful that firms would explicitly state “profit-driven” on their websites, in addition to investigating firms’ websites where some insight into values could indeed be found, an initial conversation was necessary to allow the researcher to learn more about the motives behind doing business.

Table 4 below shows the evidence used by the researcher to judge the firms to be suitable for this study in terms of them being pro-environmental, pro-social, values driven.

Table 4. Selection criteria

Case	Pro-environmental	Pro-social	Values-driven
C1	<p>“We recognise the need to rapidly work towards a low carbon economy and believe that this must be driven by example as well as legislation” (C1 website)</p> <p>“We spread information about sustainability issues and good practice at no cost, but charge a fair rate for time-consuming activities.” (C1 website)</p> <p>“We re-use as much material and equipment as possible and recycle our waste. We use ethical and sustainable products when possible (such as alternative fuels, green electricity, recycled paper, ethical banking, local products etc).” (C1 website)</p>	<p>“support projects of all sizes in our community” (C1 website)</p> <p>“Software produced (and used) is open source where possible.” (C1 website)</p>	<p>“Our main company objective is to increase the sustainability of our community” (C1 website)</p>

C2	<p>“by placing the business with us, you are [...] actively helping us to improve the quality of our Nations natural heritage” (C2 website)</p> <p>“An environmental project that allows business to actively play a role in maintaining and developing the Natural Environment. This was established and funded through the actions of [C2].” (C2 website)</p>	<p>“[C3R3] is finally turning his “green vision” into a reality that will benefit the environment and improve the skills and emotional wellbeing of vulnerable adults” (C2 Internal document)</p> <p>“[C3’s Community Enterprise] is essentially the final piece of [C3R3]’s visionary plan that brings together industry, the environment and local communities.” (C2 Internal document)</p> <p>“We are an unstoppable force and are determined to create a supported working space that will provide tuition and mentoring to enable those individuals living on edge of society to become more integrated and connected.” (C2 Internal document)</p>	<p>“we are [...] ethically, socially and environmentally driven” (C2 website)</p>
C3	<p>“Natural dyes are a renewable resource and not dependent on petroleum as are many synthetic dyes.” (C3 website)</p> <p>“plant dyes use no toxic or polluting chemicals, and the organic matter left over from dye plants can be put on the compost” (C3 website)</p>	<p>“C3R3 spends much time daily answering emails and customer questions, not because she expects them to buy more but because she wants to share the knowledge and help.” (Initial phone conversation with C3R3 on 01/08/2018)</p> <p>“All knowledge is publicly available, C3R3 is willing to share all the knowledge with others.” (Initial phone conversation with C3R3 on 01/08/2018)</p>	<p>“Nothing beats the satisfaction of growing your own colours and being self-sufficient in dyes” (C3 website)</p> <p>“The business started with £300 and a single dye, as a solution to a particular issue C3R3 identified [use of chemical, petroleum-based dyes], not as a means to achieve a certain financial goal for business owner.” (Initial phone conversation with C3R3 on 01/08/2018)</p>
C4	<p>“the scheme that helps to reduce waste, one disposable cup at a time. Working together with independent cafés, our scheme is not for profit.” (website of C4’s initiative)</p>	<p>“Our Community Café is linked to the FareShare charity and provides a delicious three course meal, for only £3.00, made using surplus supermarket produce that may have been mis-labelled, over-ordered, etc and would previously have been thrown away.” (C4 website)</p>	<p>“The ideology of our café is to provide food and a venue to promote social eating and encourage people to engage with each other in a warm, friendly environment, where they can enjoy conversation over a low-cost tasty meal.” (C4 website)</p>
C5	<p>“we use a cold-process method handed down through generations of makers. It creates no by-products and relies on old-fashioned elbow grease, with every bar poured, cut and packed by hand, right here in [place]. The soap is biodegradable too, so it’s better for the planet even once you’ve used it.” (C5 website)</p>	<p>“made by people paid a living wage” (C5 website)</p> <p>“[directors’] lifelong interest in radical political thought and social and environmental justice” (C5 website)</p>	<p>“putting ethics before profits underpins everything” (C5 website)</p> <p>“you really can run a successful enterprise where ethics come before profit” (C5 website)</p> <p>“our products aren’t just vegan, or cruelty-free, or made by people paid a living wage, without using plastic, parabens, SLS phthalates or triclosan. They’re all of these things. Sure, we could make more money doing things less ethically, but all we ever really wanted to make was a difference.” (C5 website)</p> <p>“[the directors] still have the same passionately held values and convictions as they did growing up. It’s just that now they’ve got a thriving ethical business of their own to channel them through.” (C5 website)</p>

C6	“We bank with [bank name], and are working for a carbon neutral footprint to ensure we are trading as ethically and fairly as possible” (C6 website)	“creating employment for survivors of human trafficking, restoring their dignity and giving them hope and a future” (C6 website)	“the profits going to secure the rescue and rehab of child soldiers around the globe” (C6 website)
C7	“C7R7 mentioned reducing environmental footprint via printing on-site (reduces transportation costs) and only printing the photos that are needed.” (Note from Site Visit 1 on 11/09/2018)	“I simply love to capture the magic of each event [...] as this enables me to capture great action shots that are only fleeting and most people miss” (C7 website) “When she moved into the premises, she tried to cooperate with local businesses and invited them to her studio” (Note from Site Visit 1 on 11/09/2018)	“C7R7 mentioned that if she was pursuing profits, she would move out of the premises long time ago. She wanted to showcase her work, even if it became not viable financially due to the cost of renting the premises.” (Note from Site Visit 2 on 25/09/2018)

Regarding the number of cases for a case study Easton (2010, p. 127) notes that where “little exists then one case can be enough to begin the process of theory creation”. However, Yin (2014) states that a multiple-case study comprising of at least two cases assists one with ensuring the robustness of findings. To address the robustness of findings and depth of understanding of degrowth business, after conducting the pilot study multiple cases were considered more desirable than a single case on the grounds of their potential possession of a variety of degrowth business characteristics and a potential to inform F1 and advance the concept of degrowth business.

While some (Patton, 1990) recommend utilisation of purposeful sampling, Yin (2012, 2014) warns one regarding referring to the cases in a case study as a “sample”. To avoid confusion with regards to terminology, Yin (2014, p. 42) recommends avoiding such terms as “the sample of cases” since cases are not sampling units. He states specifically that “the most desirable posture may be to avoid referring to any kind of sample (purposive or otherwise)” (ibid. p. 44).

Easton (2010, p. 119) further reinforced this approach by stating that each case is a “a single instance; a sample of one”. In this study the notion of “sample” is avoided. To enhance our understanding of degrowth business and to enhance the robustness of the findings, as Yin (2014) recommends, multiple cases (n=7) were studied for the purpose of this research. This study followed a replication and not a sampling logic (Stake, 1995; Yin, 2014). Each case was seen as a separate study in itself, and findings were firstly drawn from individual cases. Most importantly, the elements of degrowth business from each case were aggregated in F2, which is a revision of F1 in light of new insights gained during the investigation.

4.12. Overview of cases

Cattaneo and Gavalda (2010, p. 582) state that the “degrowth agenda includes the identification in society of practical examples where something akin to degrowth is already happening”. Elements of a degrowth business may be dispersed among multiple businesses. For instance, some businesses may have a strong environmental inclination. Others may have a strong social inclination. Therefore, this study is not limited to one business or one industry. An attempt is made to seek diversity among firms selected for investigation despite the communality in the selection criteria described in the previous section.

For the present study an in-depth understanding of *different* degrowth business elements related to both the environment and society in broad terms, which may be embedded within small firms, is necessary alongside a possibility of understanding of attitudes, values and motives representing a shift in values which degrowth advocates (Paulson, 2017). Thus, studying a variety of firms was pursued. Each case was expected to offer different insights into different elements of F1. Via complementing each other, the firms could assist in making the framework more comprehensive and useful for transition towards degrowth in real life. Despite all firms being selected for this study on the grounds of selection criteria, each firm exhibited its own inclinations and was expected to have its own set of characteristics, practices and values central to its operation.

For instance, C1 have a strong environmental inclination and expertise due to being a sustainability consultancy and due to the nature of their business operations, i.e. design and installation of renewable energy systems. A wealth of insights in relation to the environmental aspect of degrowth business was expected to be gained from C1. On the other hand, C4 emphasise their embeddedness within their local community. C6 emphasise their pro-social work aimed at providing employment for the survivors of human trafficking. A wealth of insights in relation to the social and wellbeing aspect of degrowth business was expected to be gained from C4 and C6.

Following Gebauer (2018), and to maximise the possibility to access the wealth of insights no particular sector or age of a firm were selected, and firms vary in these categories. All firms come from a range of sectors. None of the firms operate in sectors which degrowth seeks to diminish, e.g. fossil fuel sector (Trainer, 2014). Moreover, there is little guidance available in the literature with regards to particular sectors for degrowth. Since degrowth business framework proposed in this study aims to be general rather than specific to any particular sector

of economy, the connection between sectors firms studied operate in and the sectors mentioned as examples in the literature is not aimed to be precise.

However, a broad connection is identified in Table 5 below. While C1 represent a firm whose operations align with aspirations of degrowth and post-growth in general to transition to renewable energy (Alexander, 2015b, 2016; Kallis et al., 2015; Maxton, 2018; O’Neill et al., 2018), C2’s operation can be linked with the pursuit of durability and making objects last longer, thus reducing waste in the economy. However, most firms align with what Jackson (2017, p. 149) terms as “care, craft and culture”. This is not a particular sector of economy, rather a set of economic activities characterised by lower productivity and lower material intensity.

In terms of legal forms (BIS, 2011), all firms are private limited companies, with the exception of C3 and C7 which are sole traders. Table 5 below offers an overview of all the firms-participants.

Table 5. Overview of cases

Case	Industry, legal form	Connection of sectors to literature (post-growth/degrowth)	Year established	No of employees	Location (region of the UK)
C1	Design and installation of renewable energy systems, environmental consultancy, data monitoring opensource software. Limited company	Dittmer, (2013), Jackson (2017), Marshall and O’Neill (2018)	2002	5	East Midlands
C2	Fire protection equipment and systems Limited company	Aimed at prolonging life of goods, thus contributing to durability (e.g. Daly, 1993; Latouche, 2009; Gorz, 2012, Maxton, 2018)	2003	3	East Midlands
C3	Natural dyes (primary strand), natural fibres, natural paper. Sole trader	“care, craft and culture” (Jackson, 2017, p. 149)	2007	3	West Midlands
C4	Café Limited company	“care, craft and culture” (Jackson, 2017, p. 149)	2017	8	East Midlands
C5	Personal care Limited company	“care, craft and culture” (Jackson, 2017, p. 149)	1996	7	West Yorkshire
C6	Food (ice cream) Limited company	“care, craft and culture” (Jackson, 2017, p. 149)	2018	2	East Midlands
C7	Photography Sole trader	“care, craft and culture” (Jackson, 2017, p. 149)	2014	1	East Midlands

4.13. Ethical considerations

Ethical considerations are central to this study. The ethical considerations were reviewed by the College Research Ethics Committee at the University of Derby and ethical approval was granted (Appendix X). There are a number of ethical considerations applicable to this research which include the following.

Informed consent. Each participant signed an Informed consent letter (Appendix V). The Informed consent document had 2 copies. One was collected by the researcher. The other one was kept by the participant to allow access to important information, e.g. the researcher's contact details, withdrawal procedure and debriefing procedure at all times. Informed consent was obtained from every participant before the beginning of investigation. Every participant was given time to thoroughly read the Informed consent letter, ask questions and contemplate their participation. The Informed consent letter discloses the details of the research. It further identifies the method used to collect data and persons who are allowed to view the data. The Informed consent letter includes sections on withdrawal procedure and debriefing procedure and ways for a participant to initiate each of those should they wish to do so.

Debriefing. The Informed consent letter contains information for the participant's attention should they wish to be debriefed. Contact details to initiate this procedure are available to the participants at the top of the Informed consent letter. The participants who request it will be debriefed after the study has finished. A short report which will contain the findings from the study will be provided.

Confidentiality. Privacy and confidentiality of participants are respected at all times. No participant was identified in the study or will be identified in subsequent publications based on this research. All participants have been anonymised and will be anonymised in the published work as far as possible. This includes participating firms' names, participants' names or any information that could help to identify participating firms. However, anonymity cannot be fully guaranteed in a case when a participating business possesses a unique characteristic which can lead the readers to identify it without its name being stated. During the data collection stage names of participants, locations which could help identify the participants and names of other persons mentioned by the participants were anonymised. Real names are known to the researcher and are kept confidential.

Data protection. Data protection is of the highest priority to the researcher. To ensure the highest level of data protection the study was conducted in compliance with the UK Data

Protection Act 2018 and European Union (EU) General Data Protection Regulation (GDPR) and subsequent legislation. The study was conducted in compliance with the GDPR Principles and Research Data: Code of Conduct on Data Treatment for Research Purpose (2018) issued by the University of Derby. The information collected and data in electronic form are kept under a secure password. All information in physical form, e.g. documents, are stored in a secure location. All raw data was analysed and anonymised before research completion. Consent form is stored separately from the information collected. Only the information relevant to present research was collected. The information (raw data) provided by participants will be stored while the research is being carried out and converted into analysed data before May 2019. Data (analysed) will be stored indefinitely. If a participant decides to withdraw, all existing physical documents and materials given to the principal investigator will be returned, all electronic data will be destroyed, unless the data have been analysed and disseminated. All participants were informed about data protection (see Informed consent letter in Appendix V).

4.14. Interview questionnaire construction

Interviews are considered one of the most important, if not essential, sources of evidence in case study research (Yin, 2014). They focus directly on the topics under investigation. It can be considered a strength of this source of evidence (Yin, 2014).

The primary source of data in this research were semi-structured interviews. The interviews were the primary source because they were aimed directly at the subject matter of this research. In other words, via the interviews the author aimed to understand how degrowth business elements manifested themselves in a participating firm and uncover additional elements that may further inform F1. Interview questionnaire construction was an essential part of this study and is described in Appendix VI. There were three parts to interview questionnaire construction. Firstly, an interview framework was created based on F1 and its groups. Secondly, based on the interview framework, questions were constructed. Additional questions were incorporated to ensure that emerging insights could emerge, and that such emergence was not restricted by existing elements. Thirdly, the final questionnaire was constructed to be used as a tool for data collection.

A semi-structured format was chosen to simultaneously allow the researcher to explore the key themes and for new lines of enquiry and new insights to emerge. Galletta (2013, pp. 1-2) notes “unique flexibility” of semi-structured interview: “the semi-structured interview is sufficiently

structured to address specific dimensions of [...] research question while also leaving space for study participants to offer new meanings to the topic of study”.

As stated above, construction of the interview framework was guided by the framework F1. The interview framework aimed to utilise the elements of F1 and provided a base for interview questionnaire construction. To remind, the framework F1 consists of six groups of elements. Each group represents elements united under a certain aspect of degrowth. These elements were derived from the literature. The first group (Material and energy throughput and waste) reflects the environmental considerations of degrowth business. The second group (Internal business operation) unites insights about firms’ internal business operations, such as production, consideration of employee wellbeing, governance. The third group (Society) reflects social considerations directed at the community and wider society. They broadly correspond to the wellbeing aspect of degrowth. The fourth group (Growth-related) is aimed at understanding of growth in relation to a firm that may be taking place in a degrowth business. The fifth group addresses the attitudes, values and motives. It is aimed at exploring broadly the shift in values degrowth advocates. This group of elements reflects a deviation from a productivist and profit maximising logic of business-as-usual. The sixth group incorporates the barriers since firms exist within certain structures. These structures may prevent the firms to exploring their degrowth potential to the fullest extent in the current capitalist setting.

The interview framework consists of two parts. Part 1 helps to understand the unique perspective of the business selected. It relates to the criteria on the basis of which firms were selected. Therefore, this part concerns the environmental and social orientation and values deviating from profit maximisation. Additionally, it incorporates the question of growth orientation which relates to Group 4 in F1.

Part 2 aims to explore the presence and inclusion of the degrowth business elements. The elements identified from the literature may not be exhaustive, therefore additional insights can arise. This is facilitated by the semi-structured nature of the interview. In this case, the participants were not restricted to predetermined answers. Moreover, a business may focus on creation of one type of benefit, e.g. exhibit particularly strong social or environmental tendencies. Therefore, additional or modified questions were considered acceptable to explore these perspectives in-depth. The interview framework allowed the researcher to develop a questionnaire via considering questions and subsequently arranging them in the final interview questionnaire which was used as a data collection tool.

For the questionnaire to avoid intimidating the respondents and to demonstrate respect (Mason, 2002) rather than to impose one's expertise, the language was less formal than that of the interview framework. Technical terms were eliminated. The language used aimed to be accommodating. For instance, words such as "discuss" and "talk" were used instead of "interview" (Weinberg, 1996). Moreover, the interview questions focused on the respondents' own area of expertise (Leech, 2002), i.e. their own business, and words such as "describe" invited them to verbally explore what they knew well.

While leading questions should be avoided (Leech, 2002), some questions relate directly to the case selection criteria. Those questions were asked to invite the respondents to expand on what the researcher judged to apply to the firms under investigation due to selection criteria. To prevent suggestive questions in advance, the researcher consulted the supervision team. To avoid suggestive and closed questions where possible, broader questions were preferred. For instance, the element of F1 "democratic decision-making" was not translated into the question "Is decision-making of your firm democratic?" Instead, a broader question "How are the decisions made in Business X, whose views are taken into consideration?" was asked. This was also useful in capturing the wealth of insights (Flyvbjerg, 2006).

Questions in italics concluded each section of the interview to (1) capture the insights not captured by the questions asked, (2) to expand on the attitudes, values and motives (group 5 in F1) which were not covered by Part 1, and (3) to better understand the barriers to adoption of a variety of potential degrowth business elements (group 6 in F1).

To reflect on the questions and whether there could be an expectation of certain answers from the respondents, it was not the aim of this study to test whether firms investigated were degrowth businesses or would comply to every single element in F1. It was acknowledged that every firm had its own set of potential manifestations of degrowth. Therefore, the questions aimed at capturing the practices where those existed. The difficulties with manifestations of practices would likewise be captured. However, while the focused nature of the interview questionnaire allowed in a relatively short space of time to cover all the groups of F1, it could be beneficial to have unstructured interviews to probe into each potential element of degrowth business even further.

To ensure reliability of the study, all interviews were recorded with a permission from the participants (refer to the Informed consent letter in Appendix V) and saved in a database corresponding to each case. Recording of the interviews not only allowed to accurately

represent the answers and increase the quality of analysis but also made the data available to the readers. For instance, all relevant excerpts from interviews are available in Appendix XI. It also allowed to address possible bias, since the data were available to a colleague to identify the presence of alternative explanations. However, to ensure quality in a situation where a participant would object to recording for any reason or if recording would be impossible, it was decided that notes would be taken with a permission from the participant. The participant would then be asked to view the notes to ensure that their answers and views were represented accurately.

After the interview questionnaire was designed, the pilot study C1 was carried out, followed by the other six cases. Once each interview was transcribed and assigned to a corresponding category in the database, data analysis took place. All names of firms and individuals in this study and transcripts were replaced with letters due to ethical considerations, and a simple system was introduced. The following system is used in this thesis and related outputs and the documents which contain raw data (e.g. investigator's notes, notes taken during meetings, transcripts): C = case, C1 is pilot; Cn is a Case No 2, 3...7; R = respondent. Thus, C1R1 is respondent 1 from the pilot study, C2R2 is respondent from case 2. Cl = client.

While interviews were essential for this study, multiple other sources of data were also used. Desirability of multiple sources of evidence has been highlighted (Yin, 2012). Such sources can be eclectic (Easton, 2010). Yin (2014) identifies six main sources of case study evidence. They include documents, archival records, interviews, direct observation, participant-observation, physical artefacts. In this study multiple sources of data were used to supplement the insights from the interview which were the key source of insights. Other data sources included, e.g. documents, online sources. These are described in Appendix XI for each of the case firms.

Using multiple data sources is an advantage of case study research (Yin, 1984, 2012, 2014). Utilisation of multiple sources of data provides a comprehensive insight into different aspects of degrowth business elements embedded within a firm. It also allows for additional insights to arise. Multiple sources of data were used for the purpose of triangulation (Bryman, 2012; Yin, 2014; Creswell, 2014). Triangulation refers to cross-checking information via the use of multiple sources (Burke Johnson, 1997). Triangulation helps enhance reliability of findings (Creswell, 2014). While it was originally associated with quantitative research, it is useful for qualitative research (Bryman, 2012). For this study access to multiple data sources can assist

in arriving to the same conclusion regarding a particular practice a firm may be implementing, thus enhancing rigor. While access to multiple data sources and thus large quantities of information affords the benefit of cross-checking, it also has disadvantages. This is to say that while collecting large quantities of information contributes to credibility and rigor (Baxter and Jack, 2008), it also requires a system of organisation (Baxter and Jack, 2008; Gillham, 2000; Yin, 1984, 2012), otherwise poor data management and organisation may decrease the quality of research (Yin, 1984). To address this, a filing system was created in a form of a database. Each database corresponding to each case C1...7 contains data collected from all cases.

4.15. Data collection and analysis process

Prior to data collection ethical considerations were outlined and approval was obtained. With regards to data collection in a case study method, this research accommodates both deductive and inductive logic (Easton, 2010). Data collection was guided primarily by the framework F1 and was aimed at accessing multiple data sources to inform F1. Thus, deductive logic was used. However, to accommodate the possibility of new lines of inquiry, inductive logic was also applied. Data collection and analysis took place throughout Spring-Autumn 2018 and were completed in October 2018.

Analysing evidence from case study research is “especially difficult because the techniques still have not been well defined” (Yin, 2014, p. 132). Yin (2014) recommends starting one’s analysis with playing with the data in search for promising patterns and insights. Another important aspect of case study data analysis is fear of case study researchers to lose the detail in favour of conceptual closure (Flyvbjerg, 2006). This means that essential details arising from the researcher’s experience of the phenomena first-hand and in its wealth can be lost in summarising. To avoid losing nuance and the wealth of insights, it was necessary to prefer nuance to preserve detail over summarising. This arguably resulted in the revised framework F2 being extensive.

A separate data analysis file was created for each firm (see Appendix VII for the data analysis process and Appendix XI for the data analysis files). Data analysis of each case was carried out after the data were collected to allow for the broadest range of themes and insights to emerge from a variety of data sources from each case. Interviews provided the majority of insights. They were analysed in a way described by Marshall and O’Neill (2018, p. 276) who also used semi-structured interviews in their research. This way followed three steps: (1) transcribing to facilitate data analysis, (2) coding and (3) thematical analysis. Coding in this research was

aimed at summarising the data (Saldana, 2015) rather than semantics. Such summarising began with codes, proceeded to themes, then elements and groups. All data were coded and themed firstly question by question, and then returned to and read several times to ensure that all themes were identified. For instance, a respondent may return to speaking about a certain element or practice after a particular question has been asked and answered. Therefore, analysing the data solely question by question was considered limiting and it was considered useful to go back to the data on several occasions.

The guiding theoretical framework F1 and awareness of the themes from the literature reviewed before and during data collection and analysis stages were helpful in a sense of knowing “what to look for” (Yin, 2014, p. 134). However, in the beginning of the data analysis F1 was found to be excessively broad and its elements restrictive. Thus, while it was useful as a guiding framework, an equal value was placed in nuances, concrete examples and emerging, ground-up insights. One example can be the “redefining the meaning of economic activities” element of F1. In reality, this element can encompass a wide range of behaviours in a firm.

The identification of barriers to practising business in a pro-environmental, pro-social, values-driven manner was helped by an inductive logic. This means that the respondents were free to describe the barriers they faced in real life in the UK rather than answer more specific questions. This was done to avoid pre-determining a discussion as the barriers identified in the literature largely stem from the capitalist organisation of economies. At the analysis stage various barriers were integrated into groups.

Due to degrowth business not being well understood and researched, the value of emerging insights not yet extensively covered by the literature cannot be underestimated. To preserve nuance and the richness of new insights, in the process of summarising detail were preferred to abstraction (Flyvbjerg, 2006). For instance, instead of uniting multiple and diverse codes under a predetermined category of “redefining the meaning of economic activities”, during data analysis it was considered more helpful to expand this category in light of rich insights that were obtained.

Since this work concentrates on the elements of business operation, the analysis was aimed at those. This was not to deny the importance of meaning and interpretations. However, a different philosophical and analytical framework would then be required. The analysis was also not aimed at the frequency of codes, themes or insights. Rather, it was aimed at the relevance of those to understanding of degrowth business.

It was decided not to use software tools to analyse the data. Yin (2014, p. 135) notes that “even under the best of circumstances, nearly all scholars express strong caveats about any use of computer-assisted tools when dealing with case study data” and “most case studies pose a serious challenge in efforts to use computer-assisted tools”. This is due to a variety of data sources which may not be exclusively textual. In the case of this study, data was also derived from multiple site visits and supported by conversations and meetings. Moreover, using simplified technology instead (e.g. hand-written notes) can be preferable as a degrowth practice itself (Heikkurinen, 2018) considering the quality and consistency were maintained.

Data analysis included three steps for each firm. The first one is analysis via coding and themes identification. The second one is analysing the themes for individual degrowth business framework construction. The third step is individual degrowth business framework construction. Hence, each data analysis file for each firm contains those three parts (see Appendix VII). The format is maintained throughout all cases. Part (1) included constructing a data analysis table. The table consists, firstly, of the Data column which contains quotes taken directly from the data sources. Secondly, the Coding and Themes column contains codes and themes that arise from data analysis. Themes in bold were important for the framework. Underlined themes were to be incorporated into the framework, the ones which are not underlined have been featured previously. Thirdly, the Analysis column links the themes to the original framework and analyses new themes. It includes, for instance, comparisons to the original framework F1, important insights, comparison between cases. This column was helpful in outlining the findings. Finally, the Analytical Memo column is less formal than the data analysis column. It contains, primarily, the author’s notes, important insights which are related to degrowth but not directly related to the research question, insights for further investigation, and observations.

For each case, the language of coding and themes was maintained where insights were similar across cases (e.g. “recycling”). However, where insights were more nuanced and this nuance was considered enhancing of the degrowth business framework or served as an example of a concrete practice, language was changed to avoid reductionism (Flyvbjerg. 2006) and misrepresentation. It was the aim of the researcher to derive a comprehensive and useful framework of a degrowth business. Therefore, the closeness between codes and themes was maintained.

To further preserve nuance and detail, some elements arising from themes were supplemented with examples. For instance, “embeddedness” was considered excessively broad and not as useful as more concrete insights and examples. In this case, examples were necessary (e.g. working with charities, activists, cooperation) to express the multi-faceted character of this theme.

The second part of each data analysis file consisted of a framework construction table. Here the codes and themes were taken directly from the data analysis. The elements of each individual framework derived directly from the themes identified in each firm’s case. At this stage the elements from the original degrowth business framework F1 were being compared to the emerging elements. This was to identify new elements and inform or revise existing ones. Elements in italics have been featured in the original framework. The elements may not correspond to the original elements due to the depth of insights gained at the data analysis stage and where the original elements were considered restrictive. For instance, the element “embeddedness” required examples of concrete practices. Likewise, the element “redefining the meaning of economic activity” in F1 was considered excessively broad.

As a result, a framework was constructed for each firm and returned to firms for review to minimise a chance of mis-representation. All key respondents received tables with degrowth business framework corresponding to their business. In every case feedback was welcome. None of the firms considered that anything required changing. It was then decided that those frameworks could be used for further data analysis. Such construction of individual degrowth business framework comprised the third part of data analysis for each individual case.

After degrowth business framework for each case was received back from the firms, findings and insights were derived from each framework. However, for degrowth business framework (F2) itself, the analysis proceeded to the stage of synthesis. At this stage each of the 5 groups of each individual framework was compared, and data integrated to inform and revise F1.

Step 2 in Appendix VII provides an example of row 1 of Material and Energy Throughput and Waste group of elements. F2 was then constructed as a result of integration of elements from all cases C1...7. F2 is available (1) either with the disclosure of the case numbers where each element is derived from for the reason of transparency (Appendix VIII) or (2) as a table with the elements only (Appendix IX) which is useful from a practical perspective for firms since it offers concrete examples of practices firms can implement, and from a theoretical perspective for further research where exact cases are less relevant than the insights.

Disclosing the case numbers where the elements were derived from also assists in identifying which elements were present in all cases. This should not be taken as a ground for deriving positivist laws, i.e. concluding that every similar firm will necessarily possess these characteristics. Rather, such commonalities are present because (1) the firms were selected on these grounds, (2) these elements may be relatively easy for firms to integrate, (3) the level of abstraction is high as is the case with embeddedness. Embeddedness signifies a range of practices, and even though it is a part of each firm's operations, it is manifested differently.

Since the number of cases was small, no quantitative analysis was performed. However, should further research of similar firms be carried out, quantitative analysis of multiple cases (Yin, 2014) can be performed to identify further patterns and tendencies.

4.16. Other possible methods

This section concludes the Methodology chapter and discusses additional methodological options, i.e. other possibilities which relate to the methods which may be used for investigation of the phenomenon of degrowth business. While case study was the approach best suited for this study and was not contradictory to the author's philosophical position, other methods can be used in future research and to further enhance our understanding of degrowth business. To look deeper into the findings derived from the case studies and to derive additional insights, alternative methods can be used, and the framework can be revised and supplemented. For instance, a survey [2] can be constructed based on the updated framework and distributed among potential adopters of degrowth business elements. Qualitative methods can be used to further understand the worldviews of owner-managers and employees. Action research or ethnography (e.g. Richert, 2017; Testa et al., 2017) can be useful in understanding the practices and experiences of running and even establishing a degrowth business in a capitalist setting.

In future research, to advance understanding of degrowth business in various industries and contexts, and to design an even more comprehensive framework of concrete practices and barriers, a survey method with a qualitative element can be adopted. It is important to be aware of a possibility of reductionism associated with this positivist method. From a critical realist perspective, this method would be explicitly aimed at the existing complexity of reality and human emancipation (Bhaskar, 1989; Lawson, 2019) rather than finding an ideal and universal set of characteristics.

Since the historical and context dependency are important, degrowth business characteristics can change over time and space. Identifying further characteristics may bring to light new

groups of elements and address multiple questions. The following questions may be asked. Has anything been missed? What could make this framework more comprehensive? How should this framework be modified for different industries/countries/modes of production? Considering this framework is merely a part of a large economic and societal transformation, what else is important, what is relevant? How do the elements link with each other and the barriers? Which policies could facilitate implementation and adoption of those elements?

Qualitative methods such as in-depth interviews can be further used to research the worldviews of owner-managers in-depth and also specific practices and tendencies identified in the findings of this research. While this research provides a starting point, there remain multiple questions regarding, e.g. owner-managers' and employees' values, attitudes and behaviours. Questions may include the following. Why were these particular values adopted? Why do the environmental and social attitudes result in corresponding behaviours in some individuals but not others? What societal institutions empower environmental and social attitudes and behaviours? Action research or ethnography can result in a rich account of practices, experiences and barriers degrowth firms face in everyday life and in different context. A study such as an autoethnographic one can look, for instance, at starting up a degrowth firm and challenges associated with this. This can be done in different contexts such as different countries. A comparative analysis can be performed.

An inter-disciplinary approach and involvement of researchers from multiple disciplines in such studies can be beneficial. Degrowth business is a complex concept. It does not have to strictly fall within a premise of a particular discipline.

5. Findings

The findings are organised in two ways. Firstly as findings from each case, and secondly as findings from the synthesis which F2 is. Findings from all the individual cases serve mainly the purpose of informing F1 and reconstruction of F1 into F2. In this sense F2 represents aggregated findings and the answer to the research question. However, to report the detail and nuance which case study research gives access to (Flyvbjerg, 2006), interesting (unexpected or particularly enlightening), unique (arising from a particular case and not others) and important (relating closely to the theoretical framework F1) findings are highlighted in the findings from individual cases.

5.1. Individual cases

In this section findings from individual cases are reported. As outlined previously, multiple data sources were utilised to derive the findings and to construct individual frameworks. It can be noted in the subsequent text that plenty of insights were derived from interviews, and references to interviews prevail. This is because interview questions were aimed specifically at the concept of “degrowth business” and its potential elements. Thus, the quotes from interviews are effective in demonstrating relevant insights. Appendix XI which necessarily supplements this section, contains the list and description of all data sources, data and, importantly, full individual degrowth business frameworks associated with each individual case. This section presents the main findings from each case in a form of a narrative aimed to overview each case.

Case 1 [C1]

“The aim is the protection of global commons, and habitats and species” (C1).

C1 is a micro firm located in the East Midlands. It specialises in the design and installation of renewable energy systems, sustainability consulting and data monitoring open source software. C1 was established in 2002. It is owned by four directors who are also employees. Apart from the directors, 1 full time equivalent is shared between multiple people who are also self-employed outside C1. Those individuals become involved in projects with C1 where their expertise and/or time are necessary. C1 was a pilot and studied for a prolonged period of time, thus rich data was derived from this case.

C1 has a strong environmental motive and orientation, which is exemplified in C1’s aim, “*the protection of global commons, and habitats and species*” (C1R1, Int.1). Deviation from profit

maximisation as the key motive in economies beyond growth was previously highlighted in the literature (Alexander, 2015b; Spash, 2017b). Moreover, an orientation of firms towards solving environmental and social problems was proposed as a criterion of a degrowth company (Khmara and Kronenberg, 2018).

This case offers multiple insights into the environmental side of degrowth business and also the technological side. Hence, technology features throughout C1's individual framework (e.g. technology-aversion as a barrier, open source software, renewable energy generation) (see Appendix XI). This is due to C1's nature of business which is design and implementation of renewable energy systems and being a sustainability constancy (C1 website).

Since C1 work with sophisticated technology, they are not averse to technology and see technology-aversion as a barrier to transitioning towards a more sustainable society. At the same time, C1 advocate appropriate technology and have a critical rather than a purely optimistic outlook on technology. For instance, C1R1 is critical regarding battery energy storage (C1 Articles 1 and 2). Consider: *"Battery energy storage probably will be important when we start connecting a lot more renewables to the grid, and by then it might be better, but what they aren't saying to people is that if you buy battery energy storage now at a domestic level you will never get your money back and you can't prove that you are making an environmental benefit"* (C1R1 Int.2). This corresponds to "preference towards appropriate technology" element in F1. Use of appropriate technology was previously featured in post-growth literature (Daly, 1993; Schumacher, 1993).

Not every case studied provided examples of the inclusion of non-human life into their considerations. However, due to one of C1's directors being trained in, and involved with, permaculture (*"[Name 3] [C1's director] is involved with the Permaculture Association"* (C1R1 Int.2)), permaculture became a viable option. Here permaculture is viewed as a manifestation of the inclusion of non-human life related considerations due to its design principle of "enhancing biodiversity" (Permaculture Association, 2018). This broadly corresponds to the value of non-violence towards non-human life in the literature and F1 (Schumacher, 1993b, 1993c). It also provides an example of inclusion of wellbeing of, and care for, non-humans (Bonnedahl and Heikkurinen, 2019; Heikkurinen et al., 2019) and acknowledging the needs of non-human animals alongside those of humans (Maxton, 2018).

C1 are embedded within their community and appear to behave as such. This is exemplified in their involvement with community projects and politics (see Appendix XI for C1's individual

framework). For example, C1's embeddedness within community is reflected in their objective: *"Our main company objective is to increase the sustainability of our community"* (C1 website). Arguably, their embeddedness within communities goes beyond local communities. This is due to open source software not being confined to any particular geographical location. Open source software provides an example of social orientation and technology for degrowth (Gorz, 2010). However, C1's social orientation is secondary to the environmental orientation. The main service to the community (local and global) is perceived to be done via environmental orientation and action. C1R1 (Int.2) notes, *"the entire reason we exist is to facilitate environmental improvement"* and further, *"along the way you don't want to do social harm and you hope that by supporting the environment you provide social benefit"*.

The primacy of environmental consideration is further explained by C1R1 in the following statement: *"if you break the environment then there is no habitat for people or cuddly animals"* (C1R1 Int.2). In this respect C1's non-violence towards the environment and a desire for environmental change for environmental, social and pro-non-human life reasons correspond eco-centric values (Kopnina et al., 2018).

A variety of principles of management and employee wellbeing-generating principles and activities arise depending on the firm studied and enlighten the wellbeing aspect of degrowth (Schneider et al., 2010) in relation to a firm and its employees. Specifically for C1, self-organisation as opposed to hierarchical or authoritative management is highly important. This comes with mutual respect and flexibility of working hours. All directors of C1 are independent and work on their own projects while also working together where a project requires expertise of more than one of them. Beyond contributing to employee wellbeing, self-discipline and flexibility, alongside creativity, are seen as important qualities for a sustainable post-growth economy (Maxton, 2018).

Embedding ethics throughout business operations is important to C1. It is evident in, for instance, ethical banking that C1 use (C1R1 Int.1), being ethical leaders in business (C1C11, Int.), practicing ethical lifestyles (C1R1, personal communication) and even refusing to implement SEO [search engine optimisation]: *"the fact that the whole sort of way trying to manipulate Google search and all that stuff seems fairly unethical"* (C1R1 Int.2). This is also noticed by the customer interviewed for this research who notes: *"I know they are an ethical business"* (C1C11, Int.). This in combination with the other aspects of C1 broadly corresponds

to “redefining the meaning of economic activities” in F1, since business becomes a holistic and ethical entity rather than a profit maximising one (Heikkurinen et al., 2019).

C1 can be considered an example of a firm with an explicit political orientation. This is evident in their involvement with local politics, supporting activists and protestors: “*We have been known to help out with an odd protest*” (C1R1 Int.2). The original framework F1 did not include a political orientation. However, the case of C1 suggests that a firm may also be seen as a political entity.

C1 does not object to growth: “*I would quite like it to be bigger. I’d be very happy if there were 50 of us*” (C1R1 Int.1). However, a limit to growth exemplified in C1R1’s reference to a particular number of 50 employees: “*It’d be great to have 50 people*” (C1R1 Int.1). Thus, recognising sufficiency in size or staying small, is important since growth could be detrimental to other characteristics, e.g. lack of hierarchy: “*If you have bigger numbers of people, you would probably need to have some sort of hierarchy. And none of us are really that kind of people who enjoy hierarchy*” (C1R1 Int.). While active avoidance of hierarchy in C1 can be a surprise, especially considering the modern definition of success as related to the social standing and material success (Jackson, 2017), avoidance of hierarchy can in fact be seen as more natural, i.e. more aligned with the nature of humans as they have evolved. This is to say that for the majority of human existence people lived as hunter-gatherers and still possess a brain wired in the same way (Gowdy and Krall, 2013). It has been noted that hunter-gatherers were in fact “aggressively egalitarian with vigorously enforced levelling mechanisms” (Gowdy and Krall, 2013, p. 141).

Profit does not play a central role in C1: “*If we wanted just to make money, we could probably find easier ways of doing it, or find far less risky ways of doing it*” (C1R1 Int.1) and “*we are...motivated to do what we do because we want to make environmental improvements*” (C1R1 Int.1). However, in a capitalist setting an ability to make some profit is important to sustain families, “*to be able to eat and feed our families and pay our mortgages*” (C1R1 Int.1) and to make a pro-environmental enterprise financially viable: “*The whole reason why we started a company was because, you know, if you are working on this stuff in a voluntary sector three days a week you can’t do much more and still feed your family, so you have to find a way of making it pay*” (C1R Int.2).

The relationship between the primary aim of environmental improvement and the need to make a profit is exemplified in the following: “*the aim is to minimise our environmental damage*

and, as far as possible, to minimise other people's. But you have to do it in such a way that you can make enough profit to live, and that's not directly a social motive except in as far as all social activities are going to cease if the environment ceases to be habitable" (C1R1 Int.2). In relation to this, capitalism's manifestation of profit making (Pineault, 2016) is seen as a barrier to C1's aim: *"Having to make a profit to some degree is a barrier"* (C1R1, Int.2). This points to in a direction of capitalism being a barrier to degrowth in general, and degrowth business in particular, and relates to the embeddedness of firms within a capitalist setting which necessitates profit making (Kallis et al., 2012; Pineault, 2016).

Other barriers which arise from this case, such as inefficient organisation of exchange events or information availability, can be seen as systemic. Addressing those may require cooperation and involvement of multiple actors and revision of multiple structures and systems (Alexander, 2015). This corresponds to critical realist understanding of reality and an interplay between agents and structures (Bhaskar, 1989, 1998). Since this applies to all firms, this will be discussed below in greater detail.

C1 is the only firm studied that explicitly recognises the need for degrowth. In relation to post-growth visions in general, C1R1 specifically utilises what can be referred to as a post-growth vocabulary. It should be noted that this can be unusual, and perhaps should not at this stage be seen as universal, i.e. an indicator that a post-growth vocabulary is widespread among firms. Consider, for instance, a reference to a steady state: *"I see the role of sustainable technology as being to move towards (and reach) a sustainable steady state, in which we are not at imminent risk of being wiped out at short notice by our own stupidity, and retain our knowledge and technical capability"* (C1R1 personal communication, January 2019). In the case of C1R1 using such post-growth vocabulary can arise from their involvement, for instance, with activists or *"various environmental and community groups [they] work with"* (C1R1 Int.2). Reference to degrowth is exemplified in the following: *"in some sense there has to be degrowth of most aspects of the economy. And one aspect of the economy where you can actually have continuous growth is knowledge"* (C1R1 Int.1).

Knowledge sharing is, unsurprisingly, important to C1, and open source software mentioned above is one example. Other examples are offering free advice to, and working with, activists: *"I think it's really important to share the knowledge we've got with these groups [protestors, activists]"* (C1R1 Int.1). This also relates to C1's embeddedness within the community. Sharing technical knowledge freely as a practice of degrowth on business level was also noted

in a study which indicates that Patagonia (an apparel firm) share their manufacturing technologies and new materials with other industry participants (Khmara and Kronenberg, 2018).

Another important to post-growth in general, and degrowth in particular, aspect is a critique towards the pursuit of productivity growth (Jackson, 2017; Kallis, 2017; Heikkurinen et al., 2019). C1R1 (Int.1) states that *“If you class knowledge as your key outcome, then yes, we are definitely striving to learn new things, learn to do things better. If you class immediate financial income as your priority, then we probably don’t really optimise our productivity in that way”* and *“if you work a lot of hours and you enjoy doing it and you get a lot of good, diverse outcomes, that’s actually quite a satisfying job”*.

A finding that can be derived from this case is the importance of striving for diverse outcomes and diverse understanding of productivity rather than striving for profit and productivity maximisation (Heikkurinen et al., 2019). This relates to the outcomes important to C1, *“If you care about the environment in a very general sense, you will see spending time helping [Faith Initiative] or advising [Faith Group] or helping a bunch of activists in a field, as being a good outcome and you’ll see a productive use of your time”* (C1R1 Int.). This does not go in line with the mainstream understanding of business as a profit maximiser (Friedman, 2007). Nor does the notion of sufficiency instead of maximising one’s financial earnings (*“he [a director] wants to make enough money to survive”* (C1R1 Int.1)).

Finally, C1 have an unorthodox attitude to competition. This corresponds to a de-emphasis of competition in degrowth (Nørgård, 2013). C1R1 (Int.2) states: *“I don’t care where people get their PVs [photovoltaic systems] from, as long as they get PVs”*. This attitude to competition, which is one of the central premises of a capitalist organisation of economy (Pineault, 2016), requires further research.

An aspect which manifests in C1 and requires an inter-disciplinary investigation is the meaning of success. In a degrowth economy it does not correspond with financial success. A deviation from equating of success with material success is noticeable in such theorising (Jackson, 2017). Consider the following statement from C1R1 (Int.2): *“what generally makes me feel good about life isn’t so much having a vast amount of money in the bank..., it’s the fact that you can drive through some pretty grotty housing estates around [Location] and find that maybe 20% of the houses have now got 2-4 kilowatts PV on the roof and you think well, something is*

changing here. You know, we haven't put most of these systems here, I don't really care about that, point is that they are there and that's really good".

The quote above also points in the direction of happiness and satisfaction which in degrowth economy would not be derived from *"having a vast amount of money"* (C1R1 Int.2). Rather, they would derive from, e.g. meaningful activities, leisure time, or seemingly idle activities such as conversations which are beneficial for wellbeing (Nørgård, 2013).

Case 2 [C2]

"I set it up to be the norm. Not because I want to benefit from that" (C2).

C2 is a micro firm based in the East Midlands. C2 was established in 2003 and specialises in fire protection equipment and systems. C2 has three directors who are also employees. Two of those three directors are shareholders.

Comparably to C1, C2 has a strong environmental orientation and consideration of non-human life. Unlike C1, C2's environmental orientation is not manifested via the use of sophisticated technology, but it is manifested via an internally funded (*"All that mechanism has been paid for internally, we never need grants or funding"* (C2R2, Int.)) forestry initiative (C2 Internal Documents).

With regards to funding, C2's starting capital was provided by C2R2 (*"The business started with £4000 in a shed as a way to change the fire industry and create an environmental link."* (Investigator's notes from meeting with C2R2 on 24/04/18)), and C2's financial strategy is long-term (*"I've got a 15-year plan"* (C2R2 Int.)). Financial strategies and reducing dependency on the capitalist market, its structures and instruments are important for degrowth. This is because capitalist structures may provide barriers, as was suggested earlier in Section 3.6 "Understanding the barriers". To minimise one's participation in a growth-orientated capitalist system where capital requirements are small, entrepreneurs can seek alternative funding strategies. While internal funding, as is the case with C2, may provide an option, this might not be feasible for all firms. Thus, funding for degrowth firm is a challenge. It is discussed further in Section 6.7.4 "Financial considerations as a limitation".

Similarly to C1, for C2R2 profit is not the main reason for C2's existence or source of meaning or happiness (see Nørgård, 2013). C2R2 states that the concept of profit is *"out of date"* (Meeting Notes from 240418). The reason for existence of business itself is described by C2R2 as *"find[ing] a route for the army"* (Meeting Notes from 240418) or creation of a different

pathway to do business which can then be adopted by others. C2R2 (Int.) notes that *“The profits, the money that comes out is a by-product”* of other things (e.g. quality) being done well. Furthermore, C2R2 (Int.) states: *“My agenda is not a personal gain, personal greed, that’s not my focal point”*.

Another aspect of C2’s operation is the notion of “conscious growth” (C2R2 Int.) which arises from this case. It is a principle of growth to capabilities rather than striving for growth for economic reasons or due to internalisation of growth mania inherent to the economic system (Illich, 1973). C2R2 notes that growth and profit are not the goals of business. He states¹⁸:

“I would suggest that anyone who says that business is about growth and profit is a [censored] [...] And you know nothing [...]”. If you believe business is all about growth and money, you are a [censored]. The whole process is so much more complex. And the reason why it is so much more complex is because it involves people. And people are very complex” (C2R2 Int.).

Another important finding that arises from C2 is scepticism that C2R2 faced when he tried to explain C2’s forestry initiative to others, including employees and business contacts. It is exemplified in the following: *“I’ve sat in the nursery and shouted at the heavens: “How many trees do I have to plant before people believe I’m planting trees?””* (C2R2 Int.) The theme of scepticism also arises from C7 where C7R7 attempted to cooperate with local firms, and none responded. C7R7 mentioned suspicion as a reason for non-cooperation. The barrier of scepticism towards initiatives and values (cooperation) beneficial to a degrowth society/economy needs to be further investigated. This scepticism may arise, for instance, due to deviations from what is “central” to the economy, such as money, competition and quantification (Nørgård, 2013). This point in the direction of change of culture, education and beliefs (Assadourian, 2012; Vargas Roncancio et al., 2019) for degrowth to be possible.

Desire for industry transformation (a desire to *re-invent what doing business... meant*” (C2R2, Int.)) and a desire to play a role in it, rather than a desire for personal or short-term benefit is evident in C2. C2R2 (Int.) states:

“It has to be like that because the sustainability of the model is based upon spreading this concept throughout industry, so this then becomes the sort of model that is the norm. I set it up

¹⁸ I decided to censor the following quote due to another decision to make this work publicly available (see Reflection) which would potentially expose this work to people of different ages. My judgment here is that the meaning of the quote has not been changed significantly. Since C2R2 implies that those who believe that “business is about growth and profit” know “nothing” suggests that C2R2 is not in an agreement with those individuals and his views deviate from this understanding of business, which makes the exact words that were censored unessential.

to be the norm. Not because I want to benefit from that, not because I want finance from it, but because someone has to make a stand. If you have an idea and believe in it passionately, then have the [courage] to stand up and go: "I think this is worthy" and if you don't do something...There's no sustainability. And if there's no sustainability, what is the next generation going to do? And the next generation? And the next generation? There won't be one". Interestingly, here C2R2 highlights the sustainability of the business model rather than sustainability only of their business itself.

C2R2's quote above corresponds to Maxton's (2018, p. 47) observation that "[a] major incentive for people to innovate [in a sustainable "equilibrium" economy] would be the knowledge that their work had further improved human well-being". It can also be extended to wellbeing in general including the environment and non-human life for those with eco-centric values (Kopnina et al., 2018).

An unorthodox view on competition noted previously in C1 is also manifested in C2 via pro-social, cooperative and convivial attitude. Consider the following: *"I've never been grabby or selfish about the concept itself. If I was lucky enough to know that we've even been half of 1 percent of moving the previous paradigm, then I'd die happy. Because it means that it's worked"* (C2R2 Int.).

C2's social orientation is evident in cooperation and working with a CIC [community interest company] which was initially established by C2R2: *"That creates the links with the social element, the council, community..."* (C2R2 Int.). Embeddedness of small firms within local communities has been previously documented (Söderbaum, 2008). It is an important contributor to the wellbeing aspects of degrowth (Schneider et al., 2010).

C2 also practice mutually beneficial (symbiotic) cooperation with other firms which results in a positive environmental outcome in the form of waste reduction (O'Neill et al., 2018; Maxton, 2018), an example being trading used cardboard, which the other firm uses for packaging, for a small amount of money then used to purchase hot drinks for employees. C2R2 (Int.) explains: *"We produce an awful lot of cardboard. There's an organisation around the corner... Packaging for them is very expensive...And we deliver all our cardboard to them, weigh it in and they give us a little bit of money. That money is not a huge amount of money...that gets moved to petty cash and we buy tea, coffee...It makes it more effective for us, it makes it more effective for them, it reduces our wastes, the amount we waste and it gives them a product they*

don't have to buy, that needs to be manufactured specifically for them, that would ultimately be thrown away. And the fact it's cardboard means it's biodegradable”.

Such cooperation between firms is not only beneficial from ecological perspective. It also signifies cooperation which should become central to degrowth society where competition is de-emphasised (Gorz, 2012; Nørgård, 2013).

Case 3 [C3]

“Without passion there isn't a business” (C3).

C3 is a micro firm based in the West Midlands. C3 was established in 2007 and specialises in natural dyes which is the primary strand of their operations. Other strands include natural fibres and natural paper. C3 is family owned and employs three people, two owners and one independent contributor who is also self-employed outside of C3.

Similarly to C2, C3 do not own the unit and therefore do not have control over, e.g. the use of renewable energy. Consider this: *“we are in an office in a big building, we couldn't put solar panels or do anything like that”* (C3R3, Int.). Yet, C3 are mindful of the environment in terms of transportation: *“We purposefully rent a place that is not too far from the house”* (C3R3 Int.).

However, C3 provides an important insight into several potential elements of production for degrowth in environmental terms (e.g. natural material use) and social terms. For instance, happiness in the process of production, which relates closely to meaningful jobs provision and fulfilment in the process of production, was previously identified in the literature (Klitgaard, 2013; Schumacher, 1993c; Gorz, 2012). C3 share similar attitudes to C1 towards sufficiency (i.e. the notion of “enough”) of income rather than income maximisation. Consider the following: *“I make enough money, I am not rich, but we make enough to live a decent life. I want more time, not more money”* (C3R3 Int.).

C3 use renewable and natural materials (e.g. *“Natural dyes are a renewable resource and not dependent on petroleum as are many synthetic dyes”* (C3's website accessed 02/08/2018) and *“What we sell can be composted, the papers that we sell, they can be composted”* (C3R3 Int.)), the by-product of which can be composted. It corresponds to a general desirability of renewable and recyclable materials use in post-growth economies (Maxton, 2018). This applies to C3's primary and popular product (natural dyes) as well as natural fibres the firm produces. The latter category of products C3 make (hand-made clothing made from hand-spun yarn) provide an important insight into the barriers the product of this ancient production method face. C3

face public expectations regarding the cost of clothing manufactured on a large scale, which results in people not expecting to pay substantial amounts for hand-made yarn and clothing: “*She [C3R3] explained that a dress would cost £3000 if it was to be produced from a locally grown linen, which then would need to be spun and weaved and made into a dress.*” (Investigator’s notes from site visit on 21/08/2018). While convivial technologies and tools (Illich, 1973), such as weaving and using natural dyes as exemplified by C3 are important for degrowth, current co-existence between such technologies and mass production should be investigated further. Thriving and survival of firms using such technologies, though essential for degrowth, may be under threat due to competition. A societal transition from more sophisticated to less sophisticated technologies where possible can also be investigated.

Like C2, C3 financed internally and started with a very small scale of operation (“*The business started with £300 and a single dye*” (Investigator’s notes from 01/08/2018)). This will be discussed further in relation to degrowth and funding.

C3 see growth as undesirable: “*that [growth] is my main problem at the moment*” (C3R3, Int.) and “*They want to remain small (the size they are now) because they have found a good balance*” (Investigator’s notes from 01/08/2018). They also see an increasing demand for their product as a barrier to size maintenance and wellbeing: “*it reached the stage when we are working 7 days a week with no holidays for 6 years... I want more time, not more money. And by growing the business, I will have even less time...*” (C3R3 Int.). C3R3 (Int.) states: “*I don’t want to employ and manage more staff and rent bigger premises*”. This corresponds to adoption of non-growth mode of business in post-growth literature (Leonhardt et al., 2017).

C3R3 highlights the primacy of passion for product over profit: “*My business exists because I have passion for the subject*” and “*Without passion there isn’t a business*” (C3R3 Int). Yet, beyond passion for production, the environmental orientation is important: “*It is mainly environmental, because I want people to use natural dyes rather than chemical dyes*” (C3R3 Int.). However, it is the passion for product and happiness in the process of production that are the main motives behind doing business: “*I wouldn’t have it any other way because every day I enjoy it*” and “*I haven’t gone for increased production, high profits, because I think I would never be happy doing that*” (C3R3 Int.).

In this respect, C3 is similar to C7 which is discussed below. Both businesses have forms of art or craft as the centre of their operations. While C3 produces natural dyes, fibres and clothing using those dyes and fibres by hand, C7R7 is a photographer. This primary motive (passion

rather than profit) relates closely to Nørgård's (2013, p. 63) notion of "amateur economy" for degrowth which signifies "activities driven by love [...] and other affections". In such economy the production "process, is by definition a source of direct personal satisfaction" (ibid.). In this respect, both C3 and C7 provide real-life examples of firms driven by such motives. It should be noted that the word "amateur" as used by Nørgård does not have a negative connotation. Nørgård (2013) explains that it is a derivative of the word "love".

C3 also provides an insight into undesirability of increased productivity which is an important aspect of post-growth and degrowth vision (Jackson, 2017; Kallis, 2017; Latouche, 2009; Heikkurinen et al., 2019). Instead of aiming at increased productivity, C3 is orientated towards quality, artistic expression, sharing knowledge with others and preference towards learning in-house or self-learning (autodidacticism in C3's individual framework, see Appendix XI). These elements may signify a more suitable for degrowth, holistic attitude to business (Heikkurinen et al., 2019).

Sharing knowledge with others is a part of a social orientation of C3. For instance C3R3 (Int.) states: *"It's a lot of students starting up on their businesses, or people starting with their businesses. I suppose it's another way that I help the society"* referring to a desire to help people. Also consider the following: *"sharing the knowledge is the main objective. A lot of the money goes into allowing me time to do more research"* (C3R3 Int.).

Case 4 [C4]

"My passion lies in the local economy" (C4).

C4 is a micro firm based in the East Midlands. C4 is a café, it was established in 2017. C4 employs eight people, including one director.

While C1, C2 and C3 discussed above, and the following case C5, have a strong environmental orientation, C4 offers several insights into a strong social orientation. It is exemplified in C4's embeddedness within their local community and preference towards localisation: *"I use local people as much as possible...I use local stores to buy things"* and *"My passion lies in the local economy. I always try to use local"* (C4R4 Int.).

Embeddedness within local community is manifested in several ways in C4. They include supporting activists (*"I said to him [an activist] "Come and use [C4] for meetings, fundraising, whatever I can help with to get your message across"*) (C4R4 Int.)) and charitable actions (*"We have a group of ladies that help others with autism issues, and they come once a month.*

We let them use this space for free” (C4R4 Int.)). Localisation is a prominent theme in degrowth literature (Alexander, 2015b; Dittmer, 2015; Fournier, 2008; Kallis, 2017; Latouche, 2009; North, 2010; Schumacher, 1993c; Marshall and O’Neill, 2018). C4 in this regard provides valuable examples of how localisation can be achieved.

Connected to localisation are the barriers regarding procurement of goods locally: *“some of the times buying locally is massively expensive”* and *“sometimes buying locally and organic will just cut the product out of my customers’ financial, they won’t be able to afford it”* (C4R4 Int.). This indicates the need to address transition towards degrowth on multiple levels.

Connected to localisation are the values of individuality and independence, which are important to C4R4 (Int.): *“we lose our individuality on a massive scale, we are becoming very carbon copy, and I think it’s a shame”*. While individuality and independence may not be immediately perceived as essential to degrowth which is aimed at overall human wellbeing (Schneider et al., 2010) and unity, Daly (2018, p.25) notes that the *“beautiful and powerful vision of overall unity hides a world of diversity and difference”*, thus highlighting the need to acknowledge those while striving to live in unity within the planetary boundaries.

Similarly to C2 and C3, C4 have a desire for industry transformation and growth of the model rather than the business itself: *“having [C4] as a blueprint for other businesses”* and *“offering our knowledge and sharing it with other people who want to open something similar”* (C4R4 Int.).

Despite the prevalence of the social orientation in C4, the importance of environmental orientation in C4 should not be overlooked. While C4 faces the same barrier of lack of ownership of premises as previously discussed in cases C2 and C3, C4 incorporates multiple environmental considerations which are under their control into their business operations. They include avoidance of single use plastic, recycling and influence employee’s environmental behaviour (see C4’s individual framework in Appendix XI). This indicates the need for a more nuanced way of looking at environmental considerations in transition towards degrowth.

Similarly to C2, C4 established and funded an environmental initiative: *“C4R4 stated that their pro-environmental initiative is self-funded.”* (Investigator’s notes from site visit on 17/08/2018). This can be seen as a more preferable source of “growth” of activities for a degrowth economy. This type of “growth” is different since it is not aimed at expansion of productive capacity (Leonhardt et al., 2017).

For C4 profit itself does not appear to be the sole motive. Consider the following: *“It’s not just for money [...] We all want to be happy and healthy and useful”* (C4R4 Int.) which corresponds to satisfaction and happiness as possible motives of production in degrowth (Nørgård, 2013).

Case 5 [C5]

“[C5] cares about the earth, its animals and people’s health” (C5).

C5 is a micro firm based in West Yorkshire. It was established in 1996 and specialises in personal care products. C5 employs seven individuals. Four of them work full time, and three work part time.

C5 is a manufacturing company. It provides useful insights into manufacturing for degrowth. They relate to C5’s low-impact product, the manufacturing of which does not produce waste which is a desirable attribute of post-growth visions (Maxton, 2018). Unlike C1, C5 has a preference towards ancient technology and method of production: *“Striving always to minimise our impact on the environment, we use as little energy as possible throughout production – every [C5 product] is poured, cut, stamped and packed by hand, here in the UK”* (C5 website). This also indicates a lack of importance of productivity growth, since C5 prefers hand-made rather than machine-made products. Avoidance of complex technology corresponds to a call in the literature for simpler technologies for a post-growth and degrowth economy (Illich, 1973; Daly, 1993; Schumacher, 1993, Heikkurinen, 2018).

Ethics run throughout business operations in C5 (*“ethics come before profit”* (C5 website)) and encompass those towards the planet, society and also non-human life. C5 provides an example of inclusion of non-human life considerations on multiple levels, from their attitudes to manufacturing. Consider the following examples: *“[C5] cares about the earth, its animals and people’s health”, “We are committed to producing [C5 product] that contain no animal products or by-products. We are also completely against testing cosmetics on animals”* and *“[C5’s] business model that benefits the planet, its animals and its people”* (C5 website).

Unlike the other 6 firms studied, C5 did not identify barriers. Instead C5 identified a “coping mechanism” which allows them to thrive while maintaining their ethics driven model: *“Because of the kind of customers we have (like minded retailers), we don’t find it too hard”* (C5R5 Int.).

Like C1, C5 are explicitly political. Consider the following: *“This [the culture the founders experienced when growing up] proved to be fertile ground for radical, political thought”* and

“It came naturally to them to rally against the capitalist model” (C5 website). Moreover, C5 criticise large scale manufacturing for disregarding health considerations, those of humans and the planet. Consider the following: *“in the never-ending quest for more profit the Commercial Soap Industry has blatantly disregarded our and the planets health and wellbeing”* (C5 website).

Another element which is similar to that of C1’s flexibility in working hours, is unorthodox working practices of C5 which make sure that family wellbeing is maintained: *“All our employees have child care issues and so we have set up the working day to start at 9.30 and finish at 15.30”* (C5R5 Int.) This corresponds broadly to reduction in working hours advocated in degrowth, and the wellbeing aspect of degrowth (Schneider et al., 2010). However, concrete examples of incorporation of such practice are valuable, and the possibility of incorporation of those should be sought in future studies.

With regards to other society orientated considerations, C5 is embedded within its local community: *“We sell locally and employ locally”* (C5R5 Int.). This corresponds to localisation (Alexander, 2015b; Dittmer, 2015; Fournier, 2008; Kallis, 2017; Latouche, 2009; North, 2010; Schumacher, 1993c; Marshall and O’Neill, 2018) and embeddedness within local communities (Söderbaum, 2008).

Case 6 [C6]

“We want to measure [success] in lives being transformed” (C6).

C6 is a social enterprise based in the East Midlands. It was established in 2018 and specialises in food production and sale. C6 has two directors, one of whom is paid. It also relies on help from 18 volunteers each doing a 3-hour shift.

Similarly to C4, C6 has a strong social orientation. Unlike the other firms studied, C6 is a social enterprise. Due to C6’s strong social orientation it provides multiple insights into social considerations. C6 was established with a social motive to mainly provide support and employment for victims of human trafficking: *“The goal [of C6] is to provide support and employment for victims of human trafficking”* (C6R6 Int.). The social motive is reflected in multiple considerations towards wellbeing as an integral part of their operation. C6 view themselves as a *“sympathetic employer”* (C6 Int.). C6 also seek for other ways to pursue their values, exemplified in donation to charities (*“[...] currently they send money to charities that work with child soldiers.”* (C6R6 Int.)).

C6's attitudes to growth and performance deserve a particular attention since they deviate from profit maximising logic of mainstream business (see e.g. Friedman, 2007). Consider the following: *"I'd like them [survivors of human trafficking] to start their own shops, this is our language for growth"* (C6R6 Int.) and *"we want to measure [success] in lives being transformed"* (C6R6 Int.).

While C7 experienced scepticism, and both C7 and C3 experienced lack of cooperation, C6 experienced cooperative attitudes from the retailers based in the same area. Consider this: *"We'd like to be in a community of retailers. [Place] is a truly social space. We'd like it to be the most ethical [Place]. It is a community"* (C6R6 Int.).

C6 also provides an insight into an unexpected benefit which was not mentioned by other firms researched for this study. C6 experienced help from an individual who became inspired by C6's values: *"Our branding is done for free by a friend"* (C6R6 Int.). This should be investigated in future research in other firms which may have experienced unexpected benefits when their business model, operations, motives deviated significantly from business-as-usual in a social and/or environmental way.

Similarly to C1 and C2, C6 have an unorthodox view on competition and have *"no desire to beat anyone"* (C6R6 Int.). Cooperation instead of competition is argued to be suitable for post-growth in general and degrowth in particular (Assadourian, 2012; Gorz, 2012; Hudson, 2007; Nørgård, 2013). Competition in a growth economy can be seen as a source of growth (Gorz, 2012; Nørgård, 2013), thus the tendency in the degrowth economy would differ.

Environmental considerations also play an important role and are exemplified in single use plastic avoidance, sourcing locally and sourcing furniture from local pro-environmental firms. Consider this: *"We wanted to have least impact on the environment, support and use businesses that are doing the same"* (C6R6 Int.). Beyond the environmental aspect of C6's operation, this insight once again highlights the importance of cooperation. This time it is cooperation with suppliers and working together with them to achieve better environmental outcomes (for instance, *"we want seasonal fruit, therefore [we] choose to buy from a greengrocer located in the same [Place]"* (C6R6 Int.), *"their wood [benches, boards, counter] come from [Supplier] which is "a bit like" them"* (C6R6 Int.) and *"We wanted to have least impact on the environment, support and use businesses that are doing the same"* (C6R6 Int.)).

Case 7 [C7]

“I work for me, it’s not about money. For me, it’s about the finished article, it’s the service that I give, the impression I give, the results I give” (C7).

C7 is a micro firm based in the East Midlands. It was established in 2014 and specialises in photography. The only employee of C7 is its owner.

C7 provides an insight into social considerations due to the nature of its business operations (photography art) and also staying small in terms of growth. Connected to growth itself is a desire to train employees should the owner employ more people: *“I’d be an actual trainer”* (C7R7 Int.). This signifies a qualitative aspect of degrowth. Degrowth requires a qualitative change, a change in motives, a reorientation towards care (Kallis et al., 2015). Providing training, sharing existing knowledge free of charge can be seen as a manifestation of this. Sharing knowledge in a variety of ways rather than selling it can be further investigated in relation to degrowth.

C7 provides an example of a dematerialised social experience: *“it’s a social thing. It’s getting all the families together, and having a bit of a laugh, and it’s an experience”* (C7R7 Int.). Since dematerialisation is an integral part of degrowth (Lorek, 2015; Kallis, 2017), positive experience without consumption and providers thereof should be investigated further in future studies. C7 as a photography art studio provides an example of such a firm. This is because consumers willing to preserve a memory of an important moment would not have to purchase their own equipment. This directly relates to reduction in consumption that degrowth advocates (Schneider et al., 2010).

Moreover, C7 arguably provides an example of a firm which “provide[s] those kinds of products and services that enable consumers to live a lifestyle of sufficiency” (Reichel, 2018, p. 24). This is expressed in case of C7 in not only the dematerialised social experience outlined above. It is also expressed in provision of high-quality images associated with a significant occasion, thus perhaps eliminating the need for consumer to prefer quantity in a situation where high-quality images are available.

Like C3, C7 exists because of the owner’s passion for art rather than a desire for profit. Consider the following: *“I work for me, it’s not about money. For me, it’s about the finished article, it’s the service that I give, the impression I give, the results I give”* and *“for me, it’s about the professional side, it’s just that, satisfying my own needs, and drive, and passions, so yeah, money doesn’t really come into it”* (C7R7 Int.) In this respect C7 similarly to C3 is a manifestation of amateur economy, i.e. an economy driven by passion, which is considered an

integral part of degrowth (Nørgård, 2013). In amateur economy productivity is redefined from maximising the amount of output to experiencing happiness, joy and “satisfaction from the process of producing the output”, which requires re-evaluation of what is considered important (Nørgård, 2013, p. 68). In such economy satisfaction arises from making (Nørgård, 2013), which corresponds to C7’s emphasis on drive and passion rather than money.

C7 seeks to cooperate with other firms in the area where C7 is based: *“I went around all of [Location] city centre asking ... if they would collude with me ...and none of them got back to me... They are suspicious”* (C7R7 Int.). However, there was lack of cooperation. Suspicious attitudes C7 faced correspond to the experience of C2 noted above. As was noted in the case of C2, this poses a requirement to theorise on degrowth transition while acknowledging complexity and recognising the barriers which prevalent beliefs, culture and discourse present (Assadourian, 2012; Kallis, 2017c; Domènech et al., 2013).

C7 chooses to source from small local firms: *“I...use a picture frame maker who is ... just two roads away from me. And I go to him and he does all my frames and my mounts”* (C7R7 Int.). This is yet another example of localisation of production which runs across multiple cases in this research.

The concept of sufficiency (see Alexander, 2015b) runs across the cases. In the case of C7 consider: *“Money is not essential, as long as it pays the bills and pays for my time”* (C7R7 Int.). It questions the notion of income maximisation and instead focuses on “enough”. This necessitates studying firms in relation to the worldviews of owner-managers as will be discussed below.

In the case of C7 environmental considerations are exemplified in C7R7’s attempt to do what is possible considering lack of unit ownership, as is the case with several other firms studied. Examples of what C7R7 identified as possible include LED lights, recycling, not printing extras (see C7’s individual framework in Appendix XI).

A lack of safety in the surrounding areas prevents C7R7 from leaving her equipment and cycling to the premises: *“I don’t want my equipment left in the building. Sadly, I have to drive. I did plan to leave things here and cycle in, but just watching the area, and as the area’s changed, I don’t want to leave anything here”* (C7R7 Int.). Yet, C7R7 aims to eliminate the need for driving: *“we want to move, so when we move, one of the conditions of the move is that my studio will be build where we move, so there will be no cars, I will walk out of my backdoor*

and across the field or across the driveway and into my studio. So, zero effect of the workday will be in carbon” (C7R7 Int.).

The latter part of the interview with C7R7 offers an insight into personal behaviours of owner-managers of environmental, social and values-driven firms. While personal behaviours were not investigated as a part of this thesis, further research is needed. Consider the following examples: *“we have solar panels [at home]. We use solar, we are well insulated” (C7R7 Int.)* and *“Personally, I’ve got a solid fuel log burner which does all my hot water at home and any broken pellets and any of the wood that comes from forestry gets dried out and I take it home...” (C2R2, Int.).*

To summarise, even though environmental and social orientations are evident in each firm, which arises from the selection criteria, those are manifested differently and inclinations towards particular considerations can be noticed. For instance, C1, C2, C3, C5 have a strong environmental orientation. C4, C6, C7 have a strong social orientation. Each firm provided insights which go beyond the original framework F1. For instance, C1 further enhances understanding of democratic decision-making via non-hierarchical structure. C2 offers industry transformation as a motive for business. C3 supplements this with passion for product. C4 offers a deeper insight into what embeddedness within local community and social orientation can entail. C5 enhances understating of “non-violence” towards non-human life via avoidance of animal products and animal testing. C6 offers an in-depth insight into the pathways towards employee wellbeing. C7’s contribution to understanding of degrowth business lies in dematerialised experience. The nuances and differences evident in each firm are useful for degrowth as they have a practical value which can help firms transition towards degrowth in real life.

5.2. The aggregated framework

5.2.1. An overview of F2

In light of the findings from the individual frameworks, degrowth business framework F1, which is an answer to the question “What should production for degrowth entail?”, was re-worked into F2 (Appendix IX). F2 is an aggregation of individuals findings, the main outcome of this investigation and the answer to the research question of how small firms could transition towards degrowth. It aims to provide a practical guide for this transition, a wealth of elements firms can strive to, and perhaps should, adopt to transition towards degrowth. This section

overviews the elements while subsequent sections (5.2.1 – 5.2.6) will link each group of elements with the literature.

Which elements are manifested across all cases? Since the firms for this study were selected based on particular characteristics, those are manifested across all cases. They include environmental and social orientation and primacy of motives other than profit. Other elements that are manifested across all cases include frugal use of materials, unorthodox marketing, embeddedness within local communities, unconventional attitudes towards profit and growth. However, the differences in individual contributions are important. They are helpful in providing nuance and detail (Flyvbjerg, 2006) which makes F2 comprehensive.

The framework includes a broad range of environmental considerations depending on a firm's expertise, operations, and opportunities. Those range from generation and exporting of own energy in case of C1 to avoiding single use plastics in cases C4 and C6. However, like all the elements in F2, energy use should be seen together with the barriers that firms face. For instance, a notable barrier to using renewable energy is a lack of ownership of units where firms are based. It applies to all firms studied apart from C1. This means that a firm may not be able to control, e.g. installation of solar panels, if the industrial unit is owned by someone else.

In terms of material use, frugality is a prominent category. It can be manifested in multiple ways and apply to multiple resources, e.g. materials, water, food. For instance, while C1 repurpose materials, C5 avoid waste in production altogether.

Embeddedness within local communities includes multiple examples. It can be manifested, e.g. via cooperation, serving local communities or facilitating human communications. However, the theme of cooperation is not confined to embeddedness. It is also connected to a lack of competitive attitudes or a lack of desire to out-perform other firms (see individual findings from C1, C2, C6 above). Sharing knowledge is important as a society-orientated element and also a motive for business (C3). A manifestation of knowledge sharing found in C7 is training new employees. Knowledge sharing is not necessarily limited to the local community. For instance, C1 develop open-source software which is not confined to any particular geographical location.

Several insights that informed F2 are unique to one or more of the firms studied. Considerations towards non-human life are manifested in C1, C2 and C5. Explicit political orientation is manifested in C1 and C5. Passion for product is a motive behind business for C3 and C7. Most

firms studied are motivated by a desire for environmental improvement. Profit is not seen as an end in itself, rather a means. For example, in the case of C5 profit allows them to achieve their core values (*“without it we would not be able to make sure our core values can be achieved, but we will not allow profit to dictate our decisions”* (C5R5 Int.)), it allows C6 to employ victims of human trafficking (*“the company is not-for-profit, and profits are re-invested into the pro-social business operation”* (C6R6 Int.)) and aim to assist child soldiers (*“the profits going to secure the rescue and rehab of child soldiers around the globe”* (C6 website accessed 26/09/18)), and it allows C3 to acquire more time (*“to keep my passion going I need a source of income, so we need to make some profit to cover the costs [...]”* (C3R3 Int.) and *“A lot of the money goes into allowing me time to do more research.”* (C3R3 Int.)). However, in the case of C1 the need to make a profit in a capitalist setting is a barrier to implementing further social considerations within their model: *“Having to make a profit to some degree is a barrier because it limits the time you can spend on it [adopting social considerations within business model]”* (C1R1 Int. 2).

The firms studied offer an unconventional perspective on performance and success. While having to make a profit (consider *“you have to do it in such a way that you can make enough profit to live”* (C1R1 Int. 2)) in a capitalist setting is not surprising (Pineault, 2016), none of the firms highlight the primacy of financial performance or sophistication of financial performance metrics as a measure of success. However, the importance of environmental performance (C1), ethical performance (C5) and non-monetary quantitative performance (C6) were highlighted. Since the firms studied exhibit motives and drivers outside the conventional profit maximisation, the principles of management of such firms are sophisticated in terms of ethics and are connected to the category of employee wellbeing. In terms of the principles of management, cooperation is again highlighted. Yet, in this case cooperation is internal or among the individuals (e.g. C3) and departments within firms (e.g. C5). Consideration of other business models is evident, which may apply to the firm itself (C6) or venturing into not-for-profit sectors (C2, C4).

All firms studied have an orientation towards employee wellbeing. Although, this element is manifested in different ways depending on a firm studied. It can be derived equally from independence, freedom and ability to work independently on separate projects, as is the case with C1, or from a careful consideration of dignity and mental wellbeing of employees (C6). It should be noted that C1 employs highly skilled individuals, and C6 aims to provide employment to victims of human trafficking who may lack skills (C6 Int.). Other element of

employee wellbeing can be used in multiple contexts, such as mutual respect (C1) or comfort provision (C2). Unconventional working hours are an insight valuable for degrowth since it corresponds to “reduction in working hours” in F1. Examples include C1’s flexible working hours and C5’s working hours structured around the employees’ family lives.

The “Production” sub-group of elements provides insights into manufacturing, productivity, technology, localisation and principles concerning, e.g. quality and procurement. None of the firms studied strive for productivity increase. This is not surprising considering a lack of profit maximisation imperative in the firms studied. C3 and C5 purposefully avoid using methods which would allow them to increase productivity. For instance, in case of C5 using an “ancient” method of production allows them to control their production process in line with their environmental considerations: *“We use the ancient [...] method of [C5 product] making, which creates a biodegradable [C5 product] with zero by-products. There is literally no waste. Everything gets used up”* (C5 website). In terms of manufacturing, C3 and C5 avoid waste in the process of production. With regards to technology, appropriate technology is preferred.

Localisation is manifested, e.g. in buying local whenever possible, sourcing from local firms. Across the framework, localisation is also manifested beyond procurement. It can be observed in, e.g. employing people locally (C5) and a preference towards working locally due to environmental considerations (C1).

Moreover, production is seen by the firms studied not as a purely mechanistic exercise aimed at a certain output as exemplified in “productivist” logic or production for its own sake (Spash, 2017b, p. 25). It is seen as a social activity. This notion is manifested in cooperation with other local firms (C2), experiencing happiness in the process of production (C3, C7), seeing production as a means for learning and improvement (C3, C5), and broadly as a relationship with others, e.g. suppliers as is the case with C4.

Unconventional attitudes to growth are evident. Yet, they are manifested in multiple ways. Those range from undesirability of growth (C3), to sufficiency in size (C1, C7), to growth to capabilities (C2), to growth for social (C6) or environmental (C1) good, and growth of the models and not firms themselves (C4).

Considering the discussion in Section 3.6, multiple barriers appear to be broadly a result of a capitalist organisation of society, including the need for profit making, commercialisation, ownership, and globalisation, including societal expectations regarding the cost of products and prices for local alternatives to globally produced goods. Lack of environmental

considerations in the socio-economic system is also a barrier manifested in multiple ways, from a lack of necessary infrastructure, to a lack of pro-environmental alternatives, to a lack of environmental education. Other barriers include technology, from technology-aversion (C1) to consumer technology which cheapens art (C7).

Two additional categories arose from two cases, but further research in future studies of those categories is needed. Firstly, C6 experienced an unexpected benefit. It was manifested in people who share C6's values willing to help C6 free of charge. Secondly, C5 instead of reporting barriers, reported a coping mechanism to address the barriers. Such coping mechanism is C5's decision to work with like-minded retailer.

Finally, other-regarding rather than individualistic or self-serving values can be noted. Those are the values of owner-managers manifested in business operations. "Others" in this case may refer to humans and non-humans. Values identified in F2 directed at other human beings are exemplified in C4R4's principle: *"That's the way I like to keep my business, that we all benefit, rather than just me"* (C4R4 Int.). They include cooperation, conflict avoidance, neighbourliness. However, values can also be directed at the environment and non-human life (e.g. C5). They include sustainability and eco-centric and environmental values. Such values underpin the attitudes such as non-violence towards non-human life. Additionally, several values which broadly relate to morality are honesty, conscientiousness, modesty, humility. With regards to those values, an inter-disciplinary research is needed to understand an inter-relation between those values and degrowth business.

5.2.2. Worldviews of owner-managers

The attitudes, values and motives are together termed here under a category of worldviews. Worldviews identified in this study not only cover those previously identified in the literature, but also offer a more comprehensive, in-depth picture of what those may be like, broadly encompassing both social and environmental orientations.

To compare to the literature, drivers other than profit and the meaning of success beyond material success (Hinton and Maclurkan, 2017; Jackson, 2017; Liesen et al., 2015; Kallis, 2017b) are evident. Simplicity and autonomy of operations (Kallis, 2017; Kallis et al., 2015; Schumacher, 1993b, 1993c) are manifested in various ways, such as in a preference towards staying small (e.g. C1) or a preference towards simplified, appropriate technology or "ancient method" of production (C5). The importance of values such as individuality (C4), humility (C1) and dignity (C6) becomes evident and goes in line with the values emphasised by post-

growth scholars such as Daly (2018) who emphasises the value of individuality, and Maxton (2018) who emphasises the need for humility and dignity.

The notion of cooperation (Assadourian, 2012; Manner and Gowdy, 2008) runs throughout the framework as a value, an attitude (as is the case with C6 which questions competition), and behaviour (as manifested in embeddedness). The emphasis on cooperation diminishes the importance of competitive attitudes. For instance, C6R6 (Int.) states that they have “*no desire to beat anyone*”. The presence of cooperation in findings is not surprising since humans evolved as social beings, and pro-social tendencies such as cooperation are inherent to their behaviour (Manner and Gowdy, 2008). However, capitalism’s profit orientation emphasises competition (Gorz, 2012; Pineault, 2016). Since the firms studied deviate from the logic of profit maximisation, they appear to afford cooperative attitudes.

The value of non-violence (Schumacher, 1993b, 1993c), especially non-violence towards non-human life, is evident in some of the firms studied. C5, as an explicitly vegan company, is an example of incorporating this value throughout its business model, including sourcing. This is evident in C5’s avoidance of the usage of palm oil: “*We will never use Palm Oil and believe the best thing for the rainforests; its animals and the earth is to avoid it entirely*” (C5 website). It is also evident in their product design, e.g. in their choice to use biodegradable materials. Consider, for example: “*Look for the Leaping Bunny symbol on your cosmetics... to use this symbol [C5] has had to scrutinise every ingredient and the companies that supply them, so you can be assured that no animal has been harmed when you see it*” and “*Rabbits, Guinea Pigs, Mice, and Rats are injected, gassed, force fed and killed to test your cosmetics – Non-essential vanity products! Cruelty Free International and [C5] think this UNACCEPTABLE*” (C5 website 2018, capitalisation original). Acknowledgement of non-human life is also evident in C1 and C2. While C5 explicitly adopt a position of no harm towards non-human life, including animals and the Earth, C2 creates habitat via their forestry initiative. Non-human life as a category is featured in F2 as a part of Environmental group of elements to acknowledge it as a part of the biosphere.

Deviation from profit maximisation (e.g. Friedman, 2007) was an important part of the motives in the theoretical framework F1, exemplified in a broad notion of redefining the meaning of economic activity (Alexander, 2015b; Spash, 2017b). Redefining the meaning of economic activity refers to the removal of the dominant “productivist” (production for its own sake) logic as a motive behind production (Spash, 2017b, p. 25). In light of the findings such broad notion

should be deconstructed, since the framework itself challenges this logic on multiple levels. For instance, the meaning of economic activity as profit maximisation is replaced by the desire to transform the industry (C2) or a desire to produce something a person has passion for (C3).

A desire to sustain oneself and one's family cannot be ignored as one of the motives. However, this corresponds to the idea of sufficiency rather than excess or "conspicuous luxury consumption" (Samways, 2008, p. 10). For instance, C7R7 stated that "*if I was here for the money, I'd have closed it down ages ago*". The presence of non-material values and motives in people is evident (Sayer, 2011), and the findings regarding motives beyond profit question the validity of models of individuals and firms in mainstream economic theorising (Manner and Gowdy, 2008; Söderbaum, 2008). Thus, both the motive and the purpose of profit deviate from the understanding of a firm as a mere profit maximiser, while the worldviews of owner-managers deviate from the understanding of individuals involved in economic activities as merely pursuing self-interest (Spash, 2017b).

5.2.3. Environmental elements

Frugality has been studied well in the literature, and various manifestations of frugality have been previously identified and described. For instance, the need for unnecessary waste reduction was identified by Gorz (2012), O'Neill et al. (2018), Maxton (2018). Avoidance of energy waste was identified by Georgescu-Roegen (1993b), recycling by Daly (1993) and Maxton (2018).

To demonstrate the variety in by-product waste avoidance, C1 store by-products for future use: "*We...produce quite a lot of slate, a lot of which is broken. And we have saved a lot of that material to use as ballast*" (C1R1 Int.2). C2 use by-products of another company ("*A lot of the time they donated them by allowing us to go through their skips*" (C2R2 Int.)) for their environmental initiative and share their by-product with a neighbouring firm: "*We produce an awful lot of cardboard. There's an organisation around the corner, they pack very expensive cups... Packaging for them is very expensive, they got two choices, either they buy packaging materials...or...find another product, and they found another product which is shredded cardboard. In which case - where you get your cardboard from? And we deliver all our cardboard to them...*" (C2R2 Int.) C3 and C5 avoid waste in production and their products are biodegradable by design, for example: "*What we sell can be composted, the papers that we sell, they can be composted*" (C3R3 Int.) and "*We use the ancient cold-process method of [C5*

product] making, which creates a biodegradable [C5 product] with zero by-products. There is literally no waste” (C5 website 2018).

C4 use would-be waste products (food) from other firms while creating a pro-social outcome. C6 use their own by-product creatively and make a different product out of the would-be waste: *“meringues are made from egg whites which is a by-product of ice-cream making” (C6R6 Int.).*

Addressing waste and pollution specifically has been highlighted by scholars for decades (Daly, 1993d; Kallis et al., 2015). Where waste avoidance is not possible, unnecessary waste reduction (Gorz, 2012; O’Neill et al., 2018) and recycling (Daly, 1993) are practised. For instance, C7 only print the photos that are needed (*“I don’t print extras” (C7R7 Int.)*), while C4 and C5 avoid single-use plastics: *“We don’t have any plastic bottles here, all the water in either in a glass or a can” (C4R4 Int.)* and *“All our packaging is 100% recycled and recyclable...and plastic-free and our parcels for delivery are packed using brown paper tape” (C5 website 2018).* C6 use biodegradable packaging, even though *“The packaging is expensive” (C6R6 Int.).* C3 and C5 use natural, renewable materials in production.

With regards to energy specifically, renewable energy is preferable (Trainer, 2012; Kallis et al., 2015; Maxton, 2018; O’Neill et al., 2018). However, while C1 demonstrate sophistication in their energy use, production and energy waste avoidance due to the nature of their business operation and ownership of the industrial unit, other firms cite lack of ownership of premises as a barrier to renewable energy use. For example, consider:

“We don’t control our energy supplier; the council own the building” (C6R6 Int.)

“I’ve been talking to the landlord about trying to get some solar panels. At this moment in time he’s trying to get funding because we don’t own the buildings” (C2R2 Int.)

“We are in the process, at the moment, of getting quotes for solar panels on the roof. It’s also a listed building, so I have to work with the council. It’s not my building” (C4R4 Int.)

It appears that energy considerations and use are often outside of firms’ control and should be addressed on a different level beyond that of individuals firms. It may concern, for instance, the political level and the question of ownership, and in particular ownership in a degrowth economy and society.

5.2.4. Societal elements

With regards to the second group of elements, which targets the socio-economic sphere and wellbeing thereof, all firms are embedded within their local communities. This supports Söderbaum (2008) and Trainer's (1995) statement regarding small firms being embedded within their local communities. Several examples of embeddedness on different levels can be presented. Consider embeddedness within community of retailers: “[Place] is a truly social space. We'd like it to be the most ethical [Place]. It is a community” (C6R6 Int.), and embeddedness within local region: “We sell locally and employ locally” (C5R5 Int.).

Serving the needs of society was highlighted in the literature as a desirable aspect of production (Gorz, 2012; Klitgaard and Krall, 2012; Schumacher, 1993c). All firms investigated serve various needs of society (C1 serves the environmental needs, C2 serves the safety needs, C3 serves the need for comfort via clothing and self-expression via colour, C4 serve the needs for a community space and food, C5 serve the need for hygiene, C6 as a social enterprise serves the need for skills provision, C7 captures important moments of human lives via art). Consider examples:

“Society needs to be less dependent on fossil fuels and arguably needs to be less dependent on imported fuels.... If by using renewable energy we can reduce the amount of fossil fuels we need, then I think we are consistent with that idea of meeting the needs of society” (C1R1 Int.2).

“When the fire industry was presented, I sat there and I thought it was good, protecting people, helping to save people's lives in the situations where they are in danger, protecting property, so stopping the likes of the Grenfell towers because that's where it gets if you don't follow the rulebook” (C2R2 Int.)

However, every firm serves the need differently depending on their industry. None of the firms emphasise need creation or a desire to create demand. This is also manifested in their preference towards unorthodox marketing.

The notion of community is central to degrowth (Klitgaard, 2013; Nørgård, 2013). In the firms studied it is manifested on many levels beyond the principle of embeddedness within community. Consider, for instance, creating a community of local retailers, as is the case with C6 and their community, serving the needs of the global community as is the case with C1 and their open-source software and knowledge sharing beyond their own country.

Knowledge sharing is an important aspect of investigated firms' operations. This further undermines the primacy of monetary gain, since knowledge could be perceived as a product to sell. Rather, degrowth firms would seek opportunities to share their knowledge where possible. The nature of knowledge and knowledge sharing is varied. For instance, knowledge is manifested in teaching others about business via advice: *"It's a lot of students starting up on their businesses, or people starting with their businesses... it's another way that I help the society"* (C3R3 Int.) and *"I'd like them [victims of human trafficking] to start their own shops"* (C6R6 Int.), sharing the business principles: *"the sustainability of the model is based upon spreading this concept throughout industry so this then becomes the sort of model that is the norm"* (C2R2 Int.) and *"having [C4] as a blueprint for other businesses"* (C4R4 Int.), sharing expertise with employees: *"I'd be an actual trainer and observer"* (C7R7 Int.) and activists: *"if an opportunity comes along to teach anti-fracking groups how to make particulate sensors"* (C1R1 Int.2).

Overall, the inclusion of various other-regarding behaviours is not surprising. This is in line with Manner and Gowdy (2008) who argue that pro-social tendencies are inherent to people. The broad range of pro-sociality in the firms studied supports Manner and Gowdy's (2008) observation.

5.2.5. Internal business operations

Internal business operations represent activities which broadly correspond to those of a value chain. These should not be seen separately from the environment and society-orientated activities discussed above. However, identifying concrete activities and real-life examples can assist other firms in adopting degrowth business elements in the future. It can also assist researchers to further investigate those activities in-depth.

The term "value chain" as identified and described by Porter (2001) is avoided due to its embeddedness within a competition-orientated tradition in business studies, representation of a firm as a mere "collection of activities" (Porter, 2001, p. 51) and human beings as resources or "labour and management" (Porter, 2001, p. 52).

Implementation of ethics, environmental and social considerations in multiple ways is evident from ethical banking to ethical sourcing and beyond. Degrowth firms would adopt a long-term orientation as opposed to an orientation towards short-term financial gains (Spash and Aslaksen, 2015). Capital saving (Schumacher, 1993b) is broadly manifested in a cautious attitude towards borrowing and a desire to self-finance. For instance, C2R2 and C3R3 used

their savings to start their businesses, while C2 and C4 self-financed their environmental initiatives. Consider the example of C2: “[C2] started with £4000 in a garden shed” (C2R2 Int.) and “the reason why I had to set up [C2] first was because it paid for everything else. All that mechanism has been paid for internally, we never need grants or funding” (C2R2 Int.).

Degrowth firms may challenge the traditional metrics of success manifested in monetary terms. For instance, C6 want to measure their success in numbers of “lives transformed” (C6R6 Int.). However, this is not to abandon quantitative measurement altogether, since environmental performance can be quantitatively measured and further improved. This is the case with C1 which monitor their environmental performance.

All firms investigated use non-orthodox marketing. Consider C1R1 (Int.2): “I think doing a good job is probably the best marketing tool”. Some even do not consider marketing to be essential (“We don’t try to push anything” (C3R3, Int.)) and prefer to rely on word-of-mouth and communication with the public rather than using traditional advertising. Consider the following examples: “I suppose the marketing that we do do is mostly word of mouth, is going to exhibitions and talking to people occasionally, but more often than not it’s just word of mouth referral” (C1R1 Int.2) and “Word-of-mouth, social media, talks...” (C6R6 Int.). Undesirability of marketing and advertising was previously outlined by scholars (Daly, 1993; Marshall and O’Neill, 2018; Spash and Dobernic, 2017), and attitudes and practices of the firms investigated are in line with this characteristic of production for degrowth. Avoidance of traditional marketing in these firms can be explained by a lack of profit seeking as the primary motive of their operations, since profit is the aim of marketing (Altvater, 1994).

Long-term orientation, which is prioritised in post-growth tradition (Samways, 2018), is evident not only in financial planning, but also in general business orientation (C1, C2). For example: “you have to have a timescale that is potentially 15 years, the timescale I put it to not realising that in business 15 years is lunacy. In environmental biology they don’t do anything on a 15-years [scale]” (C2R2 Int.) and “our financial strategy is long-term instead of short-term” (C1R1 Int.1). This is not surprising since as opposed to growth and profit driven firms, firms investigated do not prioritise monetary outcomes. Consider C3: “I haven’t gone for increased production, high profits, because I think I would never be happy doing that” (C3R3, Int.). C3’s priority (happiness) corresponds with the priorities identified in post-growth and degrowth literature (Samways, 2018; Nørgård, 2013). This orientation allows firms to plan and prioritise long-term outcomes instead.

Some principles of organisation for degrowth applicable on a firm level have been previously outlined in the literature. They include democratic decision-making (Barca, 2019) and collaborative work (Schumacher, 1993c). These were found to be the case with the firms investigated. For example: *“Each of our departments has a big say in how the company runs and the directions we take”* (C5R5 Int.). Moreover, pro-social decision-making can be manifested in different ways, such as allowing for independence and autonomy while being ready to cooperate and work together where necessary as is the case with C1, lack of hierarchy and managerial control (C1), consultations with employees (C4). Some firms such as C3 and C7 were too small to investigate the principles of decision-making, e.g. in terms of it being democratic among employees. Yet, even in very small family run firms such as C3, which is operated by a husband and wife, cooperative decision-making can be witnessed, consider: *“My husband and I discuss everything”* (C3R3 Int.).

Explicitly not-for-profit business models have been considered in the literature (Hinton and Maclurkan, 2017). C6, a social enterprise, is an example of a such firm. Similarly to C6, other firms embed multiple ethical considerations within their principles of operation (e.g. ethical sourcing, pricing, transparency) and establish not-for-profit initiatives (C2, C4). This indicates a possibility of an indistinct division between different types of ethical firms, whether they are social enterprises or not. It appears that the distinction lies in the motives, attitudes and business operations. Consider the example of C1:

“we are, obviously, motivated to do what we do because we want to make environmental improvements, but at the same time we have to be able to eat and feed our families and pay our mortgages and all that nonsense. So, we have to have activities which are profitable and I suppose that means we are a for-profit company. Although, having said that, I think, [Ethical Bank Name] see us a social enterprise, or they have said that they see us a social enterprise, and other people have said that we can’t be a social enterprise because we are a for-profit company and some people have said that we can’t be a social enterprise because it’s not in our memorandum and articles and so on and so forth. So, the trouble with whether you are a social enterprise depends on how people are going to define it. I suppose, I would take the view that it’s really defined much more by your actions than by your memorandum and articles. Basically, look at what we do and judge for yourself, I suppose, would be my argument” (C1R1 Int.1). This may have implication for further research of degrowth business. If it is assumed that only social and/or environmental enterprises are suitable for a degrowth economy, multiple

pro-social, pro-environmental, values-driven but legally for-profit firms can be overlooked and not studied as manifestations of degrowth in a modern capitalist setting.

Working with like-minded firms and sourcing from firms that share similar values runs across the cases studied. This may indicate the existence of coping mechanisms which allow those firms to thrive within the modern capitalist system. C6 do not identify barriers altogether and instead refer to such a coping mechanism: *“Because of the kind of customers we have (like minded retailers), we don't find it too hard”* (C5R5 Int.)

Employee wellbeing is an important category. Alongside the society-orientated elements, it addresses the wellbeing side of degrowth and post-growth economies, in which wellbeing becomes central (Daly, 1993, 2018; Jackson, 2017). All firms studied incorporate wellbeing into their operations, though in various ways. For instance, for C6 provision of employment for the survivors of human trafficking is the goal. Wellbeing in this case is essential in terms of support and trust. C4 is a family-run business which tries to enhance wellbeing via introducing simple everyday practices, such as saying “Namaste” every morning. For C1 wellbeing means mutual respect and allowing the directors to work independently where needed. Independence and autonomy in terms of work in C1 corresponds to the work of Gorz (2012, p. 60) who highlights the importance of “personal autonomy and sovereign choice of the way in which one conducts one’s life”. Moreover, independence also relates to Schumacher’s advocacy of small units which “enable more people “to do their own thing”” (Schumacher, 1993b, p. 167).

The category of production relates closely to the environmental and societal elements. The importance of quality and durability correspond to the previous literature (Assadourian, 2012; Daly, 1993; Georgescu-Roegen, 1975, 1993b; Gorz, 2012; Latouche, 2009; O’Neill et al., 2018; Schumacher, 1993c), alongside other previously identified elements such as localisation (Dittmer, 2015; Fournier, 2008; Kallis, 2017; Marshall and O’Neill, 2018; North, 2010; Schumacher, 1993c).

Wellbeing is also evident in this category and is manifested in the lack of pursuit of productivity. The importance of this was previously identified in Jackson (2017) and Kallis (2017). It relates to happiness in the process of production. Meaningful participation of people in the process of production, fulfilment in the process of production, craft pride, development of human potential, creative activity (Gorz, 2012; Klitgaard, 2013; Schumacher, 1993b, 1993c) should all be seen as a part of production in degrowth, and therefore translated to a firm level.

The most helpful way to see this may be to view the wellbeing and production categories together. Craft pride is manifested well in C3 (natural fibres, dyes), C5 (personal care), C6 (ice cream), C7 (photography) where increased productivity would be detrimental. Since productivity increase is not pursued, the use of appropriate and even “ancient” (C5) technology becomes possible, and development of human potential becomes possible instead. It is manifested in, for instance, autodidacticism (C3), which requires time.

This is not to say that degrowth firms would deliberately choose wasteful methods of production. Schumacher (1993b, p. 165), while referring to the rationality of choosing efficient methods of production, notes that “no one in his senses favours inefficiency”. However, he also notes that the concept of efficiency relates “only to the material side of things and only to profit” and does not relate to people, for instance, happiness gained in the process of production (Schumacher, 1993b, p. 165). The pursuit of solely material efficiency leads to a particular type of organisation of production which pursues the economies of scale, favours specialised equipment and division of production, yet new types of organisation need to evolve which favour wellbeing and serving people (Schumacher, 1993b). Schumacher (1993b, p. 166) warns that such new types of organisation of production “may be looked upon as impractical and subversive”. However, since degrowth questions the logic of mainstream production, those firms become suitable for degrowth.

The ecological aspect of degrowth is manifested in environmentally minded sourcing, preference towards local and seasonal produce. Connected with the environmental group of elements, viewing one’s business as a part of industrially symbiotic setting (C2) is environmentally beneficial, so is using renewable, natural materials (C3, C5).

The Growth category requires a separate paragraph of discussion. Since profit is not the main motive for the firms investigated, the notion of growth is also unorthodox. The attitudes range from non-growth/undesirability of growth (C3) to growth of model itself (replication) and not necessarily the business investigated, which also closely relates to “knowledge sharing” element (C4, C6), to growth of social/environmental initiatives rather than businesses (C2, C6) and growth to do more good while staying small (C1).

Smallness of units of production has been previously noted in the literature (North, 2010; Schumacher, 1993, 1993b; Trainer, 2012; Spash, 2017b). Existing desirability thereof is evident, e.g. in C3: “[Growth] is my main problem [...] I don’t want to employ and manage more staff and rent bigger premises” (C3R3, Int.), in C2: “I don’t want that, it makes my blood

go cold thinking of having 10-15 engineering vehicles on the road, we've been there, done that and the organisation would need to be different. Or I would need to be different" (C2R2, Int.), in C7: *"I wouldn't want to grow too big, ideally, I've got a couple of friends or fellow enthusiasts"* (C7R7 Int.). These categories of non-growth or size sufficiency for degrowth should be investigated in future research. However, though non-growth may indeed be a suitable strategy (Leonhardt, 2017; Gebauer, 2018), it should be noted that degrowth understood as downscaling of production (Schneider et al., 2010) may not automatically translate into downscaling on the micro economic level.

5.2.6. Barriers

The final part of F2 are the barriers firms investigated face when practicing their businesses in pro-social, pro-environmental and values-driven manner. The barriers were identified via an inductive logic to reflect the real-life struggles in the given environment and in the given context. While investigating C6, a sub-category of "unexpected benefits" was introduced to reflect the socio-economic sphere more accurately. This category may require further investigation to identify other manifestations of unexpected benefits other firms may face. C6 experienced a benefit of people willing to help C6 free of charge due to sharing their social and environmental attitude. None of the other firms investigated mentioned this benefit.

The opposite of this benefit is disbelief experienced by C2R2 where others were initially sceptical of his environmental initiative: *"In doing what I've done it's been vastly more energetic and expensive than it needs to be [...] There's been multiple occasions where people just think I'm a liar because I'm saying: "we are doing this" [...] That's why I set up [Facebook Group] so if anyone says: "We don't believe you", go have a look, there are pictures of the [tree] nursery all over it, there's video footage"* (C2R2 Int.) or suspicion C7R7 experienced when she tried to cooperate with local firms: *"They are like, "What's in it for me? What are you doing that I'm not getting?" A lot of that. They are suspicious, a lot of people are suspicious"* (C7R7 Int.). Such suspicious attitudes indicate that a transition towards degrowth necessarily involves going beyond addressing capitalism and its drive for growth and profit orientation (Foster et al., 2010; Gorz, 2012; Boillat et al., 2012; Kallis et al., 2012; Pineault, 2016). It also means transforming multiple other systems (Trainer, 2014, 2020; Max-Neef, 2014; Maxton, 2018), including culture and the system of beliefs that prevail in the society.

Presence of benefits that responsible reputation brings has been previously documented in the literature (Heikkurinen and Ketola, 2012) and may result, e.g. in better morale, loyalty, access

to capital. In the case of C6 willingness to help free of charge came from an external person who does not benefit financially from C6's operations as employees or investors may have done. Heikkurinen and Ketola (2012) also note a presence of benefits such as positive reactions from external stakeholders, resulting from a firm's responsible reputation. Therefore, the community goodwill C6 experienced may not be an exception, rather an indication of a tendency which should be investigated further in relation to degrowth, the value of cooperation and the notion of community central to degrowth vision.

Barriers discovered in this investigation range from the economic and political system itself (capitalism) to practical such as a lack of time or finance. This is not surprising, considering that small firms normally face a multitude of practical barriers, particularly related to finance (Richert, 2017; Testa et al., 2017). Financing of firms in relation to degrowth was not the focus of this study. However, this is an important consideration and is discussed further in Section 6.7.4 "Financial considerations as a limitation".

Lack of demand for pro-environmental options can be positive as is the case with C3 that see demand as a barrier to their size maintenance, or negative as is the case with C4. The nature of demand should be investigated beyond the study of firms and involve the study of consumers. For instance, future research can identify the barriers *consumers* face in transition towards degrowth.

Lack of ownership of buildings/premises was noted above in relation to energy use. It constrains firms' possibilities for actions regarding energy use. As noted above, this may need to be resolved not on a firm level, but a societal/political level since rent-seeking is related to the capitalist structure of the economy (Foster et al, 2010). The issues of ownership and rent-seeking can be noticed in, e.g.:

C3: *"I need a source of income, so we need to make some profit to cover the costs of renting the premises..."* (C3R3 Int.)

C7: *"when you've got a business unit, and a rent, and a landlord, well, I don't think you are in control. You are forever chasing whatever to make your landlord, or your renter, or your bank manager if you've taken out a loan, happy..."* and *"There are a lot of barriers when you haven't got a property or when you are renting..."* (C7R7 Int.)

Commercialisation of craft is faced by C3 and C7 and is closely related to public expectations. While via knowledge sharing activities (as does C3R3), firms can facilitate public education,

time is a constraint. Therefore, arguably public education should not be the function of small firms only. It should be addressed on a different level, such as changes in education which currently facilitates status quo (Vargas Roncancio et al., 2019).

To summarise, it is evident that multiple barriers noted are inherent to the modern capitalist and growth-orientated socio-economic system. These should be effectively addressed by a wider societal action, rather than merely by small firms themselves. This is further discussed in Section 6.6 which addresses usefulness of F2 in multiple domains.

5.3. The role of F2 in advancing theory

This section builds on the “Role of F1 in this research” and returns to the relationship between degrowth business and degrowth, and degrowth business and the capitalist setting. It was suggested that for firms to transition towards degrowth, they need to become degrowth businesses. In other words, for degrowth to be possible, firms need to adopt degrowth business elements. While the theoretical framework F1 initially suggested what those elements could entail, F2 offers an advanced position informed by an investigation of real-life small firms. While the practical implications and concrete uses of F2 are discussed later on, this section focuses on how reconstruction of F1 in light of primary data (which becomes F2) advances the theoretical propositions. Therefore, it focuses on the framework itself as a finding.

First and foremost, in the process of informing F1, it was decided to reconstruct the original six groups ((1) Matter and energy throughput and waste or the environmental group, (2) Internal business operation, (3) Wider society or the societal group, (4) Growth, (5) Values, attitudes, motives and (6) Barriers) into layers to propose a new way of making sense of the relationship between multiple groups. The bottom layer corresponds to the Attitudes, Values and Motives group of elements in the theoretical framework F1. Since the business owner-managers in this study precede the business itself, it is assumed that it is the worldviews that should constitute layer one. This relates to a critical realist understanding of reality and of firms as social forms and communities (Lawson, 2014, 2019). In other words, firms as communities exist due to individuals.

The following layers consist of business operations (internal, societal and environmental operations), corresponding to the groups of the theoretical framework F1, and the final layer represents the barriers. The barriers reflect the aspects of society which may prevent a firm from fully manifesting itself as a degrowth business, particularly due to capitalist dynamics of growth and profit seeking (Foster et al., 2010; Gorz, 2012; Trainer, 2012; Pineault, 2016). Since

businesses as components of the society and economy are embedded within the environment (Bhaskar, 1989), the environmental considerations have been placed on the bottom layer of the business operations to highlight their significance.

Fig. 4. F1 reconstruction into F2

1. Material and energy throughput and waste (Environmental elements) *...	2. Internal business Operation Governance: *... Wellbeing: *... Production: *...
3. Society (Societal elements) *...	4. Growth-related *...
5. Attitudes, Values, Motives *...	6. Barriers *...



Barriers (and constraining structures)							
Political: ...	Economic system: ...	Supply: ...	Demand: ...	Practical: ...	Mentality, culture and attitudes: ...	Social: ...	Benefit: ...
Internal Business Operations							
Finance ...	Performance ... Environmental performance ... Ethical performance: ...	Marketing ...	Principles of management ...	[Employee] Wellbeing ...	Production ...	Growth ...	
Societal elements							
Local community ...				Local & Global community ...			
Environmental elements							
Energy ...		Material ...			Non-human life ...		
Worldviews (and empowering structures)							
Motives ...		Attitudes ...			Values ...		

While F1 is a theoretical framework, F2 represents aggregated findings and is a revised framework.

The groups in F2 present and overview what degrowth business should entail. Firstly, degrowth requires a shift in values, which presuppose a deviation from productivism (Paulson, 2017). F2 proposes that beyond a shift in values, a broader shift should occur, which includes worldviews. Secondly, F2 maintains the original proposition with regards to the environment and society, i.e. considerations towards those must be included for degrowth to be possible. However, internal business operations need to be revised, and social and environmental orientations need to cover a much broader range of activities than were offered by F1. This range includes finance, performance (what it is and how it is measured), marketing, management and its principles, wellbeing of employees, production and growth. While Growth in F2 is included in Internal business operations to single out the aspiration to grow or not to grow within a firm, future research may instead aim to better understand the link between worldviews of owner-

managers and growth of their firm. This may relate to the study of sufficiency (Alexander, 2015b).

This call for inclusion of the broad range of firm's activities corresponds to the call of degrowth and post-growth scholars for a qualitative change, a radical transformation of structures and agents (Kallis et al., 2015; Maxton, 2018). It is proposed that such radical transformation needs to be manifested in firms on all levels and not be limited to principles of governance, increasing employee wellbeing and changing production as was done in F1. This also goes in line with Trainer (2012, 2014) who maintains that degrowth may not as yet realise the extent to which transformation needs to happen.

Moreover, while degrowth emphasises human wellbeing (e.g. Schneider et al., 2010), non-human wellbeing needs to be explicitly included in theorising on business for degrowth in line with Bonnedahl and Heikkurinen (2019b). F1 included non-human life as part of the value of non-violence. However, primary data shows (in particular C5) that considerations towards non-human life can be explicitly included in, e.g. how a product is designed.

This area did not receive sufficient attention in this research which had a broader focus. Thus, the link between inclusion of concern for non-human life as a consideration in business and degrowth should be established elsewhere. Since degrowth is based on ecological economics which deviates from a utilitarian view of nature and non-humans (Spash, 2012), it may be proposed that degrowth implies human *and* non-human wellbeing. While consideration of non-humans is included in F2 as part of the Environment, with advances in research which link firms and non-human life, consideration towards non-humans may become part of Internal business operations.

Furthermore, this study confirms that firms, which deviate from business-as-usual in a capitalist setting, face barriers (see proposition 2). This goes in line with the wealth of literature which outlines barriers for degrowth in a capitalist setting (Section 3.6.). F2 shows that the picture is complex, and a wide range of barriers is presented. However, even in a capitalist setting, though degrowth firms (or firms which deviate from business-as-usual) face barriers, there may indeed be structures which empower.

Though this was manifested in one case (C6), it goes in line with critical realist understanding of the interaction between agents and structures which can both constrain and empower (Bhaskar, 1989, 1998). This may require a more nuanced approach to structures in which firms operate. Another case firm (C5) identified a way to pursue ethics rather than profit and operate

within a capitalist setting via working with likeminded retailers. Even though this is a single case, findings from a single case are valuable and cannot be ignored (Flyvbjerg, 2006). This may indicate that advancing theory on degrowth business requires going beyond contrasting capitalism and degrowth business. Rather, identifying what structures or agents within the current system may be empowering towards degrowth business, and which are indeed constraining, can be more useful.

Thus, propositions for further advancement of the theory on degrowth business can be reframed as follows.

- (1) If firms are to transition towards degrowth and become part thereof, they need to become degrowth businesses. This means that they need to incorporate environmental and wellbeing considerations (human and non-human), and deviate from business-as-usual, which includes a shift in worldviews, i.e. values, attitudes and motives, including shifting the focus away from quantitative growth.
- (2) In transition towards degrowth, firms are likely to face constraining and empowering structures.

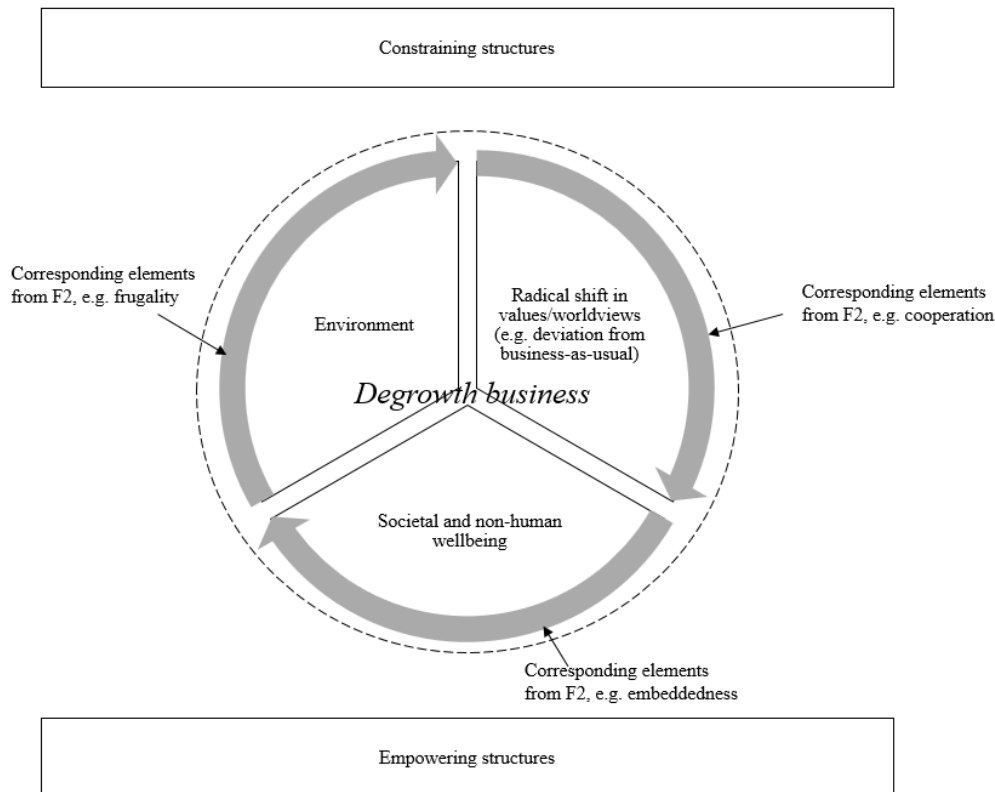
This reframing goes in line with the lack of finality of theory and therefore the need to question and advance it (Collier, 1994). With regards to the first proposition, while an experiment cannot be conducted where existing firms are made into degrowth businesses to test whether degrowth as a qualitative, all-encompassing *societal* change (Kallis et al., 2015) will come about, a future investigation can involve testing whether adopting the elements of F2, where possible and applicable, will (or will not) result in some of the aspects of what degrowth aims to achieve, i.e. those related to a decrease in matter and energy throughput and increase in wellbeing (Schneider et al., 2010).

While the second proposition, which arose from F1, suggested a link between degrowth business and capitalism, a link between degrowth business (an agent) and structures (both empowering and constraining) needs to be explored instead (fig.5). This will include capitalism and its manifestations as one of the constraining structures while acknowledging the complexity of the structures within which degrowth business is embedded.

Such structures in relation to business may indeed be external (those within which firms exist), e.g. the financial system. However, others can be internal and relate to people involved in business itself and those people's worldviews which give rise to degrowth business, i.e. bring it about. Though this investigation focused specifically on firms whose owner-managers'

worldviews empower and, arguably, give rise to practicing business in way which deviates from business-as-usual, it cannot be ignored that worldviews can equally be constraining. Thus, a link should be established with the social and the psychological. In this regard, while F2 offers an insight into what degrowth business should entail for degrowth to be possible, further links can be established based on F2 in terms of connections between its groups of elements.

Fig. 5. Degrowth business and structures



The figure above demonstrates a holistic outlook on a degrowth business which returns to the understanding of degrowth encompassing the environmental theme, wellbeing in a broad sense and a shift in values. The model also incorporates empowering and constraining structures in line with critical realist understanding of the interaction between agents and structures.

Finally, what needs to receive particular attention is the question of aggregation. This is because on the one hand this study proposes a framework, i.e. aims to simplify and present in a holistic way a concept of degrowth business. On the other hand, F2 appears broad, detailed and extensive. The main purpose of simplifying the framework, e.g. by arguing that for degrowth to be possible, firms need to comply to x, y, z, is to advance theory. However, the purpose of F2 and retaining the wealth of elements is for it to be of a practical value. Moreover, retaining such density of findings can be more interesting not only to practitioners, but also to social theory than higher level generalisations (Flyvbjerg, 2006). Future research efforts can aim to investigate one or more of the elements of F2 rather than the link between degrowth

business and degrowth, or what constitutes degrowth business as a whole. For instance, the element of autodidacticism (self-learning) in the process of production, and its potential contribution to degrowth may be further researched.

5.4. Linking research objectives and findings

This section returns to the objectives of this study and concisely summarises the findings in relation to the objectives of this research.

The first objective focused on the role of business in degrowth, the nature of production in terms of “who” the producers for a degrowth economy could be. It was important to answer the following questions: What role would business in degrowth play, who could be the agents of production in degrowth?

The second objective focused on understanding the role of small firms in degrowth, their potential to transition, the nature of production for degrowth by firms in terms of “how”, i.e. the characteristics of business for a degrowth economy by designing a degrowth business framework, and the barriers they could face in attempting to become degrowth businesses. The following questions were asked: What kind of potential do small firms have to transition to degrowth? What does production for degrowth by firms entail? What are the theoretical characteristics of degrowth business? What barriers could small firms face in this transition?

The third objective was to understand how small firms could transition towards degrowth in practice. This includes understanding the barriers they may face in real life. Since the investigation focuses on the British context, these are barriers firms may face in a capitalist and growth orientated setting.

Regarding Objective 1, since a degrowth society does not exist, the role of business should be discussed tentatively, while leaving sufficient room for theorising on producing for degrowth differently altogether. This includes modes of production far beyond business, e.g. production in backyards, and using alternative strategies such as permaculture, hobby production, production using previously utilised infrastructure (Trainer, 2012). However, the role of businesses as agents in a degrowth economy (Section 3.1), necessarily among other agents, remains important.

This impossibility to precisely identify or foresee an ideal agent, model or mode of production for degrowth arises because social systems are complex and emerging (Bhaskar, 1989, 1998;

Collier, 1994; Lawson, 2019). Thus, it is impossible to say with confidence what exactly such society and economy will look like, or what their parts or combinations thereof will be.

However, as Section 3.3 demonstrates, small firms in particular can indeed have a potential to be part of degrowth. Their role should be seen as that of agents of production in degrowth among other suitable producers (Objective 2). This “among others” claim is supported by the richness of research in alternatives in terms of business models and modes of production which can potentially co-exist in degrowth alongside small firms.

The potential of small firms for becoming and being part of degrowth should be considered together with the nature of production for degrowth in terms of “how” production is carried out, e.g. how it differs from business-as-usual and what it entails in terms of its characteristics. This nature differs from business-as-usual significantly (Section 3.8). This study outlines what such deviation from business-as-usual entails via proposing characteristics of business for a degrowth economy, structured initially as a degrowth business framework F1. F1 also identified barriers firms transitioning towards degrowth may face.

While the theoretical characteristics were deduced from the literature (F1), they do not suffice. Informing F1 further with the insights from the real-life firms to increase its value and advance a transition towards degrowth in practice and theory was necessary (Objective 3). This resulted in reconstructing F1 into F2. This was required because the transition towards degrowth needs to take place in the real world. It entails transformation of real firms. This goes in line with the focus ecological economics places on reality and insights from reality (Spash, 2012).

The complexity of reality leads to a recognition that small firms as agents exist within certain structures. This is in line with critical realism (Bhaskar, 1989, 1998; Collier, 1994; Lawson, 2019). Some of those structures impose barriers for small firms in transition towards degrowth. This study aimed to understand the nature of those barriers in reality. While literature offers a useful insight, particularly with regards to barriers capitalism poses, investigation of real firms shows how nuanced barriers are in real life.

It was proposed in this study that capitalism and its manifestations would impose barriers to the firms under investigation (Section 3.6). This was supported by the findings from the primary investigation. Yet, it was also found that in a capitalist setting firms may find ways to cope with barriers, as C5 did. Additionally, being a firm which deviates from business-as-usual can attract help from other actors sympathetic to what the firm tries to achieve, as was the case with C6. A more fruitful pathway may be, instead of contrasting degrowth business and

capitalism, to consider degrowth business as an agent being embedded within both empowering and constraining structures in the society.

The study of barriers once again highlights the need to address a transition towards degrowth in a holistic way, which entails multiple levels, agents and structures. This means that not only firms should undergo a transformation, but also multiple other agents and structures should be transformed. This includes, for instance, customers, the political system, the financial system, culture, education.

Finally, the fourth objective of this study was to outline how F2 can be used. This is discussed in Section 6.6.

6. Discussion

“Social structures are certainly only relatively enduring; the laws governing capitalist economies did not operate in the high Middle Ages or earlier, and I hope there will come a time when they will cease to operate.” (Collier, 1994, p. 244)

This chapter proceeds in the following way. Firstly, it repeats the layers of degrowth business framework F2 starting with the Worldviews (Section 6.1). Then it moves on to Operations (Section 6.2) and Barriers (Section 6.3). Section 6.4 focuses on the concept of degrowth business as a contribution in itself. Section 6.5 discusses the differences between degrowth business and other frameworks. Section 6.6 focuses on the usefulness of F2, while Section 6.7 discusses its limitations and future research avenues which arise directly from them. Where possible, suggestions for future research are given throughout the discussion chapter. This is to enhance transparency and demonstrate where exactly a particular suggestion arises from and what leads the author to propose it.

F2, which represents at once the outcome of this investigation and the revised degrowth business framework, allows to better understand what transition of small firms towards degrowth may mean and entail. In this regard, it connects the planetary level challenges and the grassroots levels of organisational practices (Heikkurinen, 2013).

Concrete elements of F2 have practical use. They are deliberately left plentiful and nuanced without any pursuit of further aggregation into broader or more abstract categories. However, what requires a particular attention is what F2 as a whole signifies, what degrowth business should essentially entail. Namely, it is the overall deep embeddedness of a degrowth firm within the socio-economic and the bio- spheres. This corresponds to the embeddedness of the economy as a whole within the social and the bio- spheres (Spash, 2011; Daly, 2018). Degrowth business, being part of economy and society in general, should follow this logic.

It can be argued that, first and foremost, it is not the precision of the degrowth business elements, but rather *the combination* of the ecological and social orientations operating *on all levels* that makes a firm a degrowth firm. This requires a holistic approach to business for degrowth. Arguably, once this inevitable embeddedness of business within the larger systems is understood and accepted, and the need to sustain life in its multiple forms is recognised, what degrowth business should entail, and why a radical, all-encompassing change is needed (Trainer, 2012; Maxton, 2018) should become increasingly clear.

This goes in line with the critical realist critique of the “dichotomous opposition between nature and society”, and a recognition of co-existence and inter-relatedness between the society, of which degrowth firm is part, and nature (Bhaskar, 1989, pp. 6-7). This also goes in line with what degrowth tries to achieve, which can be expressed as co-existence between humanity and nature. Degrowth adds, however, that this co-existence does not have to be focused solely on the decline in human activities. Such decline should necessarily be accompanied by an increase in wellbeing and welfare on the local and global levels (Schneider et al., 2010; Kallis et al., 2018). This is further complicated by the call for wellbeing which encompasses wellbeing of all inhabitants of the Earth, and that of nature itself (Bonnedahl and Heikkurinen, 2019b). For this reason, F2 pays attention to the social as well as to the environmental aspects.

Schneider et al. (2010), alongside the ecological and wellbeing aspects of degrowth, also highlight the downscaling aspect of degrowth. While this concerns the macro level of economy, such as understanding the limits to resources that can be used by the economy (Maxton, 2018), several aspects of the degrowth business framework may be useful as a part of achieving this downscaling, yet on the *micro* economic level.

The question arises: How can this be done? Firstly, lack of pursuit of monetary outcomes and expansion of production in the studied firms is evident. Some firms pursue sufficiency in size (C3) or what may be called “conscious growth” (C2R2, Int.), i.e. growth to capabilities as is the case with C2, or growth where social (C6) and environmental (C4) initiatives are being pursued. The notions of consistency (Maxton, 2018) and sufficiency replacing the notion of growth and accumulation on the micro economic level are essential for economies and societies beyond growth (Alexander, 2015b). Secondly, an emphasis on quality and durability of products, as it is the case with C1, minimises the need for replacing the products by consumers (Renner, 2012), thus potentially also contributing to downscaling of consumption. This points in the direction of the necessity to consider production and consumption for degrowth together. Thirdly, none of the firms investigated use traditional marketing which stimulates demand. This also relates to assisting consumers in downscaling their consumption.

However, one difficulty with regards to theorising on the micro economic level should be highlighted. Are even the most radical efforts of firms on the micro level enough? What can be considered sufficient? Arguably, the efforts on the micro economic level should be understood in relation to the overall resource use by the economy. Thus, an exchange between research on the macro (e.g., what is the quantity of resource x that is available for this industry?) and the

micro (e.g., how exactly can resource x be used by firms in a degrowth-compatible manner?) economic levels should necessarily take place to facilitate a degrowth transition, and such levels should be seen as parts of a holistic understanding of reality.

One may ask whether there is one guiding principle that underpins degrowth business and degrowth business framework F2. A tentative answer can be offered to this question. It can be borrowed from a radical tradition in strong sustainability and corporate social responsibility. One such principle can be “responsibility” as described by Heikkurinen (2013, p. 33), where responsibility means doing the right thing, and a deep consideration for others. In this case the word “others” refers not only to humans, but also to non-humans and nature. This responsibility, which goes beyond the legal compliance and should be intrinsic to a firm, should manifest itself in the practices and discourses of a firm (Heikkurinen, 2013). While the notion of responsibility does not on its own provide the pathway of how exactly business should change, it may invite reflective practice with regard to why F2 should be implemented and what general principles can underpin further actions, those which may not be covered by F2. Starting with responsibility instead of profit indicates a deviation from the centrality of economic motives. It indicates the centrality of ethics.

What can be noticed immediately in terms of degrowth business is a long-term orientation of degrowth business. As opposed to firms seeking growth, profit and pursuing short-term financial interests (Spash and Aslaksen, 2015), degrowth business focuses on long-term outcomes and sustainability as identified in this research, i.e. a prolonged existence into the future.

6.1. Worldviews

Daly (1993d) highlights the need in the economics beyond growth to bring together the ecological, the social and the moral. This investigation shows that firms can operate in values-driven, environmental and social manner. This may be explained by the fact that organisations consist of humans, and thus the moral imperative is inseparable from organisational behaviour (Heikkurinen, 2013). This goes in line with Lawson’s (2014) notion of a firm as a community of people. Thus, the presence of worldviews which go far beyond instrumentalism in the firms investigated is not surprising. It should arguably also be cultivated and nurtured in all firms for a degrowth economy and society to be possible.

What is a relationship between degrowth business and owner-manager’s worldviews? Degrowth business should not be seen as a black box where the matters of worldviews are

outside the premise of economics and business. Degrowth business may indeed require a holistic view of a firm, which in its turn requires a notion of an overlap between the worldviews and the degrowth business operation. In other words, it can be proposed that for a degrowth business to be possible, two sets of characteristics are important. They are (1) owner-managers' worldviews in line with degrowth and (2) business operations in line with degrowth. This is because individuals can have worldviews in line with degrowth, but those worldviews may not be manifested, i.e. result in specific behaviours such as setting up and operating a business. Likewise, business operations in line with degrowth may not be sustainable if management changes. This is a hypothesis which can be investigated in future research.

With regards to explanation of origination, existence and operation of the firms deviating from business-as-usual, it is proposed for the purpose of further research that the firms' operations in line with degrowth are secondary to the worldviews of owner-managers. In the case of this study, all firms investigated were established by owner-managers. However, from a critical realist perspective, the society itself exists in virtue of individuals (Bhaskar, 1998; Lawson, 2019). Firms as social forms also exist in virtue of individuals. It can thus be hypothesised that the worldviews of owner-managers (or the founders) gave rise to the manner in which the firms are operated.

However, the difficulty with identifying causes in social systems should be remembered. Lawson (2002, p. 13) notes that in open systems, of which human society is one, "events or outcomes are mostly each determined by a multiplicity of causes, with the possibility that at least some of the latter will be highly transient as well as unstable". It concerns the causes of degrowth business itself, i.e. whether the worldviews are a sufficient explanation of existence of a degrowth business. It also concerns, e.g. the origination of the degrowth facilitating worldviews such as those uncovered in this study. In other words, how did these worldviews come about?

While an investigation of causation, i.e. the generative mechanisms that gave rise to the worldviews which were discovered in this study, was not investigated in this research, a critical realist vision of reality can be useful. It can indicate possibilities for further research. Better understanding of generative mechanisms, which cause degrowth-compatible worldviews, can be helpful in facilitating formation of such worldviews, e.g. via education. Collier's (1994, p. 132) Tree of Sciences offers a relationship between the social and the psychological. It can be expressed in the following: "? → Molecular sciences → Biological sciences → Social sciences

→ Psychological and semiological sciences →?” The arrows represent emergence of one layer from the previous layer.

This corresponds to the critical realist ontological presupposition of one level of reality emerging from the one beneath it, but not being reducible to the one beneath. It assists with a vertical explanation where mechanisms at one level are explained by the mechanisms at the level beneath. For example, “biology explains sociology” (Collier, 1994, p. 132). Collier notes that alternative trees have been suggested. One suggestion included a reversal of the order of the top layers. Another suggestion included locating the top two layers as separate branches of the same level. However, complexity of explanations should be noted. For instance, psychological level requires understanding of the biological and social mechanisms. Also, “some strata are vertically explained by more than one other stratum; and relations of ontological presupposition are not all one-way” (Collier, 1994, p. 134).

This argument indicates that understanding the worldviews of owner-managers requires understanding, among other things, of the social mechanisms from which these psychological profiles emerged. However, it should be noted that values discovered in this study are more in line with degrowth and not in line with the existing capitalist system. Examples of values in line with degrowth are collaborative attitudes (Khmara and Kronenberg, 2018) and simplicity (Alexander, 2015b; Schumacher, 1993b, 1993c) which can be found in F2. An example of values prevalent in a capitalist system is competition (Pineault, 2016).

An important implication of the worldviews in line with degrowth is their potential for the transformation of the society. This is essential for the transition towards degrowth. However, this leads to another question, i.e. that of an interaction between agents and structures of the society. In a debate between humanism (i.e. social explanation via methodological individualism), and structuralism (i.e. social explanation via collectivism), Bhaskar (1989) advocates the third theory which accommodates both. This can be expressed in the words of Collier (1994, p. 143): “both kinds of causality are real – purposive agency has effects and so does structural causality, people make societies and societies make people”.

Collier (1994, p. 144) goes on to explain that “[s]ociety produces us as the people that we are, “out of” a biologically given raw material, and it continues to transform us throughout our lives. We in turn make new societies out of old societies by our actions, whether intentionally or not, and to whatever extent the new society either replicates the old one or is radically different”.

While the above-mentioned question of how degrowth-compatible values come about addresses mainly the “societies make people” part of Collier’s statement, the knowledge of worldviews uncovered in this research, alongside the practical manifestations of those, demonstrate how the owner-managers transform the societies via concrete actions. While it is a mistake to assume that a firm is not comprised of individuals (Söderbaum, 2008), and that firms do something on their own without the effort of individuals, as a useful oversimplification a degrowth business can be seen as an agent transforming the economy via operationalising concrete degrowth business practises. This transformation happens in an economy with constraining (e.g. capitalism) and empowering (e.g. the population of likeminded firms in the society) structures.

Since worldviews specifically were not the focus of this study, with regards to worldviews this study poses more questions than it answers. Such a lack of closure resulting from case studies may facilitate further research (Flyvbjerg, 2006). One premise concerns the worldviews of multiple people and their interaction. It can be assumed that when a person is a sole trader, the “worldview” of their business is the worldview of that business-person due to their business existing in virtue of this person (BIS, 2011; Lawson, 2019). However, the dynamics of multiple directors’ worldviews within a firm is more complex and should be researched further. This complexity is exemplified by C1. C1R1 (Int.1) states: *“by virtue of having been here the longest, I set the tone for core values, then other people joined in, in spite of or because of those”*. This may indicate the dependency of company values on this particular person. The term “company values” is used loosely here, since it is, first and foremost, people who have values, and companies are social forms which exist in virtue of those people (Lawson, 2014). A question that may arise whether worldviews of multiple people influence each other, and if so, how and which ones prevail and why? This relates to facilitating the emergence of degrowth compatible worldviews and their subsequent manifestation in firms, and requires a further, inter-disciplinary research.

This difference in worldviews (but not practices) was noted by a client, who has worked with C1 since the firm started. C1C11 (Int.) states that C1 is an ethical business, one of reasons being *“because CIRI’s involved and CIRI is very ethical anyway. In some ways CIRI is too ethical. What I mean is CIRI isn’t a businessman, he’s an expert in his field that likes to do things and to follow things because it’s the right thing to do and it interests him. You got four people now with C1. One person I know within C1 is more of a business-person...”*. And *“his ethics just run through the whole culture of the business”* (C1C11, Int.). While C1R1 himself notes shared

values between the directors, the matter of worldviews and their manifestations in people's actions in larger companies, where the diversity of worldviews is arguably also larger, needs further exploration.

Another "loose thread" encompasses changes in firm's characteristics associated with changes in ownership or leadership. C1's experience with another firm, from which they sourced free insulation material to provide insulation to their clients free of charge, provides an example. C1R1 (Int.2) notes: *"I think, they realised that that stuff had some value because they saw how keen we were to get our hands on it and I think his then operations director or something sort of stopped that and then [Individual's Name] died, they got a lot more keen to keep that stuff"*. Arguably, the firm C1R1 refers to discontinued this cooperative element when leadership changed. However, to arrive at meaningful assumptions and conclusions, more examples are required to identify whether existing employees' values also have an influence on people who join the firm.

An area which requires further research is an investigation into why the attitudes of owner-managers of degrowth firms deviate from those of the dominant social paradigm (DSP). The attitudes of the DSP are those from which the ecological problems arise and that are prevalent in our society and comprise of dedication to growth, unregulated economy, private property rights, technology (Dunlap and Van Liere, 1978). Dunlap and Van Liere (1978) argue that this current paradigm is anthropocentric and destructive. However, the owner-managers interviewed in this investigation deviate from the DSP. It is also evident in the operation of their firms.

One assumption can be that firms where environment-related degrowth business elements are manifested are established and/or led by individuals with high NEP (New Ecological Paradigm) scores. NEP is "a measure of general pro-environmental and ecological worldview, [which] has been used as the primary metric in many studies to capture an individual's existing environmental proclivities" (Noblet et al., 2013, p. 4828).

Yet, the why behind these managers running their firms in degrowth compatible manner while others may run their firms in a more conventional manner, cannot be answered here due to a lack of a comparative analysis which can be pursued in future studies. It can be assumed that where overall degrowth orientation is strong, those firms are established and/or led by individuals characterised by later stages of consciousness development (Boiral et al., 2013).

Boiral et al. (2013) propose an approach that incorporates the complexity of decision-making and management, which is based on a developmental perspective. This perspective “represents an emerging approach to exploring maturational differences in the way individuals make sense, experience and act upon reality through the lens of various stages of consciousness” (Boiral et al., 2013, p. 365). Those stages can be reassigned into three levels: pre-conventional, conventional and post-conventional. The latter is the most sophisticated and infrequent. It encompasses, e.g. the ability to question existing rules, manage complexity, proactively deal with issues. A notable implication of the least frequent (1%) leadership style, referred to as alchemist, is manifested in “re-centering of the organization’s mission and vocation toward a more social and environmental outlook” (Boiral et al., 2015, p. 368). This broadly corresponds to the operation of firms investigated.

While measurement of ecological worldviews or investigation of stages of consciousness development of owner-managers was not the aim of this research, it can be investigated further. It can be hypothesised that degrowth business owner-managers are characterised by later stages of consciousness development. Further investigation may focus on testing whether this is the case with degrowth compatible firms. Similarly to Boiral et al. (2013), a comparison can be made between owner-managers of firms that exhibit no degrowth business element and owner-managers of firms that exhibit a broad range of degrowth business elements to further investigate the relationship between owner-managers’ worldviews and organisational practices.

The final point of discussion with regards to worldviews is political responsibility. This study was not aimed at political responsibility, thus any discussion on it is not conclusive. Yet, the presence of it in C1 and C5 necessitates an attempt at discussion. While political responsibility, i.e. assuming a political role beyond the legal requirement (Scherer and Palazzo 2011), was not singled out in the framework, two firms appear to adopt a political stance.

Since the debate on political systems and degrowth is ongoing (Kallis, 2017b), political stance of C1 (manifested in being involved with local politics and supporting activists) and C5 (manifested in explicitly practising business to address/challenge the existing capitalist system) should be acknowledged. Political responsibility in terms of “increased political activity” is discussed by Heikkurinen (2013, p. 30) as a part of corporate responsibility. The “political” is also an important part of ongoing degrowth debate. This is because no single political system

is advocated by the school of degrowth (Alexander, 2015b), though deviation from capitalism is evident (e.g. Kallis, 2017b).

While further investigation is needed to understand how and to what extent a degrowth firm is a political entity, whether a political stance should be part of a degrowth business, and what exactly such stance means and entails, the cases of C1 and C5 show that it cannot be excluded. Consider the following examples:

(1) *“I’m quite happy to get involved in a bit of local politics and...drop off food for people who are protesting [anti-fracking] ... We have been known to help out with an odd protest”* (C1R1 Int.2)

(2) *“He’s [a director of C1] also very good and able at supporting protest groups and activists”* (C1R1 Int.1)

(3) *“[H]e’s [a director of C1] just as capable of going off and spending weeks running sort of seminars for coal protesters in fields”* (C1R1 Int.2)

(4) *“This [the culture the founders experienced when growing up] proved to be fertile ground for radical, political thought and social and environmental awareness, still deeply held to this day”* (C5 website 2018).

A subtle reference to politics and the role of government can be noticed in C4R4’s attitudes: *“The governments should help. The whole packaging system is wrong. You bought something on [Company] and it comes in a packaging 10 times bigger than a product, it should be illegal”* (C4R4 Int.).

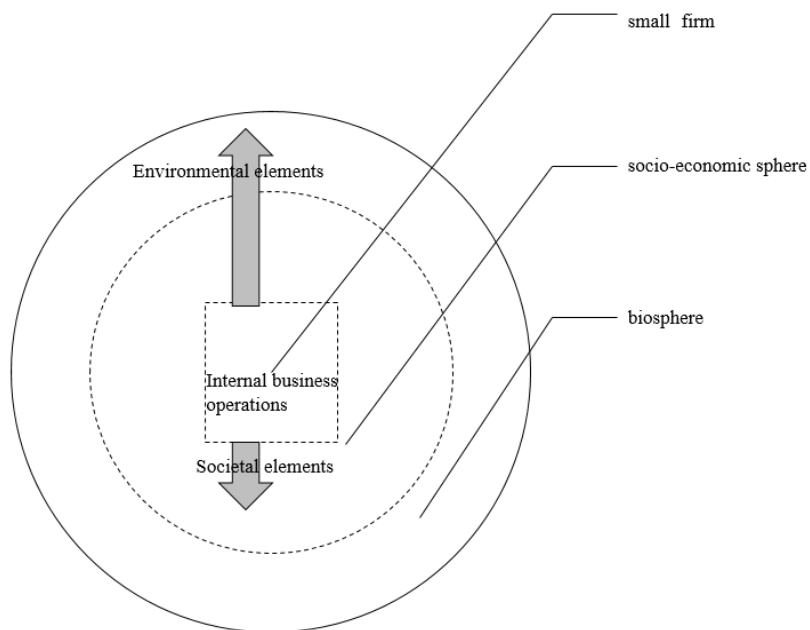
Khmara and Kronenberg (2018) identify a firm’s political engagement as a potential aspect of a degrowth company. While degrowth vision is based on ecological economics, institutional economics sees an organisation as necessarily political (Söderbaum, 2008). It imagines an organisation as a political economic organisation composed of political economic persons. An investigation of a degrowth business from an institutional perspective may be an avenue for further research. In further investigations in relation to degrowth, firms for degrowth and politics for degrowth, questions such as What constitutes a firm’s political action? and Which political actions by firms could be beneficial for degrowth? can be addressed.

6.2. Operations

Beyond worldviews the concrete elements of degrowth business which concern business operation are important. Identification of those aims to address Cattaneo and Gavaldà's (2010) call for the need to understand degrowth in practice. Apart from identification of those examples, their presentation in a simple, yet not simplistic, and meaningful form is essential. While F2, in line with critical realism which denies the existence of the final theory immune to revision (Collier, 1994), should not be seen as final, the model below outlines the general principle of degrowth business operation.

The model below (fig. 6) reflects the embeddedness of a firm within reality, comprising of the biophysical reality (the biosphere) and the socio-economic reality. This corresponds to the critical realist understanding of reality (Bhaskar, 1989) and follows from the social ecological economics' notion of embeddedness of the economy within the social and the bio- spheres (Spash, 2017b). Since a firm is a part of the economy, its embeddedness is recognised.

Fig. 6. Degrowth business embeddedness



The figure above envisions the place of small firms in reality and demonstrates the need for implementation the whole range (all three groups) of degrowth business elements identified in F2.

This model shows that a degrowth firm should be seen as a part of larger systems within which it is embedded. The dashed lines in the model represent openness of systems, while the biosphere is seen here as a closed system. Business operations, which are concerned with transformation of nature or using materials and energy from the biosphere, are identified in the

Environmental elements in F2. Business operations related to the society, which includes local and global communities (the Societal elements in F2), reflect the embeddedness of a firm within its socio-economic reality. Internal business operations (e.g. management, marketing, growth) should also reflect the embeddedness of a firm within reality, and the nature of a firm as a community of people (Lawson, 2014), to make a firm an integral and suitable part of the healthy socio-economic system. The concrete elements are outlined in Internal Business Operations group in F2.

All business operations must reflect the embeddedness of the firms within larger systems. First and foremost, this relates to the environment. How can this be manifested in firms? In line with what has already been outlined in the literature (Daly, 1993d; Gorz, 2012; Schumacher, 1993c), every firm studied in this investigation practises frugality of resource use. The notion of frugality can be used by any firm transitioning towards degrowth or operating in a degrowth economy, though in different ways. This is because frugality can be manifested in multiple ways and can apply to different resources, including materials and energy. Its manifestation will depend on the firm's industry and operations.

In this thesis the broad notion of *frugality* is preferred and used in relation to materials and energy instead of the popular concept of "circular economy" (Kirchherr et al., 2017). This use was maintained throughout this work, and the element "frugality" features in the framework F2 proposed. This requires a brief discussion. Khmara and Kronenberg (2018) refer to circular economy applied to degrowth as a model for repairing and recycling company's own products and value creation from waste. In this sense circular model is part of frugal use of material and energy.

However, the notion of circular economy as an economic framework (Ellen MacArthur Foundation, 2018) relies on absolute decoupling, the presence of which is not accepted in post-growth studies (Jackson, 2017). Hobson and Lynch (2016) note that while circular economy recognises resource scarcity, it is viewed as a tool to promote economic growth while circulating those scarce resources within the economy. Hobson and Lynch (2016) and Spash (2020) state that circular economy cannot be considered a radical transformation since it does not address issues such as hyper-consumption on a deep level.

Therefore, while repairing, recycling and waste use are part of both degrowth business framework and the framework of circular economy (Ellen MacArthur Foundation, 2018), the former should not be reduced to, or seen as a part of, the latter. Moreover, any transformation

of matter, including recycling itself, uses energy (Zencey, 2013). Therefore, downscaling of production (Schneider et al., 2010), sufficiency (Alexander, 2015b), producing durable goods (Daly, 2018; Khmara and Kronenberg, 2018), and addressing waste creation (Maxton, 2018; O'Neill et al., 2018) should be a priority.

In F2 the notion of frugality is complex and encompasses a broad range of practices. Yet, all of them are aimed at frugal use of raw materials, water, products (including food and packaging) and energy, including, where applicable, saving, repurposing, exchange, sharing, reuse, recycling, waste reduction/minimisation/avoidance, using waste as resource. Future studies can aim to identify other possible manifestations of frugality and applications of the concept of frugality for firms.

However, frugality on its own is not sufficient. Beyond frugality and in line with the overall principle of responsibility outlined above, firms need to strive to supplement frugality with other elements. F2 provides a set of characteristics which cover a variety of qualities of materials (e.g. renewable, natural, compostable, recycled) and considerations (e.g. pollution prevention, non-human life, localisation). This can also concern the product itself and its design.

Beyond the embeddedness of a firm within the environment, the embeddedness of a firm within the society should be recognised. The hallmark of the societal elements is embeddedness of a firm within communities. It is a complex category and is practised differently by the firms studied in this investigation. It can undoubtedly be practised in other ways by other firms. However, in every case it signifies cooperation and sharing. F2 contains a variety of examples and manifestations of embeddedness, e.g. working with activists and charities, localisation of sales and employment. Yet, this should not be considered exhaustive. Other examples should be sought to further understand the relationship between degrowth firms and their local and global communities.

An important element which relates to the embeddedness within communities and the overall need for downscaling of production in a degrowth economy (Schneider et al., 2010) is production for needs (Gorz, 2012). Arguably, this aspect of degrowth has not yet been well studied. This relates not only to the needs and what constitutes them, but also to the desirable sectors of economy. Once the needs (e.g. what constitutes them, what they are) have been identified, a fruitful discussion on what sectors are required to satisfy those needs may take place. A potential place to start is a “sufficiency economy” (Alexander, 2012) which outlines

the basic human needs. An inquiry which would bring together insights from different schools of economics could be beneficial. For instance, it can include traditions such as Buddhist economics (Payutto, 1995) which outlines human living and spiritual needs. While this thesis in Section 3.2 borrowed from Alexander (2012b) the initial set of needs, this question should receive much broader discussions in the field of degrowth. Such discussions could reduce ambiguity in relation to production by firms for needs.

Finally, the nature of what happens within a degrowth business is important. This concerns firms' internal business operations. Considering that the micro economic level has not received substantial attention in degrowth or in ecological economics, a deeper study of this is necessary. In this sense, this study proposes a revision of multiple aspects of internal business operations of firms in line with a call from scholars to be bold in revision of economies (Trainer, 2012, 2014; Maxton, 2018). Therefore, F2 concerns aspects including finance, firm's performance, marketing, management, employee wellbeing, production and growth. While F2 offers concrete examples of how each of those aspects of business operations can be revised to be compatible with degrowth, it should necessarily be seen as merely a starting point. Such revision may have profound implications for education and how business is taught, which is further discussed in Section 6.6.3.

6.3. Barriers

The role of the society, seen in critical realism as a "condition of action" (Collier, 1994, p. 146) cannot be denied or underestimated in relation to a degrowth business. The Barriers group of elements in F2 reflects multiple aspects of the societal organisation within which firms operate. This may lead one to assume the desirability of involvement of multiple other agents (e.g. policymakers, educators) for an overall societal transformation towards degrowth to occur, and a need for further investigations of relationships between agents and structures via a multi-disciplinary research which would take into consideration the complexity of such transformation.

It appears important to avoid assuming that because many of the barriers identified in this study are manifestations of capitalism, which describes the current social organisation, the society itself is a constraint which prevents a degrowth business from starting, evolving, and thriving. As Collier (1994, p. 159) notes, "[h]uman agents are located in and both empowered and constrained by social structures". Some aspects of the society can even be considered empowering for a degrowth firm, such as the existence of like-minded agents (e.g. activists,

like-minded consumers and suppliers, partners for networking etc.) or even “*inspiring*” (C6R6 Int.) in terms of providing inspiration for further social and environmental actions.

Constraining social structures are indeed mainly related to a capitalist organisation of society. They are the ones connected to increasing the value of capital rather than, e.g. increasing wellbeing. Gorz (2012, p. 69) states that it is “characteristic of capitalist society that relations conducive to the valorization of capital predominate in the hierarchy of values, in everyday life and in politics”. Gorz (2012) also notes that workers cannot realise the possibility to criticise capitalist relations of production in their capacity as workers, but they can do so in their capacity as, for example, citizens and consumers. However, the directors of small firms investigated have such a possibility to some extent. This is because beyond being workers they are also decision-makers. Thus, while the capital orientated structures are constraining, owner-managers can attempt to transform rather than reproduce them from within those structures (Bhaskar, 1989). For instance, this can be done by deciding purposefully to increase durability of products. Better still, this can be done by intentionally transforming business as a whole.

Overall, overcoming multiple and complex barriers requires a *collective* societal action. Such action is essential to transition towards degrowth. This requires answering multiple questions regarding a wide variety of elements of a degrowth economy. These include questions beyond those related directly to firms. They concern education for degrowth, political system and ownership for degrowth (e.g. Alexander, 2015b), technology for degrowth (e.g. Heikkurinen, 2018), and many others concerning all domains of the society and economy.

Identifying, discussing and further researching concrete barriers can be seen as an opportunity to facilitate the transition towards degrowth. Since many of the barriers derive from the capitalist organisation of economies, deviation away from capitalism may address a multitude of barriers. Examples identified in F2 include profit making, lack of ownership, commercialisation of craft. Beyond merely recognising the need for deviation from the current system, there is a clear need for understanding of what exactly should replace capitalist structures. Moreover, even if capitalism is replaced by a different system which would address multiple barriers identified in this study, further questions may arise: Will the new system present different barriers to degrowth businesses? Does a new system provide a guarantee that degrowth business is possible? Would a new system be compatible with the idea of “business”?

At this stage, it can be assumed that deviation from capitalism does not necessarily imply abolition of all private property and privately held small and micro firms (Trainer, 2012;

Alexander, 2015b). Yet, radical alternatives may need to be considered, or at least not excluded to maintain a relativist position regarding truth and knowledge (Spash, 2012).

6.4. Degrowth business – conceptual contribution

This study required an introduction of a term “degrowth business” which is used throughout this study. Answering the “how could small firms transition towards degrowth?” question was essentially aimed at understanding of what degrowth business could be, i.e. what it could entail. Acknowledging the complexity of degrowth business necessitated an introduction of a degrowth business framework beyond the concept of a degrowth business itself. This is because on its own the concept does not explain what it means to be a degrowth business and does not provide any practical contribution.

While the usefulness of F2 is discussed below, this sub-section aims to offer several key points in relation to what degrowth business is theoretically and why this concept is important. It summarises degrowth business as a conceptual contribution of this study. First and foremost, degrowth business is one of the possible manifestations of production for degrowth. Other modes of production can include, e.g. backyard production and production for own use (Trainer, 2012), artisanal production (Alexander, 2015b) and voluntary economy (Nørgård, 2013).

Degrowth business can be defined as a business operating according to the key premises of degrowth, i.e. ecological sustainability, wellbeing and values which deviate from the “norm” of profit orientation and productivism (Schneider et al., 2010; Paulson, 2017). Degrowth business thus encompasses environmentally- and wellbeing- orientated commercial activity and deviates from profit and growth maximisation. Wellbeing orientation in a degrowth business is broad and includes wellbeing of humans and non-humans. It also covers multiple levels, from self, e.g. pursuing one’s passion for craft as is the case with C3 and C7, to employees, customers, communities and beyond.

The logic of profit and growth maximisation are replaced with the notion of sufficiency of gain, productive capacity and size. Degrowth business is necessarily cooperative, thus deviating from mainstream notion of competition. The notion of cooperation here is not surprising, since it was already noted that “the human propensity to cooperate with others is the greatest human asset and perhaps the only hope for a sustainable and equitable future” (Gowdy and Krall, 2013, p. 140). Thus, degrowth business is based on the premises that are necessarily “human”.

Importantly, degrowth business operates in a socially and environmentally desirable sector. While the definition of desirability of sectors is outside the scope of the present study, a starting point can be offered. For instance, Jackson (2017, p. 149) notes desirability of low productivity and low carbon/material intensity sectors under the description of “care, craft and culture”. Other desirable sectors may be based on the basic humans needs for water, food, clothing, shelter, medicine, education, energy (Alexander, 2012).

Arguably, degrowth business is small where possible. The question whether a medium or large company can be a degrowth business is outside the scope of this research and requires further investigation. In relation to this, provision of large-scale services such as railway travel should be investigated further. Moreover, questions regarding ownership patterns and democratic decision-making suitable for larger scaler operations need to be asked.

While smallness may be desirable, a question can be asked whether degrowth business can grow. Johanisova et al. (2013, p. 11) refer to social enterprises and degrowth and state that they are not against growth when growth helps the enterprise to better achieve its role. They continue to reflect that growth beyond a certain limit (not specified) can lead to a dilution of principles or becoming mainstream. This statement can equally be applied to degrowth business. While the firms researched in this study do not pursue growth beyond certain limits and do not consider profit as the primary motive, this may become an issue for other firms. This may especially be true considering pressures to grow in a capitalist system (Johanisova et al., 2013). It may perhaps be more appropriate, though ambiguous, for degrowth business to seek the right size under a certain limit as proposed by Fioramonti (2016).

The question of growth is complicated by the acknowledgement that in degrowth economies growth of beneficial sectors, such as renewable energy and organic farming, is in fact desirable (Alexander, 2015b). In this respect growth does not need to be seen as necessarily growth in the size of individual firms. Rather, growth in the number of firms in desirable sectors may be more beneficial. It may allow to preserve other degrowth business characteristics, e.g. sufficiency and wellbeing within firms. For such growth to occur, firms in undesirable sectors may consider operating in one of the desirable sectors. For larger scale projects small firms may cooperate to deliver a result which may not be achieved without cooperation.

Moreover, understanding the nature of production for degrowth in terms of “who” (Section 3.1) can be useful. For instance, if growth in the sector of organic farming is required to satisfy needs for food, it may be preferable that it is not the small organic food producers that must

grow, but communities can cooperate to produce food for own consumption (Trainer, 2012), thus supplementing the efforts of small producers like firms.

6.5. Degrowth business and other frameworks

One may ask whether the degrowth business framework differs from existing “sustainable” business frameworks developed by not-for-profit organisations, e.g. B Lab and Future-Fit Foundation. While one future research avenue can be an investigation whether firms accredited by those organisations, or those scoring highly on their metrics, are likely to become degrowth businesses or meaningfully transition towards degrowth, several points of difference between those frameworks and degrowth business framework can be outlined here.

Both Future-Fit Foundation (2016) and B Lab (2018) promote their own frameworks which do not arise from an acknowledgement of the necessity of degrowth or any other related or comparable post-growth vision, e.g. steady-state. Both certify large firms. B Lab (2018) certifies oil companies, which is not a desirable sector from a degrowth perspective (Assadourian, 2012). B Lab (2018) do not explicitly question the notion of growth. In comparison, degrowth business framework provides an alternative based necessarily on strong sustainability, ecological economics and degrowth. While B Lab (2018) do not question the notion of growth, Future-Fit Foundation (2016) differentiate between different types of growth and state that growth in biophysical throughput which leads to exploiting natural capital is undesirable. However, growth in production and consumption is viewed as desirable (Future-Fit Foundation, 2016). This differentiates their stance from that of degrowth (Gorz, 2012; Flipo and Schneider, 2015; Kallis, 2017b; Schneider et al., 2010).

While broad similarities between the degrowth business framework and the frameworks mentioned above exist, e.g. consideration towards the environment and society in general, the differences are important. Since Future-Fit Foundation (2016) recognise the limits to growth in biophysical throughput similarly to degrowth, several differences for comparison with this framework need to be outlined.

First and foremost, their adherence to the necessity of growth, despite the recognition of biophysical limits, differentiates their position from that of degrowth. For instance, Future-Fit Foundation (2018) which promotes Future-Fit business benchmark state: “By striving to become Future-Fit companies can be sure they are helping – and in no way hindering – progress toward the UN SDGs”. One of those goals is Goal No8 (“Promote sustained, inclusive and

sustainable economic growth, full and productive employment and decent work for all”) the first part of which (economic growth) goes against ecological economics and degrowth.

Future-Fit framework is based on the pursuit of sustainable development (Future-Fit Foundation, 2017) which adopts an anthropocentric approach (Baker et al., 1997), while ecological economics, on which degrowth vision is based, deviates from anthropocentrism towards consideration of non-human life (Spash, 2017b). For instance, consider Future-Fit Foundation’s (2017, p. 9) advocacy of “actively restoring the Earth’s capacity to meet humanity’s needs – for example by regenerating biodiverse habitats”. It exemplifies the primacy of human needs and viewing habitat restoration as a subservice of those, rather than considering habitat restoration for the benefit of non-human species.

Future-Fit Foundation (2016) assumes suitability of a wide range of firms, social enterprises and corporations alike for a sustainable economy, while degrowth advocates smallness of business operation as a preferable mode of production (Trainer, 2012; Alexander, 2015b). Moreover, Future-Fit Foundation (2016) advocates enhancement of competitiveness, while degrowth pursues cooperation (Trainer, 2020). Other notable differences include Future-Fit Foundation’s advocacy of productivity increase, desirability of profit maximisation and a positive attitude towards growth in production and consumption, providing decoupling of those from biophysical throughput is achieved (Future-Fit Foundation, 2016). However, no evidence of such decoupling was identified (Jackson, 2017). Neither productivity increase (Jackson, 2017; Kallis, 2017) nor profit maximisation (Trainer, 2012; Alexander, 2015b) are pursued by degrowth. With regards to profit maximisation, Future-Fit Foundation’s (2016, p. 19) notion of “the more profit [...] the better” in degrowth business is replaced by the notion of sufficiency (Alexander, 2015b).

Additionally, Future-Fit Foundation (2016) framework does not incorporate multiple considerations of employee wellbeing identified in the degrowth business framework above, e.g. unconventional working hours to increase wellbeing, employee happiness, accommodating differences, skills provision. Another aspect which Future-Fit Foundation (2016) does not address in detail is community wellbeing. While community concern minimisation and minimisation of degradation are acknowledged by Future-Fit Foundation (2016), degrowth business framework demonstrates pathways for a strong community embeddedness and cooperation.

Due to Future-Fit Foundation's (2016) notion of business as a profit maximiser, several pro-social and unconventional, i.e. not in line with neoclassical understanding of a firm, attributes which are present in degrowth business framework, are excluded. Those are, e.g. knowledge-sharing, unorthodox marketing, democratic and cooperative decision-making. This is in line with Khmara and Kronenberg (2018) who note that business models for sustainability tend to adhere to the principles of neoclassical economics and green growth paradigm.

Considering several similarities between degrowth business framework and the frameworks outlined above, one path for research can investigate how existing frameworks such as Future-Fit and B Corp can be transformed to become suitable for a degrowth society and economy.

6.6. F2 usefulness

This section discusses usefulness of F2 and identifies several paths regarding how this framework can be used. Framework usefulness relates to (1) use of the framework by firms and other producers, (2) use of the framework by policy-makers, e.g. for the purpose of recognition of potential degrowth businesses to empower them, and (3) use of the framework in education and science, including by researchers.

6.6.1. Use of the framework by firms, other producers, networks

The framework can be used by firms to intentionally and voluntarily transition towards a more degrowth-compatible, environmental and social mode of operation, to "lead from below" (Renner, 2012, p. 4). Abrahao et al. (2012) note that in a situation where political environment constrains regulations that could be helpful in a quick transition towards a more sustainable economy, civil society should assume an important role.

Arising directly from the research question of how small firms can transition towards degrowth, the first area of usefulness of the framework is not surprising. The framework can be used by small firms as a tool to explore and understand what it entails to become and to be a degrowth business, what barriers may arise on this path, and what worldviews should be nurtured. A comprehensive character of the framework, which aimed to cover a broad range of business operations, can be useful for understanding of, and reflecting on, the *extent* to which business operations need to change. In this regard, it may be that it is not only degrowth researchers who do not yet comprehend the nature of change (Trainer, 2012, 2014), but also the economic actors themselves. Thus, researchers should provide tools for them to enhance this understanding.

Schumacher (1993b, pp. 164-165) refers to people who accept the criticism of modern society's aims and objects, including values and critique of growth, and are ready to drop out of the system. However, he concludes that "they have nothing sensible to drop into" (ibid.). Likewise, business owner-managers can be the people Schumacher refers to. While a degrowth economy does not yet exist, it is useful to outline how such people can themselves become agents of change and of societal transformation. In this sense, the degrowth business framework F2 developed here provides a pathway.

The framework can be used by firms as a tool to compare and contrast their existing business operations with what degrowth business entails, to identify concrete areas where improvements can be implemented, and what improvements can be made in relation to their existing or planned business operations. The framework can be applied gradually also by firms which have not yet started implementing corresponding elements. Since the issues of unsustainability should concern everyone (Söderbaum, 2008; Heikkurinen and Bonnedahl, 2019), small changes can be a part of a process of a large societal transformation (Söderbaum, 2008).

It is thus useful at a grassroots level by providing a wealth of elements which can be adopted at the micro economic level by economic actors themselves. This corresponds to Alexander's (2015b, p. xii) statement: "We cannot wait for governments [...]. First and foremost, we must organise and network at the grassroots level and begin building the new world within the shell of the world".

The framework can also be used collectively by networks of small firms which do business in a radically different way. For instance, Kemp et al. (1998) propose network formation for facilitating new technologies, and thus developments of niches of innovation. Likewise, small firms can form networks to facilitate social innovation and transition towards degrowth. Moreover, Kemp et al. (1998) suggest bringing together various parties such as firms, universities, research institutes. Thus, another way F2 can be helpful for networks relates to its usefulness for networks of actors not limited to networks of firms. For instance, a forum can be launched for local firms, universities and the public to discuss how F2 can be implemented collectively. One element featured in the framework (education) can be addressed in such manner, with firms sharing knowledge with their customers, and universities integrating alternative business models such as F2 into their curriculum. The value of F2 for education is discussed below.

The framework can be particularly useful for other forms of production for degrowth beyond small firms, e.g. cooperatives or artisans. This is due to such forms of production already possessing elements of production for degrowth, such as democratic ownership in the case of cooperatives, or focusing production around passion for a particular craft or product, as is the case with artisanal production. In this respect, degrowth business framework F2 can have practical implications and contribute to transformation of real structures in the real world.

Referring back to the path of transition from niches, where innovation originates, to an overall societal transformation (Geels, 2002), since such transition is not linear and is instead complex, multiple levels and actors can influence each other. For instance, small firms becoming gradually degrowth businesses can influence policy-makers or consumers. Thus, framework F2 can facilitate transition in emergent ways. The peculiarities and nature of such spill over can be investigated in further research.

However, while voluntary commitments of small firms to transition or adoption of F2 can be the first step, such commitments need to eventually become legally binding (Abrahamo et al., 2012). Abrahamo et al. (2012) argue that better regulation is still needed to facilitate a social dialogue and participation of private sector and civil society in regulatory process. How can F2 be used by policy-makers? The following sub-section attempts to answer this question.

6.6.2. Use of the framework by policy makers

Another area where F2 can have practical implications is policy-making. It should be recognised that degrowth business does not exist in isolation from the political, economic, cultural, regulatory environments and structures. Supporting firms which deviate from the growth discourse is essential for this reason (Gebauer, 2018). Likewise, the development of policies which facilitate degrowth rather than growth logic, is important (Kunze and Becker, 2015). The framework can be used by policy-makers to recognise degrowth business or potential degrowth business in the current economy to provide support to such businesses. It is essential to highlight that policies aimed at degrowth are not simply a reversal of policies aimed at a growth economy (Daly, 1993e).

Support for degrowth business can in particular relate to the barriers identified. It can include, for example, encouraging cooperation between local firms, environmental enforcement, influencing consumer behaviour which would encourage consumers to seek quality and durability, which degrowth firms provide. Moreover, support relates to empowerment of small firms. Empowerment of small firms which already possess characteristics of a degrowth

business found in the framework, is necessary to facilitate a transition towards a degrowth economy.

Central to critical realism are the notions of human emancipation and freedom (Bhaskar, 1989). Bhaskar (1989, p. 187) states that to be free “is to know and to possess the power and disposition to act in or towards our real individual, social, species and natural interests”. While those firms may already possess the disposition to act, it is the power to act that can be enhanced, e.g. by deviating power from corporations (Spash, 2011) to small firms. This is where policies which favour small firms, particularly those on the path towards degrowth, can become useful.

However, critical realism warns against monism with regards to power level, e.g. that of political governance or management, which would assume that power can only be placed at one level (Collier, 1994). Collier (1994) notes that similarly to how one-level ontology is wrong, the one-level power structure does not have to be the case. On the contrary, there may exist alternatives which incorporate real powers at multiple levels of democratic structures. As Collier (1994, p. 204) suggests: “the vision of a pyramid of democratic loci of political and economic power, from the street and shopfloor meeting to the planetary plan, may have no inherent impracticability – only the uphill task of overturning the vested interests that oppose it”. This should be taken as an indication of desirability of empowerment of multiple actors of degrowth alongside of empowerment of degrowth firms. Such actors beyond small firms can include, e.g. consumers willing to produce for own use and practice self-sufficiency, thus eliminating the distinction between production and consumption altogether.

6.6.3. Use of the framework in education and science

Another recommendation that relates to usefulness of F2 in education and science, and also for researchers, arises from critical realist philosophy and relates to Bhaskar’s (1989) statement that social sciences may assist in achieving human emancipation. Degrowth business framework can be used for educational purposes to provide alternatives to the mainstream understanding of a firm, thus facilitating pluralism in economics and related areas of knowledge such as business.

Vargas Roncancio et al. (2019) argue that higher education should play a role in addressing unsustainability and facilitating regeneration. This can be done via refocusing higher education from enabling the status quo to the recognition of embeddedness within the biophysical and to sustainable wellbeing and pluralism. Thus, the subject discussed in this study, i.e. production

for degrowth and business transition towards degrowth, can inform the curriculum to offer alternatives to business-as-usual.

Economics is the theoretical foundation for studying market actors. However, it ignores entrepreneurial activity (Gaglio, 2018). In the broader academic context, post-growth and degrowth have been largely ignored in management, organisation, and entrepreneurship studies (Johnsen et al., 2017). In this regard, ecological economics can challenge this practice by including in its curriculum the study of the micro level, e.g. degrowth business and what it entails.

It is hoped that the study of alternatives will change students' worldviews, which can be described in the words of Latouche (2009, p. 19): "The new heroes of the day are the cost killers, or the managers whom transnational companies fight to recruit by offering them stock options and golden parachutes. Mostly the products of business schools, which might be more accurately described as "schools of economic warfare", these strategists are intent on doing all they can to outsource costs, which are borne by their employees, their sub-contracts, the countries of the South, their clients, states and public services, future generations and, above all, nature, which has become both a supplier of resources and a dustbin". It can be hypothesised that with alternatives such as micro and small firms and backyard production (Trainer, 2012) presented in a favourable light in the system of education, students may be more inclined to pursue such alternatives. This may require further investigation in future studies.

The call for integration of ecological and sustainability agenda should not be seen as new. For instance, Assadourian (2012) argued for integration of ecological and sustainability agenda and socially responsible business opportunities for graduates. Spash (2015, p. 379) identified post-growth studies as "important and essential".

Beyond higher education, the framework can be used for the purpose of freely sharing knowledge with, or education of, the general public, and in particular business owner-managers and entrepreneurs to demonstrate alternative ways to business-as-usual in terms of business operations and, more broadly, in terms of the economic, political and social systems. This corresponds to Johannisova et al.'s (2015) proposal to emphasise education on cooperatives and their principles. The framework proposed in this thesis can be presented to the public alongside the wealth of alternative modes of production for degrowth.

In this respect, this study and the framework itself should be seen as an attempt to question the mainstream economics' notions of self-interest and of profit maximisation which justify the capitalist organisation of the society (Foster et al., 2010) and have become a part of mainstream discourse. As is evident in the Worldviews part of the framework, business owner-managers exhibit a plethora of other-regarding attitudes. They also go beyond caring for humans and encompass care for non-human life and the environment. Owner-managers also cite various manifestations of capitalism as barriers. This goes in line with Lawson's (2017) statement that "capitalism is itself a major obstacle to generalised human flourishing".

The Barriers part of the framework can be used as a call for a political transformation and deviation away from capitalism. It can be seen as an invitation to further investigate political systems for degrowth, i.e. political systems where degrowth firms can thrive and where degrowth compatible production can take place. Gorz (2012, p. 39) notes that "[c]apitalism was and is the only form of society which makes competition, with the aim of maximizing productivity and profit, its first commandment, unremittingly striving to enrol society, education, labour, individual and collective consumption into the service of the greatest possible valorization of capital and, consequently, to extend the domination of economic rationality, which expresses itself unchecked in the logic of the market, to all areas of life and work". It indicates that not only is capitalism not aligned with degrowth and does not provide a healthy environment for degrowth firms to thrive, it also prevents them from fully playing their role in transformation of societies.

Finally, the framework itself can be further used by researchers to advance our understanding of degrowth business, production for degrowth and more broadly, transition towards degrowth and identifying the areas which require investigation in relation to these topics. This applies to the framework itself and to the concept of degrowth business which was discussed in this study. Usefulness of this framework to researchers should not be seen as exclusive to the domain of ecological economics. Since the framework incorporates worldviews and barriers that firms deviating from business-as-usual face in the current setting, input from other disciplines such as psychology, sociology, political science is required.

6.7. Limitations and future research avenues

This section covers the study limitations arising from the nature and the design of the study and the limitations of the framework itself. Where a limitation provides a possibility for further research, a recommendation is given.

6.7.1. Limitations related to usefulness of F2

The first group of limitations relate directly to the usefulness of F2 discussed above. With regards to the **use of the framework by firms, other producers, networks** it should be noted that while F2 can indeed provide a helpful tool for reflection on business practices for the purpose of their improvement or alignment with degrowth vision, it relies mainly on owner-managers *wanting* to change their business operations. An important consideration in this study are the worldviews. One of the causal links, which was proposed but not investigated in this study, is that between the worldviews of owner-managers and degrowth business. It was proposed that those may give rise to practising business in a degrowth compatible manner or in a way which deviates from business-as-usual. This link needs to be investigated in further research. It is thus proposed that frameworks which outline the “how” of transitioning towards and operating business in a degrowth economy should necessarily be supplemented by studying the possibilities for individuals to change their worldview and the possibilities to facilitate emergence of degrowth-compatible worldviews.

A limitation concerning the ease of use of F2 is a lack of guidance for adoption. It does not represent a logical flow in terms of which practical elements should be a starting point. The framework can appear overwhelming and may discourage owner-managers to reflect on its elements. Further research can focus on investigation of how complex and complete rewiring of business operations can be possible in real life and how this complex change can be communicated in a manner which would increase an uptake. In other words, the question “where does one start?” should be answered.

Another limitation relates to the **use of F2 by policy-makers**. In relation to the use of F2 by policy makers, an important limitation to note relates to the how behind identification of degrowth businesses in the economy for the purpose of support. It is one matter to characterise degrowth business, to understand what it entails and to recognise a degrowth business having understood what it entails. It is another matter to estimate the number of such firms, or firms with characteristics of degrowth business on the national or regional level, or identify them via, for instance, a database search.

Shapira et al. (2014) note that it is particularly challenging to measure “green” industries and jobs. This relates to, for example, a lack of a single definition, lack of information with regards to “greenness” of individual firms (Shapira et al., 2014, p. 95). Moreover, existing classifications of “green” activities (see e.g. DBIS, 2013) are not necessarily compatible with

degrowth. While firms which belong to the Low Carbon Environmental Goods and Services sector (DBIS, 2013) or the Environmental Goods and Services sector (Eurostat, 2009), may indeed contribute to ecological aspirations of degrowth, degrowth business goes far beyond those. While possibilities for identification of degrowth business in the economy may provide opportunities for further research, there is an immediate need to inform businesses and other members of society about the possibility of doing and conceptualising business differently. This also provides opportunities for self-identification of businesses as transitioning towards degrowth.

The final limitation in this group relates to the **use of F2 in education and science**. It may be the case that the framework itself poses more questions than it answers. It should be acknowledged that the framework does not provide a path of transformation of societies in general. It is essential to view the transition of small firms towards a degrowth economy as *a part* of a deep and fundamental transformation of society. This research concentrates on production rather than consumption (e.g. Spash and Dobernig, 2017) side of economy. However these should be seen as inter-related and connected to multiple other agents and aspects of an overall transformation of society, e.g. downscaling the role of the market and commercial exchange in human lives (Sekulova et al., 2013; Klitgaard, 2013; Alexander, 2015b). Alexander (2015b, p. 5) captures this by stating that actions at the personal level will not suffice. Additionally, post-capitalist structures and systems, which should aim to facilitate simpler way of life, need to be created (Alexander, 2015; Trainer, 2014). Likewise, actions at a small firm level will not on their own suffice. Production for degrowth may indeed be carried out by a variety of agents such as households and artisans (Alexander, 2015b; Nørgård, 2013).

Another limitation that the use of F2 in education faces, is that on its own F2 will not suffice. Perhaps a different approach to teaching economics and business is required. A new approach may emphasise the value of cooperation rather than competition, and the reversal of the current culture, where “self-interest is stronger and more abundant than brotherhood” (Daly, 1993d, p. 355). A new approach can also contribute to human emancipation from monism of mainstream theorising. As Collier (1994) notes, false beliefs enslave, and therefore replacing them liberates.

6.7.2. Limitations of the study

One limitation arises from degrowth being a new concept, and the nature of production for degrowth not being well defined or extensively researched. For instance, this study required an

introduction of the concept “degrowth business”. It made the literature overview more challenging than if established and accepted modes of production for degrowth were well researched and in place. This indicates the need for advancing the theory of ecological microeconomics and clarifying, without necessarily finalising, what production on the micro economic level for degrowth should entail for degrowth on the macroeconomic level to materialise.

The philosophical framework of critical realism imposes a limitation due to its lack of guidance on translating one’s ontological and epistemological positions into methodology, including methods (Wuisman, 2005). This leads to a suggestion for further research to focus on methodologies for the study of production for degrowth from a critical realist perspective which is advocated, e.g. by Spash (2012).

While the case study approach chosen for this study is judged by the author to be the most suitable for the research question posed, it also imposes limitations. For instance, time imposes a limitation to understanding multiple nuances case study research gives access to (Flyvbjerg, 2006). The qualitative nature of this approach imposes its own limitations. Burke Johnson (1997) outlines several strategies which enhance the quality of qualitative research. These include extended fieldwork and use of multiple investigators in collecting and interpreting data. Being a single researcher thus imposes a limitation which could be addressed by carrying out an investigation with colleagues. Moreover, the duration of extended fieldwork is not specified. To address this limitation, further studies can be carried out to investigate degrowth business and manifestations thereof in real life in more detail. Such studies can take forms of ethnographic or action research to prolong an interaction between the researcher and manifestations of degrowth. Results from those studies can be compared to the results from the present study.

The nature of cases selected imposes limitations. For instance, all firms researched were micro firms. While the findings could be generalised via analytic generalisation to theory of production for degrowth, this study could have benefited from including firms of a variety of sizes. Studying firms of different sizes could also be useful for a comparative analysis where differences in manifestations of degrowth business elements could be identified. While an attempt was made to study firms which operate in different industries and have different inclinations, it was impossible to study firms which would represent all industries. Therefore, some elements of business for degrowth and barriers were necessarily missed.

Grounding research in a single discipline is a limitation. This research stems from ecological economics which leaves other areas of reality, e.g. the psyche, underexplored. This limitation is especially relevant to the Worldviews part of the degrowth business framework. To address this limitation, an inter-disciplinary study is required. Such study can delve deeper into the values of owner-managers, how their values come about, how such values can become more widespread within societies, and how they can replace other values such as individualism and competition.

Moreover, limiting the study to a certain location imposes limitations. Since the firms studied are based in the UK, experiences of firms and barriers they may face can be different in other contexts such as different countries, due to differences in legislation, culture, political and economic settings (Tietenberg, 1990).

6.7.3. Limitations to F2 implementation

This section covers the issues of F2 implementation. It attempts to highlight the importance of considering the socio-economic environment within which degrowth business is based and proposes avenues for further research with regards to this. While firms are the focus of this study, it is argued that the transition towards a degrowth economy is not solely a function of firms.

A significant societal transformation and an institutional change are needed (Kallis et al., 2015; Marshall and O'Neill, 2018). This concerns multiple agents and structures, both the state and the civil society (Heikkurinen, 2013). As Kallis et al. (2015, p. 14) note: “a transition can only be the outcome of multiple strategies and multiple actors; a movement of movements changing both everyday practices and state institutions”. A transition towards a radically different vision of economy presupposes rethinking of everything. This includes institutions, rights, concepts, which have become the norm and currently define our civilisation (Samways, 2018; Maxton, 2018).

This notion of change in “everything” is important, especially considering the political, social and economic barriers identified in this research. A purely individualistic approach should be rejected due to its insufficiency and blindness towards the fact that agents exist within certain institutional contexts and dynamics of production and consumption (Spash and Dobernig's, 2017).

Beyond the recognition of complexity of change, it should be acknowledged that implementation of alternative visions which conflict with the mainstream, is likely to face issues (Daly, 1993d; Moriarty and Honnery, 2013). Daly (1993d) argues that for implementation of an alternative vision, logic and necessity will not suffice for a social reform. What is required, he continues, is moral growth. Daly (1993d, p. 356) identifies sources of moral growth, including biblical, philosophical, academic/scholarly and derived from the literature, such as attention to the “evils of the day”, and the wholeness of knowledge which unites the physical, the social and the moral dimensions. While the worldviews of owner-managers of degrowth business may encompass morality, for these firms to thrive such moral growth should be present in other agents of the society, including consumers and policy-makers.

While this research focused on production, the need to research consumption for degrowth and the inter-relationship between the two cannot be underestimated. Public expectations, a barrier identified in the framework, points at this need. Consider, for instance, the following quote from C4R4 (Int.):

“We don’t have any plastic bottles here, all the water in either in a glass or a can. And that creates a few confrontations because some customers find it disgusting that we don’t have plastic to take on a train, like a bottle of water, even though we offer to refill any container free of charge with our filtered cold water. Some of them don’t get it, they just want their plastic bottle and they don’t care about the environment, or anything, and they are not prepared to carry extra weight of a glass or a tin. It’s people’s perception of what a railway station should offer”.

With regards to this, it becomes evident that societal transformation also requires policies aimed at shaping consumption (Spash and Dobernig, 2017). One such consumption-related policy can be derived from the framework. All firms researched use unorthodox marketing and do not aim to create demand. Thus, restrictions on marketing and advertising can be implemented, so the demand is not shaped by firms. Production related policies may include regulation of business size and power, supporting alternative business models, nationalisation.

The discussion above can lead one to assume that the society itself is a major barrier, a limitation for the framework and transitioning to degrowth in general. However, Bhaskar (1998, p. 34) notes that an agent is in fact inseparable from the society, and that “society is a necessary condition for any intentional human act at all”. This allows us to see that despite the

barriers which exist within the society, society is still a precondition to the transition towards degrowth. The necessary elements, including social forms, tools and materials for this transition can be found within the society itself (Bhaskar, 1998). By using various tools that the society provides, people can transform the society instead of reproducing current structures, including capitalism. This can be done due to intentionality of people. It means that people can consciously participate in transformation of social structures. These structures are themselves social products, thus can be transformed (Bhaskar, 1998).

To summarise, a transition towards degrowth is complex, and the framework proposed is not sufficient on its own to achieve degrowth. It should be supplemented by understanding of transition at multiple agents and structures, identifying what can be useful for this transition, and questioning everything, including familiar concepts such as surplus production, market, capitalism, technology (Trainer, 2012; Gowdy and Krall, 2013; Heikkurinen, 2018; Maxton, 2018).

6.7.4. Financial considerations as a limitation

This section focuses on the issue of financing that degrowth businesses may face. Concrete financial strategies for degrowth business and the link between degrowth business and the financial system are outside the scope of this research. They need to be investigated in future studies. However, several considerations will be outlined here.

Financing related limitation arises from acknowledging that firms exist within capitalist structures. These structures can prevent survival and thriving of degrowth business which deviates from the pursuit of profit maximisation. This is due to the inherent dynamic of the capitalism, which is a debt-based and growth orientated system. It necessitates profit making and growth (Foster et al., 2010; Trainer, 2012; Johanisova et al., 2013). In capitalism borrowing necessitates repayment of interest (Foster et al., 2010; Trainer, 2012; Gerber, 2014).

Firms investigated do not pursue profit maximisation and growth, and instead adhere to a principle of sufficiency in terms of size (Alexander, 2015b; Reichel, 2018) and conscious growth (C2). Even though the notion of sufficiency in relation to firms' strategy may seem strange (Reichel, 2018), sufficiency is practiced by the firms investigated which allows higher independence and control.

In relation to financing, this means that instead of borrowing firms can use their owner-managers' savings as a starting capital, as C2 and C3 did. However, this does not solve the

issue of interest repayment if firms must borrow and owner-managers do not have savings. Therefore, advising to use savings instead is not a solution. Likewise, when the product of a firm is costly, as was the case with C1, self-financing may be impossible. This indicates the need for solutions in terms of financial system for degrowth. In particular, this concerns interest.

The notion of sufficiency (Alexander, 2015b) may extrapolate to the owner-managers' lifestyles and the lifestyles of their families. For instance, in an attempt to deviate from the pursuit of profit and growth, owner-managers may adopt voluntary simplicity (see e.g. Alexander, 2015c). One research avenue can investigate consumption patterns of owner-managers of firms which do not pursue growth or deviate from the primacy of profit maximisation. In particular, one may investigate whether deviation from profit maximisation on a firm level can be facilitated by a personal practice of voluntary simplicity, or a "more fun with less stuff" principle (Jackson, 2017). However, in a system where interest repayment is expected, personal practices are arguably not sufficient.

For C7 the largest outgoing is the **rent**. To minimise the burden of rent, C7R7 decided to relocate her business from rented premises to her private home. This may not be possible for every firm, and therefore requires further investigation. In the case of C1, the premises were purchased. This may also not be financially viable for every firm and require borrowing, which would require interest repayment and thus facilitate profit seeking. This indicates a wider societal, economic and political problem of land ownership and rent-seeking, which requires further investigation in future studies.

Heikkurinen and Ketola (2012) state that a positive image may result in benefits, e.g. better access to capital from investors, including not-profit-orientated ones. This was the case with C1 which gained support from an ethical bank, which perceived C1 to be a social enterprise (C1R1, Int.1). However, attracting investors who may be attracted to a positive image of a firm does not solve the issue of investors expecting reward for their investment and risk.

Degrowth business may attempt to seek alternative funding. Some firms, such as The Clean Kilo of Birmingham, to which pro-environmental ethics is an integral part (The Clean Kilo, 2018), seek alternative funding opportunities such as crowd funding (Birmingham Live, 2017). Crowd funding is defined by Alexander (2015b, p. 143) as a "collective effort of individuals and communities to pool their resources to support projects they believe in, usually facilitated and campaigned for through the internet". This, however, may not be feasible for projects

where initial capital requirements are substantial as it was the case with C1 which use expensive equipment and technology for their projects.

The issue of funding for start-ups in a degrowth economy, especially that concerning expensive projects, should be further investigated. The issue of funding is not new and was also noted, e.g., by Heikkurinen and Ketola (2012). On this issue, C1R1 (Int.1) notes: *“if you’ve got a few tens of thousands of pounds, you are obviously not going to be putting up the finance of these things [wind turbines]”*. Even though with regards to this C1 decided to choose an ethical bank, the issues of profit making and repayment remain. As C1R1 (Int.1) continues, *“obviously the people who put up the millions of pounds required to build it take most of the profit”*.

To summarise, the issue of debt-based financial system and pathways for transitioning away from such system need to be explored. Alexander (2015b, p. 90) rightly notes: “what should replace this debt-based system – and how the transition beyond such a system would play out – are open questions that have not received the attention they deserve”. Some examples may include community owned banks which provide zero interest credits (Alexander, 2015b).

7. Conclusion

“[I]t remains true that the main part of the work of emancipation is not cognitive, but consists in toil and trouble, conflict, changes in power relations, the breaking up of some social structures and the building up of others.” (Collier, 1994, p. 191)

This study was based on the premises that the current social, ecological and economic relationships cannot last, and that a significant, radical social and ecological re-evaluation and transformation of existing agents and structures is required (Trainer, 2012; Maxton, 2018; Spash, 2015, 2017b; Alexander, 2015).

It was argued that this significant change entails a deviation from the path based on growth, greed and exploitation (Gowdy and Baveye, 2019). It signifies a revision of the principles of economy, the way it operates and the way it is understood and studied by neoclassical economics. Degrowth, a radical and comprehensive vision of society and economy beyond growth based on ecological economics, was chosen as a theoretical lens for this study. It provided a theoretical framework and a ground for a transformative approach.

Degrowth proposes planned and strategic economic contraction which is expected to ensure human and planetary wellbeing and co-existence between humanity and nature far into the future instead of an ecological and societal collapse (Assadourian, 2012). Degrowth offers a radical critique of current society and a qualitatively different vision of economy (D’Alisa et al., 2015). This qualitatively different nature of degrowth makes it different from simply greening, democratisation or self-management of capitalism (Flipo and Schneider, 2015).

The notion of transformation of society and economy in transitioning from the current system towards degrowth is central to this research. This research aimed to provide a pathway of liberation or emancipation from current structures and a new way of thinking about business. According to critical realism, which provided a philosophical lens for this research, emancipation necessarily involves transformation of structures (Collier, 1994). This concerns transformation of real structures in the real world.

Transformation of structures is done via the efforts of agents (Bhaskar, 1989, 1998). This thesis concentrated on one aspect of a societal transformation, one group of agents, namely small firms as potential agents. They were considered suitable as a part of an overall transition towards a degrowth economy, an economy simultaneously aiming at ecological sustainability and wellbeing. Assuming that a degrowth economy is desirable and small firms could be among

the agents of transformation, the aim of this investigation was to understand how small firms could transition towards degrowth. It was proposed that they could do so by becoming degrowth businesses. In other words, for degrowth to be possible, firms necessarily need to become degrowth businesses. This required a deeper investigation and understanding of what degrowth business could be. While it seems logical to deduce from definitions of degrowth that a firm for a degrowth economy is one that incorporates broad aspects of degrowth, i.e. ecological sustainability, wellbeing and a shift in values (Schneider et al., 2010; Paulson, 2017), it was also desirable to ask further, more precise questions, answering which assists transformation in practice and advances theory.

These questions include: what exactly would production for degrowth entail, what exactly constitutes environmental and social considerations? It should also be remembered that agents exist within certain structures (Bhaskar, 1989, 1998) which may impose barriers to firms deviating significantly from business-as-usual. For a transition towards degrowth to be manifested in real life, such barriers should be understood.

This thesis attempted to start answering those questions and introduced a framework of a business for a degrowth economy, which was informed by insights from primary data derived from seven case studies of British small firms. Informing the theoretical framework enhances the usefulness and enhances our understanding of the nuances of characteristics of degrowth business. Informing the theoretical framework also helps to fully answer the research question. To answer the research question, it is proposed that *small firms could transition towards degrowth and become degrowth businesses by adopting characteristics of a degrowth business, covering the whole range of business operations and orientations where applicable, in line with degrowth*. For the purpose of identification of those characteristics, F2, which is the key outcome of this investigation, can be used.

Small firms may already possess some of those characteristics, such as being embedded within their local communities (Söderbaum, 2008) and being content with their size (Johnson, 2007). Considering this, small firms may indeed be initially well positioned to transition. However, for this transition to be meaningful and sustained, the worldviews of owner-managers should be aligned with degrowth. This should not be a matter of relying on chance for those worldviews to emerge in a number of individuals. Proactive measures should be taken, such as raising awareness and educating people regarding the environment and society and deviating from mainstream economics and business studies in favour of ecological economics, social

ecological economics, and other inter- and trans- disciplinary and heterodox approaches. Thus, beyond usefulness of F2 for firms, other producers and policy-makers, using F2 in education and science was highlighted.

In several discussions concerning this work, members of academia have asked the following question: Which one element of the framework is *key*? The question is interesting in itself, and answering it allows to address an important observation from this research. People's use of simplifications, such as rules of thumb, is not surprising (Benartzi and Thaler, 2007). While it may be appealing to single out one element to proclaim solving the issue of unsustainability with one single and simple phrase or a number, complexity should instead be embraced.

In relation to this, the following reminder is helpful: "Unless the physical, the social, and the moral dimensions of our knowledge are integrated in a unified paradigm offering a vision of wholeness, no solution to our problems are likely" (Daly, 1993d, p. 357). Thus is it not a single element which is the key to becoming a degrowth business, but all the elements presented in the framework F2 are. Importantly, it is also the openness towards the possibility that there are even more elements to discover. This undoubtedly requires a holistic approach to a firm and what a firm is. This is to say that a firm should not be seen as an isolated black box with a narrow aim to seek, make or maximise profit. A firm is a very complex social entity, intimately interconnected with its surroundings, both the society and the environment. For this reason, degrowth business framework remains broad and complex, and further aggregation of its elements was intentionally avoided. In fact, on the contrary keeping the framework as nuanced as possible was pursued.

Since this research involved an investigation of small firms which not only possess several characteristics of degrowth business but also informed the concept and the framework of degrowth business, one may ask whether the firms investigated in this research are in fact degrowth businesses. Answering such question should be reflective, rather than definitive. It was not the aim of this research to evaluate whether the firms investigated were degrowth businesses, and to what extent this may be the case. Multiple operations of degrowth elements and even the presence of the key categories of degrowth business are evident in those particular firms. However, those elements should only be seen as manifestations of degrowth which could possibly indicate a potential for transition. It should not be assumed that degrowth business readily exists in a capitalist setting. This is precisely why awareness, acknowledgement and addressing the barriers which may prevent firms from transitioning towards degrowth, is

necessary. Such barriers are plentiful and complex, ranging from the capitalist system itself to deeply rooted beliefs and culture which are facilitating towards the existing growth economy and detrimental to a degrowth economy and transition towards it.

Due to a wide range of considerations (e.g. worldviews, political system) outlined in this thesis, a multi-disciplinary research is called for throughout this work. Similarly to the way ecological economics in general benefits from deriving its knowledge about the biosphere, societies and human nature from natural sciences, anthropology and sociology, and psychology respectively, further understanding of degrowth business, its formation, operation and its role in societal transformation should be a multi-disciplinary effort.

Moreover, similarly to the way ecological economics and degrowth pose questions and offer radical critique, in addition to a multi-disciplinary effort of investigation of degrowth business, the concept itself must be further critiqued and questioned. While it may seem premature to question a newly developed concept which has not yet found an appropriate manifestation in reality, efforts to seek ecologically sustainable, socially desirable, inclusive, emancipating, respecting towards non-human life modes of production should continue. The degrowth business framework aims to promote a discussion and further work not only on degrowth business, but also on production for degrowth in general. Collier (1994, p. 23, italics original) reminds us, that “while there can be justified beliefs and there can be progress, there can be no *final theory*, unsusceptible to revision and improvement”. Therefore, it is hoped that this work will be revised, improved, and unanswered questions will be addressed.

An important implication of this thesis, which is derived from the study of barriers, is the transformation and not reproduction of the political and economic environments, which prevent the firms studied from fully exploring their degrowth potential. In this respect, the call of multiple scholars (Daly, 1993d; Schumacher, 1993b; Trainer, 2012; Spash, 2015, 2017b, 2017c; Maxton, 2018) regarding a change in various systems is supported. The modern growth-orientated capitalist environment imposes barriers, which are challenging to deal with for some firms and may even be impossible to overcome for others. This environment sets firms, from their inception, on a path of borrowing, monetary metrics, growth and profit seeking. Following from the philosophy of critical realism (Bhaskar, 1989, 1998), it is not the reality which owner-managers create, it is the reality where they find themselves in.

Firms with degrowth business characteristics via their operations attempt to transform aspects thereof or identify coping mechanisms to survive or even thrive. Yet, the issues such as private

ownership, rent-seeking and other manifestations of capitalism remain. It is argued, therefore, that an intentional transformation of the current system by multiple actors is needed. Degrowth business framework provides a theoretical and practical direction of transformation on a firm level. Yet, multiple other levels, institutions, norms and relationships should be addressed for a degrowth economy and society to be possible. Thus, an essential concluding remark is the necessity to view small firms as part of transformation and not the leaders. Efforts of small firms are not enough and should not be relied upon as the sole solution. Transition towards degrowth concerns everyone and everything.

Multiple research avenues were intentionally offered throughout the discussion chapter where the author was not in a position to offer a comprehensive answer or explanation. Additional research avenue can arise from a critical reading of this thesis by other researchers, while some final research avenues are offered here. They may relate broadly to the employees and their worldviews, emergence of certain worldviews (how and why), firms of other sizes for a degrowth economy (does it matter, if so, why?), large scale services and production for degrowth (e.g. railways, healthcare and their ownership and operation), other types of production for degrowth (e.g. production for own use, crafts, cooperatives), political systems for degrowth, property and ownership in a degrowth economy and society, business and economics education for degrowth, finance and non-monetary metrics of performance and need (or lack thereof) for those, financing and maintaining larger projects, the relationship between downscaling of production and downscaling of consumption. Moreover, research avenues can investigate each of the elements of the degrowth business framework proposed in this study and relationships between those.

8. Reflection

I consider this additional chapter to be important. If I was to recommend a couple of chapters to a reader who does not have much time to read this thesis, it would be number one. Here I will do what I believe should be a more widespread practice in social sciences, which is writing in first person, re-connecting to one's own words, taking responsibility for them, and speaking to the reader less formally. My goal here, as is the case with the research which precedes this chapter, is to be honest and transparent. In this chapter I will concentrate mainly on the practice of PhD as an academic exercise and as a process of research and transformation of nature.

As an academic exercise, writing a thesis is not an entirely unpleasant process. This is only as long as freedom is allowed to take any path where research leads you, and only as long as one's personal values are not compromised and are, in fact, allowed to develop and evolve. Much value is currently attached to pragmatic research with a purpose, quantitative research and so on. This results in a lack of radical, practical and philosophy-orientated perspectives. In economics especially, considering the effect of this science on the environment and the society, radical and taboo perspectives have to be explored.

In this regard, I am mostly satisfied with my practice. On the other hand, even though I consider this thesis to belong to a radical tradition in economics and sustainability, I do not believe, on a grand scheme of things, I am telling anything new. Recognition of limits to growth, our embeddedness within nature, respect for nature and others, seeking for meaning outside of material success, all these seemingly new and radical ideas have been around for centuries. The issue is not the absence of such thoughts, but the absence of our desire to act on those. There is no mythical "gap in knowledge", there's only lack of action.

On a practical note, as a three-year academic exercise, PhD is expensive. Obtaining a title of Doctor in Philosophy may be desirable for various reasons, from a genuine desire to become a valuable part of academia which contributes to human emancipation, to vanity and self-interest, and to add credibility to someone's words (I would warn others against associating authority with truth), but it is not accessible to everyone purely from a monetary perspective, which must be stated explicitly. It is not easy, even though I believe with the popularity of radical perspectives it is becoming more so, to find a funded PhD with a good contract and which would accommodate freedom of thought. Education must be free for all.

Moreover, the knowledge that I got access to as a PhD student from various books and papers thanks to my family and friends, should absolutely be accessible to everyone free of charge.

With regards to accessibility, academics go great lengths to sound objective and clever in their writing, but in most cases, it is artificial, self-serving and unnecessary. There is a division of writing for the general public and for academic audience, which should not exist. Writing should be done as a service to humanity and nature. The so-called general public should have a right to see and access references, as much as the academic audience should not be distracted by the complexity of one's vocabulary or title.

In the case of on my own thesis, much could be said simply, in fewer words and in a much more straightforward manner. Connected to this is the requirement for a thesis to be somewhere between 75 and 100 thousand words, which is completely unnecessary. This whole thesis could be summarised in one paragraph or even a sentence: "Wake up, do everything you can, express deepest concern and unconditional love towards those [including non-humans] around you, those far away and nature and manifest this concern and love in everything you do". This statement could be explained and supported by numerous references in a few pages for those who are still sceptical.

With regards to the length of a thesis I have just mentioned, what should be understood and highlighted is the input of materials and energy associated with it. The process of PhD is a process of transformation of nature. The energy my laptop uses when I write, the journeys to conferences, the light that is on during my meetings and when I read, the great amount of paper that is used. While some of it seems more useful, other is waste which is absolutely unnecessary and bureaucratic. If this thesis is available in electronic form, there should be no need for printing. And while it is tempting to say: "My thesis is anti-matter and energy throughput increase and anti-bureaucracy", it does not cancel out the fact that much energy and materials were spent or wasted during the process. I have tried to reduce it as much as practicable by, for instance, taking train journeys instead of flights abroad, but this cannot be seen in isolation, since train journeys are often more expensive, which is important in terms of my contribution to economic growth, which I argue against.

Apart from a PhD being a process in terms of transformation of nature, it is also a process often seen as a stage in one's career, and people approach it as such. What could I possibly put on my CV during these three years? This is a utilitarian, self-serving approach. I believe that I did my best to deviate from this approach and instead concentrate on my own expertise, quality, sharing and personal growth, because at the end of the day those aspects of a person are more beneficial to humanity. The events and people I chose to engage with were chosen on the basis

on my contribution to our goal to achieve strong sustainability, and those people are not necessarily academics. I am proud of the fact that I resisted a temptation to produce a paper before I acquired necessary knowledge and became comfortable with and clear about the position that I advocate. While I am writing these words, I am also working on publications, while asking myself “Is there anything in those papers that I have not said in this thesis?”

Another important aspect of the PhD as a process is adherence to certain rules and practices which people in academia fail to question and revise. Here I refer to the ways in which things are normally done and perceived. Quite clearly, and one does not need to be an expert to see that, things done “normally” resulted in the situation of unsustainability we find ourselves in, and nature finds itself in, and non-human species have to struggle in, which they did not ask for. This pattern of thinking [things must be done normally, this is how] I find extremely detrimental to research.

Firstly, seeing research as a defined path from literature review to methodology and so on, or a piece which necessarily includes a, b and c, as prescribed, is not helpful. Especially with the rise of popularity in systematic literature reviews as the last resort in economics and business studies to seem “objective”, and thus insulate themselves from anything else even further, research is not seen as whole, something a person should take responsibility for as an entity, a product of their own mind first and foremost.

Secondly, the hierarchical structures of education institutions, and associated with them reference to others’, for instance, “extensive experience” as a way to conclude an argument, are distracting. Everyone is just a person, a human being. Anarchism should be embraced. As someone who does not subscribe to oppressive and hierarchical views of society, I benefited greatly and equally from learning from “esteemed” and “recognised” experts in my field, as much as from businessmen and individuals without any formal education, which probably is the reason of their unparalleled understanding of reality. I also greatly benefitted from learning from cats, and nature in general.

Thirdly, and this applies to all social science, subjectivity should absolutely be embraced and celebrated. Even the fact that this thesis is the product of my mind and a part of my story makes it subjective. In social sciences objectivity is one of those “normal” things that are expected and promoted to “novice” researchers, yet it cannot be achieved and should not be chased, claimed or faked. And since objectivity is an illusion, or a manifestation of dishonesty [a lie], everyone is subjective, and the only question that matters with regards to those associated with

one's research is: "Is their heart in the right place?" Because if it is, the rest will come, and this should be seen as a scientific position, since science is just a part of our social practice.

Finally, I would like to reflect on the subject matter of my PhD itself and outline some insights, which I cannot put in the main body of my work because they are not elegant enough. My work focused on business and degrowth. Firstly, studying business in a business school is difficult, and is probably wrong. It is a social phenomenon and a lack of exposure to sociology and psychology is not helpful. No doubt those sciences have their own issues, not unlike economics. Again, with a hierarchical and fragmented structure of universities it is, however, normal, which does not make it good. I doubt that the transition towards degrowth is a matter of business models or petty, yet praised, practices which look good on paper or in academics' minds, it is a matter of values.

A simple observation from my research is that when higher values are truly internalised and in place, practices are in line with them. And unsurprisingly, these practices did not come from academic papers, most of the time common sense applies better than reading between the lines of some expensive and detached academic article. Secondly, it is simply a matter of life and death, not only human, but death of other species. It amazes me that people, myself included, find time to write "scientifically" on how recycling of a plastic straw compares in its environmental impact to drinking directly from a glass, when the planet is heating up, and species are disappearing.

While my work hopefully provides some food for thought, similar outcomes could be obtained quicker if no academic frills were necessary. Thirdly, the changes must be unprecedented if we choose survival for ourselves and others. Taboo subjects must be discussed. Talking about transformation of businesses is not enough. It can be, and I support this position, that production in degrowth is not done by businesses at all. Right now, we have to learn to let go of things like hierarchies, marketing, corporations, excessive compensation, competition, needs and wants creation. We have to stop pretending that any of those can be green in any way. I would encourage business schools to stop studying business and concentrate on production, needs and sufficiency, and go back to basics.

I did not intend to refer to scholars in this chapter, but I would like to briefly refer to Tawney's Religion and the Rise of Capitalism here, in particular, to the section where he mentions that in the beginning of the age of Reformation, "economics is still a branch of ethics, and ethics of

theology”. Seeing economics as a branch of ethics is useful in the situation we find ourselves in. The question is, what kind of ethics. I strongly advocate eco-centrism.

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Notes

[1] The concept of “small firm” can be deduced, for instance, via a definition of OECD’s (2015) for SMEs. OECD (2015, p.17) defines SME in the following way: “Small and medium-sized enterprises (SMEs) are non-subsidiary, independent firms which employ fewer than a given number of employees”. According to the European Commission (2017) the main factors that define an SME are staff headcount and either turnover or balance sheet total. SMEs include micro, small and medium-sized firms (European Commission, 2017). There are three categories of SMEs, including micro enterprise (less than 10 employees, \leq € 2 m turnover or \leq € 2 m balance sheet total), small enterprise (less than 50 employees, \leq € 10 m turnover or \leq € 10 m balance sheet total) and medium-sized enterprise (less than 250 employees, \leq € 50 m turnover or \leq € 43 m balance sheet total) (European Commission, 2017). While some UK Government sources (e.g. UK Government, 2018b) use the European Commission definition of SMEs as described above, a trend towards outlining own definition is evident. For instance, UK Government (2012) identified the category of MSBs or mid-sized businesses which includes businesses with turnover £25 m-£500 m per annum. According to UK Government (2012) £25 m is the upper limit of SME definition while £500 m turnover is the upper limit for “smaller” large firms or the firms that “have grown beyond the size of smaller firms but have not yet reached the size of the largest firms”. SMEs are defined by the Companies Act as enterprises which meet two out of three following characteristics – turnover (less than £25m), employees (less than 250), and gross assets (less than £12.5m) (UK Government, 2012). It has also been noted by the same source that there is likely an overlap between SMEs and MSBs. Moreover, according to the Companies Act 2006 (The National Archives, 2018), a company qualifies as small if it satisfies two or more of the following: turnover - not more than £10.2 m; balance sheet total (the aggregate of the amounts shown as assets in the company's balance sheet) – not more than £5.1 m; number of employees – not more than 50.

[2] A popular survey method is not used as the main method for this investigation because the author of this study deviates from positivism. However, another reason can be offered. The list of degrowth small business elements identified from the literature may not be exhaustive, understanding of degrowth business and degrowth business models is limited, and a survey does not allow in-depth investigation of new lines of inquiry that may emerge during conceptualisation of degrowth small business which can, on the contrary, be investigated during a case study research. Moreover, a survey limits an in-depth understanding of reality-based practices and experiences of small businesses. A survey also does not allow the flexibility, which is helpful in moving between the stages of research to navigate the complexity of the phenomenon in question (Easton, 2010). However, a survey with a possibility of qualitative inputs can be used to further supplement the framework of degrowth small business with additional insights from a wider range of firms. The survey can also be used to understand the downsides of the framework and its applicability to various real-life business operation.

[3] In this work, the word “unorthodox”, as a deviation from the conventional, in relation to marketing is used to emphasise activities of firms which still fall within the premise of or can be described as marketing but are not necessarily designed as a strategy to maximise profit.

Appendices

Appendix I. Glossary of key concepts

Business-as-usual: refers here to operating business in a manner where profit maximisation is the focus of business (Friedman, 2007) despite the situation of severe ecological degradation which requires urgent action (Heikkurinen and Bonnedahl, 2019b), including changes in the way humanity produces. Used as a contrast to degrowth business.

Capitalism: here, following Marx, capitalism is seen as a system of self-expanding value where surplus is constantly re-invested in search of profit (Trainer, 2012; Klitgaard, 2013).

Concrete utopia: used in the sense of Latouche (2009), a vision which can be operationalised.

Degrowth: a vision of sustainable society and economy which requires downscaling of production and consumption, reduction in matter and energy throughput in economies while being orientated towards human wellbeing (Schneider et al., 2010), and non-human wellbeing (Bonnedahl and Heikkurinen, 2019b).

Degrowth business: business compatible with a degrowth vision, used interchangeably with “degrowth firm”.

Degrowth society: society compatible with a degrowth vision, one which lives “simply, in common and with less” (Kallis et al., 2015, p. 11). This is qualitatively different to the current, growth society (Latouche, 2009).

Ecological economics: a heterodox school of economics, also a “transdisciplinary field of study that addresses the relationships between ecosystems and economic systems in the broadest sense” (Costanza, 1991, p. 3).

Illuminate: used in relation to theories in the sense of Yin (2014) and the critical realist Lawson (2019). Similar use can be found in, e.g. Pollitt et al (1998) who base their analysis on multiple cases and employ guiding theory. To illuminate degrowth business framework and our understanding of degrowth business, the theoretical degrowth business framework needs to be informed to increase its practical value, thus a degrowth transition in reality.

Post-growth: an umbrella term for theories and visions of economies and societies based on the argument of ecological economics regarding impossibility to sustain economic growth on a finite planet.

Pro-environmental/pro-social: used as synonymous to environmental/social, beneficial for the environment/society.

Small firm/small business: used here in a broad sense in order to avoid tying “smallness” of a firm to a quantitative descriptor at the current stage of theorising on production and degrowth. Thus, “small” is used similarly to, for instance, Schumacher (1993), Demaria et al. (2013), Alexander (2015b) where the exact size/scale is not specified which gives space for qualitative interpretation. Here the term includes micro firms as is done by European Commission (2019).

Sustainability: in this thesis refers to prolonged/sustained continuation into the future.

Sustainable development: in this thesis used in a conventional sense as used by the UN, or development which aims to address poverty and other deprivations and climate change in combination with sustaining economic growth as exemplified in UN SDGs (United Nations, 2019).

Unsustainability: an impossibility of being prolonged/sustained into the future

Wellbeing: used in this thesis broadly as a state of flourishing where activities such as social relations, political participation, physical exercise, spirituality and contemplation (Demaria et al., 2013) are central, thus wellbeing is not equated with increasing income and wealth (Coscieme et al., 2019). Additionally, wellbeing in this work is extrapolated to that of humans and non-humans (Bonnedahl and Heikkurinen, 2019).

Appendix II. Production for degrowth

Element	References
Material and energy throughput and waste (Environmental elements)	
<p>Output reduction (producing less), deviation from productivism Opposition to and finding alternatives to productivism and a productivist society (Gorz, 2012), producing less are central to degrowth vision of economy. Output reduction strategies may include de-division of labour and de-specialisation (Kallis, 2017b). This is preferable to expansion which requires increased energy throughput, even if alternative energy is considered. Expansion powered by alternative energy sources is problematic also due to intermittency of renewable energy (Moriarty and Honnery, 2013). Existing production should be centred around needs (Alexander, 2015b).</p>	Gorz (2012), Flipo and Schneider (2015), Kallis (2017b), Schneider et al. (2010)
<p>Input reduction, combined with the entry above, energy and matter throughput minimisation, dematerialisation Less production and less consumption (Boulding, 1966). Energy throughput minimisation minimises thermal pollution (Daly, 1993). The need for energy arises in production and in recycling. Yet energy itself cannot be recycled, therefore downscaling of both input and output is emphasised. Dematerialisation or “an input-oriented strategy, which [...] intends to tackle environmental problems at their source” (Lorek, 2015, p. 83) is needed, yet is unlikely in a growing economy (Lorek, 2015, p. 84).</p>	Boulding (1966), Daly (1993), Kallis (2017), Lorek (2015), Maxton (2018)
<p>Frugality in resource use When use of resource is required, frugal use of resources by producers (Daly, 1993d; Alexander, 2015b), better sharing of resources (Kallis, 2017b) become central. Connected to frugality are different manifestations thereof, such as reuse (Alexander, 2015b; Latouche, 2009) and recycling (Latouche, 2009). Recycling is linked to durability of commodities since durability “also includes the efficiency with which the after-use “corpse” of a commodity can be recycled as an input to be born again as the same or a different commodity” (Daly, 1993, p. 30). Therefore, durability is maximised.</p>	Alexander (2015b), Daly (1993, 1993d), Kallis (2017b), Latouche (2009), Maxton (2018)
<p>Durability “The faster things wear out, the greater can be the flow of production and income. To the extent that consumer apathy and weakening competition permit, there is every incentive to minimize durability” (Daly, 1993, p. 41). Production maximisation exploits resources and creates waste. Mainstream economics gives preference towards products which do not last because they require replacement which stimulates economic activity (Renner, 2012). Renner (2012) proposes preferential policies for durable, repairable and upgradeable goods. Producing durable goods can create loyalty and advantage in a contracting economy (e.g. Patagonia) (Assadourian, 2012). Durability should be viewed as a part of the overall change in production: “recommending product durability is a technical fix that fails in a world of fashion-conscious throwaway consumerism” (Spash, 2015, p. 376). Durability and reparability of goods may be reflected in product design. In the words of Schumacher (1993c, p. 177): “It would be the height of folly to make material so that it should wear out quickly and the height of barbarity to make anything ugly, shabby, or mean”. This element relates to product design, thus is a principle of production, and energy and material throughput and waste.</p>	Daly (1993), Latouche (2009), Gorz (2012 [1994]), Georgescu-Roegen (1975, 1993b), Assadourian (2012), Renner (2012), O’Neill et al. (2018), Schumacher (1993c), Reichel (2018), Maxton (2018)
<p>Preference towards renewable resources Requires differentiation between renewable and non-renewable resources. “Nonrenewable goods must be used only if they are indispensable, and then only with the greatest care and the most meticulous concern for conservation. To use them heedlessly or extravagantly is an act of violence” (Schumacher, 1993c, p. 179).</p>	Schumacher (1993c), Maxton (2018)
<p>Addressing waste and pollution “Pollution will have to be limited to what nature can easily absorb” (Maxton, 2018, p. 42).</p>	Daly (1993d), Kallis et al. (2015), Maxton (2018)
<p>Renewable energy “A transition to renewables will inevitably be a degrowth transition” (Kallis et al., 2015, p. 7). This is due to diminished energy return on energy invested (EROI) and intermittency of renewable energy sources.</p>	Alexander (2015b, 2016), Kallis et al. (2015), Maxton (2018), O’Neill et al. (2018)
<p>Frugal energy use Avoidance of energy waste (e.g. overheating, over-lighting), unnecessary waste reduction (O’Neill et al., 2018). Energy efficiency is a useful concept, yet there may be a rebound effect which might cancel out the saving of energy occurred (Moriarty and Honnery, 2012, 2016, 2017).</p>	Georgescu-Roegen (1993b), O’Neill et al. (2018)
Business operation, wellbeing (societal elements), shift in values	
<p>Qualitative change Despite the need for reduction in production (quantitative change emphasised above), reduction should not be seen as a mechanistic process. It requires a change in motives and desirability for certain commodities, reorientation towards care and caring activities (Kallis et al., 2015). As Tawney (2015, p. 278) notes: “production should be organized for service, not for profit”.</p>	Alexander (2015b), Kallis et al. (2015), Trainer (2010), Tawney (2015)

Overall, in a degrowth economy, “the nature of what would be produced and the values motivating production would be very different” (Alexander, 2015b, p. 87), “the motivation would be to produce what was necessary and sufficient for a good life, rather than to produce luxuries or superfluous abundance” (Alexander, 2015b, p. 88), “[m]any industries in existence today would become redundant, such as the fashion and marketing industries” (Alexander, 2015b, p. 247).	
Deviation from profit maximisation An important aspect of the qualitative change outlined above is deviation from profit maximisation, thus allowing for redefinition of the meaning of economic activities and removal of “productivist” logic (Spash, 2017b, p. 25). Productivism can be viewed as production for the sake of production and is facilitated in capitalism (Deléage, 1994). Traditionally in economics personal profit motive is seen as central to powering private enterprise and social wealth (Schumpeter, 1976). In a growth-based economy, profit maximisation and accumulation are the key goals (Gowdy, 2014; Jackson, 2017), so are (1) – provision of working capital to invest and improve; (2) – paying back the creditors; (3) – paying the dividends (Jackson, 2017). In post-growth economy where the “current dominant socioeconomic system of growth, accumulation, and expansion” (Gowdy, 2014, p. 40) is replaced, “profit-maximisation would not be the aim of market activity” (Alexander, 2015b, p. 89).	Alexander (2015b), Spash, (2017b)
Deviation from profit maximisation outlined above indicates presence of drivers other than profit. This complex category entails deviation from profit as a motive, deviation from competition and redefining the meaning of success beyond material success. Kallis (2017b, p. 11) states: “the source of capitalism’s dynamism is the relentless competition of firms for profit”.	Jackson (2017), Liesen et al. (2015)
Motives beyond profit can be manifested in a legal form of a firm such as not-for-profit business.	Hinton and Maclurkan (2017)
Re-defining the meaning of success Deviation from profit maximisation and accumulation outlined above indicates the need for owner-managers to seek alternative sources of success. Jackson (2017, p. 49) states that “Success today is synonymous with material affluence” and notes that the economy promotes the society to be materialistic and exhibit selfishness and novelty-seeking (e.g. via consumption) (Jackson, 2017). This corresponds to Tawney’s (2015, p. 280) observation that in modern societies “the attainment of material riches is the supreme object of human endeavour and the final criterion of human success”.	Jackson (2017), Tawney (2015)
Orientation towards wellbeing Wellbeing (Jackson, 2017), “human improvement” (Mill (1857) quoted in Daly (1993, p. 28): “Even the industrial arts might be as earnestly and as successfully cultivated, with this sole difference, that instead of serving no purpose but the increase of wealth, industrial improvements would produce their legitimate effect, that of abridging labor”. Orientation towards wellbeing entails wellbeing of employees and communities (Daly, 1993).	Daly (1993), Jackson (2017), Mill (1857)
Simplicity, autonomy These are connected to the notions of localisation and sufficiency. Simplicity encompasses “embracing ‘simpler ways’ of living that provide for mostly local needs using mostly local resources” (Alexander, 2015b, p. xii). The notions of simplicity, sufficiency and autonomy can be applied to production and in this respect is connected to human scale of production and localisation (below).	Alexander (2015b), Kallis (2017), Kallis et al. (2015), Schumacher (1993b, 1993c).
Smallness “Human scale”, small scale operations or smallness of organisations and units of production. Spash (2017b, p. 27) argues: “humanity would do better to create an economic system that is smaller by design, not disaster”.	North (2010), Schumacher (1993, 1993b), Spash (2017b)
Small private businesses: “While some large factories would probably remain in order to provide certain materials or hi-tech equipment, small private businesses and worker cooperatives would in most cases replace the mega-corporation” (Alexander, 2015b, p. 88). Several post-growth/degrowth theorists state that small firms and staying small would become the norm (North, 2010; Trainer, 1995; Alexander, 2015b).	Alexander (2015b), North (2010), Trainer (1995)
Non-growing business Related to the entry above, it is not merely smallness but also sufficiency (Alexander, 2015b; Eskelinen and Wilen, 2019), e.g. in size, which may become a guiding principle. Leonhardt et al. (2017, p. 270, italics original) define growth as “an increase in capacity that aims at increasing turnover. Turnover is defined as sales revenue per period. Capacity can be deliberately increased by such actions as hiring new staff, investing in machinery and spatial expansion”. Therefore, these authors define non-growing SMEs as “those avoiding investment in capacity, but maintaining size” (Leonhardt et al., 2017, p. 270). Recognising limits is central. The matter of sufficiency (Alexander, 2015b) runs throughout the degrowth narrative, including production and consumption, and is not a recent phenomenon. Consider: “I know not why it should be a matter of congratulation that persons who are already richer than anyone needs to	Liesen et al. (2015), Leonhardt et al. (2017)

be, should have doubled their means of consuming things which give little or no pleasure except as representative of wealth” (Mill (1857) quoted in Daly (1993, p. 27).	
Related to sufficiency, simplicity and frugality is the principles of capital saving , which is a part of Schumacher’s (1993b, p. 170) “systematic search for smallness, simplicity, capital saving and non-violence”.	Schumacher (1993b)
Alternative ownership patterns and business models Those may include cooperatives, worker-controlled production. Democratic decision-making regarding the use of surplus is noted (Barca, 2019). Bayon (2015) argues in favour of worker-run cooperatives since “wage earners cannot act as producers in the direction of degrowth”. They may also defend jobs in ecologically destructive sectors (Bayon, 2015, p. 190). Alternatives modes of production in degrowth may include grassroot economic practices (e.g. cooperatives), worker cooperatives (Alexander, 2015b; Kallis et al., 2015). However, it should also be noted that the patterns of ownership of, for instance, means of production or tools in a narrow sense, should not be seen separately from the conviviality (Illich, 1973) of the tools. In relation to this, Illich (1973, p. 20) states that “Certain tools are destructive no matter who owns them, whether it be the Mafia, stockholders, a foreign company, the state, or even a workers' commune”.	Alexander (2015b), Barca (2019), Bayon (2015), Hardt and O’Neill (2017), Hinton and Maclurkan (2017), Kallis et al. (2015), Marshall and O’Neill (2018), Schulz and Bailey (2014), Speth (2009)
Localisation of production and exchange Localisation can be seen as an ecologically beneficial practice aimed at a convivial economy. Latouche (2009, p. 37) defines relocating as “producing on a local basis”. Localisation thus entails “production from local resources for local needs” (Schumacher, 1993c, p. 178). Marshall and O’Neill (2018, p. 273) state that “Localisation refers to a process whereby localities, regions, and nations seek to become as self-reliant as possible for their everyday needs, thus reducing their dependence on imported goods”. Desirability of localisation can be explained by the fact that supply chain/trade are material and have material implications (North, 2010). Thus, related to localisation is a concept of eco-localisation (“the ecologically and politically motivated localization of networks of production and consumption” (Dittmer, 2015, p. 150). Concepts such as eco-localisation and reverse globalisation presuppose locating value chain elements closer to the firm, thus addressing carbon emissions produced by transportation (North, 2010). In this sense, localisation is pro-environmental. Klitgaard (2013) states that local production and distribution will take place due to declining energy quality.	Alexander (2015b), Dittmer (2015), Fournier (2008), Kallis (2017), Latouche (2009), North (2010), Schumacher (1993c), Marshall and O’Neill (2018)
Embeddedness within community. Local area is important to a small firms’ functioning due to their close proximity to customers, suppliers, networks.	Söderbaum (2008), Trainer (1995)
Selectivity in relation to sectors Desirability and flourishing of certain sectors (healthcare, education, low productivity sectors) over others. Growth in certain sectors is required, e.g. organic agriculture and renewable energy (Marshall and O’Neill (2018) referring to Dittmer (2013)). Desirable sectors according to Jackson, are low productivity and low carbon/material intensity ones (“care, craft and culture” – Jackson, 2017, p. 149). Similarly to the advocates of low carbon economy (e.g. Urban and Nordensvard, 2013) post-growth argues that low carbon sectors should be expanded (Jackson, 2017). Jackson (2017) advocates investments in low carbon technologies (enhanced energy efficiency, renewable energy, carbon capture and storage). Assadourian (2012) argues that shrinking and elimination of undesirable sectors is part of degrowth, and policies are needed to sustain people previously employed there.	Alexander (2015b), Assadourian (2012), Jackson (2017), Kallis et al. (2015), Maxton (2018), Trainer (2010)
Serving the needs¹⁹ of society In relation to the entry above, it can be said that desirable sectors are those which serve the genuine needs of the society in a pro-social and pro-environmental manner. Gorz (2012, p. 9) states that in the economy, “[t]he object is always to satisfy needs with the greatest possible flow of commodities, to produce these with the techniques which permit of the greatest profit and, lastly, to accord prime importance to those needs which are most profitably satisfied”. He carries on to ask (p. 9): “how can the development of the economy be given a social and ecological orientation?” Gorz (2012) acknowledges the need to connect the economic decisions to “felt aspirations and needs” (p. 11).	Illich (1973), Klitgaard and Krall (2012), Masaka (2008), Novkovic and Webb (2014), Schumacher (1993c), Speth (2009), Victor and Jackson (2016)
Decreased productivity In a growth-based capitalist economy increase in labour productivity is seen as positive and “For centuries, productivity gains have been systematically transformed into greater output rather than into reducing the effort required” Latouche (2009, p. 79). In post-growth economy, decreased productivity becomes desirable and should be considered to avoid unemployment (Jackson, 2017; Kallis, 2017) which relates to deviation from productivism outlined above. Decreased productivity can be manifested in concentration on low productivity sectors for post-	Heikkurinen et al. (2019), Jackson (2017), Kallis (2017), Nørgård (2013), Jackson and Victor (2011), Latouche (2009)

¹⁹It should be noted here that considering the primacy of the ecological in degrowth and inclusion of human wellbeing, the “needs” would refer to what Keynes (2009) calls absolute rather than relative needs. Keynes (2009) explains that relative needs are insatiable and are felt only if their satisfaction lifts humans above, i.e. makes them feel superior to their fellow humans (Keynes, 2009) which logically opposes the vision of degrowth.

<p>growth while on a firm level it is manifested in reduction in working hours (Jackson, 2017; Kallis, 2017). However, and increase in labour productivity realised via technological innovation makes shorter working hours possible (Gorz, 2012). Here Gorz (2012) refers to ecological and not economic imperative of productivity²⁰. He states (p. 32): “the economic criteria of maximum productivity and profitability are subordinated to socio-ecological criteria”.</p> <p>While decreased productivity has received much attention in degrowth, a more general notion of “slowing down” (Nørgård, 2013, p. 67) can also be applicable.</p>	
<p>Reduction in working hours</p> <p>While Gorz (2012, p. 31) notes that “the cost of reducing working hours cannot simply be borne by each enterprise but demands public financing...”, reduction of working hours can be implemented by firms: Nørgård (2013, p. 66), in an attempt to answer his question “Why don’t people work less, if they want to?” states that such options may not be made available by employers (i.e. an employer would offer 40 or 0 hours), another answer he proposes is social pressure. However, small firms due to their flexibility can attempt to implement reduced or flexible working hours to increase wellbeing. Reduced working hours also have a positive environmental impact, realised, for example via the following pathways: energy use reduction, consumption reduction due to income reduction (Nørgård, 2013).</p>	<p>Alexander (2015b), Fournier (2008), Gorz (2012), Kallis (2017), Nørgård (2013)</p>
<p>Meaningful work</p> <p>Entails meaningful participation of people in the process of production. Related to this are fulfilment in the process of production and craft pride outlined below. This entry also relates to productivity mentioned above. Schumacher (1993b, p. 165) notes that efficiency normally relates “only to the material side of things and only to profit” and does not relate to people, for instance, happiness in the process of production, he argues in favour of a more diverse understanding of efficiency which is orientated towards wellbeing and serving people.</p>	<p>Alexander (2015b), Fournier (2008), Schumacher (1993b)</p>
<p>Fulfilment in the process of production</p> <p>Amateur or passion driven economy (Nørgård, 2013) and craft pride (Klitgaard, 2013); this element can also be described as utilisation and development of one’s potential, creative activity (Schumacher, 1993c) under “conditions of human dignity and freedom” (Schumacher, 1993c, p. 174), creative use of persons’ own energy (Illich, 1973). Sismondi notes a difference between the craft and the factory systems (Smith, 1993). Smith (1993, p. 187) explains “Since the craftsman’s reward was the fruits of his own labor...he would stop producing when he had reached the point beyond which he would prefer leisure and the fruits of his past labor to the extra income to be had from further labor”.</p>	<p>Illich (1973), Klitgaard (2013), Nørgård (2013), Schumacher (1993c)</p>
<p>“liberation in work” or development of human creative capacities, self-fulfilment</p>	<p>Gorz (2012, p. 58)</p>
<p>Adopting the value of non-violence</p> <p>This includes non-violence towards animate and inanimate nature (e.g. the environment), and in relation to technology which should not be destructive. Non-violence is facilitated via modest use of resources and living in self-sufficient local communities (Schumacher, 1993c), thus this element relates to frugality and localisation outlined above. Non-violence towards non-human species can be seen as constituent of wellbeing which is a part of degrowth vision (Schneider et al., 2010), thus translated into wellbeing of non-human life. Acknowledging of the needs of non-human life is becoming prominent in post-growth thought. Note, for instance, Maxton’s (2018, p. 42) reference to other species: “The needs of future human generations, as well as all other species, will need to be regarded as equal to those that are living”.</p>	<p>Schumacher (1993b; 1993c)</p>
<p>Appropriate, simplified technology</p> <p>Appropriate, simplified technology (Schumacher, 1993). “more powerful technologies tend to provoke more powerful ecological backlashes and to be more disruptive of habits and emotions” (Daly, 1993, p. 26).</p>	<p>Daly (1993), Heikkurinen (2018), Illich (1973), Schumacher (1993)</p>
<p>Democratisation of technology</p> <p>Related to appropriate and simplified technology which degrowth firms may use, democratisation of technology /open-access technology may become guiding principles. Open-source software (Gorz, 2010) is an example.</p>	<p>Gorz (2010), Wells (2018)</p>
<p>Undesirability of advertising</p> <p>Undesirability of advertising (Daly, 1993), restriction on advertising (Marshall and O’Neill, 2018). Spash and Dobernig (2017, pp. 15-16) note that “The ultimate aim of advertising is to provide a sustained propaganda on the importance of corporate goods and services while no similar case is made on behalf of artistic, educational, or other humane achievements”.</p>	<p>Alexander (2015b), Daly (1993), Latouche (2009), Marshall and O’Neill (2018), Spash and Dobernig (2017)</p>

²⁰Gorz (2012, p. 32) explains that “[e]cological rationality consists in satisfying material needs in the best way possible with as small a quantity as possible of goods with a high use-value and durability, and thus doing so with a minimum of work, capital and natural resources. The quest for maximum economic productivity, by contrast, consists in selling at as high a profit as possible the greatest possible quantity of goods produced with the maximum of efficiency, all of which demands a maximization of consumption and needs [...] As a consequence, the pursuit of maximum productivity at the enterprise level leads to increasing waste in the economy as a whole”.

<p>Workplace pro-environmental behaviour With regards to day-to-day activities, reduction in car travel by employees, non-motorised travel (Moriarty and Honnery, 2013) can be implemented.</p>	Caillaud et al. (2016), Moriarty and Honnery (2013)
<p>Cooperation, e.g. networks of firms Networks of enterprises (e.g. exchange of resources), cooperation (Gorz, 2012, p. 32): “what appears, from the ecological point of view, as a waste and destruction of resources is perceived from the economic point of view as a source of growth: competition between enterprises speeds up innovation, and the volume of sales and velocity of capital circulation increase as a result of obsolescence and the more rapid renewal of products”. To counter act this tendency, cooperation is preferable to competition, cooperation may be manifested in networks of enterprises. This kind of cooperation regarding resource use also addresses ecological sustainability and frugality. Assadourian (2012) offers an example of Transition Towns movement which already incorporates community-based environmentally-orientated practices such as waste exchange between businesses. Developing interdependent networks of enterprises may aim at collaboration, exchange of resources, recycling, using waste as inputs (Hudson, 2007). However, it should be noted that “Cooperation at a local and global scale should be promoted, while competition can be de-emphasised. In economics, competition is usually justified as a means to spur growth in GDP and hence increase ecological pressure. Cooperation can contribute to a better whole economy” (Nørgård, 2013, p. 69). The notion of cooperation should be applied to production and producers far beyond cooperating with other firms and should also include cooperation with the communities.</p>	Assadourian (2012), Hudson (2007), Max-Neef (2014), Nørgård (2013)
<p>Collaborative work This principle is another manifestation of orientation towards cooperation, can be applied on a level of a firm. Collaborative work enables one to overcome “ego-centredness by joining with other people in a common task” (Schumacher, 1993c, p. 174).</p>	Schumacher (1993c)
<p>Decentralised production For this, small units of production are most suitable</p>	Schumacher (1993b)

Appendix III. Identifying a range of methods used in relevant studies

Study	Themes	Research method used	Relevance of this study to the present thesis
Liesen et al. (2015)	Post-growth thought on a company level Conceptualising a post-growth company (successful, non-growing SMEs)	Document analysis of publicly available material, 14 companies based in German-speaking countries	Post-growth, SMEs
Čater et al. (2009)	Integration of environmental concerns into business processes. Motives and environmental strategies of firms and influence these environmental strategies have on competitiveness and performance	Manufacturing companies in Slovenia, more than 50 employees, a survey was used (mail and e-mail). The sample included mostly small companies (as defined under 250 employees) and large companies (over 250 employees), 153 firms in total	Environmental, mostly SMEs
Wahga et al. (2018)	Analysis of drivers of sustainable entrepreneurial practices in SMEs and relationships between them	Leatherworking industry in Pakistan, multiple case study design, grounded analysis. Snowball sampling strategy of participant recruitment, 22 SMEs, 35 interviews (semi-structured, face-to-face), also interviews with other stakeholders. Additionally: photographs, secondary documents, informal discussions	Sustainability, SMEs
Domènech et al. (2013)	The need to explore degrowth strategies on a local level Study concentrates on water supply technologies and principles of degrowth	Social multi-criteria evaluation framework, online survey (7 questions) to gather the views of social actors (8 social groups, 63 respondents). Scenario analysis and mathematical modelling. Additional sources: grey and academic literature.	Degrowth
Rahbauer et al. (2016)	Factors that influence SMEs decisions regarding adoption of electricity produced from renewable energy sources	Telephone interviews (28 interviews, 30 min or 1 hour each depending on a group, either green energy provider or SME)	Sustainability, SMEs
Testa et al. (2017)	Adoption of environmental strategies (life-cycle assessment) as response to an external pressure to adopt a more sustainable production pattern	Fashion industry SMEs located in Italian industrial cluster. Action research involving meetings with stakeholders, field visits, informal conversations, document analysis. Check-list for environmental data collection. Semi-structured interviews .	Environmental, SMEs
Richert (2017)	Energy management in SMEs	Action research . Single case study (German SME), longitudinal data (12 months of work), primary and secondary sources were used (interviews, observations, documentaries).	Sustainability, SMEs
Martinez-Conesa et al. (2017)	The relationship between CSR and organisational innovation and firm performance	Spanish SMEs with over 20 employees. Hypothesis testing. Questionnaire was used. Sample n=552.	CSR, SMEs
Daddi et al. (2017)	Application of Life Cycle Assessment to an industrial cluster of SMEs Positive contribution of industrial symbiosis in relation to the environmental	Case study of an industrial cluster of Italian SMEs (population approx. 600relatively homogenous firms, majority <12 employees). Representative group of SMEs was used for data calculation, sample n=22. Additionally, secondary data used.	Environmental, SMEs
Witjes et al. (2017)	Integration of corporate sustainability into business activities of SMEs	Long-term case, action research . 18 Dutch SMEs. Tools for data	Sustainability, SMEs

		collection were based on experience of consultancy firm rather than literature.	
Oliveira Neto et al. (2017)	Establishing a framework which helps overcome barriers to cleaner production implementation in SMEs.	4 Brazilian SMEs operating in metallurgical sector. Case studies , semi-structured interviews .	Sustainability, SMEs
Wells (2018)	This study unites the concept of degrowth, technological innovation, innovation in business model and governance	A single case of an SME	Degrowth, SMEs
Joutsenvirta (2016)	Disruption of existing institutional arrangement via a bottom-up initiative Practice approach applied to a struggle between activists and authorities	A case of Finnish activists (institutional challengers) vs tax authorities (institutional defenders) based on the biggest Time Bank in Finland. Sources- public documents, articles, reports, press releases, other documents.	Degrowth
Kostakis et al. (2018)	Design global, manufacture local model as a model of collaborative production for degrowth as opposed to the conventional model of mass production Unites digital and knowledge commons and infrastructure and degrowth communities	Case studies (2), participatory approach (case participants become contributing researchers).	Degrowth
Bloemmen et al. (2015)	Microeconomic approach as a basis for degrowth macroeconomic model Trust, cooperation and pro-environmental behaviour instead of homo economicus assumptions	Case study (Belgian CSA - community supported agriculture). Using documents, archives, semi-structured interviews, observations, field experience, site visits.	Degrowth
D'Alisa and Cattaneo (2013)	Unpaid work (household production) performed outside of the market From a degrowth and energy consumption perspectives, the importance of unpaid work is highlighted	Explorative case study . Unit of analysis – a Spanish region. Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism (MuSIASEM) approach is used.	Degrowth
Cattaneo and Gavalda (2010)	Rural–urban squatting (an alternative to a growth-based capitalism and government control) as an implementation of degrowth thought	A case of Barcelona. Inductive approach. Participant observation, ethnographic and auto-ethnographic investigation. Also, quantitative estimation. The authors were themselves project participants.	Degrowth
Leonhardt et al. (2017)	Mechanisms of growth for SMEs	A case study , the authors use Q methodology and interviews with owner-managers of growing and non-growing SMEs in Austria.	Post-growth
Johanisova and Franková (2017)	Eco-social enterprises in transition towards a degrowth society.	The authors offer some examples based on the literature and their original empirical research,	Degrowth
Dafermos (2017)	A study of a cooperative in Catalonia (The Cooperativa Integral Catalana (CIC)) whose aim is to build an alternative, post-capitalist economy	Ethnographic , field-research, includes interviews, participant observation	Post-capitalism
Marshall and O'Neill (2018)	Local currency and localisation, including barriers to localisation	The case study of Bristol. Semi-structured interviews with business owners and employees (various methods) and expert interviews (over Skype).	Post-growth
Khmara and Kronenberg (2018)	The authors identify 7 criteria to assess whether a company follows a degrowth paradigm	A case study of Patagonia (a growing, but socially and environmentally minded company)	Degrowth

Appendix IV. Study preparation

Task	Resources	Challenges	Addressing challenges
Preparation for data collection (theoretical and material)	Literature Informed consent Interview questions (guiding question; semi-structured interview) List of sources of evidence Technology (computer, recording device, writing instruments, software skills) Case study database	<ul style="list-style-type: none"> •construct validity •conflicting theories •cover all key themes •clear interview questions •avoid questions that suggest answers •Consider using NVivo as an option 	<ul style="list-style-type: none"> •Construct validity: extensive literature overview •Conflicting theories: extensive literature overview •Cover all key themes: identify and review most recent research on degrowth and business, construct a questionnaire reflecting the key themes (organise degrowth business elements by groups for investigation) •Clear interview questions & Avoid questions that suggest answers: receive feedback from the supervision team on questions •Consider using NVivo: familiarise with software usefulness and limitations
Access to firms and data; access to assistance	Start with relevant Derby Business School contacts Participating firms (source of evidence)	<ul style="list-style-type: none"> •must be the richest sources of information •identify scholars for reviewing data (address bias) •access to documents 	<ul style="list-style-type: none"> •The richest sources of information: identify several potential participants •Identify scholars: availability of the supervision team •Access to documents: inquire regarding potentially useful documentation/files
Data collection	Data collection schedule Pilot Participants	<ul style="list-style-type: none"> •withdrawal from a study •questionnaire issues •time management •ensuring case study reliability and research quality throughout •protecting participants' data •reflexivity ("interviewee gives what interviewer wants to hear" (Yin, 2014, p. 106)) •Emerging lines of inquiry 	<ul style="list-style-type: none"> •Withdrawal from study: identify and contact alternative participants •Questionnaire issues and reflexivity: receive feedback from pilot participants, address feedback, invite participants to answer honestly (no right/wrong answers) •Time management: follow the data collection schedule, estimate time for every data collection event •Case study reliability and research quality: record information carefully (to prevent inaccuracy), maintain database, triangulation (different sources of data; return to literature) •Protecting participants: anonymise participants, store data securely (secure location, computer, password) •Emerging lines of inquiry: note and investigate the new lines of inquiry (e.g. via an in-depth interview)
Data analysis and findings	Database Computer, Software, Supervision team, other scholars	<ul style="list-style-type: none"> •Potential biases •Quality of findings •Conflicting theories •External validity •Contribution (theoretical and practical) 	<ul style="list-style-type: none"> •Potential biases: Allow supervision team to review data •Conflicting theories: invite scholars who hold conflicting views to comment on the findings •Quality of findings: triangulation •External validity: use analytic generalisation •Contribution: Outline practical recommendations (business/policy), limitations and implications, outline theoretical contribution, further research
Reporting	Audiences, outputs (journals), formats	<ul style="list-style-type: none"> •Disseminating the findings •Debriefing 	<ul style="list-style-type: none"> •Disseminating the findings: Identify journals, share and publish both preliminary and final results, knowledge sharing activities •Debriefing: invite participants to learn about the findings, prepare a short report for the participants who demonstrated their interest in this work

Appendix V. Informed consent letter

INFORMED CONSENT

Title of Research

Small Business Transition Towards a Degrowth Economy

Principal Investigator/Researcher

Name: Iana Nesterova

University: University of Derby

Department: Derby Business School

Contact details

Phone: 07483801942 **E-mail:** i.nesterova@derby.ac.uk

University of Derby contact details

Phone: 01332 590500 **Address:** Kedleston Rd, Derby DE22 1GB

Dear Sir/Madam,

You are being kindly asked to take part in a research project by becoming a participant of a case study. This research explores an alternative vision of economy and aims to evaluate the potential for small businesses to transition to a more sustainable economy. This research is not associated with any physical, psychological or emotional harm, nor does it utilise any covert approach. If you choose to participate in this research, you will be asked to take part in an interview with the Principal Investigator, each interview will take no longer than 1 hour and may be recorded (audio or video means) to maintain accuracy of data. For the purpose of this research, other types of data (such as documents) may be voluntarily shared by you.

The data you provide will be used solely by the Principal Investigator and only for the purpose of this research and subsequent publications based on this research. This data will be viewed by the Principal Investigator and the supervisory team from the University of Derby. The raw data will be transformed into analysed data. Your confidentiality will be respected at all times. Your real name will be anonymised at the data collection stage and will only be known to the Principal Investigator. Every attempt will be taken to maintain anonymity of participants in published work, however, if your business possesses a unique characteristic, full anonymity cannot be guaranteed.

Data protection is of the highest priority to the Principal Investigator. The Data Protection Act and the University's Good Scientific Practice are consulted by the researcher to ensure the highest level of data protection. The data collected and all other data in electronic form (e.g. documents) will be kept under a secure password. All data in physical form (e.g. documents) will be stored in a secure location. Consent form (this letter) will be stored separately from the data collected. Only the data relevant to present research will be collected. The raw data you provide will be analysed and anonymised before May 2019. Analysed data will be stored indefinitely.

If you have any questions regarding my research and participation in it, please do not hesitate to contact me via contact details provided above.

Withdrawal

Your participation in this study is voluntary. If you decide to withdraw from the study, you can do so by contacting the Principal Investigator using the contact details above and stating your intent to discontinue your participation. You may withdraw within 1 month after the interview. Data already provided by you will then be deleted as soon as possible. An exception from this is analysed data. After data have been analysed and disseminated, withdrawal is impossible.

Debriefing

After the research is completed, I will be glad to share the findings with you. You can request the written summary after May 2019 by contacting me using the Contact details stated above.

CONSENT

Please confirm that you have read and understood the information above and you agree to take part in this study.

Signature _____ Date _____

Appendix VI. Interview questionnaire construction

A. Interview framework:

Groups refer to groups in F1

Part 1 – questions directed at the unique perspective of the participating business. The questions are asked to accurately represent participants’ perspectives in the study.	
Benefit	Business X’s environmental and social benefit (Demaria et al., 2013; Victor and Jackson, 2016)
Motive	Business X’s motive – Group 5 (based on deviation from profit maximisation and drivers other than profit (Alexander, 2015b; Spash, 2017b; Jackson, 2017; Liesen et al., 2015)
Importance of growth	Business X’s attitudes towards expansion (growth) and its desirability – Group 4 (Liesen et al., 2015; Leonhardt et al., 2017; Gebauer, 2018)
Part 2 – specific questions related to separate elements of business. If a business engages in creation of one type of benefit, it can be explored in more detail.	
Business (Group 2)	<p>How does Business X embed social/environmental benefit into its business operations? How are the following elements are considered?</p> <p>Governance:</p> <ul style="list-style-type: none"> •Emphasis of qualitative change (Alexander, 2015b; Kallis et al., 2015; Trainer, 2010; Tawney, 2015) •Simplicity and autonomy of operation (Alexander, 2015b; Kallis, 2017; Kallis et al., 2015; Schumacher, 1993b, 1993c) •Alternative ownership patterns (Alexander, 2015b; Barca, 2019; Bayon, 2015; Hardt and O’Neill, 2017; Hinton and Maclurkan, 2017; Kallis et al., 2015; Marshall and O’Neill, 2018; Schulz and Bailey, 2014; Speth, 2009) •Democratic decision-making (Barca, 2019) •Consideration of other business models (e.g. not-for-profit) (Alexander, 2015b; Hinton and Maclurkan, 2017) <p>Wellbeing:</p> <ul style="list-style-type: none"> •Orientation towards wellbeing (Daly, 1993; Schneider et al., 2010; Demaria et al., 2013; Jackson, 2017) •Development of human potential (not exploitation) (Illich, 1973; Schumacher, 1993c; Klitgaard, 2013; Nørgård, 2013) •Reduction in working hours (Alexander, 2015b; Fournier, 2008; Gorz, 2012; Kallis, 2017; Nørgård, 2013) •Meaningful jobs (Alexander, 2015b; Fournier, 2008; Schumacher, 1993b) •De-specialisation (Kallis, 2017b) <p>Production:</p> <ul style="list-style-type: none"> •Decreased productivity (Heikkurinen et al., 2019; Jackson, 2017; Kallis, 2017; Nørgård, 2013; Jackson and Victor, 2011; Latouche, 2009) •Localisation of production, sourcing and exchange (including production for local needs) (Alexander, 2015b; Dittmer, 2015; Fournier, 2008; Kallis, 2017; Latouche, 2009; North, 2010; Schumacher, 1993c; Marshall and O’Neill, 2018) •Preference towards appropriate, simplified technology (Illich, 1973; Schumacher, 1993; Daly, 1993; Heikkurinen, 2018) •Collaborative work (Schumacher, 1993c) <p>What has been missed? – Group 2</p> <p>What is the primary motive behind implementing these considerations into the business model? – values related (Group 5) (Alexander, 2015b; Spash, 2017b; Jackson, 2017; Liesen et al., 2015)</p> <p>Are there any further considerations Business X is striving/planning to adopt? Are there any barriers to adoption? – Group 6</p>
Society (Group 3)	<p>How does Business X consider the wider society? How the following elements considered?</p> <ul style="list-style-type: none"> •Embeddedness within community (Söderbaum, 2008; Trainer, 1995) •Consideration of community wellbeing (Schneider et al., 2010; Jackson, 2017) •Consideration of the wider society (humanity) (Heikkurinen and Bonnedahl, 2019) •Restriction on advertising (in a capitalist setting – more ethical advertising, information-based) (Alexander, 2015b; Daly, 1993; Latouche, 2009; Marshall and O’Neill, 2018; Spash and Dobernig, 2017) •Serving the needs of society (Illich, 1973; Klitgaard and Krall, 2012; Masaka, 2008; Schumacher, 1993c; Speth, 2009; Victor and Jackson, 2016) <p>What has been missed? – Group 3</p>

	<p>What is the primary motive behind implementing these considerations into the business model? – values related. (Group 5) (Alexander, 2015b; Spash, 2017b; Jackson, 2017; Liesen et al., 2015)</p> <p>Are there any further considerations Business X is striving/planning to adopt? Are there any barriers to adoption? – Group 6</p>
Environment (Group 1)	<p>How does Business X consider the environment? How are the following elements considered?</p> <ul style="list-style-type: none"> •Frugal use of resources (Alexander, 2015b; Daly, 1993, 1993d; Kallis, 2017b; Latouche, 2009; Maxton, 2018) •Throughput minimisation (Boulding, 1966; Daly, 1993, 2015; Kallis, 2017; Lorek, 2015; Maxton, 2018) •Sharing of resources, networks of enterprises (Gorz, 2012; Assadourian, 2012) •Preventing waste and pollution (Daly, 1993, 1993d; Alexander, 2015b; Latouche, 2009; Kallis et al., 2015; Maxton, 2018) •Renewable energy (Alexander, 2015b, 2016; Kallis et al., 2015; Maxton, 2018; O’Neill et al., 2018) •Recycling (Latouche, 2009) •Avoidance of energy waste (can be manifested in over-heating, over-lighting) (O’Neill et al., 2018) •Durability of product, reparability (Daly, 1993, 2015; Latouche, 2009; Gorz, 2012; Georgescu-Roegen, 1975, 1993b; Assadourian, 2012; Renner, 2012; O’Neill et al., 2018; Schumacher, 1993c; Reichel, 2018; Maxton, 2018) •Pro-environmental workplace behaviour and travel modes (Caillaud et al., 2016; Moriarty and Honnery, 2013) <p>What has been missed? – Group 1</p> <p>What is the primary motive behind implementing these considerations into the business model? - values related. (Group 5) (Alexander, 2015b; Spash, 2017b; Jackson, 2017; Liesen et al., 2015)</p> <p>Are there any further considerations Business X is striving/planning to adopt? Are there any barriers to adoption? – Group 6</p>

B. Interview questions:

Questions	Comments
Part 1	
Does Business X create an environmental or social benefit, or both?	One of the selection criteria. Asked to represent the participants’ perspectives accurately.
Business can operate for profit, not for profit or not only for profit. What, in your opinion, applies to Business X?	Asked to represent business accurately. Additionally relates to business motive. Since values are most challenging to capture, this question may offer a deeper understanding of primacy of profit motive. Firms were selected based on non-primacy of profit; however this criterion was most challenging to capture.
How would you describe your views and attitudes in relation to growth of Business X? This can be done in terms of quality or quantity and scale of operation.	Relates to group 4 in F1. Asked to understand the nuance of growth orientation on the micro level. Even though degrowth advocates limits to growth, this is not automatically translated to the micro level.
In your view, is growth of Business X desirable?	Relates to the question above for a deeper understanding of desirability of growth. Avoidance of a leading question.
Part 2	
Internal business operation	
Governance: How would you describe the type of ownership of Business X?	Asked to accurately record ownership and understand the peculiarities of ownership.
Governance: Speaking about the way management of Business X is organised, do any principles come to mind?	Purposefully left broad to let the participants share their own perspective despite prior theoretical knowledge.
Governance: How are the decisions made in Business X, whose views are taken into consideration?	Purposefully left broad to let the participants share their own perspective despite prior theoretical knowledge (e.g. democratic decision-making in the literature, see the Interview framework above)
Wellbeing: How would you describe the importance of employee wellbeing to Business X?	It is doubtful that a response regarding employee wellbeing would be negative, thus two questions were asked to probe into the nuance of ensuring wellbeing.
Wellbeing: How is employees’ wellbeing ensured by Business X in broad terms?	See above. Additionally, degrowth literature remains broad in relation to peculiarities of wellbeing on the micro level. Asked to inform F2.

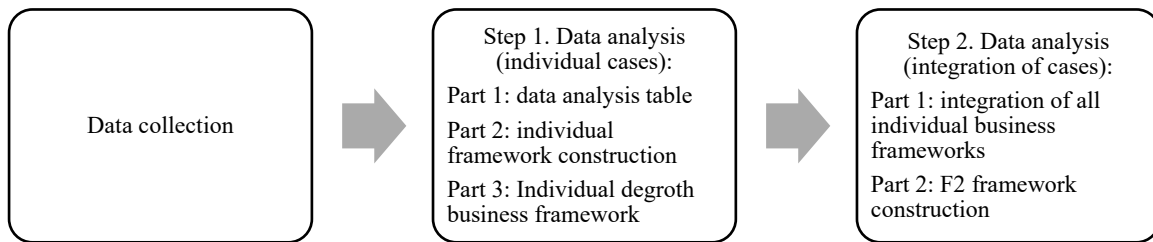
Production: Thinking about sourcing and supply chain, does Business X take the environment and people into consideration? Does Business X source locally?	See selection criteria. Participating firms were selected based on environmental and social considerations. This question aims to probe into the peculiarities of those considerations on the micro level in relation to supply chains and potential localisation of procurement.
Production: How would you describe the importance of productivity increase in Business X?	It was not disclosed to the participants that degrowth advocates decrease in productivity. The word “describe” was used to invite a reflection rather than a yes/no answer with regards to productivity increase.
Society	
In broad terms, how would you describe Business X’s embeddedness within local community?	See selection criteria. All firms had a social element. However, this could be manifested differently. This question probes into one of the important elements which potentially make small firms suitable for degrowth (see the Interview framework above for sources).
Is there anything beneficial that Business X strives to do for the local and global community?	See selection criteria. This question probes into the nature of the social benefit and the broad “wellbeing” aspect of degrowth with regards to communities.
Do you think that the product (service) of Business X satisfies the needs of the society?	Relates to the needs vs wants. This question probes into the nature of product and what needs it satisfies, according to participants. Degrowth does not prescribe a concrete list of needs.
How would you describe the marketing strategy of Business X?	It was not disclosed to the participants that degrowth advocates abandonment of advertising.
Environment	
How would you describe Business X’s use of renewable energy, if any?	The word “describe” was used to invite a reflection rather than a yes/no answer. It was expected that firms may not use renewable energy and their environmental attributes would be manifested differently.
Do the environmental considerations play a role when something changes about Business X, for instance, when Business X expands?	See selection criteria. This is to probe into the environmental orientation on the micro level.
How would you describe Business X in relation to its energy use? How about the use of materials?	The word “describe” was used to invite a reflection rather than a yes/no answer. This question relates directly to matter-energy throughput decrease degrowth advocates.
What about waste, does Business X reduce, reuse or recycle any of the waste?	Since degrowth advocates reduction of waste/pollution, the question is precise.
Speaking about workplace behaviour and travel, do you think the environment/nature is considered?	Since degrowth advocates reduction in energy use, the question is precise.
Does Business X interact with other businesses to exchange resources? How would you describe this exchange, if any?	Directly relates to sharing resources between firms (see Interview framework above).
When it comes to product development, what is considered important?	This question is purposefully broad. It was not disclosed to the participants what degrowth advocates in this instance. This relates to informing F2 for practical use.
Concluding questions for each section in Part 2	
Has anything been missed? Is there anything that Business X does differently in relation to the environment and people? Is there anything you would like to add?	Relates to the selection criteria. Since the purpose of this interview is to inform F2, these questions were asked to capture the maximum insights and nuance with regards to the society and the environment.
Why does Business X implement these considerations? What, in your view, is the primary motive behind these considerations?	Purposefully broad. Also relates to selection criteria. It was not disclosed to the participants what position degrowth may advocate.
Is there anything else Business X is striving or planning to adopt? Are there any barriers to this?	Relates directly to the barriers. It was not disclosed to the participants which barriers there may be to allow their own perspectives to emerge and experiences to be recorded accurately.

C. Interview final questionnaire:

Part 1 – questions directed at the unique perspective of the participating business. The questions are asked to accurately represent participants’ perspectives in the study.	
Benefit	Does Business X create an environmental or social benefit, or both?
Motive	Business can operate for profit, not for profit or not only for profit. What, in your opinion, applies to Business X?

Importance of growth	How would you describe your views and attitudes in relation to growth of Business X? This can be done in terms of quality or quantity and scale of operation. In your view, is growth of Business X desirable?
Part 2 – specific questions related to separate elements of business. If a business engages in creation of one type of benefit, it can be explored in more detail.	
Business	I would like to discuss the way Business X takes the environment (and/or) society into consideration in its day-to-day operations. Governance: How would you describe the type of ownership of Business X? Speaking about the way management of Business X is organised, do any principles come to mind? How are the decisions made in Business X, whose views are taken into consideration? Wellbeing: How would you describe the importance of employee wellbeing to Business X? How is employees' wellbeing ensured by Business X in broad terms? Production: Thinking about sourcing and supply chain, does Business X take the environment and people into consideration? Does Business X source locally? How would you describe the importance of productivity increase in Business X? <i>Has anything been missed? Is there anything that Business X does differently in relation to the environment and people?</i> <i>Why does Business X implement these considerations into its business operations?</i> <i>Is there anything else Business X is striving or planning to adopt? Are there any barriers to this?</i>
Society	I would like to talk about the way Business X considers the local community and the wider society. In broad terms, how would you describe Business X's embeddedness within local community? Is there anything beneficial that Business X strives to do for the local and global community? Do you think that the product (service) of Business X satisfies the needs of the society? How would you describe the marketing strategy of Business X? <i>Is there anything else you would like to add in relation to Business X and its connection to the local and global communities?</i> <i>What, in your view, is the primary motive behind these considerations?</i> <i>Is there anything else Business X is striving or planning to adopt? Are there any barriers to this?</i>
Environment	I would like to talk about the way Business X considers the environment or nature. How would you describe Business X's use of renewable energy, if any? Do the environmental considerations play a role when something changes about Business X, for instance, when Business X expands? How would you describe Business X in relation to its energy use? How about the use of materials? What about waste, does Business X reduce, reuse or recycle any of the waste? Speaking about workplace behaviour and travel, do you think the environment/nature is considered? Does Business X interact with other businesses to exchange resources? How would you describe this exchange, if any? When it comes to product development, what is considered important? <i>Has anything been missed? Is there anything you would like to add?</i> <i>What, in your opinion, is the primary motive behind implementing these environmental considerations into the operation of Business X?</i> <i>Still thinking about the environment and nature, is there anything else that Business X is striving/planning to adopt? Are there any barriers to this?</i>

Appendix VII. Data analysis



Step 1. Individual cases

Here C1’s data analysis file serves as an example, only one row is given to illustrate the process of data analysis step by step. Multiple rows repeat this process.

Part 1- Data analysis

The Data column contains quotes taken directly from the data sources. A complete list of data sources is presented before data analysis in each case. Where a quote is given, a reference is also provided to a particular data source. This is not Harvard referencing and is provided to assist the researcher and the reader in identifying the precise source of data. This also assists the transparency of research. The Coding and Themes column contain codes and themes that arise from data analysis. Themes in bold are important for the framework. Underlined themes are to be incorporated into the framework, the ones which are not underlined have been featured previously. The Analysis column links the themes to the original framework and analyses new themes. Analytical Memo is less formal and contains author’s notes, important insights and observations.

To maintain consistency and a possibility and ease of comparison across cases, the language of coding and especially themes is maintained apart from the situations where a new and different insight arises.

Data	Coding and Themes	Analysis	Analytical Memo
“we are aware that our activities and processes have environmental impacts, and we acknowledge our responsibility to manage and control these” (C1 Document (5)). “We have also taken account of the environmental impact of replacing the fluorescent lighting before the end of its life, including the disposal of the old equipment which contains heavy metals, including rare earth compounds, and elemental mercury vapour” (C1 Document (4)).	Coding: Environmental impact, responsibility [to manage and control environmental impacts] Themes: <u>Awareness of environmental impact</u> <u>Awareness of environmental responsibility</u>	These relate broadly to the “redefining the meaning of economic activity” entry in the original framework. Pro-environmental and pro-social behaviours and practices may arise from this awareness. The economic activity is planned and practiced accordingly (as will be evident below).	Pro-environmental and pro-social attitudes are evident in C1R1, for instance, “a sensible starting point would be to acknowledge that each of us has a duty to live within God’s creation without causing its destruction...
...

Part 2 – Framework construction. Based on summarising of data into codes and codes into themes (Saldana, 2015) while preserving nuance and detail case study gives access to (Flyvbjerg, 2006).

The codes and themes are taken directly from the data analysis (see above). The elements derive from the themes. At this stage the elements from the original Degrowth Business Framework are being compared to the emerging elements. Elements in italics have been featured in the original framework. The elements may not correspond to the original elements due to insights gained at the data analysis stage. The author re-evaluates and re-groups the elements. New sub-groups arise, the original groups remain. Exception - Group 4 from the original framework (Growth) is merged with the Internal Business Operation. Groups will be sub-divided where necessary and assists understanding.

Codes	Themes	Elements	Groups
environmental impact, responsibility [to manage and control environmental impacts]	Awareness of environmental impact Awareness of environmental responsibility	Attitudes Relates to in the theoretical framework F1: <i>Redefining the meaning of economic activity</i>	Attitudes, Values, Motives [Worldviews]
...

Part 3 – Individual degrowth business framework

Presented in full in Appendix XI.

Step 2. Integration

Part 1 - Integration of the frameworks from individual cases. Here “Material and energy throughput and waste” group serves as an example. This process is repeated in the remaining categories, including Worldviews, Societal, Internal Business Operations and Barriers.

C1	C2	C3	C4	C5	C6	C7
Energy: •Renewable energy sourcing, generation, exporting and use ...	Material: • Frugal use of materials [using other firms’ wastes, waste as resource, recycling, repurposing, reusing] ...	Energy: •Transportation - Commuting distance minimisation ...	Material: • Frugal use of materials [waste recycling, waste as resource, food waste reduction] ...	Energy: • Frugal energy use ...	Material: •Pollution prevention [single use plastic avoidance, compostable packaging] ...	Material: • Frugal use of materials •Recycling ...

Part 2 – Degrowth business framework F2 framework construction

Presented in full below (Appendices VIII and IX)

Appendix VIII. Degrowth business framework F2 – aggregation of C1...7

Barriers (+ unexpected benefits, barrier avoidance)							
<p><i>Political:</i></p> <p>Capitalism (C1) Lack of pro-environmental enforcement (C4)</p>	<p><i>Economic system:</i></p> <p>Profit making (C1) Capitalism (C1) Lack of ownership (C2 C3 C6 C7) Commercialisation of craft (C3)</p>	<p><i>Supply:</i></p> <p>Obtaining needed goods locally (C1 C4) Lack of infrastructure (C2 C3) Lack of environmentally-friendly alternatives (C3 C6) Pro-environmental alternatives more expensive (C4) Local goods more expensive (C4)</p>	<p><i>Demand:</i></p> <p>Lack thereof [for pro-environmental options] (C4) Excess [barrier to size maintenance] (C3)</p>	<p><i>Practical:</i></p> <p>Financial (C1 C3) Time (C1) Information availability (C1 C2 C3) Convenience (C1) Inefficient organisation of exchange events (C1)</p>	<p><i>Mentality, culture and attitudes:</i></p> <p>Technology aversion (C1) Lack of permanence [attitudes, product, location] (C1) Disbelief [scepticism] (C2) Lack of cooperation from local firms (C7) Lack of trust [suspicion] (C7) Public expectations [price, product look] (C3 C4 C6 C7) Changing attitudes to art (C7) Consumer technology [cheapens craft] (C7)</p>	<p><i>Social:</i></p> <p>Education [also environmental] (C1 C4) Skills (C1) Lack of security/safety (C7)</p>	<p><i>Benefit & Avoidance:</i></p> <p><i>Benefit:</i> people's willingness to contribute free of charge (C6)</p> <p><i>Avoidance:</i></p> <p>Working with like-minded retailers (C5)</p>
Internal business operations							
<p><i>Finance</i></p> <p>Long-term strategy (C1) Ethical banking (C1 C6) Internal financing (C3) Internal financing [of initiatives] (C2 C4)</p>	<p><i>Performance</i></p> <p>Non-monetary metric of success (C6)</p> <p><i>Environmental performance</i></p> <p>Monitoring [review, new ways] (C1) Legislation compliance (C1)</p> <p><i>Ethical performance:</i></p> <p>Monitoring business practices (C5)</p>	<p><i>Marketing</i></p> <p>Unorthodox [and preference towards] (C1 C2 C3 C4 C5 C6 C7): No advertising (C1 C3) Word-of-mouth (C1 C2 C4 C6) Networking (C1) Initiatives as differentiator (C2) PR (C4) Talks (C6) Social media (C5 C6) Bloggers (C5) Direct interaction</p>	<p><i>Principles of management</i></p> <p>Long-term orientation (C1 C2) Self-organisation (C1) Democratic or cooperative decision-making (C1 C3 C5) Lack of hierarchy (C1) Ethics [sourcing, pricing, transparency, ethical leader, ethical</p>	<p><i>[Employee] Wellbeing</i></p> <p>Flexible working hours (C1) Unconventional working hours [to enhance wellbeing] (C5) Employee happiness (C5) Accommodating differences (C1) Mutual respect (C1) Freedom (C1) Creativity (C1)</p>	<p><i>Production</i></p> <p>Quality (C1 C2 C3 C5 C6 C7) Durability (C1 C3) Expertise (C1 C7) Environmentally and socially minded sourcing (C1 C2 C6) Diverse understanding of productivity (C1) Appropriate technology (C1) Industrial symbiosis (C2)</p>	<p><i>Growth</i></p> <p>Growth to do more good (C1 C6) Growth to increase wellbeing (C7) Undesirability of growth (C3) Not just for growth (C1) Staying small [size sufficiency] (C1 C2 C3 C7) Conscious growth [with purpose, to capabilities, monitored] (C2) Establishing and financing of initiatives [pro-environmental, pro-social] (C2 C4) Establishing of initiatives – charity (C6) Growth of model [not business] (C4 C6)</p>	

		with customers (C5)	business practice] (C1 C5 C6) Directors as employees (C2 C6 C7) Collaborative work (C2) Reflective practice (C4) Consultations with employees (C4) Non-profit elements of business (C4) Donation to charities (C6) Working with likeminded firms (C6) Pro-social goals (C6) Alternative business models [not-for-profit] (C6) Environmental responsibility (C5)	Comfort provision (C1 C2) Supportive atmosphere (C1) Importance thereof (C4 C5 C6) Incorporating simple principles of wellbeing [greetings, thinking patterns] (C4) Employee dignity (C6) Respect for employees (C6) Trust (C6) Recognizing employees' needs (C6) Mental and physical wellbeing (C6) Flexibility (C6) Supporting employees (C6) Skills provision (C6) Employee empowerment (C6)	Sourcing from small firms/farmers (C3 C6 C7) Sourcing from cooperatives (C5) Renewable/natural materials (C3 C5) Happiness in production (C3 C7) Localisation [buying local when possible, supporting local economy, preference towards local goods] (C4 C5 C6 C7) Long-term relationship with suppliers (C4) Autodidacticism (C3) Seasonal produce (C6) Fair Trade (C6) Low-impact product (C5) Harmless [humans, non-humans, environment] product (C5) Production as learning & improvement (C5) Appropriate [ancient] method of production (C5)	Training employees [knowledge sharing] (C7)
Societal elements						
<i>Local community</i>			<i>Global community</i>			
<p>Embeddedness [cooperation, projects, working with charities, politics, community orientation, social eating, promoting human communication, volunteering/donation opportunities, serving community/working locally, cooperation with charities, cooperation with local firms, sourcing from cooperatives] (C1 C2 C3 C4 C5 C6 C7) Meeting environmental needs (C1) Knowledge sharing (C1 C2 C3 C4) Supporting activists, entrepreneurs (C1 C4) Customers' needs [consideration of, satisfaction of] (C1 C2 C3 C4 C7) Ethical community of retailers (C6) Dematerialised social experience (C7)</p>			<p>Meeting environmental needs (C1) Knowledge sharing (C1 C2 C3 C4) Opensource software (C1)</p>			

Working with likeminded customers/retailers (C5)		
Localisation [of sales and employment] (C5)		
Environmental elements		
<i>Energy</i>	<i>Material</i>	<i>Non-human life</i>
<p>Renewables [sourcing, generation, exporting, use] (C1 C4)</p> <p>Frugal use [& minimisation, over-heating/over-lighting avoidance] (C1 C5 C7)</p> <p>Localisation (C1)</p> <p>Transportation [vehicle share, low carbon transportation, commuting distance minimisation] (C1 C3)</p> <p>Pollution prevention [thermal] (C1)</p>	<p>Pollution prevention [also single use plastics avoidance] (C1 C3 C4 C5 C6)</p> <p>Compostable packaging (C6)</p> <p>Compostable, renewable material use (C3)</p> <p>Natural material use (C5)</p> <p>Recycled material use (C5)</p> <p>Recyclable material use (C5)</p> <p>Frugal use [materials, water including saving, repurposing, exchange, sharing, reuse, recycling, waste minimisation/avoidance, waste as resource, food waste reduction] (C1 C2 C3 C4 C5 C6 C7)</p> <p>Influencing employees' pro-environmental behaviour (C4)</p> <p>Biodegradable product (C5)</p>	<p>Permaculture (C1)</p> <p>Habitat provision (C2)</p> <p>Habitat creation (C2)</p> <p>Animal by-product avoidance (C5)</p>
Worldviews (attitudes, values, motives)		
<i>Motives</i>	<i>Attitudes</i>	<i>Values</i>
<p>Desire for environmental improvement (C1 C2 C3 C4 C6)</p> <p>Sustaining oneself and family (C1 C2 C3)</p> <p>Doing the right thing (C1 C2)</p> <p>Not-only-for-profit [Diverse understanding of gain] (C1 C2 C3 C4)</p> <p>Profit to acquire time (C3)</p> <p>Industry transformation, growth of model [not business] (C2 C3 C4)</p> <p>Knowledge sharing (C3)</p> <p>Passion for product (C3)</p> <p>Passion over profit (C7)</p> <p>Desire for social change (C6)</p> <p>Profit with a purpose (C6)</p> <p>Profit to employ more people (C6)</p> <p>Compensation not profit seeking (C7)</p> <p>Addressing capitalism (C5)</p> <p>Ethics before profit (C5)</p> <p>Profit to achieve core values (C5)</p>	<p>Awareness of environmental impact (C1 C2 C4 C6)</p> <p>Awareness of environmental responsibility (C1 C5)</p> <p>Awareness of social responsibility (C5)</p> <p>Recognising need for degrowth (C1)</p> <p>Pro-environmental orientation (C1 C2 C3 C4 C5 C6 C7)</p> <p>Pro-social orientation (C1 C2 C3 C4 C5 C6 C7)</p> <p>Preference towards local goods (C4)</p> <p>Cooperation [not competition] (C6)</p> <p>Radical political thought (C5)</p> <p>Non-violence towards non-human life [including supply chain] (C5)</p>	<p>Fairness (C1 C5 C7)</p> <p>Diverse outcomes [success beyond profit] (C1)</p> <p>Honesty (C1 C2)</p> <p>Simplicity (C2)</p> <p>Reciprocity (C2)</p> <p>Mutual benefit [win-win] (C2 C4 C7)</p> <p>Cooperation (C2 C7)</p> <p>Modesty (C1)</p> <p>Humility (C1)</p> <p>Transparency (C1 C6)</p> <p>Trust (C1)</p> <p>Creativity (C1 C7)</p> <p>Innovation (C1)</p> <p>Leading by example (C1 C2)</p> <p>Eco-centric values (C1 C2)</p> <p>Environmental values (C6)</p> <p>Pro-social values (C1 C2 C4 C6)</p> <p>Quality (C1 C7)</p> <p>Conscientiousness (C1 C2)</p> <p>Conflict avoidance (C2)</p> <p>Happiness (C3 C5)</p> <p>Sufficiency (C3)</p> <p>Time [over money] (C3)</p> <p>Neighbourliness (C3)</p> <p>Individuality (C4)</p> <p>Independence (C4)</p> <p>Freedom (C6)</p> <p>Reputation (C7)</p> <p>Sustainability (C5)</p> <p>Ethical integrity (C5)</p>

Appendix IX. Degrowth business framework F2

Barriers (+ unexpected benefits, barrier avoidance)							
<p><i>Political:</i> Capitalism Lack of pro-environmental enforcement</p>	<p><i>Economic system:</i> Profit making Capitalism Lack of ownership Commercialisation of craft</p>	<p><i>Supply:</i> Obtaining needed goods locally Lack of infrastructure Lack of environmental-friendly alternatives [or prohibitively expensive] Local goods more expensive</p>	<p><i>Demand:</i> Lack thereof [for pro-environmental options] Excess [barrier to size maintenance]</p>	<p><i>Practical:</i> Financial Time Information availability Convenience Inefficient organisation of exchange events</p>	<p><i>Mentality, culture and attitudes:</i> Technology aversion Lack of permanence [attitudes, product, location] Disbelief [scepticism] Lack of cooperation from local firms Lack of trust [suspicion] Public expectations [price, product look] Changing attitudes to art Consumer technology [cheapens craft]</p>	<p><i>Social:</i> Education [also environmental] Skills Lack of security/safety</p>	<p><i>Benefit:</i> people's willingness to contribute free of charge <i>Avoidance:</i> Working with likeminded retailers</p>
Internal business operations							
<p><i>Finance</i> Long-term strategy Ethical banking Internal financing [of initiatives]</p>	<p><i>Performance:</i> Non-monetary metric of success <i>Environmental performance:</i> Monitoring [review, new ways] Legislation compliance <i>Ethical performance:</i> Monitoring business practices</p>	<p><i>Marketing</i> Unorthodox [and preference towards]: No advertising Word-of-mouth Networking Initiatives as differentiator PR Talks Social media Bloggers Direct interaction with customers</p>	<p><i>Principles of management</i> Long-term orientation Democratic or cooperative decision-making Lack of hierarchy, self-organisation Ethics [sourcing, pricing, transparency, ethical leader, ethical business practice] Directors as employees Collaborative work Reflective practice</p>	<p><i>[Employee] Wellbeing</i> Flexible and unconventional working hours [to enhance wellbeing] Accommodating differences, mutual respect Importance of wellbeing Simple principles of wellbeing [greetings, thinking patterns] Employee: freedom, creativity, comfort, happiness, dignity, respect for, recognising their needs, mental and physical wellbeing,</p>	<p><i>Production</i> Quality and durability Expertise Environmentally and socially minded sourcing [from small firms/farmers; cooperatives; Fair Trade] Diverse understanding of productivity Appropriate [even ancient] technology and method of production Industrial symbiosis Renewable/natural materials Happiness in production Localisation [buying local when possible, supporting</p>	<p><i>Growth</i> Undesirability of growth Not just for growth Staying small [size sufficiency] Conscious growth [with purpose, to capabilities, monitored]; to do good; to increase wellbeing Establishing and financing of initiatives [pro-environmental, pro-social, charity] Growth of model [not business] Training employees [knowledge sharing]</p>	

			Consultations with employees Non-profit elements of business Donation to charities Working with likeminded firms Pro-social goals Alternative business models [not-for-profit] Environmental responsibility	support towards, skill provision, empowerment Trust Flexibility	local economy, preference towards local goods] Long-term relationship with suppliers Seasonal produce Low-impact product/harmless [humans, non-humans, environment] product Production as learning & improvement; autodidacticism	
Societal elements						
<i>Local community</i>			<i>Local & Global community</i>			
Embeddedness [cooperation, projects, working with charities, politics, community orientation, social eating, promoting human communication, volunteering/donation opportunities, cooperation with charities, cooperation with local firms, sourcing from cooperatives] Meeting environmental needs Serving community [working locally] Supporting activists, entrepreneurs Ethical community of retailers Dematerialised social experience Working with likeminded customers/retailers Localisation [of sales and employment]			Meeting environmental needs Knowledge sharing Use and production of open source / copyleft materials and designs, not limited to software Customers' needs [consideration of, satisfaction of]			
Environmental elements						
<i>Energy</i>		<i>Material</i>		<i>Non-human life</i>		
Renewables [sourcing, generation, exporting, use] Frugal use [& minimisation, overheating/over-lighting avoidance] Localisation Transportation [vehicle share, low carbon transportation, commuting distance minimisation] Pollution prevention [thermal]		Pollution prevention [single use plastics avoidance] Frugal use [materials, water including saving, repurposing, exchange, sharing, reuse, recycling, waste minimisation/avoidance, waste as resource, food waste reduction] Influencing employees' pro-environmental behaviour Biodegradable product Qualities of materials used: natural, renewable, recycled, recyclable, compostable [including packaging]		Permaculture Habitat provision Habitat creation Animal by-product avoidance		
Worldviews (Attitudes, values, motives)						
<i>Motives for Business</i>		<i>Attitudes</i>		<i>Values</i>		
Desire for: •Environmental improvement/social change/to do the right thing •Industry transformation, growth of model [not business] •Addressing capitalism •Compensation [not profit] Knowledge sharing Profit with a purpose [e.g. to employ more people, to acquire time, to		Awareness of: •environmental impact •environmental responsibility •social responsibility Recognising need for degrowth Pro-environmental orientation Pro-social orientation Preference towards local goods Cooperation [not competition] Radical political thought		Innovation Leading by example Eco-centric & Environmental values [including sustainability] Pro-social values Quality Conscientiousness Conflict avoidance Happiness Sufficiency		

achieve core values, to sustain oneself and family] and not-only-for-profit [diverse understanding of gain] Primacy [before profit] of: ethics, passion for product	Non-violence towards non-human life [including supply chain]	Mutual benefit [win-win] Cooperation Modesty Humility Transparency Trust Creativity	Time [over money] Neighbourliness Individuality Independence Freedom Reputation Ethical integrity
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Note: 05/10/2018 the framework was sent to C1R1, following a conversation Opensource software [resulted from C1] was replaced with “use and production of open source / copyleft materials and designs, not limited to software”

Appendix X. Request for ethical approval and a copy of confirmation of the approval



Request for ethical approval for research undertaken by staff, post-graduate research and post-graduate professional students
Please submit your completed form to the chair of your college research ethics committee (CREC)

Your Name	Iana Necterova	
College	Business	
College Research Ethics Committee		
Staff ID		
Student ID	100348250	
Unimail address	I.necterova1@unimail.derby.ac.uk	
Programme name / code	PhD – Traditional	
Name of supervisor(s)	Dr Fred Paterson, Dr Christine Jones	
Title of proposed research study		
Small Business Transition Towards Degrowth Economy		
Background Information		
Has this research been funded by an external organisation (e.g. a research council or public sector body) or internally (such as the RLTF fund)? If yes, please provide details.	Yes – Internally	
Have you submitted previous requests for ethical approval to the Committee that relate to this research project? If yes please provide details.	No	
Are other research partners involved in the proposed research? If yes please provide details.	No	
Signatures		
The information supplied is, to the best of my knowledge and belief, accurate. I clearly understand my obligations and the rights of the participants. I agree to act at all times in accordance with University of Derby Policy and Code of Practice on Research Ethics: http://www.derby.ac.uk/research/uoirethics/		
Signature of applicant	[content removed for data protection reasons]	
Date of submission by applicant		
Signature of supervisor (if applicable)		
Date of signature by supervisor (if applicable)		
For Committee Use Reference Number (Subject area initials/year/ID number)		
Date received	Date considered	
Committee decision	Signed	

1. What is the aim of your study? What are the objectives for your study?

The aim of this research is to evaluate the potential for small businesses to transition to a degrowth economy.

The objectives to achieve this aim include:

1. To evaluate the need for a degrowth economy
2. To identify the elements of degrowth business via primary and secondary data sources
3. To develop a model of a small business for degrowth economy
4. To validate the model by conducting a survey of small businesses

2. Explain the rationale for this study (refer to relevant research literature in your response).

The development of capitalist, growth-based and fossil fuel powered economies resulted in challenges which humanity has yet failed to address, such as global environmental issues including climate change and resource depletion (Valenzuela and Bohn, 2017). The orientation towards economic growth has been extensively criticised by the school of ecological economics (Daly and Townsend, 1993; Hall and Kitgaard, 2006; Jackson, 2017). Ecological economists argue that the pursuit of economic growth leads to overproduction and overconsumption which are not sustainable nor desirable (Assadourian, 2012; Latouche, 2009; Trainer, 1995). While the governments operating within different capitalist systems are attempting to include environmental goals into development plans via the concept of sustainable development, these efforts have also been criticised mainly on the grounds of preserving status quo (Bahro, 1982; Kothari et al., 2014; Latouche, 2009; Swyngedouw, 2015; Trainer, 1995). Multiple scholars have called for a radically different approach, not based on the pursuit of economic growth (Kitgaard and Krall, 2012; Moriarty and Honnery, 2016; Normander, 2012; Spash, 2017; Speth, 2012).

Post-growth thought bases its analysis on ecological economics and explores alternatives to a growth-based model of economy. "Post-growth" is an umbrella term for those alternatives which includes a fast-emerging school of degrowth, which emphasises transitioning away from the pursuit of economic growth while paying particular attention to the notion of well-being and living within planetary boundaries (Assadourian, 2012; Kallis et al., 2015; Spash, 2015). Degrowth centres around a qualitatively different vision of economy, not the same but smaller (D'Aisa et al., 2015). While degrowth literature is well developed in terms of its critique of economic growth, there is a lack of understanding of what alternative economy should look like and how it should be achieved (Alexander, 2016). Wells (2016) argues that there is a need for a debate on a micro-economic level and a need to understand the function of business in transitioning towards degrowth economy and society. Hardt and O'Neill (2017) also note that while ecological macroeconomic models are being designed, business models have hardly been addressed. The potential of small firms becoming important players in this alternative model of economy has been contemplated by Trainer (2010). Small firms are more responsive to change due to their flexibility (North and Smallbone, 1996), have a preference towards better rather than more (Liesen et al., 2014), are oftentimes content with their size (Johnson, 2007) and emphasise non-monetary objectives and embeddedness in local communities (Söderbaum, 2008).

This study acknowledges the need to move away from purely theoretical and conceptual work on degrowth economy and takes into consideration the call from authors such as Alexander (2016) and Wells (2016) to research practical aspects of transitioning towards a degrowth economy/society, especially at the micro-level. Literature overview reveals a potential for small firms to be an integral part of a degrowth economy, however this study goes further and attempts to evaluate this potential primarily via case study methodology as outlined by Yin (2012; 2014).

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3. Provide an outline of your study design and methods.

The method and design of this study are based primarily on the works of Yin (2012; 2014). The study looks into an alternative vision of economy ("degrowth economy") and concentrates on modern small business currently embedded within a context of a capitalist, growth-based Western economy and its potential to transition to this alternative model of economy by adopting elements of degrowth business. Due to the complex nature of the phenomenon (degrowth business) and importance of its context, a case study methodology has been chosen. The viability and value of studying small business via case study method has been noted by Yin (2012). A survey method has been rejected as the main method for this study because a lack of concrete elements of degrowth business, which could have been deducted purely from the literature, and a lack of strict definition of degrowth business in the literature. Therefore, a survey will only be used as a part of a mixed method approach at the final stage of this study when elements of degrowth business have been identified from primary data.

Method

Case study is the main method used in this investigation, however the inclusion of model validation objective places this study within a more complex mixed method arrangement.

Each case in this research is a small business firm, however the goal is to collect evidence from multiple

sources within (and where possible), outside (– this may include customers and suppliers if possible) the business and not from a single person within each firm. Multiple sources of evidence (documents, interviews, secondary data) will be used; this allows a holistic understanding of a phenomenon to occur (Baxter and Jack, 2008; Tellis, 1997). This case study (like other case studies in general as per Yin (2012; 2014)) is not directed at statistical generalisation, instead, analytic generalisation will be applied.

Design

Research design includes 5 components as identified by Yin (2014), they include (1) a case study's questions, (2) its propositions (if any), (3) its unit(s) of analysis, which help identify the data that need to be collected and (4) the logic linking the data to the propositions, (5) the criteria for interpreting the findings. A number of elements of a degrowth business arise from existing literature, however the list is far from exhaustive and merely provides guidance. Some of these elements form the basis for selecting case study firms (see Section 4 of this document) while others guide and give initial direction to data collection. However, it is hoped that new elements will arise; they may be related to the ones already mentioned in the literature or represent new concepts which will require further exploration.

Yin (2012) identifies 3 stages of the Design, including (1) defining a case, (2) selecting a type of design, (3) using theory in design work. For the present study, (1) a case is a small business firm based in the UK, which satisfies a number of characteristics (see Section 4 below) (2) a type of design is holistic, multiple-case study and (3) a number of degrowth firm characteristics have been identified at the literature review stage which will be questioned and compared based on data collected.

To finalize the approach to research design, a small number of businesses will be used for a pilot study. The pilot study will begin with a single case as recommended by Yin (2014). The pilot study will shape understanding of degrowth business and reveal the elements which need to be researched further. Multiple-case study will follow a replication and not a sampling logic and is preferred to a single-case study because findings will be more robust than if a single-case study design is selected (Stake, 1995; Yin, 2014).

After the case study is complete and elements of degrowth business have been identified, a model will be developed. Finally, as stated in the last objective of this research, the model will be validated by conducting a survey of a sample of small businesses. The survey will contain a qualitative element to allow further modifications of the model based on the insights gathered from the sample.

Tests

The design incorporates tests, as suggested by Yin (2014), which address the methodological challenges including (1) construct validity, (2) internal validity, (3) external validity, and (4) reliability. Construct validity is addressed via extensive literature review (identification of degrowth business) and use of multiple sources of evidence, internal validity does not apply (no causation explored), external validity is addressed via using replication logic and analytic generalisation. To address reliability, procedures followed will be documented, and a case study database developed.

Preparation, data collection and analysis

Adaptiveness in doing a case study research is important. Yin (2014, p. 73) refers to creating a "rich dialogue with the evidence". This will result in constant comparison between theories, expectations and new information. This may lead to changes in the revision of the original design which Yin (2014) also notes.

A data collection protocol including data collection plan, details of firms and key informants, specific interview questions will be developed. Data base will be developed to handle a large volume of information associated with case study. All data will be transformed into a uniform textual form. All data will be reported in an honest manner and processed according to principles states further in this form. Data analysis will start alongside data collection and will be done by the researcher herself (assisted by a software tool - NVivo). Data will be organised according to categories and themes and findings will be aggregated from all cases.

Interview Questions

Interview questions are guided by the concepts identified in the literature, however new questions may arise to explore emerging concepts.

The questions below will be used in the pilot study, modification may be made based on the feedback received from the pilot study participants. Since the interviews are semi-structured, additional questions may arise to further explore and/or clarify participants' statements.

A model of a "degrowth small business" will be developed based on integration of the elements derived from (1) the literature and (2) primary data. Primary data are expected to enrich the existing concepts and possibly introduce the new ones. The survey which will be carried out to validate the model will be based on the elements of a complete model.

Part 1 – questions directed at the unique perspective of the participating business. Business were selected based on these criteria, the questions are asked to accurately represent participants' perspectives in the study

Benefit	Do you consider your business (Business X) as one creating an environmental and/or social benefit?
Motive	What do you consider to be the primary motive behind your business (Business X)?
Importance of growth	How would you describe your attitudes towards expansion of your business (Business X)?

Part 2 – specific questions related to separate elements of business guided by the existing literature. If a business engages in creation of one type of benefit, it can be explored in more detail.

Business	<p>How does Business X embed social/environmental benefit into its internal and external business operations?</p> <p>Would you describe how the following elements are considered?</p> <ul style="list-style-type: none"> • Product (durability, reparability) • Employees (happiness, work sharing, well-being, participation, meaningful jobs, collaborative work, de-specialisation of labour, productivity reduction) • Sourcing (local, similar principles) • Marketing (undesirability of advertising) • Localisation (orientated towards local market) • Management (simplicity of organisation) • Ownership • Networking (exchange of resources) <p>Why (what is the primary motive behind implementing these considerations into your business model)? – values related (e.g. non-violence, simplicity, autonomy)</p> <p>Are there any further considerations that you are striving/planning to adopt? Are there any barriers to adoption?</p>
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Society	<p><i>How does Business X consider the wider society?</i></p> <p><i>Would you describe how the following elements are considered?</i></p> <ul style="list-style-type: none"> Marketing (undesirability of advertising) Embeddedness (localisation, providing meaningful jobs locally) Sharing (open-access technology) Needs (serving the needs of society) <p><i>Why? (what is the primary motive behind implementing these considerations into your business model) – values related (e.g. non-violence, simplicity, autonomy)</i></p> <p><i>Are there any further considerations that you are striving/planning to adopt? Are there any barriers to adoption?</i></p>
Environment	<p><i>How does Business X consider the environment and non-human life?</i></p> <p><i>Would you describe how the following elements are considered?</i></p> <ul style="list-style-type: none"> • Renewables • Scale (smallness of operations) • Frugality in resource and energy use, avoidance of energy and material waste • Addressing waste and pollution • Recycling • Throughput minimisation • Pro-environmental workplace behaviour <p><i>Why? (what is the primary motive behind implementing these considerations into your business model) - values related (e.g. non-violence, simplicity, autonomy)</i></p> <p><i>Are there any further considerations that you are striving/planning to adopt? Are there any barriers to adoption?</i></p>
<p>Biases</p> <p>The researcher is aware of a number of biases which may affect the research and should be minimised. Subjectivity is noted when a researcher is him/herself a research instrument. Openness to contrary (to what was expected) evidence is highlighted by Yin (2014). Alternative explanations can be addressed via consulting other researchers.</p>	
<p>References</p> <p>Baxter, P. and Jack, S. (2008) Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. <i>The Qualitative Report</i>, 13(4), pp. 544-559.</p> <p>Stake, R.E. (1995) <i>The Art of Case Study Research</i>. Sage: London.</p> <p>Tellis, W.M. (1997) Application of a Case Study Methodology. <i>The Qualitative Report</i>, 3(3), pp. 1-19.</p> <p>Yin, R.K. (2014) <i>Case Study Research: Design and Methods</i>. 5th ed. Sage: London.</p> <p>Yin, R.K. (2012) <i>Applications of Case Study Research</i>. 3rd ed. Sage: London.</p>	
<p>4. If appropriate, please provide a detailed description of the study sample, covering selection, sample profile, recruitment and inclusion and exclusion criteria.</p> <p>Due to selected research method (case study), sampling logic is not used. Instead, replication logic is more appropriate (Yin, 2014). Cases for this study are selected on the basis of the following characteristics: (1) small firm, based in the UK (2) creating an environmental/social advantage and (3) pursuing qualitative rather than quantitative growth. These characteristics are important because firms that satisfy those criteria may be richer sources of further insight. The literature overview reveals that each of those characteristics are already identified by degrowth and post-growth scholars as useful.</p> <p>Initially, recruitment of businesses will be carried out via contacts in Derby Business School.</p>	
<p>5. Are payments or rewards/incentives going to be made to the participants? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> if so, please give details.</p>	

8. Please indicate how you intend to address each of the following ethical considerations in your study. If you consider that they do not relate to your study please say so.

Guidance to completing this section of the form is provided at the end of the document.

a. Consent

Please refer to Informed Consent document (Appendix I). The Informed Consent document will have 2 copies, one to be collected by the researcher and the other one to be kept by the participant should they wish to refer to important information, such as researcher's contact details, withdrawal procedure and debriefing procedure. Informed Consent will be obtained from every participant before the beginning of investigation. Every participant will be given time to thoroughly read the Informed Consent letter, ask questions and contemplate their participation. Informed consent letter discloses the details of the research and its aim. It further identifies the method used to collect data and persons who will be allowed to view the data. Data protection is of the highest priority. Data Protection Act and the University's Good Scientific Practice are consulted by the researcher to ensure the highest level of data protection. All data collected and data in electronic form will be stored under secure password. All data contained in physical documents will be stored in a secure location. All raw data will be analysed and anonymised before research completion; analysed data will be stored indefinitely. The Informed Consent letter includes sections on withdrawal procedure and debriefing procedure and ways for a participant to initiate each of those should they wish to do so.

b. Deception – No covert approach will be used in this study.

c. Debriefing

Refer to the Informed Consent letter (Appendix I). The Informed Consent letter contains information for the participant's attention should they wish to be debriefed. Contact details to initiate this procedure are available to the participants (top of the Informed Consent letter). The participants who request it, will be debriefed after the study has finished. A short report which will contain the findings from the study will be provided.

d. Withdrawal from the investigation.

Information regarding withdrawal from the investigation is stated explicitly as part of consent letter which participants will receive and will have a copy of (see Appendix I – Informed Consent). Participants can freely withdraw from the study within 1 month from the interview date by contacting the principal investigator via contact details (options are given for the participant's convenience including e-mail, phone) stated at the beginning of the Informed Consent letter. Participants cannot withdraw after the data have been analysed and disseminated.

e. Confidentiality

Privacy and confidentiality of participants will be respected at all times. No participants will be identified in the study and all participants will be anonymised in the published work as far as possible. However, anonymity cannot be fully guaranteed in a case when a participating business possesses a unique characteristic which can lead the readers to identify it without its name being stated. During the data collection stage, names of participants will be anonymised and real names will only be known to the researcher; they will be kept confidential.

f. Protection of participants - no physical, psychological or emotional harm induced by this research

g. Observation research – no observational research carried out

h. Giving advice
No advice will be given to participants. Should a participant need advice, they will be referred to appropriate professional, if known.

i. Research undertaken in public places – This research is not undertaken in any public places.

j. Data protection
Data protection is of the highest priority to the researcher. Data Protection Act and the University's Good Scientific Practice are consulted by the researcher to ensure the highest level of data protection. The information collected and data in electronic form will be kept under a secure password. All information in physical form (documents) will be stored in a secure location. Consent form will be stored separately from the information collected. Only the information relevant to present research will be collected. The information (raw data) provided by participants will be stored while the research is being carried out and converted into analysed data before May 2019. Data (analysed information) will be stored indefinitely. If a participant decides to withdraw, all existing physical documents/materials given to the principal investigator will be returned, all electronic data will be destroyed (unless the data have been analysed and disseminated). All participants will be informed about data protection (see Informed Consent letter attached).

k. Animal Rights – No animals are involved/used in this study.

l. Environmental protection – There are no direct implications for the environment. However, this study is compliant with the Environmental Policy of the University.

Are there other ethical implications that are additional to this list? Yes No

7. Have I do you intend to request ethical approval from any other body/organisation? Yes No
If 'Yes' – please give details

8. Do you intend to publish your research? Yes No
If 'Yes', what are your publication plans?

- Interim findings
- Publication following completion of the study

9. Have you secured access and permissions to use any resources that you may require? (e.g. psychometric scales, equipment, software, laboratory space). Yes No
If Yes, please provide details.

NVivo software – provided by the University of Derby for the purpose of this research

10. Have the activities associated with this research project been risk-assessed? Yes No

Details of the Risk Element	Potential risk rating prior to controls eg tolerable, moderate, substantial/severe	Controls in place to reduce likelihood	Residual risk rating after controls eg tolerable, moderate, substantial/severe
Personal risk - Conducting interviews on business premises	Tolerable	<ul style="list-style-type: none"> • Prior knowledge of the participant • Interview planned in the knowledge of others 	Minimal

Which of the following have you appended to this application?

<input type="checkbox"/> Focus group questions	<input type="checkbox"/> Psychometric scales
<input type="checkbox"/> Self-completion questionnaire	<input type="checkbox"/> Interview questions
<input type="checkbox"/> Other debriefing material	<input type="checkbox"/> Covering letter for participants
<input type="checkbox"/> Information sheet about your research study	<input checked="" type="checkbox"/> Informed consent forms for participants (Appendix I)
<input type="checkbox"/> Location consent form	<input type="checkbox"/> Other (please describe)

PLEASE SUBMIT THIS APPLICATION WITH ALL APPROPRIATE DOCUMENTATION

weigh longer-term research benefit against short-term environmental harm needed to achieve research goals.

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Iana Nesterova
Doctoral Student
University of Derby
Derby

8 November 2017

Dear Iana

Re: Small Business Transition Towards Degrowth Economy

This letter is to confirm that your research (as subject line above) has received ethical approval by Chairs Action on behalf of the College of Business, Research Ethics Committee.

Note: should your research evolve and further ethical considerations arise you will need to submit an amended ethical application.

Yours sincerely

[content removed for data protection reasons]

Dr Tracey Wond
Head of Research (College of Business), Business, Law and Social Sciences
Acting Chair of College of Business, Research Ethics Committee
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Appendix XI. Data

C1

C1 Data Sources

Description of data source	Information this source provides
Investigator's notes. Face-to-face meeting with R1 took place on 21/03/18 and lasted 2 hours. R1 was introduced to the study and was willing to participate. Degrowth business framework was discussed.	Investigator's notes provide insight into C1's operation and R1's attitudes.
Website. C1's website available throughout the data collection phase	Provides insights into the main spheres of activity, company's vision
Leaflet. This contains examples of work C1 does and essential information about the company, including ethics.	Provides overview of the company, examples of work, insights into principles of production.
Documents - Articles. Article (1) An article authored by one of the C1's directors in an industry journal from 2017 (not referenced to protect the respondent's identity) and an (2) updated version thereof presented as C1's internal document. These were shared and accessed on 29/03/18. This document became a part of case study database. Article (3) was shared by C1R1 in May 2018 and contains a section authored by C1R1; this article was written for the diocese of [Location]	Insights into C1's use of renewables (battery storage) – Articles 1,2 Attitude to growth – Article 3
Documents – Internal. Internal documents: (3) data monitoring from renewable energy systems, (4) document describing retrofit of the storage and office unit of C1. These were shared and accessed on 29/03/18. These documents became a part of case study database.	Insights into C1's use of renewable energy, lighting, water saving, insulation and other pro-environmental practices and plans including lighting, rainwater harvesting, permaculture design of the grassed land next to the unit (disposal of organic waste, habitat creation).
Document – C1's Environmental Policy (5). This document was obtained on 30/03/18.	Firm's environmental policy and commitments.
Interview 1 - Interview using interview questions as a guide (additional questions arose during the conversation). The interview took place face-to-face at the University of Derby as a part of the meeting with C1R1 on 04/04/2018. The meeting lasted from 10:30 AM until 14:00 PM. The interview was recorded (audio) with a permission from C1R1. Parts of the questionnaire 1 and 2 -Business were covered. During the meeting, notes were taken. Interview 2 – The interview took place at the University of Derby as a part of the meeting with C1R1 on 20/04/18. The meeting lasted from 10:00 AM until 13:00 PM. The interview was recorded (audio) with a permission from C1R1. Final parts of the questionnaire 2 – Society and 2- Environment were covered. During the meeting notes were taken.	Interview transcripts provide data which relates to specific aspects of degrowth business (see Interview Framework above) from the perspective of C1R1. Investigator's notes provide additional insights from the parts of meeting which were not recorded (where specific situations, e.g. situations related to the respondent's area of residence, political views were discussed).
Personal communications. Personal communications with C1 took place throughout the data collection and analysis stage to clarify/investigate the case in more detail. These took place primarily via email, but also included face-to-face meetings. The emails are not included due to confidential nature; however, some parts of emails are included with permission from the respondent.	Personal communication provides clarification to questions and leads that arose during the data analysis stage. They supplement other data sources.
Site visit. Took place on 16/05/18 and is supplementary to Document (4). Field notes were taken. The main purpose of the site visit was to observe pro-environmental aspects of C1's industrial unit.	Observations; a graph obtained the following day which demonstrates monitoring of energy production and consumption (open source system).
Data collected from C1's Clients. To enhance understanding of C1's operations, particularly the operations observed by C1's clients, a client was contacted with an offer to participate in this research. C1C11 – Phone Interview on 22/05/18. This interview took a form of a dialogue (Mason, 2002) and did not follow the questionnaire designed for the owner-managers interviewed in this research.	A client's perspective based on their experience with C1.

C1 Data Analysis

Data	Coding and Themes	Analysis	Analytical Memo
<p>“we are aware that our activities and processes have environmental impacts, and we acknowledge our responsibility to manage and control these.” (C1 Document (5))</p> <p>“We have also taken account of the environmental impact of replacing the fluorescent lighting before the end of its life, including the disposal of the old equipment which contains heavy metals, including rare earth compounds, and elemental mercury vapour.” (C1 Document (4))</p>	<p>Coding: Environmental impact, responsibility [to manage and control environmental impacts]</p> <p>Themes: <u>Awareness of environmental impact</u> <u>Awareness of environmental responsibility</u></p>	<p>These relate broadly to the “redefining the meaning of economic activity” entry in the original framework. Pro-environmental and pro-social behaviours and practices may arise from this awareness. The economic activity is planned and practiced accordingly (as will be evident below).</p>	<p>Pro-environmental and pro-social attitudes are evident in C1R1, for instance, “a sensible starting point would be to acknowledge that each of us has a duty to live within God’s creation without causing its destruction, a duty to other people to allow them reasonable use of resource similar to that which we might reasonably consume, and a duty to future generations, not to consume resources at a rate which will render their survival difficult or impossible.” (Article (3)). The importance of seeing a “big picture” appears to be a part of C1R1’s worldview, for instance “I don’t think most of us take enough time off for ourselves, and even when we do, a lot of people don’t take much time to reflect and think about the big picture of what they are doing and why.” (C1R1, personal communication, 19/06/2018)</p>
<p>“review on a bi-annual basis, all the environmental aspects of our activities” (C1 Document (5))</p> <p>“The Board of Directors is committed to the review and enhancement of this Environmental Policy” (C1 Document (5))</p> <p>“ensure continual improvement in the environmental management system, and thereby our environmental performance” (C1 Document (5))</p> <p>“Although using the battery system has reduced our energy import at this time of year to virtually zero, there is still doubt that using the system would be a net financial benefit, and the environmental benefits, or lack thereof, remain unquantified” (C1 Document (3))</p> <p>“[C1] has begun to record and monitor temperatures in the unit using open source software they have developed” (C1 Document (4))</p> <p>“PV systems were installed on the roof to compare the performance of monocrystalline and polycrystalline panels” (C1 Document (4))</p>	<p>Coding: Monitoring of environmental aspects, monitoring of environmental performance, review of environmental aspects of firm’s activities, testing in-house energy systems, thermal monitoring</p> <p>Themes: <u>Monitoring of environmental performance</u></p>	<p>C1 implement multiple pro-environmental practices which relate to the Material and Energy Throughput and Waste (Environment) group of elements. However, apart from implementation, monitoring of environmental performance is carried out. It can supplement the Governance aspect of a Degrowth Business as a good practice.</p>	<p>C1 can test their own energy system and consumption due to the nature of C1 business (renewable energy systems design and installation is one of the strands of their activity alongside sustainability consulting and opensource software development). Monitoring of C1’s own environmental performance can be useful for knowledge sharing (discussed below) and reflect C1’s directors’ interest in engineering and design of energy systems.</p> <p>On 16/05/2018 the PI visited the industrial unit (see field notes which demonstrate an example of monitoring of energy generation and use from the visit).</p>
<p>“comply with applicable environmental legislation and other requirements” (C1 Document (5))</p>	<p>Coding: Environmental legislation</p> <p>Themes: <u>Environmental legislation compliance</u></p>	<p>Environmental legislation compliance was not featured in the original framework and reflects the practicalities of existing within a particular system. This can supplement the Governance aspect of a Degrowth</p>	<p>A Degrowth Business should strive for environmental performance that exceeds the requirements outlined in legislation.</p>

		Business and will be specific to a country's environmental legislation.	
<p>“protection of global commons, and habitats and species” (C1R1 Int. 1)</p> <p>“If we wanted just to make money, we could probably find easier ways of doing it, or find far less risky ways of doing it... I think it's something you would only do if you were committed to the idea of there being more wind power and more ethically sourced energy” (C1R1 Int. 1)</p> <p>“we are, obviously, motivated to do what we do because we want to make environmental improvements” (C1R1 Int. 1)</p> <p>“The core reason for wanting to do business locally is really one about energy” (C1R1 Int.2)</p> <p>“the entire reason we exist is to facilitate environmental improvement” (C1R1 Int.2)</p> <p>“all of these individual projects that we do mustn't conflict with our overall idea of providing environmental improvement” (C1R1 Int.2)</p> <p>“I've occasionally described the work we do is being a sustainability advocacy” (C1R1 Int.2)</p> <p>“we would like to have a bigger impact on the environment” (C1R1 Int.2)</p> <p>“the primary motivation is that, as a species, we don't break the environment in which we live” (C1R1 Int.2)</p> <p>“with a small company and a small group of people, the aim is to minimize our environmental damage and, as far as possible, to minimize other people's.” (C1R1 Int.2)</p> <p>“deliver further environmental improvement through the equipment we install, and the advice that we provide through our consultancy work” (C1 Document (5))</p>	<p>Coding: Pro-environmental orientation, commitment to a pro-environmental cause, creating a positive environmental outcome, environmental improvement</p> <p>Themes: <u>Pro-environmental orientation</u> <u>Environmental improvement</u></p>	<p>C1 realises an environmental benefit via their engineering expertise. Awareness of environmental impact outlined above leads to a firm's pro-environmental orientation. This also relates to the Desire for environmental change element of the original framework and Redefining the meaning of economic activities. C1R1 states that primacy of pro-environmental orientation over profit orientation. Barriers to exercising further pro-environmental initiatives (e.g. purchasing and electric van): monetary, time, “Having the right number of people with right skills” (C1R1 Int.2). More widely: “Education of the public and society”, “people being afraid of technology” (C1R1, Int.2)</p> <p>Barriers: Financial, Time, Skills, Education, Technology-aversion</p>	<p>Pro-environmental orientation leads to a wide range of pro-environmental practices in C1.</p> <p>In case of C1, the awareness of human impact on the environment leads directly to pro-environmental orientation in terms of business nature and practices (including monitoring thereof). Some people may be environmentally aware, but not pro-environmentally orientated in practice.</p>
<p>“prevent all kinds of pollution where practicable” (C1 Document (5))</p> <p>“minimise the carbon emissions arising from all our activities” (C1 Document (5))</p>	<p>Coding: Pollution prevention, carbon emissions minimization</p> <p>Themes: Preventing pollution</p>	<p>Preventing pollution is featured in the original framework. This is one of the practices which demonstrates C1's pro-environmental orientation in reality and can be linked with monitoring and review of firm's environmental performance. For the purpose of the framework, carbon emissions are included in the notion of pollution.</p>	<p>The notion of “pollution” is broad and pollution prevention relates to a set of practices, some of which are detailed in further entries.</p>
<p>“The gas supply to the site had been disconnected, and it was decided to use biomass heating rather than re-connect the gas (to reduce greenhouse gas emissions).” (C1 Document (4))</p> <p>“PV systems were installed” (C1 Document (4))</p> <p>“LED lighting with daylight and PIR sensing has been installed near the office doors.” (C1 Document (4))</p> <p>“minimise our use of ...energy...in our premises and site work” (C1 Document (5))</p>	<p>Coding: preference towards renewables, renewable energy generation, renewable energy use, renewable energy sourcing, energy use minimization, exporting extra energy to the grid,</p>	<p>Barriers: “Little environmental data is available to assess whether the use of battery systems will result in a net reduction of environmental or carbon footprint.” (C1R1 Article (2))</p> <p>“Part of the complex web of environmental issues is battery recycling” (C1R1 Article (2))</p>	<p>C1R1 are aware of downsides associated with burning wood (particulate pollution)</p> <p>C1 utilises multiple technique to facilitate frugal energy use. Other firms may not have comparable wealth of knowledge, frugal energy use part of the framework</p>

<p>“we aim to generate as much of our [renewable energy] own as we can” (C1R1 Int.2)</p> <p>“make better use of passive solar heat” (C1 Document (4))</p> <p>“maximise the natural light available” (C1 Document (4))</p> <p>“The energy we do buy is from [Green Energy Supplier]” (C1R1 Int.2)</p> <p>“the energy we don’t use we export into the grid, we don’t get paid anything for that, but we don’t really care, because it’s still a good environmental outcome” (C1R1 Int.2)</p> <p>“we have also used it [extra energy] for testing battery systems as well” (C1R1 Int.2)</p> <p>“we don’t use a lot of energy” (C1R1 Int.2)</p> <p>“we took out the gas supply, so we don’t use any gas, so there is no direct use of hydrocarbons” (C1R1 Int.2)</p> <p>“The gas boiler was removed and replaced with a...wood boiler” (C1 Document (4))</p> <p>“priority is given to heating the offices when there is demand for heat, and excess heat from the boiler is stored” (C1 Document (4))</p> <p>“Heating is basically done from waste wood” (C1R1 Int.2)</p> <p>“Only those parts of the building which people are using are normally heated” (C1 Document (4))</p> <p>“The building has been zoned into areas with different uses, so that the heating can be controlled to avoid heating unused parts of the building unnecessarily.” (C1 Document (4))</p> <p>“use a DEFRA approved biomass boiler in our industrial unit” (C1 Document (5))</p> <p>“We only heat a small part of the building” (C1R1 Int.2)</p> <p>“we try not to heat too much of the building or heat it when we aren’t there” (C1R1 Int.2)</p> <p>“we also know that having a great big wood burner is great in terms of having zero fossil fuel consumption” (C1R1 Int.2)</p> <p>“Insulation was added to the block-work internal wall that divides the offices from the workshop and storage area” (C1 Document (4))</p> <p>“Seals around doors were installed to reduce draughts in the building” (C1 Document (4))</p> <p>“A ... heat recovery fan has been installed in each office, to provide fresh air without losing a significant amount of heat.” (C1 Document (4))</p> <p>“A ...solar hot water collector..., was installed on the roof to provide hot water.” (C1 Document (4))</p>	<p>using extra energy for testing [PV systems], use of waste material [wood] for heating, overheating avoidance, zoning, insulation, draught prevention, heat recovery, energy efficiency</p> <p>Themes: Renewable energy sourcing, generation, exporting and use Frugal energy use</p>	<p>“The financial case for batteries should be considered with care” (C1R1 Article (2)) - – Information availability</p> <p>Financial benefit can be realised by frugal energy use, also “The heat delivered is metered, and earns income from the Renewable Heat Incentive” (C1 Document (4)) and “The system is eligible to earn income from the Renewable Heat Incentive” (C1 Document (4))</p> <p>Renewable energy use relates to pollution prevention while frugal energy use relates to throughput and waste minimization which are a part of the original framework</p>	<p>can be consulted to explore the possibilities.</p> <p>Elements such as “frugal energy use” may not be as helpful as a list of practices (e.g. overheating avoidance, draught prevention) which other firms can adopt. Some practices may require a large investment (renewable energy systems) while other practices (overheating avoidance) may be implemented on a large scale.</p>
<p>“minimise our use of ... water in our premises and site work” (C1 Document (5))</p> <p>“Their [Saver Siphons] installation roughly halves the water use of toilet flushing.” (C1 Document (4))</p> <p>“Water for toilet flushing is supplied by a header tank on the mezzanine, which makes it easy to install a rainwater harvesting system.” (C1 Document (4))</p>	<p>Coding: Water use minimization, rainwater harvesting</p> <p>Themes: Frugal water use</p>	<p>Frugal water use can be seen as a part of frugal use of resources in general. However, in places where water supply is constrained, frugal water use can be of a particular importance.</p>	<p>It can be useful to single out certain materials depending on the geographical area so a particular attention can be paid to that resource. In case of C1, water use was mentioned separately.</p>

<p>“minimise our use of materials...in our premises and site work” (C1 Document (5))</p> <p>“minimise our generation of waste” (C1 Document (5))</p> <p>“The best of the old tiles were selected for reuse in the corridor between the offices, toilets and kitchen. The others were recycled.” (C1 Document (4))</p> <p>“use the best path within the waste hierarchy for each stream of materials produced in our activities” (C1 Document (5))</p> <p>“big sheets of cardboard people will take off us to use in their allotments for weed suppression” (C1R1 Int.2)</p> <p>“Small bits of cardboard we take to the local dump and recycle” (C1R1 Int.2)</p> <p>“We produce a certain amount of waste wood just off cuts and those just go into the burner usually, or some of them are big enough to be reused” (C1R1 Int.2)</p> <p>“stuff that we end up storing” (C1R1 Int.2)</p> <p>“we will reuse a lot of electronic components” (C1R1 Int.2)</p> <p>“we took a load of that [roofing insulation material from another firm] off him and we just gave it to our clients to use as insulation” (C1R1 Int.2)</p> <p>“I’ve also been to one or two of the WRAP exchange events” (C1R1 Int.2)</p> <p>“It was decided to use carpet tiles again, as stained or damaged tiles can be replaced without changing the entire carpet.” (C1 Document (4))</p>	<p>Codes: Material use minimization, sharing useful waste materials, recycling, using/reusing waste materials, storing [useful] waste for future use, reuse of materials, reusing electronic components, repurposing another company’s waste for clients, participating in exchange events</p> <p>Themes: Frugal use of materials [including recycling, sharing, reuse, repurposing, exchange]</p>	<p>Barriers: convenience of reusing materials vs sourcing virgin materials, the time between producing waste and waste becoming useful, legal aspects of reusing electronic components and diverting waste from waste stream, changes in another company’s attitudes towards sharing waste, inefficient organisation of exchange events and databases, waste, materials and energy exchange networks/industrial ecology require permanence and stability (C1R1 Int.2)</p> <p>Frugal use of materials was featured in the original framework. Similarly to the frugal use of energy aspect, the practices of frugal use of materials are important.</p>	<p>Frugal use of materials entry can be useful for the researchers interested in circular economy possibilities and implementation.</p> <p>Permanence of industry is a barrier (attitudes, location, product can change) (C1R1, personal communication, spring 2018)</p>
<p>“by supporting the environment you provide social benefit” (C1R1 Int.2)</p> <p>“If by using renewable energy we can reduce the amount of fossil fuels we need, then I think we are consistent with that idea of meeting the needs of society” (C1R1 Int.2)</p> <p>“we don’t have a written agenda of social aims” (C1R1 Int.2)</p> <p>“with the social stuff if an opportunity comes along...we’ll do it” (C1R1 Int.2)</p>	<p>Codes: Social benefit, meeting the needs of society, serving environmental needs/requirements of the society</p> <p>Themes: Pro-social orientation Meeting environmental needs [of society]</p>	<p>In case of C1, pro-social orientation is secondary (or stems from the pro-environmental orientation). Themes below, however, highlight multiple aspects of pro-sociality within C1.</p> <p>Barrier: “Having to make a profit to some degree is a barrier” (C1R1 Int.2)</p>	
<p>“business model that’s going to be sustainable” (C1R1 Int. 1)</p> <p>“we have to have activities which are profitable” (C1R1 Int.1)</p> <p>“we obviously got to make a profit and that means we can’t work solely on a voluntary basis” (C1R1 Int.2)</p> <p>“our financial strategy is long-term instead of short-term” (C1R1 Int.1)</p>	<p>Coding: [Financial] sustainability, profitability, long-term financial strategy</p> <p>Themes: Long-term financial strategy</p>	<p>C1 came out of the voluntary sector and pro-environmental background and motivation, however financial sustainability is important, providing C1 operates in a capitalist environment and has financial obligations. This theme has not been featured or extensively discussed in the original framework because it is not the primary focus of ecological economics or degrowth literature. It closely relates to sustaining one’s family.</p>	<p>While being a for-profit company, R1 is interested in the idea (source – email communication spring 2018) of a social enterprise and not-only-for-profit business. They have been told that they cannot be a social enterprise because it’s not in the memorandum and articles, but their bank told them they are.</p> <p>C1 try to avoid mistakes made by companies that are better financed (source – email communication spring 2018). The earnings of directors are modest. The company maintains its autonomy and the directors</p>

		Some company earnings will be reinvested in pro-environmental practices (electric van) (Source C1R1 personal communication, spring 2018).	do not have plans to sell it (source – personal communication with C1R1, spring 2018)
“As a business, you need to be aware of, and act on, your personal values. This has resulted in our company as being classified by one academic as a 'not ONLY for profit' company. But we do have to make a profit. If we let ourselves fall into the habit of not doing (and we don't make a profit every year), we'll go bust, which amongst other things would reduce the amount of environmental good we can do.” (C1R1, email communication, summer 2018)	Coding: Not-only-for-profit Themes: <u>Not-only-for-profit</u>	C1 make a profit to remain functional as a business, which then allows them to do more good.	
“we have to be able to eat and feed our families and pay our mortgages and all that nonsense” (C1R1 Int. 1) “you are trying to pay a 900 mortgage” (C1R1 Int. 1) “as long as you’ve got enough money to feed the family and pay the mortgage” (C1R1 Int.1)	Coding: Sustaining oneself, sustaining one’s family, mortgage Themes: <u>Sustaining one’s family</u>	This category reflects the connection between a firm and personal lives of a firm’s directors.	Personal debt obligations necessitate creation of profit.
“bringing in a hopefully reasonably ethical bank” (C1R1 Int.1)	Coding: Ethical bank Themes: <u>Ethical banking</u>	From the planning stage to set up C1 an ethical bank was considered. This ethical bank is still used by C1. This element relates to the Governance entry in the framework and was not featured in the original framework.	
“doesn’t seem especially fair, when you are only employing people for a day or two, to pay them less than a hundred pounds” (C1R1 Int.1) “Fair prices” (C1’s website) “We don’t really write that stuff [values and ethics] down. It’s pretty much axiomatic.” (C1R1 personal communication 09/05/2018) “Some people might see it as the application of a Christian outlook, though I don’t think it’s that in any direct sense. You might also argue that it’s just good British fairness, though again, I’m not convinced.” (C1R1 personal communication 09/05/2018)	Codes: Fairness towards contractors, fairness towards customers, fairness as value Themes: <u>Fairness</u>	The value of fairness has been mentioned several times and will inform the Attitudes, Values, Motives group of elements in the framework.	
“in some sense there has to be degrowth of most aspects of the economy” (C1R1 Int.1) “The need for ‘contraction and convergence’ is clear” (C1R1 Article 3) “I see this growth thing to some degree in the context of contraction and convergence” (C1R1 Int.1)	Codes: Degrowth, contraction and convergence Themes: <u>Need for degrowth</u>	R1 sees degrowth in the context of contraction and convergence. This theme relates to the Redefining the meaning of economic activities entry in the original framework.	While awareness of degrowth and other alternative economic visions may not be widespread among businesses, education can help introduce them to alternatives. This entry reflects the attitudes to growth of the founder and the managing director of C1.
“one aspect of the economy where you can actually have continuous growth is knowledge” (C1R1 Int.1)	Codes: Knowledge economy, knowledge sharing – contribution to	This theme relates to the Desire for social change entry in the original framework. In case of knowledge sharing, concrete	C1 have implemented various ways to share knowledge with multiple groups of people.

<p>“I sort of see some part of what we do as being a part of knowledge economy” (C1R1 Int.1)</p> <p>“We have been involved in research projects which have aimed to gather practical experience of battery systems, and these comments are based on some of the measurements we’ve made, and the quirks we’ve observed.” (C1R1 Article (1))</p> <p>“I don’t go out and market the company when I talk to people about renewables” (C1R1 Int.1)</p> <p>“we also provide a certain amount of feedback and input and banging heads together and introducing common sense into their [environmental and community groups] discussions.” (C1R1 Int.2)</p> <p>“to some degree the justification for working in broader society, it really in a lot of ways is about setting an example” (C1R1 Int.2)</p> <p>“we try and encourage people to take a quantitative approach to assessing what they do” (C1R1 Int.2)</p> <p>“generating reusable / sharable knowledge / experience” (C1R1 Int.2)</p>	<p>industry magazines, knowledge sharing – activists (related to Supporting Activists), knowledge sharing – faith groups, knowledge sharing – community, online community, knowledge sharing – free advice, setting an example</p> <p>Themes: <u>Knowledge sharing</u></p>	<p>practices and example can be useful.</p>	<p>C1R1 participates in conferences and events where they speak/present on environmental issues and addressing them.</p>
<p>“we write things like opensource software” (C1R1 Int.1)</p> <p>“with products like opensource, people can if they want to, reuse bits of it or reuse the whole thing or use it in new contexts and circumstances” (C1R1 Int.1)</p> <p>“with products like opensource, people can if they want to, reuse bits of it or reuse the whole thing or use it in new contexts and circumstances” (C1R1 Int.1)</p> <p>“it [software] should be almost free” (C1R1 Int.1)</p> <p>“And ‘payment’ for using it is generally voluntary, and ‘in kind’ contributions and support are often more welcomed than money” (C1R1 Int.1)</p>	<p>Codes: Opensource software, voluntary payment</p> <p>Themes: <u>Opensource software</u></p>	<p>Sometimes writing opensource software also results in a financial benefit as C1 is able to provide a complete solution to a customer (hardware and software) (C1R1 Int.1)</p> <p>This theme related to Knowledge sharing outlined in the previous entry.</p>	<p>Relates to pro-sociality and knowledge sharing.</p>
<p>“I would quite like it [C1] to be bigger” (C1R1 Int.1)</p> <p>“a bigger company is in a position to do more good, if it’s doing good things” (C1R1 Int.1)</p> <p>“if there was demand for the services we provide, it would be fantastic to grow” (C1R1 Int.1)</p> <p>“...keep in mind that we could and may grow if and when we can. I suppose in these sense that we’re ‘not just for profit’, we’re also ‘not just for growth.’” (C1R1, personal communication 15/05/2018)</p>	<p>Codes: Growth, do more good, doing good things, not just for growth</p> <p>Themes: <u>Company growth to “do more good” Not just for growth</u></p>	<p>While C1R1 acknowledges the need for degrowth, R1 stated that they would like to company to be bigger (still within an SME size of 50 employees), but identified issues associated with growth.</p> <p>The reasons for growth given are doing good and satisfying demand for company’s services.</p> <p>While C1 remains open to growth if an opportunity arises, they do not prioritise growth. C1 did not take an opportunity from a potential investor to invest £30 000 into their business (C1R1, personal communication, spring 2018)</p>	<p>Should be seen together with the disadvantages of growth which R1 outlines.</p> <p>While discussing growth, C1R1 (personal communication 15/05/2018) notes: “I doubt that either he [C1R1’s friend] or our mutual friend [Name] would consider [C1] investable. I think [Name] in particular took a while to understand what we’re about.”</p> <p>C1R1 (personal communication, 2018) states: “I’m obviously a fan of small companies.”</p> <p>Staying small is exemplified in: “I would quite like it to be bigger. I’d be very happy if there were 50 of us” (C1R1 Int.1) and</p>

			“It’d be great to have 50 people” (C1R1 Int.1))
“none of us are really that kind of people who enjoy hierarchy” (C1R1 Int.1)	Codes: hierarchy Themes: <u>Anti-hierarchy</u>	Barrier to growth: demand (C1R1 Int.1) Disadvantage of growth: hierarchy	C1R1 has a preference towards smallness of business operations where the company’s unique set of internal wellbeing-orientated behaviours can be exercised (see below)
<p>“We want each other to feel comfortable, within reason” (C1R1 Int.1)</p> <p>“when people have got problems, we try and support them” (C1R1 Int.1)</p> <p>“We are flexible” (C1R1 Int.1)</p> <p>“There is flexibility in a sense of being able to work when you want to work and do as much work as you want to do” (C1R1 Int.1)</p> <p>“you can just take a year out and go away and do something completely different and then just come back and nobody really cares.” (C1R1 Int.1)</p> <p>“You don’t feel that you have to give up your job and make a life-changing choice, you can keep what you’ve got and still have an option to do something different for a time” (C1R1 Int.1)</p> <p>“freedom to work at home” (C1R1 personal communication 09/05/2018)</p> <p>“We don’t pay too much attention to the job titles” (C1R1 Int.1)</p> <p>“on average we all make a roughly equal contribution, albeit in very different ways” (C1R1 Int.1)</p> <p>“There are things we disagree about, there aren’t many, we argue about them for a bit and make a decision, but we don’t argue about things very much” (C1R1 Int.1)</p> <p>“We try to have regular meetings” (C1R1 Int.1)</p> <p>“we are happy to let people enjoy what they are doing in their own way” (C1R1 Int.1)</p> <p>“employing people who can organise themselves” (C1R1 Int.1)</p> <p>“I don’t really want to manage. I’m quite happy to lead” (C1R1 Int.1)</p> <p>“If you are going to be creative and develop new things, you got to have that freedom to explore stuff” (C1R1 Int.1)</p> <p>“there is also wellbeing in a sense of freedom to be creative” (C1R1 Int.1)</p> <p>“...there are some behaviours which are likely to result in good long term outcomes...” (C1R1 personal communication 09/05/2018)</p> <p>“The building needs to be heated to provide staff comfort” (C1 Document (4))</p> <p>“we can actually do better things when we are willing to be unorthodox” (C1R1 Int.1)</p> <p>“it comes down to the element of trust” (C1R1 Int.1)</p> <p>“it’s a trust thing” [letting people enjoy what they do in their own ways] (C1R1 Int.1)</p>	<p>Codes: Supportive atmosphere, flexibility, acknowledging, respecting and accommodating the differences, lack of hierarchy, democratic decision-making, self-organisation, management vs leadership, wellbeing, comfort provision, freedom and creativity, freedom to work at home, long-term orientation, trust</p> <p>Themes: <u>Orientation towards wellbeing: flexibility [working hours], accommodating the differences, freedom and creativity, comfort provision, supportive atmosphere</u></p> <p><u>Governance: long-term orientation, self-organisation, democratic decision-making, lack of hierarchy, creativity and innovation, trust</u></p>	<p>Freedom and creativity are important, even though it may mean lower profit.</p> <p>The themes relate to the Internal Business Operations group of elements in the framework.</p> <p>C1R1 recognises the difference between leadership and management and has a preference towards leadership. This could contribute to the way the firm’s governance has been set up (C1R1 is the key figure in C1).</p> <p>Multiple sub-themes were included to supplement the Internal Business Operations group of elements to demonstrate specific practices.</p> <p>Wellbeing and Governance can be inter-connected in a way that when governance is set up in ways that facilitate wellbeing.</p> <p>Trust was not featured in the original framework. Though not specific to degrowth, it can facilitate wellbeing and other elements (such as flexibility in working hours)</p>	There are, despite sharing common ethics, some differences in attitudes towards running a business among the directors (source – personal communication with C1R1 spring 2018).
“[Name 1] is just as capable of going away for three months over the summer and spending time at climate camp explaining things to activists” (C1R1 Int.1)	Codes: Teaching activists, helping protesters Themes:	This theme supplements the Wider Society group of elements in the original framework. It is featured separately due to a close	

<p>“drop off food for people who are protesting” (C1R1 Int.2) “We have been known to help out with an odd protest” (C1R1 Int.2)</p>	<p>Supporting activists</p>	<p>relationship between degrowth and activism.</p>	
<p>“consider, subject to the availability of information, the environmental policies and practices of our suppliers in the procurement process” (C1 Document (5)) “the environmental and social aspects of the manufacturers’ products we are buying” (C1R1 Int.1) “relatively low pollution and they have some clear statements about the conditions in which their staff are working and are employed.” (C1R1 Int.1 on procuring solar panels) “if we are buying from America, Japan, Europe, we don’t pay that much attention because the legal framework should be in place” (C1R1 Int. 1) “ethical supply where information allows” (C1R1 Int.2)</p>	<p>Codes: Environmental aspects (inc. pollution), social aspects (inc. working conditions), ethical supply, reliance on legal framework in industrialised countries</p> <p>Themes: Environmentally and socially minded sourcing</p>	<p>Barrier: little information available, difficulty obtaining product information on small orders, difficulty obtaining suitable technology locally (C1R1 Int.1)</p> <p>This theme informed the Production entry of the framework</p>	
<p>“we aim to deliver our services locally” (C1R1 Int.1) “selection of an industrial unit in [Location] which is fairly central to staff’s homes, which minimises commuting distance.” (C1 Document (4)) “reduce emissions from activities such as transport to sites by working locally” (C1 Document (5)) “you want your staff as far as possible to live within a reasonable distance” C1R1 Int.1) “if we want to buy wood, we might buy from a local supplier” (C1R1 Int.1)</p>	<p>Codes: Serving <i>local</i> communities, headquarters located near directors’ area of residence, sourcing locally where possible (see Sourcing above)</p> <p>Themes: Localization</p>	<p>Reasons: costs less, saves time (C1R1 Int.1), Emissions reduction (C1 Document (5))</p> <p>Localization was featured in the original framework.</p>	<p>C1 apply the logic of localization where appropriate (creates an environmental benefit), however they don’t base all of their operations on this principle</p>
<p>“we are definitely striving to learn new things, learn to do things better” (C1R1 Int.1) “if you work a lot of hours and you enjoy doing it and you get a lot of good, diverse outcomes, that’s actually quite a satisfying job” (C1R1 Int.1) “If you care about the environment in a very general sense, you will see spending time helping [Faith Initiative] or advising [Faith Group] or helping a bunch of activists in a field, as being a good outcome and you’ll see a productive use of your time” (C1R1 Int.1)</p>	<p>Codes: Knowledge as outcome, good and diverse outcomes</p> <p>Themes: Diverse outcomes, Diverse understanding of productivity</p>	<p>Immediate financial outcome in not prioritised (C1R1 Int.1). This relates to the existing framework entry “Seeking alternatives to productivism” and “Redefining the meaning of economic activities”</p>	<p>Importance of outcomes beyond profit.</p> <p>C1R1 (personal communication, spring 2018) has a sceptical attitude towards capitalism. Investigator’s notes from 21/03/18 (“Capitalism is not perceived by R1 to be the answer”)</p>
<p>“we had contacts in the community before we started” (C1R1 Int.2) “various environmental and community groups we work with” (C1R1 Int.2) “objecting to open cast coal mines” (C1R1 Int.2) “it is very rewarding working with people” (C1R1 Int.2) “one of the things we are doing at the moment is we want to start experimenting with some sensors to measure particulate dusts” (C1R1 Int.2)</p>	<p>Codes: Working with communities, involvement in local politics, enjoyment from working with people</p> <p>Themes: Embeddedness within community</p>	<p>Working with communities provide commercial leads, but also opportunities for knowledge sharing (mutual benefit). Working with communities entails local communities, but also wider community, global community (e.g. knowledge sharing via opensource software, publications, online). Involvement in local politics relates to “supporting activists” as many initiatives C1 supports are pro-environmental (e.g. anti-fracking).</p>	<p>It can be more beneficial to identify specific practices a firm can implement to enhance its embeddedness within its local community.</p>

		Embeddedness within community was featured in the original framework.	
<p>“there isn’t one [marketing strategy]” (C1R1 Int.2)</p> <p>“we don’t have an advertising budget” (C1R1 Int.2)</p> <p>“I’m fairly sceptical, I think we all are, really, about the value of traditional advertising” (C1R1 Int.2)</p> <p>“we don’t really do any SEO or web optimisation, we really treat the website as a noticeboard.” (C1R1 Int.2)</p> <p>“the fact that the whole sort of way trying to manipulate Google search and all that stuff seems fairly unethical” (C1R1 Int.2)</p> <p>“the marketing that we do do is mostly word of mouth” (C1R1 Int.2)</p> <p>“on other occasions there has been an opportunity to involve C1” (C1C11 Int.)</p> <p>“we probably do better by talking to people directly” (C1R1 Int.2)</p> <p>“doing a good job is probably the best marketing tool” (C1R1 Int.2)</p> <p>“He likes to do a good job and he wants to do a good for the right reasons as well.” (C1C11 Int.)</p> <p>“Like most advertising, its [advertising via another sustainable business’s website] reach is national, which isn’t much use to us as we mostly try to work locally.” (C1R1, personal communication, 20/05/2018)</p> <p>“there’s obviously a lot of networking” (C1R1 Int.2)</p> <p>“I don’t think they aggressively market themselves at all” (C1C11 Int.)</p> <p>“they [C1] get a lot of customers from word-of-mouth” (C1C11 Int.)</p> <p>“C1 doesn’t get its customers from aggressive marketing. C1 gets them from, one project leads to another because of word-of-mouth” (C1C11 Int.)</p>	<p>Codes:</p> <p>Absence of a traditional marketing strategy, absence of aggressive marketing, ethical considerations in marketing, scepticism towards advertising, word of mouth, doing a good job, networking, repeat business</p> <p>Themes:</p> <p><u>Unorthodox marketing strategy, word-of-mouth, networking, quality</u></p>	<p>Degrowth advocates restrictions on advertising. C1 practices strategies which do not go against the ethics of the firm, such practices include doing a good job, relying on referrals, networking.</p>	<p>This is not marketing in a traditional sense</p>
<p>“it’s about being cost effective, having good efficiency, reliability, long life, ease of maintenance” (C1R1 Int.2)</p> <p>“we want to be able to design courageously (thinking outside the box, using things in unusual ways), but specify components conservatively (low risk of failure etc.)” (C1R1 personal communication 2018)</p> <p>“I think C1 add a great deal of value to the work they do for clients” (C1C11 Int.)</p> <p>“I’ve been bickering with in emails over the last week or two because he really wants a battery system” (C1R1 Int.2)</p> <p>“That’s not a sort of thing that is normally regarded as good to say to a client, but he wants to spend [Contract Value] on something which isn’t going to improve the environment” (C1R1 Int.2)</p> <p>“you have to be brutally honest” (C1R1 Int.2)</p> <p>“The weight of wood burned, the moisture content, and the amount of energy produced, are being recorded to find out more about the behaviour of the burner. This gives [C1]</p>	<p>Codes:</p> <p>Consideration of customers’ needs, providing value for clients, ethical treatment, providing honest advice, consideration of environmental outcome, experience sharing</p> <p>Themes:</p> <p><u>Consideration of customers’ needs, honesty</u></p>	<p>Barrier: C1R1 notes in Int.2 that a barrier to provision of the best solution is that C1 is involved at the later stages of a project after the project has been designed.</p> <p>Honesty is another pro-social value identified, in addition to fairness (above)</p>	<p>C1R1 (personal communication, 2018) notes that the majority of their customers share their values and are more technical.</p> <p>This category will be explored in more depth with C1’s customers/clients</p>

experience which they share with their clients, and which helps them to design better heating systems.” (C1 Document (4))			
“explore solutions to environmental issues in partnership with our subcontractors, clients and the wider population” (C1 Document (5)) “modesty and humility” (C1R1, personal communication, 2018)	Codes: Partnership, modesty, humility Themes: <u>Cooperation</u> <u>Modesty</u> <u>Humility</u>	In addition to honesty and fairness identified above, cooperation is a value that will inform the framework.	Additionally, the values of “modesty and humility” of enterprise, reflected in its operations were highlighted (C1R1, personal communication, 14/06/18)
“information will be available as requested by stakeholders.” (C1 Document (5))	Codes: Transparency Themes: <u>Transparency</u>	This theme supplements the Governance entry in the framework (as part of Ethics)	Information has been provided by C1R1 on researcher’s request. C1R1 was willing to share financial data, information about current contracts, projects and potential projects, information about personal earnings and dividends (not disclosed here). They were also willing to provide clients’ details (with clients’ permission) for the purpose of this research and further investigation
“sharing vehicles when possible, the use of low carbon fuels in our vehicles where practicable” (C1 Document (5))	Codes: Vehicle sharing, low carbon fuels Themes: <u>Transportation - Vehicle share</u> <u>Low carbon transportation</u>	These themes will inform the Pro-environmental workplace behaviour entry in the framework. This category has been replaced by the Energy sub-category of Material and Energy Throughput and Waste.	
“to set practical examples in our daily lives” (C1’s website, 2018)	Codes: Practical examples Themes: <u>Leading by example</u>	This theme has been featured in several conversations with C1R1 throughout the data collection stage.	
“they are an ethical business” (C1C11 Int.) “C1R1’s involved and C1R1 is very ethical anyway” (C1C11 Int.) “[C1R1] likes to do things and to follow things because it’s the right thing to do and it interests him.” (C1C11 Int.) “his [C1R1’s] ethics just run through the whole culture of the business” (C1C11 Int.) “C1R1 is very conscientious” (C1C11 Int.) “he [C1R1] wants to do things for the right reasons which is quite unusual for a business” (C1C11 Int.)	Codes: Ethical business, ethical director, conscientious director Themes: <u>Ethical business, ethical and conscientious leader, doing “the right thing”</u>	This is a broad theme which informs the principles of management/governance. An insight which requires further research is the role of an ethical leader in firm for a degrowth economy. This theme relates to Redefining the meaning of economic activities category in the original framework (envisioning business as a social process rather than a purely profit maximizing activity)	C1R1 explores various aspects of ethics in business (environment related, society related, employees related and so on), and doesn’t call C1 “an ethical business”, however it comes across as such to a client. The interview with C1C11 shows the importance of an ethical leader who is interested in what he is doing and believes in what he is doing.
“he’s an expert in his field” (C1C11 Int.) “[He] is very good in his area, he’s an engineer, he knows a lot of stuff” (C1C11 Int.) “C1R1 is very much an expert” (C1C11 Int.)	Codes: Expertise, knowledge Themes: <u>Expertise</u>	C1C11 notes complementary attitudes (more business and more “academic” (C1C11 Int.) attitudes within C1)	

<p>“mutual respect” (C1C11 Int.) “They [directors of C1] have respect for each other. They also acknowledge they are both very good at different things.” (C1C11)</p>	<p>Codes: Mutual respect, respect, respecting the differences</p> <p>Themes: <u>Mutual respect</u></p>	<p>This theme relates to employee wellbeing</p>	
<p>“All installations are supervised by a director to deliver the best stand of work, ensuring maximum system lifespan and output.” (C1 Leaflet) “...installing sustainable technologies, ensuring they are appropriate, affordable, and provide the best performance and durability.” (C1 Leaflet)</p>	<p>Codes: Best standard of work, maximum lifespan, sustainable technology, appropriate technology, durability</p> <p>Themes: <u>Durability, Appropriate technology</u></p>	<p>This theme was also a part of the original framework since degrowth vision emphasizes durability. It will be moved in the production category in Internal Business Operations because it can be considered a principle of production, Preference towards appropriate technology was a part of the original framework.</p>	
<p>“Director [Name 3] has undertaken a permaculture informed design to improve the utilisation of this space.” “[C1]’s requirements and aspirations (availability of daylight, creation of habitat, organic waste disposal, ash disposal, security...) (C1 Document (4)) “We hope that it will be possible to dispose of food waste, green waste and possibly ash from the wood burner on site. Other materials such as shredded cardboard and paper could also be incorporated into the mix of material to be treated if this helps the process.” (C1 Document (4)) “The disposal of organic waste might be achieved by composting, or by the use of a wormery. Either process would produce compost as a product, which could be used to help plants grow on site or elsewhere, and reduce the amount of waste that has to be removed from the site. This would help close nutrient cycles and feed the soil.” (C1 Document (4))</p>	<p>Further improvements: Permaculture Daylight availability Habitat creation Organic waste disposal – composting Organic waste disposal - wormery Ash disposal Security</p> <p>Themes: <u>Permaculture, habitat creation</u></p>	<p>These are the practices C1 aspires to adopt</p>	<p>These items have not yet been implemented by C1. However, they can be implemented by other firms and provide ideas for pro-environmental improvements.</p> <p>ISO 14001 (C1R1 personal communication 2018)</p> <p>During the site visit on 16/05/18 the PI observed plans regarding permaculture</p>

Framework Construction

Codes	Themes	Elements	Groups
environmental impact, responsibility [to manage and control environmental impacts]	Awareness of environmental impact Awareness of environmental responsibility	Attitudes <i>Redefining the meaning of economic activity</i>	Attitudes, Values, Motives
monitoring of environmental aspects, monitoring of environmental performance, review of environmental aspects of firm’s activities, testing in-house energy systems, thermal monitoring	Monitoring of environmental performance	Environmental performance	Internal Business Operation
Environmental legislation	Environmental legislation compliance	Environmental performance	Internal Business Operation
pro-environmental orientation, commitment to a pro-environmental cause, creating a positive environmental	Pro-environmental orientation Environmental improvement	Motives, Attitudes <i>Desire for social and environmental change</i>	Attitudes, Values, Motives

outcome, environmental improvement			
pollution prevention, carbon emissions minimization	Pollution prevention	Pollution prevention [energy and material]	Material and Energy Throughput and Waste (Environment-related)
preference towards renewables, renewable energy generation, renewable energy use, renewable energy sourcing, energy use minimization, exporting extra energy to the grid, using extra energy for testing [PV systems], use of waste material [wood] for heating, overheating avoidance, zoning, insulation, draught prevention, heat recovery, energy efficiency	Renewable energy sourcing, generation, exporting and use Frugal energy use	Energy - Renewable energy sourcing, generation, exporting and use Energy - Frugal energy use <i>Renewable energy</i> <i>Throughput minimization</i> <i>Avoidance of energy waste</i> <i>Frugal use of resources</i>	Material and Energy Throughput and Waste (Environment-related)
water use minimization, rainwater harvesting	Frugal water use	Material - Frugal water use <i>Frugal use of resources</i> <i>Throughput minimization</i>	Material and Energy Throughput and Waste (Environment-related)
material use minimization, sharing useful waste materials, recycling, using/reusing waste materials, storing [useful] waste for future use, reuse of materials, reusing electronic components, repurposing another company's waste for clients, participating in exchange events	Frugal use of materials [including recycling, sharing, reuse, repurposing, exchange]	Material - Frugal use of materials [including saving, repurposing, exchange, sharing, reuse, recycling, waste minimization] <i>Frugal use of resources</i> <i>Throughput minimization</i>	Material and Energy Throughput and Waste (Environment-related)
social benefit, meeting the needs of society, serving environmental needs/requirements of the society	Pro-social orientation Meeting environmental needs	Pro-social orientation Meeting environmental needs <i>Serving the needs of society</i> <i>Desire for social and environmental change</i>	Attitudes, Values, Motives Community and Humanity
[financial] sustainability, profitability, long-term financial strategy	Long-term financial strategy	Finance: Long-term financial strategy	Internal Business Operation
not-only-for-profit	Not-only-for-profit	Motives <i>Redefining the meaning of economic activities</i>	Attitudes, Values, Motives
sustaining oneself, sustaining one's family, mortgage	Sustaining one's family	Motives: sustaining one's family <i>Redefining the meaning of economic activities</i>	Attitudes, Values, Motives
ethical bank	Ethical banking	Finance	Internal Business Operation
fairness towards contractors, fairness towards customers, fairness as value	Fairness	Fairness	Attitudes, Values, Motives
degrowth, contraction and convergence	Need for degrowth	Attitudes: Recognizing need for degrowth <i>Desire for social and environmental change</i>	Attitudes, Values, Motives

knowledge economy, knowledge sharing – contribution to industry magazines, knowledge sharing – activists (related to Supporting Activists), knowledge sharing – faith groups, knowledge sharing – community, online community, knowledge sharing – free advice, setting an example	Knowledge sharing	Knowledge sharing <i>Embeddedness within community</i> <i>Desire for social and environmental change</i>	Community and Humanity
opensource software, voluntary payment	Opensource software	Opensource software <i>Desire for social and environmental change</i> <i>Motives other than profit</i>	Community and humanity
growth, do more good, doing good things, not just for growth	Company growth to “do more good” Not just for growth, staying small	Growth-related <i>Smallness of business operation</i> <i>Consideration of other business models</i>	Internal Business Operation
hierarchy	Anti-hierarchy	Principles of management/governance: lack of hierarchy <i>Simplicity and autonomy of operation</i>	Internal Business Operation
supportive atmosphere, flexibility, acknowledging, respecting and accommodating the differences, lack of hierarchy, democratic decision-making, self-organisation, management vs leadership, wellbeing, comfort provision, freedom and creativity, freedom to work at home, long-term orientation, trust	Orientation towards wellbeing: flexibility [working hours], accommodating the differences, freedom and creativity, comfort provision, supportive atmosphere Governance: long-term orientation, self-organisation, democratic decision-making, lack of hierarchy, creativity and innovation, trust	Employee wellbeing Principles of management/governance Values <i>Wellbeing: orientation towards wellbeing, development of human potential</i> <i>Governance: democratic decision-making, simplicity and autonomy of operation</i>	Internal Business Operation Attitudes, Values, Motives
teaching activists, helping protesters	Supporting activists	Community and humanity: supporting activists <i>Embeddedness within community</i>	Community and humanity
environmental aspects (including pollution), social aspects (including working conditions), ethical supply, reliance on legal framework in industrialised countries	Environmentally and socially minded sourcing	Production Principles or management/governance	Internal Business Operation
serving <i>local</i> communities, headquarters located near directors’ area of residence, sourcing locally where possible (see Sourcing above)	Localization	Energy - Localization	Material and Energy Throughput and Waste (Environment-related)
knowledge as outcome, good and diverse outcomes	Diverse outcomes Diverse understanding of productivity	Production Attitudes <i>Redefining the meaning of economic activity</i>	Internal Business Operation Attitudes, Values, Motives
working with communities, involvement in local politics,	Embeddedness within community	Embeddedness [cooperation, projects, politics]	Community and humanity

enjoyment from working with people		<i>Embeddedness within community</i>	
absence of a traditional marketing strategy, absence of aggressive marketing, ethical considerations in marketing, scepticism towards advertising, word of mouth, doing a good job, networking, repeat business	Unorthodox marketing strategy [word-of-mouth, networking] Quality	Marketing Production <i>Durability of product, reparability Restriction on advertising</i>	Internal Business Operation
consideration of customers' needs, providing value for clients, ethical treatment, providing honest advice, consideration of environmental outcome, experience sharing	Consideration of customers' needs Honesty	Consideration of customer's needs Values – Honesty	Community and Humanity Attitudes, Values, Motives
Partnership, modesty, humility	Cooperation Modesty Humility	Values – Cooperation Values – Modesty Values - Humility	Attitudes, Values, Motives
transparency	Transparency	Values – Transparency Principles of management/governance - Ethics	Attitudes, Values, Motives Internal Business Operation
vehicle sharing, low carbon fuels	Transportation - Vehicle share Low carbon transportation	Energy <i>Pro-environmental workplace behaviour and travel modes</i>	Material and Energy Throughput and Waste (Environment-related)
practical examples	Leading by example	Values	Attitudes, Values, Motives
ethical business, ethical director, conscientious director	Ethical business Ethical and conscientious leader “Doing the right thing”	Principles of management/governance -Ethics Motives <i>Redefining the meaning of economic activities</i>	Internal Business Operation Attitudes, Values, Motives
expertise, knowledge	Expertise	Production - expertise	Internal Business Operation
Mutual respect, respect, respecting the differences	Mutual respect	Employee wellbeing <i>Orientation towards wellbeing</i>	Internal Business Operation
Best standard of work, maximum lifespan, sustainable technology, appropriate technology, durability	Durability Appropriate technology	Production <i>Durability of product, reparability Preference towards appropriate, simplified technology</i>	Internal Business Operation
permaculture	Permaculture Habitat creation	Non-human life <i>Adopting the value of non-violence towards the environment and non-human life</i>	Material and Energy Throughput and Waste (Environment-related)
financial, time, skills, education, technology-aversion, information availability, convenience, profit making, capitalism, demand, obtaining needed components locally, lack of permanence [attitudes, location, product of other industry participants], inefficient organisation of exchange events			The Other group is replaced by Barriers, the codes which reflect separate useful insights are retained to inform this category due to their importance

Degrowth Business Framework (C1F). The elements and groups are presented in the form of an individual degrowth business framework. Includes data sources from which elements derive.

<p>Material and Energy Throughput and Waste (Environment-related)</p> <p>Energy:</p> <ul style="list-style-type: none"> •Renewable energy sourcing, generation, exporting and use (C1 Documents (4, 5), C1R1 Int.2) •Frugal energy use (C1 Documents (4, 5), C1R1 Int.2) •Localization [working locally] (C1 Documents (4, 5), C1R1 Int. 1) •Transportation - Vehicle share (C1 Document (5)) •Transportation - Low carbon transportation (C1 Document (5)) •Transportation – commuting distance minimization (C1 Document (4)) <p>Material:</p> <ul style="list-style-type: none"> •Pollution prevention [also related to Energy] (C1 Document (5)) •Frugal water use (C1 Documents (4, 5)) •Frugal use of materials [including saving, repurposing, exchange, sharing, reuse, recycling, waste minimization] (C1 Documents (4, 5), C1R1 Int.2) <p>Non-human life:</p> <ul style="list-style-type: none"> •Permaculture [including habitat provision] – plan (C1 Document (4), site visit) 	<p>Internal Business Operation - Governance</p> <p>Finance:</p> <ul style="list-style-type: none"> •Long-term financial strategy (C1R1 Int. 1 and 2) •Ethical banking (C1R1 Int. 1) <p>Environmental performance:</p> <ul style="list-style-type: none"> •Monitoring of environmental performance [review, new ways] (C1 Documents (3, 4, 5)) •Environmental legislation compliance (C1 Document (5)) <p>Marketing:</p> <ul style="list-style-type: none"> •Unorthodox marketing strategy [no traditional advertising, reliance on word-of-mouth, networking] (C1R1 Int. 1 and 2, C1C11 Int.) <p>Principles of management/governance:</p> <ul style="list-style-type: none"> •Long-term orientation (C1R1 Int. 1) •Self-organisation (C1R1 Int. 1) •Democratic decision-making (C1R1 Int. 1) •Lack of hierarchy (C1R1 Int. 1) •Ethics [ethical sourcing, fair pricing, transparency, ethical leader] (C1C11 Int., C1R1 Int. 1., C1 website, C1 Document (5)) <p>Employee Wellbeing</p> <ul style="list-style-type: none"> •Flexibility [working hours] (C1R1 Int. 1) •Accommodating the differences (C1R1 Int. 1) •Mutual respect (C1C11 Int.) •Freedom and creativity (C1R1 Int. 1) •Comfort provision (C1R1 Int. 1) •Supportive atmosphere (C1R1 Int. 1) <p>Production</p> <ul style="list-style-type: none"> •Quality and durability (C1C11 Int., C1 Leaflet) •Expertise (C1C11 Int.) •Environmentally and socially minded sourcing (C1R1 Int. 1 and 2, Document (5)) •Diverse understanding of productivity (C1R1 Int. 1) •Appropriate technology (C1 Leaflet) <p>Growth-related</p> <ul style="list-style-type: none"> •Company growth to “do more good” (C1R1 Int. 1) •Not just for growth (C1R1, personal communication 15/05/2018) •Staying small (C1R1 Int. 1)
<p>Community and Humanity</p> <ul style="list-style-type: none"> •Embeddedness [cooperation, projects, politics] (C1R1 Int. 2) •Meeting environmental needs (C1R1 Int. 2) •Serving community [working locally] (C1 Document (5)) •Knowledge sharing (C1R1 Int. 1 and 2) •Opensource software (C1R1 Int. 1) •Supporting activists (C1R1 Int. 1 and 2) •Consideration of customers’ needs (C1R1 Int. 1 and 2, Document (4); C1R1 personal communication 2018) 	<p>Barriers</p> <ul style="list-style-type: none"> •Financial (C1R1 Int. 2) •Time (C1R1 Int. 2) •Skills (C1R1 Int. 2) •Education (C1R1 Int. 2) •Technology-aversion (C1R1 Int. 2) •Information availability (C1R1 Article (2)) •Convenience (C1R1 Int. 2) •Profit making (C1R1 Int. 2) •Capitalism (C1R1 Int. 2) •Demand (C1R1 Int. 1) •Obtaining needed components locally (C1R1 Int.1) •Lack of permanence [attitudes, location, product of other industry participants] (C1R1, personal communication, spring 2018) •Inefficient organisation of exchange events (C1R1 Int. 2)
<p>Attitudes, Values, Motives</p> <p>Motives:</p> <ul style="list-style-type: none"> •Desire for environmental improvement (C1R1 Int. 1 and 2, Document (5)) •Sustaining one’s family (C1R1 Int. 1) •“Doing the right thing” (C1C11 Int.) •Not-only-for-profit (C1R1, email communication, summer 2018) <p>Attitudes:</p> <ul style="list-style-type: none"> •Awareness of environmental impact (C1R1 Documents (4) and (5)) •Awareness of environmental responsibility (C1R1 Documents (4) and (5)) •Recognizing need for degrowth (C1R1 Int. 1) •Pro-environmental orientation (C1R1 Int. 1 and 2) •Pro-social orientation (C1R1 Int. 2) <p>Values:</p> <ul style="list-style-type: none"> •Fairness (C1R1 Int. 1., C1 website) •Diverse outcomes [success beyond profit] (C1R1 Int. 1) •Honesty (C1R1 Int.2) •Cooperation (C1 Document (5)) •Modesty (C1R1, personal communication, 14/06/18) •Humility (C1R1, personal communication, 14/06/18) •Transparency (C1 Document (5)) •Trust (C1R1 Int. 1) •Creativity and innovation (C1R1 Int. 1) 	

<ul style="list-style-type: none"> •Leading by example (C1 website) •Eco-centric and pro-social values (C1R1, email communication, summer 2018) •Quality and conscientiousness (C1C11 Int.) 	
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C2

C2 Data Sources

Description of data source	Information this source provides
Investigator's notes. Initial face-to-face meeting with R2 took place on 24/04/18 and lasted 4 hours 45 minutes. R2 was introduced to the study and was willing to participate. The following meeting took place on 05/07/18, during this meeting notes were taken, and interview was recorded.	Investigator's notes provide insight into C2's operation and R2's attitudes.
Interview. Interview using interview questions as a guide (additional questions arose during the conversation). The interview took place face-to-face at the Bear café in Derby as a part of the meeting with C2R2 on 05/07/2018. The meeting lasted from 11:00 AM until 15:00 PM. The interview was recorded (audio) with a permission from C2R2.	Interview transcript provides data which relates to specific aspects of degrowth business (see Interview Framework above) from the perspective of C2R2. Investigator's notes provide additional insights from the parts of meeting which were not recorded (where specific situations, e.g. situations related to the respondent's personal circumstances were mentioned).
Personal communications. Personal communications with C2 took place throughout the data collection and analysis stage to clarify/investigate the case in more detail. These took place primarily via face-to-face meetings.	Personal communication provides clarification to questions and leads that arose during the data analysis stage. They supplement other data sources.
Promotional/information materials and documents. An information booklet which describes the [Forestry Initiative] of C2 shared by C2R2, one of the two shareholding directors of C2.	Photographs, press information.
Internal documents – include C2's [Forestry Initiative] mission statement and "Our achievements to date" document.	Mission statement provides information about C2's values, the "Our achievements to date" document provides an insight into completed activities.
Website. C2's website available throughout the data collection phase	Provides insights into the main spheres of activity, company's vision.

C2 Data Analysis

Data	Coding and Themes	Analysis	Analytical Memo
<p>"we used to have more in-house, we used to have more employees, and I changed it" (C2R2 Int.)</p> <p>"They all are small organisations and as it stands in this moment in time, I don't want to change that." (C2R2 Int.)</p> <p>"it makes my blood go cold thinking of having 10-15 engineering vehicles on the road, we've been there, done that and the organisation would need to be different." (C2R2 Int.)</p> <p>"small companies bring creativity, start experimenting with what tomorrow will look like" (C2R2 – notes taken during the meeting on 05/07/18)</p>	<p>Codes:</p> <p>Smallness of business operations</p> <p>Themes:</p> <p>Staying small</p>	<p>"Smallness of business units/operation" was featured in the original framework. Staying small was also mentioned by C1. This does not mean staying the size the company is currently, but rather refers to remaining a small company. These firms do not appear to object to some growth, e.g. growth "to capabilities" in case of C2 or growth "to do more good", yet this should be seen in line with "staying small".</p>	<p>A reason for staying small in case of C1 was primarily the management structure (lack of hierarchy), for C2 it appears to be the director's desire for a match between his vision of what a company should be and the possibility to achieve it considering its size. It also relates to the principles behind growth, which is a "monitored process" (C2R2 Int.) currently when the model C2R2 designed has been implemented. Another aspect implied by both C1R1 and C2R2 is lack of possessiveness over doing good, both directors want to see other companies strive for environmental improvement by doing activities similar/identical to those of C1 and C2. Also see "industry</p>

			transformation” and “cooperation” below.
<p>“I’ve got a 15-year plan” (C2R2 Int.)</p> <p>“Success and continued success are all about understanding what long-term vision is” (C2R2 Int.)</p> <p>“15 years, the timescale I put it to not realising that in business 15 years is lunacy” (C2R2 Int.)</p>	<p>Codes: Long-term plan</p> <p>Themes: Long-term orientation</p>	<p>Long-term orientation was also mentioned by C1.</p>	
<p>“associated with it is the company called [Forestry Company Name], and [Forestry Company Name] works with an organisation I set up called [Community Enterprise]” (C2R2 Int.)</p> <p>“we are also ethically, socially and environmentally driven” (C2 website)</p> <p>“we then created a nursery which has got about 20 – 25 000 saplings” (C2R2 Int.)</p> <p>“An environmental project that allows business to actively play a role in maintaining and developing the Natural Environment. This was established and funded through the actions of [C2]” (C2 website)</p> <p>“this is going to cost money to do this, I need to be able to generate some money, and what are the chances for me to get funding for this? 0.” (C2R2 Int.)</p> <p>“I needed to be able to create a level of sustainability where one thing would pay for the next.” (C2R2 Int.)</p> <p>“the reason why I had to set up C2 first was because it paid for everything else. All that mechanism has been paid for internally, we never need grants or funding.” (C2R2 Int.)</p> <p>“[Forestry Initiative] has been born from our ongoing commitment to reducing our carbon footprint.” (C2 promotional materials from 2012)</p> <p>“From the money that you spend with [Group] we put a large percentage of that back into planting trees” (C2 promotional material from 2012)</p> <p>“To create a direct and tangible link...to achieve environmental improvement and regeneration within the UK from the actions of industry for the good and wellbeing of the nature of and People of the UK.” (Mission Statement from 2012)</p> <p>“All...environmental projects will be undertaken with the improvement of biodiversity as well as the aesthetic value of the land considered as the main focal point.” (C2 Mission Statement from 2012)</p>	<p>Codes: Pro-environmental orientation, pro-social orientation, establishment of pro-environmental initiatives, establishment of pro-social initiatives, financing pro-social and pro-environmental initiatives, importance of wellbeing – nature, importance of wellbeing – human, environmental improvement, internal financing</p> <p>Themes: Pro-social orientation, pro-environmental orientation, establishment and financing of initiatives, eco-centric and anthropocentric values, desire for environmental improvement, internal financing</p>	<p>Both C1 and C2 can be characterised by pro-environmental and pro-social orientation and desire for environmental improvement of these companies, possibly stemming from the values of the owners/directors which both directors appear to have.</p> <p>A new element which arises from the case of C2 is the establishment and financing of pro-environmental and pro-social initiatives (community and forestry) which were financed internally. This relates broadly to “venturing into desirable sectors which serve the needs – not profit motivated”. The forestry initiative is central to C2’s model.</p>	<p>While C2 established the community initiative, it then became a separate entity which currently continues to work closely with C2. Central to C2 business model is the pro-environmental forestry initiative.</p>
<p>“That creates the links with the social element, the council, community” (C2R2 Int.)</p> <p>“will then refurbish it [old furniture] using people from the community who have fallen off the main line, basically, teaching them skills, teaching them all the things that go along with someone in the workplace” (C2 Int.)</p> <p>“[Community Enterprise] is absolutely embedded in the community. And the whole point of the [Community Enterprise] is to allow other businesses to get access to being</p>	<p>Codes: Social element, community link, local government link, embeddedness within community</p> <p>Themes: Embeddedness</p>	<p>Embeddedness within local community is featured in both C1 and C2. While C1 can also be characterised by its embeddedness within the global community (e.g. via knowledge sharing, opensource software), C2 emphasise their orientation towards the UK where it is based.</p>	<p>C2R2 appears to be willing for other firms to adopt a similar model (this is not limited to the UK). However, the company is not actively working with firms/individuals outside of the UK.</p>

<p>embedded within the community by not doing anything, just by doing what they do” (C2R2 Int.)</p>			
<p>“the materials used to build that nursery came from other organisations, it was by-products of their industry” (C2R2 Int.) “they [other firms] donated them by allowing us to go through their skips” (C2R2 Int.) “they [volunteers] helped build the nursery which is all wheelchair accessed and that sort of stuff, often recycled materials” (C2R2 Int.) “soil that we’ve made ourselves using grass cuttings and all sorts of stuff which we collected looking after the local estate” (C2R2 Int.) “The amount of recycling that we do and have done is fantastic.” (C2R2 Int.) “Another example of dealing with waste is large bags which are a packing material for fire extinguishers. Some of those bags become ripped, these are then combined and used as ballast. The ones which are not ripped are rolled up and used for transportation of trees (10 trees in a bag). They can also be given to [the pro-social initiative that came out of C2] and used for transporting products which are made from recycled materials by volunteers.” (Investigator’s notes from meeting with C2R2 on 24/04/18) “and we deliver all our cardboard to them [a neighbouring organisation], weigh it in and they give us a little bit of money. That money is not a huge amount of money” (C2R2 Int.) “Our plastic bags we send to [Community Enterprise], they get their products, they put their stuff in and ship them out, they don’t have to get plastic bags in, you get double use out of plastic bags that the extinguishers get delivered in.” (C2R2 Int.) “By September 2015 we had perfected our strategy for making nutrient rich growing soil for the nursery by mixing and re-cycling green waste collected from the normal maintenance practices of the business estate.” (“Our achievements to date” internal document)</p>	<p>Codes: Waste as resource, using recycled materials</p> <p>Themes: Frugal use of materials [using other firms’ wastes, waste as resource, recycling, repurposing, reusing]</p>	<p>Frugal use of materials was also featured in the case of C1. The case of C2’s relationship with other firms is different to that of C1 because they have established lasting relationship with other firms by using waste as resource from one firm and diverting their cardboard waste to another firm. This is an important feature of C2 according to C2R2 in that it creates a symbiosis in the industry where both parties benefit. C1 also used another firm’s materials (for insulation) but this relationship did not continue. C1 seek for opportunities to cooperate with other firms and participated in exchange events, yet it did not result in finding a matching organisation. C1 cited inefficient organisation of exchange events and lack of permanence in industrial estates as barriers to establishing lasting relationships with other firms. Frugal use of resources was a part of the original framework.</p>	<p>C2 use parts of fire extinguishers for planting tree seeds; the seeds are locally collected rather than purchased.</p>
<p>“by doing business with C2, as a by-product of that, you also get offset carbon, trees in the ground” (C2R2 Int.) “Established the [Forestry Initiative] as an active, no extra cost, contract element for all customers of the companies of [Group]” (“Our achievements to date” internal document) “we’ve got a lot of letters going out today and tomorrow... Each one of those letters says what we are, who we are, what we sell and, incidentally, we’ve got the [Forestry Initiative] and one of the leaflets that goes next to it – look how green we are, do you want a bit of this?” (C2R2 Int.)</p>	<p>Codes: Pro-environmental initiative as a differentiator</p> <p>Themes: Pro-environmental initiative as a differentiator</p>	<p>While C2 rely on word-of-mouth (see below) similarly to C1, they use promotional communications, however apart from offering information about the company, they use their forestry initiative as a “differentiator” (C2R2 Int.) therefore appealing to perceived pro-environmental orientation in other firms. By doing this C2 hope to not only attract customers but grow their forestry initiative.</p>	

<p>“And if there’s no sustainability, what is the next generation going to do?” (C2R2 Int.)</p> <p>“Not because I want to benefit from that, not because I want finance from it, but because someone has to make a stand” (C2R2 Int.)</p> <p>“because for every mile that we went there was a percentage that went into tree credits which would then be aligned with planting trees” (C2R2 Int.)</p> <p>“I want to change things, I want to make things better.” (C2R2 Int.)</p> <p>C2R2 wants to “Turn those [corporates] into environmentalists as a by-product of their actions.” (Investigator’s notes from meeting 17/07/2018)</p> <p>“What we are doing at this moment in time, it does not make sense, there’s no sustainability.” (C2R2 Int.)</p> <p>“It was about stopping whaling, stopping deforestation, creating an environment that we could live in.” (C2R2 Int.)</p> <p>“My position in the fire industry then created a situation where, actually, I can do this and on the side of everything else I can also help protect the environment” (C2R2 Int.)</p>	<p>Codes: Desire for sustainability</p> <p>Themes: Desire for environmental improvement</p>	<p>This was also evident in the case of C1 and the original framework and can be connected with the awareness of environmental impact of human activities which is also evident in both cases.</p>	
<p>“the sustainability of the model is based upon spreading this concept throughout industry so this then becomes the sort of model that is the norm” (C2R2 Int.)</p> <p>“The business started with £4000 in a shed as a way to change the fire industry and create an environmental link.” (Investigator’s notes from meeting with C2R2 on 24/04/18)</p> <p>“I set it up to be the norm” (C2R2 Int.)</p> <p>“R2 sees themselves as a scout who needs to “find a route for the army”, and that is a reason why C2 was established.” (Investigator’s notes from meeting with C2R2 on 24/04/18)</p> <p>“I wanted to create an organisation, a model that would kickstart the second half of the industrial revolution, re-invent what doing business, what it meant.” (C2R2 Int.)</p> <p>“But there are still a lot of companies that just don’t have the expertise and the know-how of how to do it. So, because we are already doing it, and it’s not lunacy anymore.” (C2R2 Int.)</p> <p>“I’ve set this stall out in all sorts of mediums well, this is what we are doing, I’ve never been grabby or selfish about the concept itself” (C2R2 Int.)</p> <p>“To work with and involve at all levels, in a symbiotic partnership involving industry, education and community in order to plant...trees” (C2 Mission Statement from 2012)</p> <p>“Established supplier partnerships which enable us to use their waste materials, which would otherwise be landfilled, for active re-use in the [tree] Nursery.” (“Our achievements to date” internal document)</p> <p>“Working with Parents, Teachers and students, 200 trees were planted...at no cost to the tax payer, the trees being supplied free</p>	<p>Codes: Industry transformation, leading by example, symbiotic partnership, cooperation with community</p> <p>Themes: Industry transformation, leading by example, cooperation [industry, community]</p>	<p>Leading by example and cooperation are a part of C1’s and C2’s principles of operation. In case of C2 cooperation means both symbiotic relationships with other firms where both parties benefit and cooperation for the benefit of the environment and people. C1 in comparison, highlight or engage with symbiosis less and emphasise involvement, embeddedness within the community, such as supporting activists (cooperating with activists on environment-related matters).</p>	<p>“Leading by example” refers to business practice in case of C2, in the previous case of C1 both business and personal practices were prominent.</p> <p>“R2 envisions the Industrial Revolution as a circle of two phases. Phase one is described by R2 as a stage of expansion and environmental exploitation, this is the stage we are currently at. This is a stage where industry spreads, becomes more sophisticated, creating waste and pollution. However, phase two (“tidying up”) is about sustainability (health, education, technology, energy). The society is becoming aware of the effects of the phase 1 via global news, media, film industry.” (Investigator’s notes from meeting with C2R2 on 24/04/18)</p>

of charge” (“Our achievements to date” internal document)			
<p>“grow the organisation on the basis of rather than expanding outside of my capabilities and outside of our capabilities, expand it to our capabilities” (C2R2 Int.)</p> <p>“Growth is very much a monitored process” (C2R2 Int.)</p> <p>“I would suggest that anyone who says that business is about growth and profit is a [censored].”</p>	<p>Codes: Growth to capabilities, growth as monitored process, not-just-for-profit</p> <p>Themes: <u>Conscious growth [with purpose, to capabilities, monitored]</u></p>	<p>While both C1 and C2 are not averse to some growth (yet staying within the size of a small firm), C1 do not identify growth as their primary objective (and the same applies to profits), thus C1 see themselves as not-only-for-profit and not-just-for-growth (where growth is aimed at doing more good). C2 highlight the need for conscious growth (also not profit-orientated), growth to capabilities which is monitored.</p>	<p>Both C1 and C2 highlight that business is not just for profit or growth</p>
<p>“The profits, the money that comes out is a by-product.” (C2R2 Int.)</p> <p>“When asked about profits, R2 stated that “that concept is out of date” and that it is a by-product which takes care of itself when other elements are done correctly (related to quality, satisfying the needs and so on).” (Investigator’s notes from meeting with C2R2 on 24/04/18)</p> <p>“My agenda is not a personal gain, personal greed, that’s not my focal point.” (C2R2 Int.)</p> <p>“look at the model, look at what we trying to achieve, it’s there, it’s true sustainability.” (C2R2 Int.)</p>	<p>Codes: Profit as a by-product</p> <p>Themes: Not-just-for-profit</p>	<p>Even though C2 is legally a for-profit organisation, like C1, both companies highlight the not-just-for-profit orientation. The motive is a desire for environmental change, community wellbeing and co-existence with other species.</p>	
<p>“After those two particular job offers I did think “I am going to have to do something” because [Name] and me had just met, we’d been together for about a year, we were talking about settling down, having a family, getting a house and I needed stability.” (C2R2 Int.)</p>	<p>Codes: Stability</p> <p>Themes: Sustaining one’s family</p>	<p>This element is important to both C1R1 and C2R2, it may, alongside other factors, explain why both set up [legally] for-profit organisations</p>	<p>“Other factors” for being a for-profit company in case of C2 include (1) C2R2’s perception that C2 needs to be for-profit to communicate effectively with other for-profit organisations (see C2R2 Int.) and (2) financing C2’s pro-environmental initiative internally.</p>
<p>“You can’t have people come in and not look after them” (C2R2 Int.)</p> <p>“From the moral point of view, you just look after your fellow man.” (C2R2 Int.)</p> <p>“provision of comfort and hot drinks to the employees.” (Investigator’s notes from meeting with C2R2 on 24/04/18)</p>	<p>Codes: Looking after employees, comfort provision</p> <p>Themes: Employee wellbeing, comfort provision</p>	<p>Employee wellbeing (and orientation towards wellbeing in general as outlined in the original framework) is a part of both C1 and C2. This can incorporate simple activities such as provision of comfort (e.g. hot drinks) to the notion of “looking after” the employees and working as a team (collaborative work in the original framework) – also see below.</p>	
<p>“We try to create a situation in which we are a team” (C2R2 Int.)</p> <p>“I’m just as likely to be out on the tools, working on the side of one of the engineers.” (C2R2 Int.)</p> <p>“I also got installs to do with one of the engineers, I can’t wait! It’s going to be great!” (C2R2 Int.)</p>	<p>Codes: Directors working alongside employees, collaborative work</p> <p>Themes:</p>	<p>In both C1 and C2 directors work alongside other members of staff. In C2 management appears to be more structured (even though C2R2 stated that they aimed at inclusion). Collaborative work is</p>	<p>C1 – 4 directors, 5 FTE, all work independently or collaboratively depending on a task, non-hierarchical C2 – 2 shareholding directors (3 directors), 5 employees, collaborative work, teamwork but more</p>

	Directors as employees, collaborative work	practiced where needed for a certain task in both firms C1 and C2.	structured in terms of decision-making hierarchy (see C2R2 Int.)
<p>“But as long as it’s all honesty, integrity, professionalism...It starts with honesty. Every time. As soon as one party is found not to be honest – game over.” (C2R2 Int.)</p> <p>“Our company has at its heart three basic principles - Honesty, Integrity and Professionalism. It all starts with Honesty.” (C2 website)</p> <p>“Treat people as you expect to get treated yourself.” (C2R2 Int.)</p> <p>“I’m sat at the 50% line, you are sat at the 50% line, therefore I am concerned about you, you are concerned about me, that is how work, any relationship works. As long the percentages are at the 50% line then there’s room to talk, other than that it becomes parasitic.” (C2R2 Int.)</p> <p>“If we weren’t conscientious in the way we do business, you’d fall out with your neighbours. You fall out with your neighbours, you end up with running conflict.” (C2R2 Int.)</p> <p>“treat people as you expect to get treated yourself and that way you will get on and if you get on you help each other and you create a micro community. And if you go to our industrial estate, that’s what we’ve got.” (C2R2 Int.)</p>	<p>Codes: Honesty, reciprocity, conscientiousness, avoiding conflict, industrial estate as community</p> <p>Themes: Honesty, reciprocity/symbiosis conscientiousness, avoiding conflict</p>	Honesty and conscientiousness were mentioned by both C1R1 and C2R2. C2R2, in addition, highlights the value of reciprocity in human interactions and symbiosis in interactions with other firms.	
<p>“We could get them cheap but they wouldn’t be as good.” (C2R2 Int.)</p> <p>“[C2] specialises in offering a full range of Quality Fire Safety related services and products” (C2 website)</p>	<p>Codes: Good quality</p> <p>Themes: Quality</p>	Quality was highlighted in both cases, C1 and C2 and is related to “durability of product” in the original framework. Moreover, C2R2 notes (see “not-just-for-profit” theme above) that quality is important to making profit (a by-product when other elements, including quality, are in place).	Quality was highlighted by both C1 and C2 and can also be important when both companies rely to word-of-mouth “marketing” and repeat business.
<p>“When asked about marketing, C2 rely on the word-of-mouth. R2 considers it to be more powerful than advertising and states that “words are cheap” and people will talk about the company if there is quality and passion.” (Investigator’s notes from meeting with C2R2 on 24/04/18)</p>	<p>Codes: Word-of-mouth</p> <p>Themes: Word-of-mouth</p>	Word-of-mouth was highlighted by both C1 and C2. C2 use information-based marketing communications where the differentiator is their pro-environmental initiative.	
<p>“The organisation we get our extinguishers from are doing an awful lot to make sure, that there’s not only the welfare of their staff but also the environmental side of things, their recycling processes are second to none” (C2R2 Int.)</p>	<p>Codes: Employee welfare in the supply chain, environmental considerations in the supply chain</p> <p>Themes: Environmentally and socially minded sourcing</p>	Environmentally and socially minded sourcing is a part of business operations for both C1 and C2. However, both firms’ directors note lack of information availability.	
<p>“if it doesn’t capture you will end your days impoverished, unfulfilled and bankrupt, but with a clear conscience because you tried to do the right thing, and even if it wasn’t the right thing, you believed it was the right thing” (C2R2 Int.)</p>	<p>Codes: Doing the right thing</p> <p>Themes: Doing the right thing</p>	“Doing the right thing” applies to the directors of both C1 and C2.	C1C1 notes this “[He – C1R1] likes to do things and to follow things because it’s the right thing to do and it interests him.”

<p>“please don’t cut this rainforest down. Where are those orang-utans going to leave when there’s no forest because you want palm oil plantations all over the place?” (C2R2 Int.)</p>	<p>Codes: Awareness of environmental impact</p> <p>Themes: Awareness of environmental impact</p>	<p>This theme is inherent to both C1 and C2.</p>	
<p>“I don’t sell to anybody, I allow people to buy off me. I find out what they need and then I present to them something that fills that category. If they then think that the product that I’ve presented them with is something that they want, then we’ll do business. To do other than that puts an emphasis on skulduggery, on trickery...” (C2R2 Int.)</p> <p>“All of the negatives that come out of business, commerce, salesmanship, all revolve around practices that are not sustainable and I have no intention to put my name to that...” (C2R2 Int.)</p>	<p>Codes: Consideration of customer needs, satisfying customer needs, sustainable business practices</p> <p>Themes: Honesty and simplicity in business operations, consideration of customers’ needs</p>	<p>The value of honesty is prominent in both C1 and C2 and is mentioned in interviews as well as personal communications with C1R1 and C2R2 throughout the data collection stage.</p> <p>Consideration of customers’ needs is important to both C1 and C2.</p>	
<p>“Throughout 2015 we developed our [Estate Project]. Tying the spare land on the [Business Estate] into a flourishing tree nursery and wildlife habitat. Our intention being to demonstrate that even on a working industrial estate, business and wildlife...can exist together.” (“Our achievements to date” internal document)</p>	<p>Codes: Wildlife habitat</p> <p>Themes: Habitat creation/provision</p>	<p>Habitat creation/provision was mentioned by both C1 and C2. This can relate to the directors’ values as well as their expertise. One of the directors of C1 has expertise in permaculture (C1R1 interviews and personal communications, 2018) while C2’s director was trained as an environmental biologist.</p>	<p>This relates to “adopting the value of non-violence towards...non-human life” in the original framework.</p>
<p>C2R2 stated that by engaging in projects with schools they are able to share their knowledge with schoolchildren regarding growing trees (Investigator’s notes from meeting 17/07/2018)</p>	<p>Codes: Knowledge sharing</p> <p>Themes: Knowledge sharing</p>	<p>Knowledge sharing is also a part of C1’s framework.</p>	<p>This theme runs across businesses similar to C1 and C2.</p>
<p>“they just don’t believe me” (C2R2 Int.)</p> <p>“There’s been multiple occasions where people just think I’m a liar because I’m saying: “we are doing this”” (C2R2 Int.)</p> <p>“they still don’t believe what I’m doing” (C2R2 Int.)</p> <p>“in setting something up like this, there’s no infrastructure.” (C2R2 Int.)</p> <p>“What are the chances of me getting some understanding from an organisation?” (C2R2 Int.)</p> <p>“One of the main barriers is – will people believe us?” (C2R2 Int.)</p> <p>“You get some people which are dishonest, some people who are liars, some people who are disillusioned, some people are just incapable. Some people who talk the talk but can’t walk the walk. Very few people. There are clichés like that, you have to kiss a lot of frogs before you meet the prince” (C2R2 Int.)</p> <p>“There are certain organisations that we know more about than others and that’s normally because there’s lack of information” (C2R2 Int.)</p> <p>“he’s [the landlord] trying to get funding [for solar panels] because we don’t own the</p>	<p>Codes: Disbelief Lack of understanding Infrastructure Lack of like-minded individuals Information availability Lack of unit ownership</p> <p>Themes: Information availability Lack of infrastructure Disbelief [scepticism, lack of understanding] Lack of unit ownership</p>	<p>While information availability was highlighted by C1R1 as well as by C2R2 and lack of infrastructure was mentioned by both (e.g. inefficient organisation of exchange events in case of C1), a prominent barrier noted by C2R2 which was featured throughout the interview and in personal communications is disbelief and related to it scepticism towards alternative business models demonstrated by individuals (e.g. employees) and organisations.</p>	<p>Information availability was mentioned by both C1 and C2</p> <p>Important barrier: [towards alternative business models]</p>

buildings. Wind power...we can't erect wind turbines or something like that." (C2R2 Int.)			
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Framework Construction

*When an element was featured previously in the case of C1, "Replication" is noted.

Codes	Themes	Elements	Groups
Smallness of business operations	Staying small	Replication Growth-related <i>Smallness of business operation</i> <i>Consideration of other business models</i>	Internal Business Operation
Long-term plan	Long-term orientation	Replication: Principles of management/governance	Internal Business Operation
Pro-environmental orientation, pro-social orientation, establishment of pro-environmental initiatives, establishment of pro-social initiatives, financing pro-social and pro-environmental initiatives, importance of wellbeing – nature, importance of wellbeing – human, environmental improvement, internal financing	Pro-social orientation, pro-environmental orientation, establishment and financing of initiatives, eco-centric and anthropocentric values, desire for environmental improvement, internal financing	Growth-related: Establishing and financing of initiatives [pro-environmental, pro-social] Finance – internal financing Replication: Motives, Attitudes Values <i>Desire for social and environmental change</i>	Internal Business Operations Attitudes, Values, Motives
Social element, community link, local government link, embeddedness within community	Embeddedness [within community]	Replication: Embeddedness [cooperation, projects] <i>Embeddedness within community</i>	Community and Humanity
Waste as resource, using recycled materials	Frugal use of materials [using other firms' wastes, waste as resource, recycling, repurposing, reusing]	Frugal use of materials - Waste as resource Replication: Material - Frugal use of materials [including saving, repurposing, exchange, sharing, reuse, recycling, waste minimization] <i>Frugal use of resources</i> <i>Throughput minimization</i>	Material and Energy Throughput and Waste (Environment-related)
Pro-environmental initiative as a differentiator	Pro-environmental initiative as a differentiator	Internal Business Operations - Marketing	Internal Business Operations
Desire for sustainability	Desire for environmental improvement	Replication: Desire for environmental improvement <i>Desire for social and environmental change</i>	Attitudes, Values, Motives
Industry transformation, leading by example, symbiotic partnership, cooperation with community	Industry transformation, leading by example, cooperation [industry, community]	Industry transformation Replication: Values – Leading by example Embeddedness [cooperation] <i>Desire for social and environmental change</i>	Attitudes, Values, Motives Community and Humanity

Growth to capabilities, growth as monitored process, not-just-for-profit	Conscious growth [with purpose, to capabilities, monitored]	Growth-related – conscious growth [with purpose, to capabilities, monitored]	Internal Business Operations
Profit as a by-product	Not-just-for-profit	Not-just-for-profit <i>Motives other than profit, redefining the meaning of business success</i>	Attitudes, Values, Motives
Stability	Sustaining one's family	Replication: Motives: sustaining one's family <i>Redefining the meaning of economic activities</i>	Attitudes, Values, Motives
Looking after employees, comfort provision	Employee wellbeing, comfort provision	Replication: Employee wellbeing - comfort provision <i>Orientation towards wellbeing</i>	Internal Business Operation
Directors working alongside employees, collaborative work	Directors as employees, collaborative work	Principles of management/governance – collaborative work, directors as employees <i>Production – collaborative work</i>	Internal Business Operation
Honesty, reciprocity, conscientiousness, avoiding conflict, industrial estate as community	Honesty, reciprocity/symbiosis conscientiousness, avoiding conflict	Values - Reciprocity/mutual benefit, conflict avoidance Production - symbiosis Replication: Values – honesty, conscientiousness <i>Redefining the meaning of economic activities</i>	Attitudes, Values, Motives Internal Business Operation
Good quality	Quality	Replication: Production – Quality <i>Durability of product</i>	Internal Business Operation
Word-of-mouth	Word-of-mouth	Replication: Marketing <i>Restriction on advertising</i>	Internal Business Operation
Employee welfare in the supply chain, environmental considerations in the supply chain	Environmentally and socially minded sourcing	Replication: Production – environmentally and socially minded sourcing <i>Redefining the meaning of economic activities</i>	Internal Business Operation
Doing the right thing	Doing the right thing	Replication: Motives	Attitudes, Values, Motives
Awareness of environmental impact	Awareness of environmental impact	Replication: Attitudes <i>Redefining the meaning of economic activity</i>	Attitudes, Values, Motives
Consideration of customer needs, satisfying customer needs, sustainable business practices	Honesty and simplicity in business operations, consideration of customers' needs	Simplicity Replication: Values – Honesty Community and Humanity – Consideration of customers' needs	Attitudes, Values, Motives Community and Humanity

		<i>Serving the needs of society Simplicity and autonomy of operation</i>	
Wildlife habitat	Habitat creation/provision	Replication: Non-human life [including habitat provision] <i>Adopting the value of non-violence towards...non-human life</i>	Material and Energy Throughput and Waste (Environment-related)
Knowledge sharing	Knowledge sharing	Knowledge sharing <i>Embeddedness within community Desire for social and environmental change</i>	Community and Humanity
Disbelief, lack of understanding, infrastructure, lack of like-minded individuals, information availability, lack of unit ownership	Information availability, lack of infrastructure, disbelief [scepticism, lack of understanding], lack of unit ownership	Disbelief [scepticism, lack of understanding] Lack of unit ownership Replication: Information availability, lack of infrastructure	Barriers

Degrowth Business Framework (C2F). The elements and groups are presented in the form of an individual degrowth business framework. Includes data sources from which elements derive.

<p>Material and Energy Throughput and Waste, and Habitat (Environment-related) Material: •Frugal use of materials [using other firms' wastes, waste as resource, recycling, repurposing, reusing] (C2R2 Int., Investigator's notes from meeting with C2R2 on 24/04/18) Non-human life: •Habitat creation/provision ("Our achievements to date" internal document)</p>	<p>Internal Business Operation - Governance Finance: •Internal financing [of pro-environmental and pro-social initiatives] (C2 website, C2R2 Int.) Marketing: •Word-of-mouth (Investigator's notes from meeting with C2R2 on 24/04/18) •Pro-environmental initiative as a differentiator ("Our achievements to date" internal document, C2R2 Int.) Principles of management/governance: •Long-term orientation (C2R2 Int.) •Directors as employees (C2R2 Int.) •Collaborative work (C2R2 Int.) Employee Wellbeing •Comfort provision (Investigator's notes from meeting with C2R2 on 24/04/18) Production •Environmentally and socially minded sourcing (C2R2 Int.) •Quality (C2R2 Int., C2 website) •Symbiosis (C2R2 Int., Mission Statement from 2012) Growth-related •Conscious growth [with purpose, to capabilities, monitored] (C2R2 Int.) •Establishing and financing of initiatives [pro-environmental, pro-social] (C2R2 Int., C2 promotional materials from 2012, C2 website) •Staying small (C2R2 Int.)</p>
<p>Community and Humanity •Embeddedness [cooperation, projects] (C2R2 Int.) •Consideration of customers' needs (C2R2 Int.) •Cooperation [industry, community] (C2R2 Int., C2 Mission Statement from 2012, "Our achievements to date" internal document) •Knowledge sharing (Investigator's notes from meeting 17/07/2018)</p>	
<p>Attitudes, Values, Motives Motives: •Desire for environmental improvement (Mission Statement from 2012, C2 promotional materials from 2012, C2R2 Int.) •Sustaining one's family (C2R2 Int.) •"Doing the right thing" (C2R2 Int.) •Not-just-for-profit (C2R2 Int., Investigator's notes from meeting with C2R2 on 24/04/18) •Industry transformation (Investigator's notes from meeting with C2R2 on 24/04/18, C2R2 Int.)</p>	<p>Barriers •Disbelief [scepticism, lack of understanding] (C2R2 Int.) •Information availability (C2R2 Int.) •Lack of infrastructure (C2R2 Int.) •Lack of unit ownership (C2R2 Int.)</p>

<p>Attitudes:</p> <ul style="list-style-type: none"> •Awareness of environmental impact (C2R2 Int.) •Pro-environmental orientation (C2R2 Int., C2 website, C2 promotional materials from 2012, Mission Statement from 2012) •Pro-social orientation (C2R2 Int., C2 website) <p>Values:</p> <ul style="list-style-type: none"> •Honesty (C2R2 Int., C2 website) •Simplicity (C2R2 Int.) •Conscientiousness (C2R2 Int.) •Reciprocity, mutual benefit (C2R2 Int.) •Conflict avoidance (C2R2 Int.) •Leading by example (C2R2 Int., Investigator’s notes from meeting with C2R2 on 24/04/18) •Cooperation (C2R2 Int., C2 Mission Statement from 2012) •Eco-centric and pro-social values (C2R2 Int., C2 website, Mission Statement from 2012) 	
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C3

C3 Data Sources

Description of data source	Information this source provides
<p>Investigator’s notes. Initial telephone conversation with R3 took place on 01/08/18 and lasted approximately 25 minutes. R3 was introduced to the study and was willing to participate. The interview was scheduled for the following week and workshop visit was offered to the principal investigator.</p> <p>Recruitment of this participant was done via email by obtaining their contact details from an independent database of small sustainable companies and contacting them via email on 31/07/2018; R3 responded on 01/07/2018 and was willing to participate.</p>	Investigator’s notes from the telephone conversation provide brief initial insight into C3’s operation and R3’s attitudes.
<p>Websites. C3’s websites were available throughout the data collection phase. C3 operates 5 separate websites each dedicated to a particular strand of C3’s activity.</p>	Provide insights into the main spheres of activity, company’s vision, photographs (visual representation of C3’s activity), customer feedback.
<p>Social media pages. Unlike previous cases, C3 use social media.</p>	Customer feedback, C3’s day-to-day activities. Social media pages are supplementary to main data collection techniques.
<p>Interview. Interview using interview questions as a guide (additional questions arose during the conversation). The interview took place over the phone as a part of a conversation with C3R3 on 07/08/2018. The conversation started at 10 AM and lasted approximately 50 minutes. The interview was recorded (audio) with a permission from C3R3.</p>	Interview transcript provides data which relates to specific aspects of degrowth business (see Interview Framework above) from the perspective of C3R3.
<p>Site visit. During the phone conversation on 07/08/2018 C3R3 invited the author to visit the workshop. The visit took place on 21/08/2018 and lasted from 10:30 AM until approximately 15:00 PM. During this time notes were taken (document- Investigator’s notes from the site visit on 21/08/2018).</p>	Workshop visit is a source of observation and supplements the other data sources described in this table. It also allows the author to ask additional questions that emerged throughout data analysis.

C3 Data Analysis

Data	Coding and Themes	Analysis	Analytical Memo
<p>“It [business orientation] is mainly environmental, because I want people to use natural dyes rather than chemical dyes.” (C3R3 Int.)</p>	<p>Codes: Environmental orientation, desire for industry transformation</p> <p>Themes: Pro-environmental orientation, desire for industry transformation</p>	<p>Pro-environmental orientation is also evident in C1 and C2. Desire for industry change/transformation also arises in C2.</p>	<p>The pro-environmental orientation is primary among the environment, society, profit triad, however, as is evident below, the main motive is C3R3’s passion for the product.</p>

<p>“wherever possible we try to buy directly from the farmers or from small businesses.” (C3R3 Int.)</p> <p>“it’s [supporting entrepreneurs with advice] another way that I help the society.” (C3R3 Int.)</p>	<p>Codes: Sourcing from farmers and small business, supporting entrepreneurs</p> <p>Themes: <u>Sourcing from small businesses</u>, <u>land farmers,</u> <u>supporting entrepreneurs,</u> <u>pro-social orientation</u></p>	<p>C3R3 highlights the pro-environmental orientation, however pro-social orientation is also evident via an attempt to source from small firms and farmers as well as to engage in knowledge sharing activities. C1 and C2 also highlight pro-social orientation.</p>	<p>While C3 try to source from small firms and farmers, lack of information (and impossibility to travel to the locations of their suppliers) are barriers.</p>
<p>“My business exists because I have passion for the subject” (C3R3 Int.)</p> <p>“I really, really enjoy what I’m doing. It was my hobby before, that we keep going.” (C3R3 Int.)</p> <p>“I wouldn’t have it any other way because every day I enjoy it.” (C3R3 Int.)</p> <p>“Because I don’t find the other ones [synthetic alternatives] very exciting, so I wouldn’t be motivated to do research, I wouldn’t be motivated to write on the website, there would be no passion. Without passion there isn’t a business.” (C3R3 Int.)</p> <p>“The business started with £300 and a single dye, as a solution to a particular issue C3R3 identified, not as a means to achieve a certain financial goal for business owner.” (Investigator’s notes from phone conversation 01/08/2018)</p> <p>“I would say that 80% of the reason is because I get excited about the products, then 20% is because they are good for the environment.” (C3R3 Int.)</p>	<p>Codes: Passion for product, internal financing</p> <p>Themes: <u>Passion for product as a motive,</u> <u>Internal financing</u></p>	<p>This corresponds to the broad element of the original framework “Motives other than profit” as well as “Redefining the meaning of economic activities.”</p> <p>While C1 and C2 highlight desire for environmental improvement (and industry transformation in case of C2) as their motives, passion for product is important for C3.</p> <p>Both C2 and C3 used their own funds to start the business</p>	<p>C3R3 did not want to use conventional mass-produced synthetic colours and decided to find an alternative which was a plant that grew in C3R3’s allotment (C3’s website, accessed 01/08/2018)</p>
<p>“to keep my passion going I need a source of income, so we need to make some profit to cover the costs of renting the premises, of keeping the website going, then we have to eat.” (C3R3 Int.)</p> <p>“A lot of the money goes into allowing me time to do more research.” (C3R3 Int.)</p>	<p>Codes: Not-only-for-profit, sustaining oneself, profit as a means to acquire time</p> <p>Themes: <u>Not-only-for-profit, sustaining oneself, profit as a means to acquire time</u></p>	<p>While profit is not the main motive, as it is the case with C1 and C2, C3R3 highlights the need to make a profit to pay the business expenses and sustain oneself.</p>	
<p>“I make enough money, I am not rich, but we make enough to live a decent life. I want more time, not more money. And by growing the business I will have even less time.” (C3R3 Int.)</p> <p>“C3’s employee (who considers herself a part of a “gig economy”, she works for C3, but also runs her own business) asked me about businesses and growth and whether businesses had to grow to be successful. She mentioned she did not want to employ more people (which was the only way for her to grow her business) because she was content with the size of her business. C3R3 who was participating in our discussion noted the same (re size sufficiency).” (Investigator’s notes from site visit on 21/08/2018)</p>	<p>Codes: Sufficiency, valuing time [more time over more money], smallness of business operation</p> <p>Themes: <u>Sufficiency,</u> <u>valuing time [more time over more money],</u> <u>smallness of business operation</u></p>	<p>This corresponds to redefining the meaning of economic success in F1.</p> <p>Smallness of business operation is a part of F1 and the business practice and preference of C1 and C2.</p>	

<p>“C3R3 spends much time daily answering emails and customer questions, not because she expects them to buy more but because she wants to share the knowledge and help.” (Investigator’s notes from phone conversation 01/08/2018)</p> <p>“All knowledge is publicly available, C3R3 is willing to share all the knowledge with others, the only secret they have is their supplier.” (Investigator’s notes from phone conversation 01/08/2018)</p> <p>“I don’t make any distinction from where they come from. [on knowledge sharing] (C3R3 Int.)</p> <p>“sharing the knowledge is the main objective” (C3R3 Int.)</p> <p>“I do about 12 talks a year.” (C3R3 Int.)</p> <p>“I would like to give talks to universities, but they don’t have the funding to pay for the speakers. I would love to speak more to younger people.... Universities would like me to give talks to the students for free, but I can’t afford to do that.” (C3R3 Int.)</p>	<p>Codes: Sharing knowledge, money as a barrier</p> <p>Themes: Knowledge sharing [as a practice, as business objective], [locally and globally]</p> <p>Barrier: money</p>	<p>The theme of knowledge sharing runs throughout all cases investigated to date (C1, C2 and C3). C3’s customers (customer feedback obtained from C3’s website) appear to value the knowledge sharing aspect of C3’s operation: “very interesting”, “we can feel your heart in it”, “fascinating and useful”, “informative”.</p>	<p>The theme of knowledge sharing runs throughout C3’s websites where multiple technical, historical and educational details related to C3’s operations are shared and explained. Knowledge sharing in C3 takes multiple forms: articles, links, workshops, talks, book recommendations, FAQs, personal emails, interviews, TV shows, exhibitions</p>
<p>“We only produce what people need.” (C3R3 Int.)</p>	<p>Codes: Serving the needs</p> <p>Themes: Consideration of customers’ needs</p>	<p>C1, C2 and C3 emphasise serving the needs of their customers as opposed to overselling or creating demand.</p>	
<p>“There is a saying that I always keep in my mind: “The more you advertise it, the less there is a need for it.” So, we don’t advertise anywhere anymore. We don’t try to push anything, because we don’t have to. We have enough sales. If somebody says: “I’m buying this” I never say: “Why don’t you buy this, that and the other?” Amazon website says: “customers who bought this also bought this.” We don’t do that either.” (C3R3 Int.)</p> <p>“C3R3 stated that the company use SEO (in-house)” (Investigator’s notes from phone conversation 01/08/2018)</p>	<p>Codes: Lack of advertising</p> <p>Themes: Absence of advertising</p>	<p>C3 use SEO, however, they avoid other types of marketing. The websites are used for knowledge sharing. C3’s marketing activities are unorthodox as it is the case with C1.</p>	
<p>“There is no way I could do that because we are in an office in a big building, we couldn’t put solar panels or do anything like that.” (C3R3 Int.)</p> <p>“C3R3 also noted the rent going up for the studios that she rents.” (Investigator’s notes from site visit on 21/08/2018)</p>	<p>Barrier: lack of unit ownership</p>	<p>C3 do not use renewable energy (though they do use renewable materials in production) for the reason also mentioned by C2, which is lack of unit ownership.</p> <p>Another side of this barrier noted by C3R3 is increasing rent, which also makes the studios unaffordable for many [artists and small firms].</p>	
<p>“There is one problem that I have regarding the environment. We use an awful lot of packing, you know, those mail lite bags, we would really like to go plastic free on our packaging. We tried things that don’t have plastic, and in our post, they just fall apart. That is something I really dislike about my business, is the amount of waste that we create, but I don’t see an alternative to that.” (C3R3 Int.)</p>	<p>Barrier: lack of alternatives [to plastic packaging]</p> <p>Barrier: lack of suitable infrastructure [freight, postage]</p>	<p>External barriers, which reflects the state of the industry.</p>	

<p>“there is freight, but we can only use the Post Office. There isn’t an environmentally good freight company.” (C3R3 Int.)</p> <p>“lack of post offices is a big deterrent to us using public transport” (C3R3 Int.)</p> <p>“[C3R3] demonstrated the plastic packaging they use which C3R3 would like to change, however there are no alternatives.” (Investigator’s notes from site visit on 21/08/2018)</p>			
<p>“They “struggle” because they don’t want to grow and are looking for ways not to grow with expanding demand and customer base. They want to remain small (the size they are now) because they have found a good balance.” (Investigator’s notes from phone conversation 01/08/2018)</p> <p>“that [growth] is my main problem at the moment” (C3R3 Int.)</p> <p>“by growing the business, I will have even less time.” (C3R3 Int.)</p> <p>“I don’t want to employ and manage more staff and rent bigger premises.” (C3R3 Int.)</p>	<p>Codes: Undesirability of growth</p> <p>Themes: Undesirability of growth</p> <p>Barrier: demand growth</p>	<p>Staying small as a theme runs throughout all cases investigated to date (C1, C2 and C3), however while C1 and C2 are open to business growth (while staying small), C3 finds growth undesirable. This corresponds to the element in F1: “adoption of non-growth or lifestyle mode of business.” The barrier is, therefore, demand growth. Growth deprives the owners of time and means employing more people and renting bigger premises which are undesirable in the case of C3.</p>	
<p>“Natural dyes are a renewable resource and not dependent on petroleum as are many synthetic dyes.” (C3’s website accessed 02/08/2018)</p>	<p>Codes: Renewable materials use</p> <p>Themes: Renewable material use</p>	<p>Using renewable materials corresponds to the general frugality in use of available raw resource (see F1). It also related to pollution prevention (also an element of F1). Frugality of resource and energy use manifests in multiple ways and is evident in C1 and C2.</p>	
<p>“My husband and I discuss everything” (C3R3 Int.)</p> <p>“And my husband is also involved in decision-making. Me and my husband.” (C3R3 Int.)</p>	<p>Codes: Cooperative decision-making</p> <p>Themes: Cooperative decision-making</p>	<p>C3R3 runs C3 with her husband. While democratic decision-making applied to C1, in case of C3 cooperation appear to be a more appropriate descriptor.</p>	
<p>“plant dyes use no toxic or polluting chemicals, and the organic matter left over from dye plants can be put on the compost.” (C3’s website accessed 02/08/2018)</p> <p>“Only [waste] the packet. What we sell can be composted, the papers that we sell, they can be composted.” (C3R3 Int.)</p>	<p>Codes: Avoidance of polluting chemicals, using compostable materials, waste avoidance</p> <p>Themes: Avoidance of polluting substances, pollution prevention, compostable material use, desire for industry change, desire for environmental improvement, waste avoidance</p>	<p>These themes correspond to the following elements of F1: Pollution prevention and Desire for industry change and environmental improvement</p> <p>Frugality in use of materials is evident in C1, C2 and C3. Due to unique nature of C3’s products, they are able to avoid waste which could otherwise contribute to pollution.</p>	

<p>“We purposefully rent a place that is not too far from the house.” (C3R3 Int.)</p>	<p>Codes: Commuting distance minimisation</p> <p>Themes: Commuting distance minimisation</p>	<p>This theme corresponds to “pro-environmental workplace behaviour and travel modes” in F1 and C1’s commuting distance minimisation. C3 and C1 considered distance when selecting their workshop/industrial units.</p>	
<p>“The result is a unique [product] that will be treasured for a long time to come.” (C3’s website 2 accessed 02/08/2018) “Each [product] is then finished with traditional pigments..., followed by several coats of beeswax. No acrylic or other modern synthetic paints are used to colour them.” (C3’s website 2 accessed 02/08/2018) “Quality and durability [are important].” (C3R3 Int.)</p>	<p>Codes: Preference towards natural materials, durability, quality</p> <p>Themes: Preference towards renewable, natural materials, durability, quality</p>	<p>Quality is highlighted by C1 and C2. Durability of product is an element in the F1. Quality. C3’s customers appear to value C3’s quality of product (e.g. “I’ve been really impressed with your service and the quality of the materials and information on the website” – customer feedback obtained from C3’s website).</p>	<p>C3 website 1 is dedicated to natural dyes C3 website 2 is dedicated to sculpture</p>
<p>“I haven’t gone for increased production, high profits, because I think I would never be happy doing that.” (C3R3 Int.)</p>	<p>Codes: Happiness</p> <p>Themes: Happiness in the process of production</p>	<p>This theme corresponds to the following elements in F1: “redefining the meaning of economic activities”, “seeking alternatives to productivism”</p>	
<p>“Even people that I know for 14 years, they hardly ever say good morning. We try, but it doesn’t happen. We have an allotment as well, it’s so different. Everybody talks, everybody says good morning and hello.” (C3R3 Int.)</p>	<p>Codes: Neighbourliness</p> <p>Themes: Neighbourliness</p>	<p>While C2 highlight symbiosis or mutually beneficial relationship between firms, C3 emphasise the desire for neighbourliness.</p>	
<p>“C3’s website was constructed in-house by C3R3’s husband who is a biologist, but he taught himself to construct a website.” (Investigator’s notes from site visit on 21/08/2018)</p>	<p>Codes: Autodidacticism</p> <p>Themes: Autodidacticism</p>	<p>Instead of outsourcing the online aspect of C3’s operation, C3R3’s husband who runs C3 with her made a decision to educate himself on website construction and SEO.</p>	
<p>“It is very difficult to know, because I don’t travel to the places that produce the dyes, it is not economically viable for me to go to India, and El Salvador and other places. I can’t really look into that. Even my suppliers in the UK, I don’t visit them. The ones abroad, they do send me photos of their farms, and it’s not really a factory, they don’t come from factories, so I doubt there is any problem, but I cannot be sure.” (C3R3 Int.)</p>	<p>Barrier: information availability</p>	<p>This barrier is highlighted by C1 and C2.</p>	
<p>“C3R3 notes some barriers: public attitudes and expectations. She explained that a dress would cost £3000 if it was to be produced from a locally grown linen, which then would need to be spun and weaved and made into a dress.” (Investigator’s notes from site visit on 21/08/2018) “C3R3 stated that she was not selling the items she was making (e.g. scarves) because they would be too expensive for the public that have particular expectations regarding prices for clothing. The scarves were made from pure silk which was then hand spun and the scarf was then woven. She would,</p>	<p>Barrier: public attitudes Barrier: public expectations</p>	<p>C3 site visit took place after C4 data collection, however, public expectations as a barrier were also noted by C4R4.</p>	

however, gift those scarves.” (Investigator’s notes from site visit on 21/08/2018)			
<p>“C3R3 finds exhibitions too commercial.” (Investigator’s notes from site visit on 21/08/2018)</p> <p>“[C3R3] did not want to sell...clothing items that she made via boutiques because of the 50% mark-up one would expect from a boutique.” (Investigator’s notes from site visit on 21/08/2018)</p>	Barrier: commercialisation of craft	Commercialisation of craft also occurs via becoming a boutique supplier.	Further explanation: C3R3 produces clothing from natural and hand-made (by C3R3) fibres dyed using the natural dyes which are the main products C3 trades. C3 avoid participating in exhibitions which could expose their product to a broader audience because of commercialisation of craft and cost of participation. Another option is selling clothing items to a boutique which could introduce a further mark-up.

Framework Construction

*When an element was featured previously in the cases of C1 and C2, “Replication” is noted.

Codes	Themes	Elements	Groups
Environmental orientation, desire for industry transformation	Pro-environmental orientation Desire for industry transformation	<p>Replication: Motives, Attitudes Values [pro-environmental orientation; desire for industry transformation]</p> <p><i>Desire for social and environmental change</i></p>	Attitudes, Values, Motives
Sourcing from farmers and small business, supporting entrepreneurs	Sourcing from small businesses [and farmers] Supporting entrepreneurs Pro-social orientation	<p>Production [sourcing from small firms and farmers] Embeddedness within community [Supporting entrepreneurs]</p> <p>Replication: Motives, Attitudes Values [pro-social orientation]</p> <p><i>Desire for social and environmental change Embeddedness within community</i></p>	Internal Business Operation Motives, Attitudes, Values Wider Society
Passion for product	Passion for product Internal financing	<p>Motive [passion for product]</p> <p>Replication: Internal financing</p> <p><i>Motives other than profit Redefining the meaning of economic activities</i></p>	Attitudes, Values, Motives Internal Business Operation
Not-only-for-profit, sustaining oneself, profit as a means to acquire time	Not-only-for-profit, sustaining oneself, profit as a means to acquire time	<p>Motive [Profit as a means to acquire time]</p> <p>Replication: Attitudes, Values, Motives [Not-only-for-profit, sustaining oneself]</p> <p><i>Motives other than profit Redefining the meaning of economic activities</i></p>	Attitudes, Values, Motives

Sufficiency, valuing time [more time over more money], smallness of business operation	Sufficiency, valuing time [more time over more money], smallness of business operation	Values [Sufficiency, time over money] Replication: Staying small <i>Smallness of business operation</i> <i>Consideration of other business models</i>	Attitudes, Values, Motives Internal Business Operation [Growth-related]
Sharing knowledge	Knowledge sharing [as a practice, as business objective], [locally and globally]	Motives [Knowledge sharing] Replication: Community and Humanity [Knowledge sharing] <i>Embeddedness within community</i> <i>Desire for social and environmental change</i>	Attitudes, Values, Motives Community and Humanity
Serving the needs	Consideration of customers' needs	Replication: Community and Humanity – Consideration of customers' needs <i>Serving the needs of society</i>	Community and Humanity
Lack of advertising	Absence of advertising	Replication: Marketing [Unorthodox marketing] <i>Restriction on advertising</i>	Internal Business Operation
Undesirability of growth	Undesirability of growth	Growth-related Replication: Staying small <i>Adoption of non-growth or lifestyle mode of business</i>	Internal Business Operation
Renewable materials use	Renewable material use	Renewable material use <i>Frugal use of resources</i>	Material and Energy Throughput and Waste (Environment-Related)
Cooperative decision-making	Cooperative decision-making	Principles of management	Internal Business Operation
Avoidance of polluting chemicals, using compostable materials, waste avoidance	Avoidance of polluting substances, pollution prevention, compostable material use, desire for industry change, desire for environmental improvement, waste avoidance	Pollution prevention [avoidance of polluting substances; compostable material use], waste avoidance/minimisation Replication: Motives: Desire for environmental improvement, Industry transformation Material: waste minimisation <i>Preventing waste and pollution</i> <i>Desire for social and environmental change</i>	Material and Energy Throughput and Waste (Environment-related) Attitudes, Values, Motives
Commuting distance minimisation	Commuting distance minimisation	Replication: Transportation - Commuting distance minimisation <i>Pro-environmental workplace behaviour and travel modes</i>	Material and Energy Throughput and Waste (Environment-related)

Preference towards natural materials, durability, quality	Preference towards renewable, natural materials Durability, quality	Production [Preference towards renewable, natural materials] Replication: Durability, quality <i>Durability of product</i>	Internal Business Operation Attitudes, Values, Motives
Happiness	Happiness in the process of production	Production <i>Redefining the meaning of economic activities, seeking alternatives to productivism</i>	
Neighbourliness	Neighbourliness	Values	Attitudes, Values, Motives
Autodidacticism	Autodidacticism	Production [Autodidacticism]	Internal Business Operation
Money as a barrier Lack of unit ownership Lack of alternatives [to plastic packaging] Lack of suitable infrastructure [freight, postage] Demand growth Information availability Public attitudes Public expectations Commercialisation of craft	Money Lack of unit ownership Lack of alternatives [packaging] Demand growth Information availability Public attitudes Public expectations Commercialisation of craft	Financial - [Replication C1] Lack of unit ownership - Replication [C2] Lack of alternatives [packaging] Lack of suitable infrastructure [freight, postage] – Replication [C2] Demand growth [barrier to size maintenance] – opposite of Demand [C1] where lack of demand is a barrier Information availability – Replication [C1, C2] Public attitudes Public expectations Commercialisation of craft	Barriers

Degrowth Business Framework (C3F). The elements and groups are presented in the form of an individual degrowth business framework. Includes data sources from which elements derive.

<p>Material and Energy Throughput and Waste, and Habitat (Environment-related)</p> <p>Energy:</p> <ul style="list-style-type: none"> •Transportation - Commuting distance minimisation (C3R3 Int.) <p>Material:</p> <ul style="list-style-type: none"> •Pollution prevention [avoidance of polluting substances; compostable material use] (C3R3 Int., C3 website) •Waste avoidance/minimisation (C3R3 Int., C3 website) •Renewable material use (C3 website) 	<p>Internal Business Operation - Governance</p> <p>Finance:</p> <ul style="list-style-type: none"> •Internal financing (Investigator's notes from phone conversation 01/08/2018) <p>Marketing:</p> <ul style="list-style-type: none"> •Unorthodox marketing [absence of advertising] (C3R3 Int.) <p>Principles of management/governance:</p> <ul style="list-style-type: none"> •Cooperative decision-making (C3R3 Int.) <p>Production</p> <ul style="list-style-type: none"> •Sourcing from small firms and farmers (C3R3 Int.) •Preference towards renewable, natural materials (C3 website 2) •Quality (C3R3 Int.) •Durability (C3R3 Int.) •Happiness in the process of production (C3R3 Int.) •Autodidacticism (Investigator's notes from site visit on 21/08/2018) <p>Growth-related</p> <ul style="list-style-type: none"> •Undesirability of growth (C3R3 Int., Investigator's notes from phone conversation 01/08/2018) •Staying small [size sufficiency] (C3R3 Int., Investigator's notes from phone conversation 01/08/2018)
<p>Community and Humanity</p> <ul style="list-style-type: none"> •Embeddedness [supporting entrepreneurs] (C3R3 Int.) •Consideration of customers' needs (C3R3 Int.) •Knowledge sharing [practice] (C3R3 Int., Investigator's notes from phone conversation 01/08/2018) 	
<p>Attitudes, Values, Motives</p> <p>Motives:</p> <ul style="list-style-type: none"> •Desire for environmental improvement (C3R3 Int.) •Sustaining oneself (C3R3 Int.) •Not-just-for-profit (C3R3 Int.) •Profit as a means to acquire time (C3R3 Int.) 	<p>Barriers</p> <ul style="list-style-type: none"> •Financial (C3R3 Int.) •Lack of unit ownership (C3R3 Int., Investigator's notes from site visit on 21/08/2018) •Lack of alternatives [packaging] (C3R3 Int., Investigator's notes from site visit on 21/08/2018)

<ul style="list-style-type: none"> •Industry transformation (C3R3 Int.) •Knowledge sharing [as business objective] (C3R3 Int.) •Passion for product (C3R3 Int.) <p>Attitudes:</p> <ul style="list-style-type: none"> •Pro-environmental orientation (C3R3 Int.) •Pro-social orientation (C3R3 Int.) <p>Values:</p> <ul style="list-style-type: none"> •Happiness (C3R3 Int.) •Sufficiency (C3R3 Int.) •Time over money (C3R3 Int.) •Neighbourliness (C3R3 Int.) 	<ul style="list-style-type: none"> •Lack of suitable infrastructure [freight, postage] (C3R3 Int.) •Demand growth [barrier to size maintenance] (C3R3 Int., Investigator’s notes from phone conversation 01/08/2018) •Information availability (C3R3 Int.) •Public attitudes (Investigator’s notes from site visit on 21/08/2018) •Public expectations (Investigator’s notes from site visit on 21/08/2018) •Commercialisation of craft (Investigator’s notes from site visit on 21/08/2018)
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C4

C4 Data sources

Description of data source	Information this source provides
Investigator’s notes. Investigator’s notes were taken throughout the data collection stage which for C4 started on 13/08/18.	Investigator’s notes outline themes for further investigation.
Websites. C4’s website was available throughout the data collection phase. Supplementary – C4’s local e-newspaper website [accessed 14/08/18) hosts an article on C4R4’s pro-environmental initiative. A reference is not given to protect the participant (not used as a main source of data).	Provide insights into the main spheres of activity, company’s vision, photographs (visual representation of C4’s activity).
Social media page. C4 use social media and C4’s Facebook page was accessed to supplement formal data collection techniques.	C4’s Facebook page is supplementary, it provides an insight into customer’s views and experiences with C4.
Interview. Interview using interview questions as a guide (additional questions arose during the conversation). The interview took place over the phone as a part of a conversation with C4R4 on 13/08/2018. The conversation started at 09:30 AM and lasted approximately 1 hour. The interview was recorded (audio) with a permission from C4R4.	Interview transcript provides data which relates to specific aspects of degrowth business (see Interview Framework above) from the perspective of C4R4.
Site visit. During the phone conversation on 13/08/2018 C4R4 invited the author to visit the café. The visit took place on 17/08/2018 and lasted from 12:00 PM until approximately 15:00 PM. During this time notes were taken (document- Investigator’s notes from the site visit on 17/08/2018).	Workshop visit is a source of observation and supplements the other data sources described in this table. It also allows the author to ask additional questions that emerged throughout data analysis.

C4 Data Analysis

Data	Coding and Themes	Analysis	Analytical Memo
<p>“It’s mainly for profit, but we do a lot of non-profit parts of it as well. Some elements are non-profit.” (C4R4 Int.)</p> <p>“It’s an organisation I set up independently from C4. So, what [Initiative] is, it’s a network of independent cafes...it’s... to encourage people, while giving them a heavy discount, to use their own cup... It’s better for the environment and it saves you money as well.” (C4R4 Int.)</p> <p>“C4R4 stated that their pro-environmental initiative is self-funded.” (Investigator’s notes from site visit on 17/08/2018)</p>	<p>Codes: Non-profit elements</p> <p>Themes: Non-profit elements of business, establishing and funding of a pro-environmental initiative</p>	<p>This theme corresponds to C2’s establishing of initiatives [pro-environmental, pro-social].</p> <p>It also corresponds to “Venturing into desirable sectors which serve the needs – not profit motivated” and “Desire for social and environmental change” in the original framework.</p>	<p>C4R4 notes that her business is “for-profit”, however she also embeds not-for-profit elements into her business model.</p> <p>Desire for environmental improvement is evident in: “it’s... to encourage people, while giving them a heavy discount, to use their own cup... It’s better for the environment” (C4R4 Int.)</p>
<p>“if there’s an opportunity to become a consultant to open similar places, having [C4] as a blueprint for other businesses.” (C4R4 Int.)</p> <p>“it would be the case of being a consultant, so, you know, offering our knowledge and sharing it with other people who want to open something similar.” (C4R4 Int.)</p>	<p>Codes: Knowledge sharing, desire to change the industry, growth of model [not business]</p> <p>Themes:</p>	<p>Knowledge sharing is the theme that is common among all businesses researched to date as a part of this research (C1, C2, C3 and C4). Industry transformation is also a part of a motive for C2, C3 and C4.</p>	<p>C2, C3 and also C4 highlight sharing knowledge about their model and growth/proliferation of such models in the society rather than growth of their businesses.</p>

<p>“C4R4 wants to share knowledge about recycling with schoolchildren by offering lectures.” (Investigator’s notes from site visit on 17/08/2018)</p>	<p>Knowledge sharing, industry transformation, growth of model [not business]</p>	<p>Themes correspond to: Embeddedness within community and Desire for social and environmental change in F1.</p>	
<p>“I’m very inclusive for opinions, but I’m the final decision-maker. Most time it’s a consultation.” (C4R4 Int.) “[Investigator] witnessed their meeting where C4R4 recognised the chef’s expertise and the meeting was consultation orientated rather than C4R4 making the decisions.” (Investigator’s notes from site visit on 17/08/2018)</p>	<p>Codes: Inclusiveness, consultation</p> <p>Themes: <u>Consultation with employees</u></p>	<p>Orientation towards human wellbeing (part of F1) and Democratic decision-making (also a part of F1) manifest themselves differently in all firms researched to date as a part of this research. While C1 strive for independence and democratic decision-making (run by directors who perform the majority of the jobs), C2 faced a challenge of employees’ lack of internalisation of values (yet, they practice collaborative work). C3 is a sole trader, but the decisions are made collaboratively between C3R3 and her husband. In case of C4, inclusiveness is practiced in a form of consultation with employees, though C4R4, the owner and director, is the final decision-maker.</p>	
<p>“It [employee wellbeing] is very important to me. We are very customer focused. I make sure that the staff are happy to give the best I can to my customers.” (C4R4 Int.) “[Investigator] spoke to the chef who works in C4 and he noted that he really enjoyed working there.” (Investigator’s notes from site visit on 17/08/2018)</p>	<p>Codes: Importance of employee wellbeing, happiness of staff</p> <p>Themes: Importance of employee wellbeing</p>	<p>Importance of employee wellbeing is highlighted by all firms researched to date as a part of this research. Though, orientation towards employee wellbeing (part of F1) manifests itself in different ways in C1, C2, C3 and C4.</p>	
<p>“One is the principles [of wellbeing] I discussed with that staff that came in this morning, we greet each other, [...] because I feel it could be a nice way to start the day.” (C4R4 Int.) “if you think of your thoughts in that way “Is it a helpful though, is it a hindering thought?” rather than negative or positive, it just feels very different to me, so I just said it again this morning, it might be something they’d like to adopt.” (C4R4 Int.)</p>	<p>Codes: Daily greetings, positive state of mind, helpful patterns of thinking</p> <p>Themes: <u>Incorporating simple principles of wellbeing</u></p>	<p>C4R4 shared two examples of incorporating simple principles of wellbeing into C4’s daily operations. These expand on the “Orientation towards wellbeing” from F1.</p>	
<p>“if my staff are happy, my customers are happy, and it’s important to me” (C4R4 Int.)</p>	<p>Codes: Customer satisfaction</p> <p>Themes: Customer orientation [satisfaction]</p>	<p>All firms researched to date as a part of this research value their relationships with their customers, though they operate in different sectors.</p>	<p>C4’s Facebook page provides additional supplementary insights into C4’s operation from customers’ perspective. Friendly atmosphere, community orientation, fair pricing, food quality and range, service, individual décor were highlighted by customers/visitors of C4 (C4 Facebook page accessed on 14/08/18). To be supplemented by a site visit 17/08/18.</p>

<p>“I like things that might be selfish and good for all, you know, not just for me. That’s the way I like to keep my business, that we all benefit, rather than just me.” (C4R4 Int.)</p>	<p>Codes: Mutual benefit</p> <p>Themes: Mutual benefit [win-win]</p>	<p>The value of creating win-win solutions has also been highlighted by C2. In broader terms this relates to “Redefining the meaning of economic activities” element in F1, since self-interest is supplemented by the desire for win-win solutions, a mutual benefit.</p>	
<p>“It’s something I’ve asked myself “Why am I doing this, what is my motivation behind it?”” (C4R4 Int.)</p>	<p>Codes: Reflection</p> <p>Themes: <u>Reflective practice</u></p>	<p>C4R4 engages in reflective practice, which can simultaneously be an attitude she has towards operating the business and a contributor to wellbeing. Reflective practice can be considered one of the principles of management in C4. It can be related to the emphasis on qualitative change in F1.</p>	<p>C4R4 also recognises the limiting aspect of reflective practice (“sometimes it stops me doing things. It can be quite limiting sometimes.” (C4R4 Int.)</p>
<p>“And if I’m incredibly honest with myself, there’s always going to be an element of gain for me. Whether it’s the satisfaction in making a difference or some sort of recognition. It’s not the only motivation...” (C4R4 Int.)</p> <p>“It’s not just for money, they think it’s just for money, but what they really want is the benefits... We all want to be happy and healthy and useful.” (C4R4 Int.)</p> <p>“That’s not to say that profit is the end thing...” (C4R4 Int.)</p>	<p>Codes: Diverse sources of satisfaction</p> <p>Themes: Diverse understanding of gain</p>	<p>This relates to “Redefining the meaning of economic activities” and “Motives other than profit, redefining the meaning of business success” elements in F1. C4R4 acknowledges the desire to gain, but the gain is not necessarily reduced to the monetary gain. Thus, diverse understanding of gain describes C4R4’s attitude more accurately.</p>	
<p>“I use local people as much as possible, our butcher is local. I use local stores to buy things.” (C4R4 Int.)</p> <p>“I even tried this with my staff where I pay them £10 of their wages in a voucher that they can spend locally” (C4R4 Int.)</p> <p>“I think it’s important, spending their money where they are earning it.” (C4R4 Int.)</p> <p>“A passion of mine is to get people thinking about where they are spending their money.” (C4R4 Int.)</p> <p>“It’s [localisation] massively important.” (C4R4 Int.)</p> <p>“My passion lies in the local economy. I always try to use local.” (C4R4 Int.)</p>	<p>Codes: Buying local, preference towards local goods</p> <p>Themes: Localisation [buying local when possible, supporting local economy, preference towards local goods]</p>	<p>Localisation is an element of F1. While C4R4 has a preference towards buying locally, it is not always possible (barrier – local goods are more expensive, therefore customers would not be able to afford the product.)</p>	<p>Localisation can refer to a principle of production [sourcing locally] and an attitude [preference towards local goods]</p>
<p>“It’s something to think about, independence is very important to me, and not to lose it to multiple chains, make it look exactly the same.” (C4R4 Int.)</p>	<p>Codes: Independence</p> <p>Themes: <u>Independence</u></p>	<p>Independence is a value highlighted by C4R4. It may be related to the autonomy of operation (an element of F1).</p>	
<p>“Now we are getting so blended, which is good in some ways, but in other ways, we lose our individuality on a massive scale.” (C4R4 Int.)</p>	<p>Codes: Individuality</p> <p>Themes: <u>Individuality</u></p>	<p>The value of individuality is related to the value of independence above. C4 is an independent firm and its individuality is important to C4R4.</p>	<p>This applies to C4 itself and the broader society in general.</p> <p>Further investigation – “is globalisation a barrier?”</p>
<p>“at the moment through the summer we’ve been doing it [Community Café] every other Wednesday, but we’ll go back to doing it every week.” (C4R4 Int.)</p> <p>“Our Community Café is run on a voluntary basis so, if you fancy lending a hand one</p>	<p>Codes: Waste as resource, food waste reduction, social eating, promoting human communication, cooperating with</p>	<p>C4 strive to use waste as resource. C1 and C2 also strive to make this a part of their operations while C3 avoid or compost waste due</p>	<p>Community orientation is also highlighted on C4’s website (accessed 14/08/2018)</p>

<p>day, pop along and let us know..." (C4 website, accessed 14/08/18)</p> <p>"you can contribute a small amount towards paying for a meal for someone who cannot afford it." (C4 website, accessed 14/08/18)</p> <p>"love the ethos of the community kitchen" (C4 customer, via C4's social media page, accessed 14/08/18)</p> <p>"Our Community Café is linked to the FareShare charity and provides a delicious three course meal, for only £3.00, made using surplus supermarket produce that may have been mis-labelled, over-ordered, etc and would previously have been thrown away. FareShare collects this surplus food and re-distributes it to many community organisations like ours. All of the food provided is carefully managed and handled to ensure freshness and is supplied to us in the same condition as you would have brought it from the supermarket. The ideology of our café is to provide food and a venue to promote social eating and encourage people to engage with each other in a warm, friendly environment, where they can enjoy conversation over a low-cost tasty meal." (C4 Website, accessed 14/08/18)</p> <p>"I said to him [a young activist] "Come and use [C4] for meetings, fundraising, whatever I can help with to get your message across." (C4R4 Int.)</p> <p>"Things like that, since we've been open, because it's important to us for these sorts of things to be available. We have a group of ladies that help others with autism issues, and they come once a month. We let them use this space for free. We want to be used by the community as much as we can support." (C4R4 Int.)</p>	<p>charities, supporting activists [by providing space], volunteering/donation opportunities, pro-social orientation</p> <p>Themes: Using waste as resource, food waste reduction, community orientation [social eating, promoting human communication, volunteering/donation opportunities], cooperating with charities, supporting activists [by providing space], pro-social orientation</p>	<p>to a unique nature of their business (natural dyes). Pro-social orientation is evident in C4's orientation towards its local community and using their business as a community hub which facilitates social eating and human interaction.</p> <p>C4 also cooperates with charities as well as providing space for charities and initiatives (phone conversation with C4R4 on 13/08/18).</p> <p>Pro-social orientation is evident in F1 (embeddedness within community, consideration of community wellbeing)</p>	<p>Pro-social values evident in pro-social initiatives and ethos.</p>
<p>"The gain from it [community initiatives], going back to what I was saying earlier, is that we get a lot of exposure, people know that we are here." (C4R4 Int.)</p> <p>"And when people tell other people, it all helps." (C4R4 Int.)</p>	<p>Codes: PR, word-of-mouth</p> <p>Themes: PR as marketing strategy, word-of-mouth</p>	<p>To a large extent all firms that participated in this research to date rely on word-of-mouth and lasting relationship with their customers/communities as their marketing strategy.</p>	<p>C4R4 (Int.) highlights that though those initiatives provide good PR, it is not the main reason for engaging in community initiatives.</p>
<p>"We are in the process, at the moment, of getting quotes for solar panels on the roof." (C4R4 Int.)</p> <p>"There's also an environmental aspect [in using solar panels], so it ticks all my boxes." (C4R4 Int.)</p>	<p>Codes: Solar panels</p> <p>Themes: Renewable energy</p>	<p>C4R4 has a preference towards renewable energy [for environmental and monetary reasons] and is currently seeking to heat the space via using solar energy. Renewable energy is a part of the original framework.</p>	
<p>"The obvious thing, we have industrial recycle bins here, it's cardboard and glass which are filled more often than the general waste." (C4R4 Int.)</p> <p>"We don't have any plastic bottles here, all the water in either in a glass or a can." (C4R4 Int.)</p> <p>"we offer to refill any container free of charge with our filtered cold water." (C4R4 Int.)</p>	<p>Codes: Recycling, avoiding single use plastic bottles</p> <p>Themes: Waste recycling, pollution prevention [avoiding single use plastic bottles]</p>	<p>Recycling is a part of F1.</p>	
<p>"And I think it was such a waste of paper to put it in with this calculator, the book was almost as big as the calculator." (C4R4 Int.)</p>	<p>Codes: Awareness of environmental impact</p>	<p>This theme runs throughout the cases investigated in this research.</p>	

	Themes: Awareness of environmental impact		
<p>“...I wanted to make it an eco-shop and we wanted things to be as eco-friendly as possible.” (local e-newspaper interview of C4R4)</p> <p>“It’s [pro-environmental initiative set up by C4R4 which is used by C4] better for the environment and it saves you money as well.” (C4R4 Int.)</p>	<p>Codes: Pro-environmental orientation</p> <p>Themes: Pro-environmental orientation</p>	This theme runs throughout the cases investigated in this research (one of the criteria for selecting businesses as cases for this research alongside their pro-social orientation).	
<p>“Coffee supplier is local, C4R4 has known that supplier for 20 years.” (Investigator’s notes from site visit on 17/08/2018)</p>	<p>Codes: Long-term relationship with a supplier</p> <p>Themes: <u>Long-term relationship with suppliers</u></p>	C4R4 noted that other options could possibly be cheaper, some of which are available outside of the region C4 is based in, however C4R4 prefers to maintain a long-term relationship with their supplier. This relates to “Localisation of...sourcing” in F1, however, the preference towards a long-term relationship as opposed to the smallest price may also indicate “redefining the meaning of economic activities.” (F1)	
<p>“The chef notes that he did not know much about recycling, however his attitudes were challenged and changed by C4R4.” (Investigator’s notes from site visit on 17/08/2018)</p>	<p>Codes: Challenging employees’ attitudes [to recycling], changing employees’ attitudes [to recycling]</p> <p>Themes: Influencing employees’ pro-environmental behaviour</p>	This theme relates to “Pro-environmental workplace behaviour and travel modes” in F1.	
<p>“some of the times buying locally is massively expensive” (C4R4 Int.)</p> <p>“some customers find it disgusting that we don’t have plastic to take on a train, like a bottle of water...” (C4R4 Int.)</p> <p>“The education when it comes to recycling. I constantly take things out of a bin to recycle.” (C4R4 Int.)</p> <p>“Economically, it’d be good if things that are environmentally friendly were cheaper, as cheap as their equivalent.” (C4R4 Int.)</p> <p>“It would make life easier if products that are more environmentally friendly didn’t cost more than the products that are not environmentally friendly.” (C4R4 Int.)</p> <p>“If there was more, and it is happening actually, there’s more environmentally packaging coming out. It’s more expensive, but it’s getting better. Getting products that are more affordable is on a wish list. Paper cups being recyclable rather than having a plastic lining.” (C4R4 Int.)</p> <p>“If the customers demand more environmentally friendly, which they start to, products they will become more</p>	<p>Barrier: local goods more expensive than alternatives</p> <p>Barrier: public expectations</p> <p>Barrier: environmental education</p> <p>Barrier: environmentally friendly goods more expensive</p> <p>Barrier: lack of [affordable] alternatives</p> <p>Barrier: demand [for pro-environmental options]</p> <p>Barrier: lack of pro-environmental</p>	Lack of affordable recyclable packaging alternatives was also noted by C3.	

mainstream and more affordable.” (C4R4 Int.) “The governments should help. The whole packaging system is wrong. You bought something on [Company] and it comes in a packaging 10 times bigger than a product, it should be illegal.” (C4R4 Int.)	enforcement [government related]		
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Framework Construction

*When an element was featured previously, “Replication” is noted.

Codes	Themes	Elements	Groups
Non-profit elements	Non-profit elements of business, establishing and funding of a pro-environmental initiative	Principles of management - Non-profit elements of business Replication: Finance - Internal financing of pro-environmental initiative Growth-related: Establishing of initiatives [pro-environmental] <i>Venturing into desirable sectors which serve the needs – not profit motivated</i> <i>Desire for social and environmental change</i>	Internal Business Operation
Knowledge sharing, desire to change the industry, growth of model [not business]	Knowledge sharing, industry transformation, growth of model [not business]	Growth of model [not business] Replication: Knowledge sharing Industry transformation <i>Embeddedness within community</i> <i>Desire for social and environmental change</i>	Community and Humanity Attitudes, Values, Motives Internal Business Operation
Inclusiveness, consultation	Consultation with employees	Principles of management	Internal Business Operation
Importance of employee wellbeing, happiness of staff	Importance of employee wellbeing	Replication: Employee wellbeing [various manifestations] <i>Orientation towards wellbeing</i>	Internal Business Operation
Daily greetings, positive state of mind, helpful patterns of thinking	Incorporating simple principles of wellbeing	Replication: Employee wellbeing [various manifestations] <i>Orientation towards wellbeing</i>	Internal Business Operation
Customer satisfaction	Customer orientation [satisfaction]	Replication: Consideration of customers’ needs [various manifestations]	Internal Business Operation
Mutual benefit	Mutual benefit [win-win]	Replication: Values [mutual benefit] <i>Redefining the meaning of economic activities</i>	Attitudes, Values, Motives
Reflection	Reflective practice	Principles of management [reflective practice]	Internal Business Operation

		<i>Emphasis on qualitative change</i>	
Diverse sources of satisfaction	Diverse understanding of gain	Motives <i>Redefining the meaning of economic activities Motives other than profit, redefining the meaning of business success</i>	Attitudes, Values, Motives
Buying local, preference towards local goods	Localisation [buying local when possible, supporting local economy, preference towards local goods]	Attitudes - Preference towards local goods Replication: Production [Localisation] <i>Localisation of production, sourcing and exchange</i>	Attitudes, Values, Motives Internal Business Operation
Independence	Independence	Values – Independence <i>Simplicity and autonomy of operation</i>	Attitudes, Values, Motives
Individuality	Individuality	Values – Individuality	Attitudes, Values, Motives
Waste as resource, food waste reduction, social eating, promoting human communication, cooperating with charities, supporting activists [by providing space], volunteering/donation opportunities, pro-social orientation	Using waste as resource, food waste reduction, community orientation [social eating, promoting human communication, volunteering/donation opportunities], cooperating with charities, supporting activists [by providing space], pro-social orientation	Cooperating with charities Replication: Waste as resource Community orientation Pro-social values <i>Embeddedness within community Consideration of community wellbeing</i>	Material and Energy Throughput and Waste Community and Humanity Attitudes, Values, Motives
PR, word-of-mouth	PR as marketing strategy, word-of-mouth	Marketing [PR] Replication: Word-of-mouth <i>Restriction on advertising</i>	Internal Business Operation
Solar panels	Renewable energy	Replication: Renewable energy Renewable energy	Material and Energy Throughput and Waste
Recycling, avoiding single-use plastic bottles	Waste recycling, pollution prevention [avoiding single use plastic bottles]	Replication: Waste recycling, pollution prevention <i>Preventing waste and pollution Recycling</i>	Material and Energy Throughput and Waste
Awareness of environmental impact	Awareness of environmental impact	Replication: Awareness of environmental impact <i>Desire for social and environmental change</i>	Attitudes, Values, Motives
Pro-environmental orientation	Pro-environmental orientation	Replication: Pro-environmental orientation <i>Desire for social and environmental change</i>	Attitudes, Values, Motives

Long-term relationship with a supplier	Long-term relationship with suppliers	Production [long-term relationship with suppliers] Replication: Localisation [production] Localisation of [sourcing] <i>Redefining the meaning of economic activities</i>	Internal Business Operation
Challenging employees' attitudes [to recycling], changing employees' attitudes [to recycling]	Influencing employees' pro-environmental behaviour	Influencing employees' pro-environmental behaviour <i>Pro-environmental workplace behaviour and travel modes</i>	Material and Energy Throughput and Waste
local goods more expensive than alternatives public expectations environmental education environmentally friendly goods more expensive lack of affordable alternatives demand for pro-environmental options lack of pro-environmental enforcement	local goods more expensive than alternatives public expectations environmental education environmentally friendly goods more expensive lack of [affordable] alternatives demand [for pro-environmental options] lack of pro-environmental enforcement [government related]	Local goods more expensive Public expectations Government [lack of enforcement] Replication: Education Supply [of affordable pro-environmental alternatives, local alternatives] Demand [for pro-environmental options]	Barriers

Degrowth Business Framework (C4F). The elements and groups are presented in the form of an individual degrowth business framework. Includes data sources from which elements derive.

<p>Material and Energy Throughput and Waste, and Habitat (Environment-related) <i>Material:</i></p> <ul style="list-style-type: none"> •Frugal use of materials [waste recycling, waste as resource, food waste reduction] (C4R4 Int.) •Pollution prevention [avoiding single use plastic bottles] (C4R4 Int.) •Influencing employees' pro-environmental behaviour (Investigator's notes from site visit on 17/08/2018) <p><i>Energy:</i></p> <ul style="list-style-type: none"> •Renewable energy (C4R4 Int.) 	<p>Internal Business Operation - Governance <i>Finance:</i></p> <ul style="list-style-type: none"> •Internal financing of pro-environmental initiative (C4R4 Int., Investigator's notes from site visit on 17/08/2018) <p><i>Marketing:</i></p> <ul style="list-style-type: none"> •Word-of-mouth (C4R4 Int.) •PR (C4R4 Int.) <p><i>Principles of management/governance:</i></p> <ul style="list-style-type: none"> •Reflective practice (C4R4 Int.) •Consultations with employees (C4R4 Int., Investigator's notes from site visit on 17/08/2018) •Non-profit elements of business (C4R4 Int.) <p><i>Employee Wellbeing</i></p> <ul style="list-style-type: none"> •Importance of employee wellbeing (C4R4 Int., Investigator's notes from site visit on 17/08/2018) •Incorporating simple principles of wellbeing [greetings, thinking patterns] (C4R4 Int.) <p><i>Production</i></p> <ul style="list-style-type: none"> •Localisation [buying local when possible, supporting local economy, preference towards local goods] (C4R4 Int.) •Long-term relationship with suppliers (Investigator's notes from site visit on 17/08/2018) <p><i>Growth-related</i></p> <ul style="list-style-type: none"> •Establishing of initiatives [pro-environmental] (C4R4 Int.) •Growth of model [not business] (C4R4 Int.)
<p>Community and Humanity</p> <ul style="list-style-type: none"> •Embeddedness [cooperation with charities] (C4R4 Int., C4 website, phone conversation with C4R4 on 13/08/18) •Knowledge sharing (C4R4 Int., Investigator's notes from site visit on 17/08/2018) •Community orientation [social eating, promoting human communication, volunteering/donation opportunities] (C4 website, C4R4 Int., C4 social media page) •Supporting activists [by providing space] (C4 website, C4R4 Int., C4 social media page) •Customer orientation [satisfaction] (C4R4 Int.) 	<p>Barriers</p> <ul style="list-style-type: none"> •Supply [local goods more expensive than alternatives; pro-environmental goods more expensive] (C4R4 Int.) •Public expectations (C4R4 Int.) •Education [environmental] (C4R4 Int.) •Demand [for pro-environmental options] (C4R4 Int.) •Lack of enforcement [government] (C4R4 Int.)
<p>Attitudes, Values, Motives <i>Motives:</i></p> <ul style="list-style-type: none"> •Desire for environmental improvement (C4R4 Int.) •Industry transformation, growth of model [not business] (C4R4 Int.) •Diverse understanding of gain (C4R4 Int.) <p><i>Attitudes:</i></p>	

<ul style="list-style-type: none"> •Awareness of environmental impact (C4R4 Int.) •Preference towards local goods (C4R4 Int.) •Pro-environmental orientation (C4R4 Int., local e-newspaper interview of C4R4) •Pro-social orientation (C4R4 Int., C4 website) <p>Values:</p> <ul style="list-style-type: none"> •Individuality (C4R4 Int.) •Independence (C4R4 Int.) •Mutual benefit [win-win] (C4R4 Int.) •Pro-social values (C4 website, C4R4 Int., C4 social media) 	
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C5

C5 Data sources

Description of data source	Information this source provides
Investigator's notes. The product of C5 was obtained during a visit in zero waste supermarket in West Midlands on 21/08/2018. Primary search about the company was carried out and the company was contacted on 08/09/2018 via email.	Choice of packaging materials and retailers C5 choose to supply, this is to be used in addition to the interview and information provided on the website.
Websites. C5's website was available throughout the data collection phase.	Provides insights into the main spheres of activity, company's history and vision.
Personal communication (email).	A decision was made to carry out an interview via email due to C5R5's (director, respondent) availability.
Interview. Interview using the questionnaire as a guide was carried out on 15/10/2018.	Interview transcript provides data which relates to specific aspects of degrowth business (see Interview Framework above) from the perspective of C5R5. C5 provide much information on their website, however further insights into C5's operations were derived from an interview.
Social media page. C5's social media page was available throughout data collection.	Pro-environmental and pro-social attitudes (e.g. collaboration with charities element was derived from this source).

C5 Data Analysis

Data	Coding and Themes	Analysis	Analytical Memo
<p>"This [the culture the founders experienced when growing up] proved to be fertile ground for radical, political thought and social and environmental awareness, still deeply held to this day." (C5 website accessed 10/09/18)</p> <p>"inspired, motivated and environmentally aware" (C5 website accessed 10/09/18)</p>	<p>Codes: Radical political thought, social awareness, environmental awareness</p> <p>Themes: Awareness of environmental responsibility, awareness of social responsibility, radical political thought</p>	<p>Environmental responsibility in its various forms and manifestations runs throughout all cases studied, however a radical political thinking, whether as an attitude (C5) or getting involved with local politics (C1) runs in two cases investigated to date.</p> <p>This relates to redefining the meaning of economic activities in F1 since business is seen as a political enterprise, not a profit making one.</p> <p>Another relevant element is "desire for social and environmental change".</p>	Two firms' directors, those of C1 and C5 are explicit about their political views and view their businesses as radical acts addressing capitalism.
<p>"It came naturally to them to rally against the capitalist model and strive to find a fairer way of doing things." (C5 website accessed 10/09/18)</p>	<p>Codes: Addressing capitalism, fairness</p> <p>Themes: Addressing capitalism, fairness [value]</p>	<p>While the value of fairness has been mentioned previously, addressing capitalism via business actions is related to the entry above.</p> <p>As in the previous entry, this relates to redefining the</p>	

		meaning of economic activities in F1 since business is seen as a political enterprise.	
<p>“they [the founders] also felt an instinctive connection to nature.” (C5 website accessed 10/09/18)</p> <p>“our hardworking, eco-friendly team.” (C5 website accessed 18/09/18)</p> <p>“[C5] will never use a plastic, which is derived from petrol, to bulk out a product and claim it as a ‘benefit’. We don’t want to harm the sea, the animals or the beaches.” (C5 website accessed 15/10/18)</p> <p>“We use Ecosia [pro-environmental web browser] and they are making a difference.” (C5 Facebook page accessed 15/10/18)</p> <p>“Every time you use these commercial detergents you are flushing these chemicals into our rivers...” (C5 website accessed 15/10/18)</p>	<p>Codes: Pro-environmental orientation</p> <p>Themes: Pro-environmental orientation</p>	<p>Pro-environmental orientation is evident in other firms.</p> <p>This characteristic is one on the basis of which the firms for this study were selected.</p>	
<p>“it really is possible to run a successful business where ethics come before profit.” (C5 website accessed 10/09/18)</p> <p>“this journey of ethics and ecology” (C5 website accessed 10/09/18)</p> <p>“The soap that we all buy and have been for years is actually closer in formula to powdered detergent than traditional soap and in the never-ending quest for more profit the Commercial Soap Industry has blatantly disregarded our and the planets health and wellbeing.” (C5 website accessed 15/10/18)</p> <p>“They deliberately don’t tell us that they have removed all the moisturising glycerine so that they can create moisturising products to us all at a massive profit.” (C5 website accessed 15/10/18)</p>	<p>Codes: ethics before profit</p> <p>Themes: Ethics before profit</p>	<p>Ethics before profit is related to “not-only-for-profit” logic of C1 and C6’s “not-for-profit” model.</p> <p>This relates to Motives other than profit in F1. Even though profit is important, C5 see profit as a means to an end (see a later entry), which allows to conclude that it is not profit that is the ultimate goal.</p>	Meaning of success
<p>“an ethically-based business” (C5 website accessed 10/09/18)</p> <p>“a chance [setting up own business] ...to live our...ideals and give something honest and good back to the world.” (C5 website accessed 10/09/18)</p> <p>“From start to finish, no stone is left unturned in the quest to produce low-impact [product].” (C5 website accessed 10/09/18)</p> <p>“Sustainability and ethical integrity are top of the list.” (C5 website accessed 10/09/18)</p> <p>“skin friendly, animal friendly and earth friendly.” (C5 website accessed 10/09/18)</p> <p>“[C5] cares about the earth, its animals and people’s health.” (C5 website accessed 18/09/18)</p> <p>“We are a Vegan company, dedicated to ethical business practices and low impact production methods.” (C5 website accessed 18/09/2018)</p> <p>“There are only 3 ingredients needed to make soap, some of these Commercial soaps have hundreds and I challenge you to know what most of them are. Don’t forget that this all gets washed down the drain and is going into our rivers and wild life.” (C5 website accessed 15/10/18)</p>	<p>Codes: Ethics, low-impact product, sustainability [value], ethical integrity [value], product harmless to humans, non-humans, environment</p> <p>Themes: Ethics, low-impact product, sustainability [value], ethical integrity [value], product harmless to humans, non-humans, environment</p>	<p>While ethics as a principle of operation/governance was featured in other cases, C5 emphasise low-impact of their product and the need for it to be harmless to both human and non-human life.</p> <p>Broadly, this relates to “Adopting the value of non-violence towards the environment and non-human life” in F1, which arose from the writings of Schumacher.</p>	C5 is a manufacturing company, so their principles of production should further inform the degrowth business framework’s production aspect.

<p>“will not cause irritation and will biodegrade without causing our planet any harm.” (C5 website accessed 15/10/18)</p>			
<p>“For [founder 1] and [founder 2 - C5R5], making soap is about so much more than manufacturing a product. It is a constant process of learning, improving and refining, in order to make as little impact on nature and health as possible.” (C5 website accessed 10/09/18)</p>	<p>Codes: Production as learning, production as improvement</p> <p>Themes: Production as learning, production as improvement</p>	<p>None of the businesses studied see their production/service as simply a business operation.</p> <p>This relates to “redefining the meaning of economic activities” in F1 and broadly to “decreased productivity” since the emphasis is placed on the process rather than the outcome in quantitative terms.</p>	
<p>“We are committed to producing [C5 product] that contain no animal products or by-products. We are also completely against testing cosmetics on animals and are registered with Cruelty Free International and The Vegan Society.” (C5 website accessed 10/09/18)</p> <p>“We will never use Palm Oil and believe the best thing for the rainforests; its animals and the earth is to avoid it entirely.” (C5 website accessed 27/09/2018)</p> <p>“the Coconut Oil in [C5 product] is not produced using slave monkeys to pick the fruit. Yes, in some places, this actually happens.” (C5 website accessed 27/09/2018)</p> <p>“Rabbits, Guinea Pigs, Mice, and Rats are injected, gassed, force fed and killed to test your cosmetics – Non-essential vanity products! Cruelty Free International and [C5] think this UNACCEPTABLE.” (C5 website accessed 15/10/18)</p> <p>“Look for the Leaping Bunny symbol on your cosmetics. In order to use this symbol [C5] has had to scrutinise every ingredient and the companies that supply them, so you can be assured that no animal has been harmed when you see it.” (C5 website accessed 15/10/18)</p>	<p>Codes: Avoiding animal products/by-products, no animal testing, cruelty free, cruelty-free ingredients</p> <p>Themes: Animal by-product avoidance, non-violence towards non-human life [including supply chain]</p>	<p>While C1 (permaculture) and C2 (habitat provision) emphasise consideration of non-human life, C5 emphasise non-violence towards non-human life via their decision to make their products vegan.</p> <p>This relates to “adopting the value of non-violence towards the environment and non-human life” in F1.</p>	
<p>“We use the ancient cold-process method of [C5 product] making, which creates a biodegradable [C5 product] with zero by-products. There is literally no waste. Everything gets used up and turned into lovely [C5 product].” (C5 website accessed 10/09/18)</p> <p>“[C5 product] is made using naturally biodegradable ingredients – unlike commercial detergents that contain synthetic chemicals, that are literally flushed into our rivers. We are totally opposed to using harmful preservatives or foaming agents, believing there is simply no need for SLS or Parabens.” (C5 website accessed 10/09/18)</p> <p>“the [C5 products] are all made using natural plant-based oils – coconut oil, olive oil, castor oil, shea butter and cocoa butter. Each has its own unique qualities” (C5 website accessed 10/09/18)</p> <p>“Essential oils, flowers, spices and herbs are used for their scent and colour, their healing</p>	<p>Codes: Ancient method of production, biodegradable product, waste avoidance, pollution prevention, natural materials</p> <p>Themes: Appropriate method of production, biodegradable product, waste avoidance, pollution prevention, natural materials</p>	<p>While C1 advocate the use of appropriate technology, C5 emphasise appropriate/simplified method of production. Like C3, their products are biodegradable, and they also use natural materials. Waste avoidance and pollution prevention run across the cases studied previously.</p> <p>“Preference towards appropriate, simplified technology” is a part of F1, so is “Preventing waste and pollution”</p>	

properties...” (C5 website accessed 10/09/18) “Are you still using plastic microbeads, when you could use hemp seed bran which is packed full of moisturizing oils and vitamin e.” (C5 website accessed 15/10/18)			
“Striving always to minimise our impact on the environment, we use as little energy as possible throughout production – every [C5 product] is poured, cut, stamped and packed by hand, here in the UK.” (C5 website accessed 10/09/18)	Codes: Energy use minimisation, localisation of production Themes: Frugal energy use, localisation of production	Frugal use of resources is a part of F1, so is localisation of production.	
“All our packaging is 100% recycled and recyclable...and plastic-free and our parcels for delivery are packed using brown paper tape. We are also against the use of microbeads. What’s wrong with poppy seeds or hemp bran?” (C5 website accessed 10/09/18)	Codes: Preference towards natural materials, recycled materials use, recyclable materials use, single use plastic avoidance Themes: Preference towards natural materials, recycled materials use, recyclable materials use, single use plastic avoidance	In this respect, C5 is similar to C3 which also prefer natural materials. Due to the nature of C5’s product, recycled/recyclable paper packaging can be used which is not the case with C3. Single use plastic avoidance is also evident in C4 and C6. Preference towards natural and recyclable materials broadly related to “preventing waste and pollution” in F1.	
“careful choice of ingredients” (C5 website accessed 10/09/18)	Codes: Quality Themes: Quality	Producing good quality product was also highlighted by other firms-participants.	Quality. C5’s social media pages were consulted to get a better insight into the quality of the product. C5’s customers note the quality, for instance “Thank you for making such great products.” Another customer described C5’s product as “this amazingly simple and natural yet effective [product]”.
“We also buy our Shea Butter from a women’s worker cooperative in Ghana.” (C5 website accessed 10/09/18)	Codes: Working with women’s cooperatives Themes: Sourcing from cooperatives	Other firms in this study also prefer to source from small, local firms (C4, C6), social enterprises (C6), farms (C3). This is also connected with Consideration of wider society in F1 and will be reflected in Embeddedness [global community] element.	
“By constantly scrutinising our production methods and working practices, we take little steps towards our goal of producing a zero-impact natural [product] and business model that benefits the planet, its animals and its people.” (C5 website accessed 10/09/18) “Our story is all about what is left in as well as what is left out.” (C5 website accessed 10/09/18)	Codes: Scrutinising production, scrutinising working practice Themes: Monitoring business practice	While C1 monitor their environmental performance, C5 emphasise monitoring their business practice.	This element is to be incorporated into the newly created “Performance” category in F2.

<p>“Many thanks to [C5] and Shugon Bags & Leathergoods UK for their amazing donations [for refugees]!” (Religious Organisation Facebook page, accessed 15/10/18)</p>	<p>Codes: Charity, pro-social orientation</p> <p>Themes: Pro-social orientation, cooperation with charities [donation]</p>	<p>Pro-social orientation is also evident throughout other entries above.</p> <p>Broadly, it is linked to “redefining the meaning of economic activities” in F1. This orientation is evident in other firms studied within this research.</p>	
<p>“All our employees have child care issues and so we have set up the working day to start at 9.30 and finish at 15.30.” (C5R5 Int.)</p>	<p>Codes: Employee wellbeing, unconventional working hours</p> <p>Themes: Importance of employee wellbeing, unconventional working hours [to enhance wellbeing]</p>	<p>Orientation towards wellbeing is a part of F1. This is practiced differently in each firm studied, in case of C5, due to all employees having children, employee wellbeing is accommodated via unconventional working hours.</p>	
<p>“[Values that drive our business are] Environmental responsibility. Employee happiness. Ethical business practices.” (C5R5 Int.)</p>	<p>Codes: Environmental responsibility, employee happiness, ethical business practice</p> <p>Themes: Environmental responsibility, employee happiness, ethical business practice</p>	<p>Employee happiness is related to the entry above. Environmental responsibility is related to overall pro-environmental orientation that runs throughout C5’s operations. Incorporating ethics into business practice itself is similar to C1.</p> <p>These broadly relate to Orientation towards wellbeing and Adopting the value of non-violence in F1. Happiness will be included in Worldviews, Environmental responsibility and ethical business practice into the principles of management. Employee happiness will also inform the wellbeing category.</p>	
<p>“Because of the kind of customers we have (like minded retailers), we don't find it too hard.” (C5R5 Int.)</p>	<p>Codes: Like-minded customers</p> <p>Themes: Working with like-minded retailers</p>	<p>This relates to C1’s experience of working with like-minded customers. This broadly related to embeddedness.</p>	<p>Firms studied appear to create “intellectual bubbles” around themselves with customers who share their values. This needs to be further investigated in future research.</p>
<p>“Profit is important as without it we would not be able to make sure our core values can be achieved, but we will not allow profit to dictate our decisions.” (C5R5 Int.)</p>	<p>Codes: Profit to achieve core values</p> <p>Themes: Profit to achieve core values</p>	<p>While profit is important for C5, the attitude towards profit as a means to an end (achieving values) is unusual. C4 adopt a similar view n profit which allows them to acquire for time which they value.</p>	
<p>“Each of our departments has a big say in how the company runs and the directions we take.” (C5R5 Int.)</p>	<p>Codes: Inclusion</p> <p>Themes:</p>	<p>This relates to “democratic decision-making” in F1. This theme runs across other cases (C2 found it difficult</p>	

	Cooperative decision-making	to implement even though C2R2 strived for inclusiveness).	
“We sell locally and employ locally.” (C5R5 Int.)	Codes: Localisation Themes: Localisation [of sales and employment]	The theme of localisation runs throughout the cases and is featured in F1.	
“we prefer to use bloggers and speak directly to customers through social media.” (C5R5 Int.)	Codes: Bloggers, speaking to customers directly Themes: Preference towards unorthodox marketing [bloggers, social media, direct interaction with customers]	Restriction on advertising in a part of F1. All firms studied have a preference towards unorthodox marketing and don't have a marketing strategy. An important element derived from C5 is their preference towards direct interaction with customers.	

Framework Construction

*When an element was featured previously, “Replication” is noted. Starting from C6 [researched before C5 due to data collection arrangements], the group Attitudes, Value, Motives was replaced with Worldviews.

Codes	Themes	Elements	Groups
Radical political thought, social awareness, environmental awareness	Awareness of environmental responsibility, awareness of social responsibility, radical political thought	Radical political thought Replication: Awareness of environmental responsibility Awareness of social responsibility <i>Redefining the meaning of economic activities</i> <i>Desire for social and environmental change</i>	Worldviews
Addressing capitalism, fairness	Addressing capitalism, fairness [value]	Addressing capitalism Replication: Fairness <i>Redefining the meaning of economic activities</i>	Worldviews
Pro-environmental orientation	Pro-environmental orientation	Replication: Pro-environmental orientation <i>Redefining the meaning of economic activities</i>	Worldviews
Ethics before profit	Ethics before profit	Ethics before profit <i>Motives other than profit, redefining the meaning of business success</i>	Worldviews
Ethics, low-impact product, sustainability [value], ethical integrity [value], product harmless to humans, non-humans, environment	Ethics, low-impact product, sustainability [value], ethical integrity [value], product harmless to humans, non-humans, environment	Sustainability, ethical integrity, harmless [humans, non-humans, environment] product, low-impact product	Internal Business Operations Worldviews Environment-Orientated

		Replication: Ethics <i>Adopting the value of non-violence towards the environment and non-human life</i>	
Production as learning, production as improvement	Production as learning & improvement	Production as learning & improvement <i>Redefining the meaning of economic activities</i> <i>Decreased productivity</i>	Internal Business Operation
Avoiding animal products/by-products, no animal testing, cruelty free, cruelty-free ingredients	Animal by-product avoidance, non-violence towards non-human life [including supply chain]	Production [animal by-product avoidance] Non-violence towards non-human life [including supply chain] <i>Adopting the value of non-violence towards the environment and non-human life</i>	Internal Business Operations Worldviews
Ancient method of production, biodegradable product, waste avoidance, pollution prevention, natural materials	Appropriate [ancient] method of production, biodegradable product, waste avoidance, pollution prevention, natural materials	Appropriate [ancient] method of production, biodegradable product Replication: Waste avoidance, pollution prevention, natural materials <i>Frugal use of resources</i>	Internal Business Operations Environment-Orientated
Energy use minimisation, localisation of production	Frugal energy use, localisation of production	Replication: Frugal energy use, localisation of production <i>Frugal use of resources</i> <i>Localisation of production</i>	Internal Business Operation Environment-Orientated
Preference towards natural materials, recycled materials use, recyclable materials use, single use plastic avoidance	Preference towards natural materials, recycled materials use, recyclable materials use, single use plastic avoidance	Recycled materials use, recyclable material use Replication: Preference towards natural materials Single use plastic avoidance <i>Frugal use of resources</i> <i>Pollution prevention</i>	Internal Business Operation Environment-Orientated
Quality	Quality	Replication: Quality <i>Durability of product</i>	Internal Business Operations
Working with women's cooperatives	Sourcing from cooperatives	Embeddedness [sourcing from cooperatives] Replication: Sourcing from [small firms/farms] <i>Consideration of wider society</i>	Society-Orientated Internal Business Operations
Scrutinising production, scrutinising working practice	Monitoring business practice	Replication: Monitoring <i>Redefining the meaning of business success</i>	Internal Business Operations

Charity, pro-social orientation	Pro-social orientation, cooperation with charities [donation]	Replication: Pro-social orientation, cooperation with charities <i>Embeddedness</i>	Worldviews Society-Orientated
Employee wellbeing, unconventional working hours	Importance of employee wellbeing, unconventional working hours [to enhance wellbeing]	unconventional working hours [to enhance wellbeing] Replication: Importance of employee wellbeing <i>Orientation towards wellbeing</i>	Internal Business Operations
Environmental responsibility, employee happiness, ethical business practice	Environmental responsibility, employee happiness, ethical business practice	Environmental responsibility, employee happiness, ethical business practice Replication: Happiness <i>Orientation towards wellbeing Adopting the value of non-violence</i>	Internal Business Operations Worldviews
Like-minded customers	Working with like-minded retailers	Working with like-minded retailers <i>Embeddedness</i>	Society-Orientated
Profit to achieve core values	Profit to achieve core values	Profit to achieve core values <i>Redefining the meaning of economic activities</i>	Worldviews
Inclusion	Cooperative decision-making	Replication: Cooperative decision-making <i>Democratic decision-making</i>	Internal Business Operations
Localisation	Localisation [of sales and employment]	Replication: Localisation <i>Localisation</i>	Society-orientated
Bloggers, speaking to customers directly	Preference towards unorthodox marketing [bloggers, social media, direct interaction with customers]	Replication: Unorthodox marketing <i>Restriction on advertising</i>	Internal Business Operations

Degrowth Business Framework (C5F). The elements and groups are presented in the form of an individual degrowth business framework. Includes data sources from which elements derive. *while other firms identify multiple barriers to their operations (in a pro-social, pro-environmental, values-driven way), when asked about barriers C5 identify a “coping mechanism” or barrier avoidance, which they address via working with likeminded retailers.

<p>Material and Energy Throughput and Waste (Environment-related) Energy: •Frugal energy use (C5 website) Material: •Biodegradable product (C5 website) •Waste avoidance (C5 website) •Pollution prevention (C5 website) •Natural materials (C5 website) •Recycled materials use (C5 website) •Recyclable materials use (C5 website)</p>	<p>Internal Business Operation - Governance Ethical performance: •Monitoring business practices (C5 website) Marketing: •Preference towards unorthodox marketing [bloggers, social media, direct interaction with customers] (C5R5 Int.) Principles of management/governance: •Ethics [ethical business practice] (C5R5 Int., C5 website) •Environmental responsibility (C5R5 Int., C5 website) •Cooperative decision-making (C5R5 Int.) Employee Wellbeing:</p>
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<ul style="list-style-type: none"> •Single use plastic avoidance (C5 website) <p>Non-human life:</p> <ul style="list-style-type: none"> •Animal by-product avoidance (C5 website) 	<ul style="list-style-type: none"> •Importance of employee wellbeing (C5R5 Int.) •Unconventional working hours [to enhance wellbeing] (C5R5 Int.) •Employee happiness (C5R5 Int.) <p>Production:</p> <ul style="list-style-type: none"> •Low-impact product (C5 website) •Harmless [humans, non-humans, environment] product (C5 website) •Production as learning & improvement (C5 website) •Appropriate [ancient] method of production (C5 website) •Localisation of production (C5 website) •Preference towards natural materials (C5 website) •Quality (C5 website, C5 social media) •Sourcing from cooperatives (C5 website)
<p>Community and Humanity</p> <ul style="list-style-type: none"> •Embeddedness [sourcing from cooperatives, cooperation with charities] (C5 website) •Working with likeminded customers/retailers (C5R5 Int.) •Localisation [of sales and employment] (C5R5 Int.) 	
<p>Worldviews (Attitudes, Values, Motives)</p> <p>Motives:</p> <ul style="list-style-type: none"> •Addressing capitalism (C5 website) •Ethics before profit (C5R5 Int., C5 website) •Profit to achieve core values (C5R5 Int.) <p>Attitudes:</p> <ul style="list-style-type: none"> •Awareness of environmental responsibility (C5R5 Int., C5 website) •Awareness of social responsibility (C5 website) •Radical political thought (C5 website) •Pro-environmental orientation (C5 website, C5 social media) •Pro-social orientation (C5 social media) •Non-violence towards non-human life [including supply chain] (C5 website) <p>Values:</p> <ul style="list-style-type: none"> •Fairness (C5 website) •Sustainability (C5 website) •Ethical integrity (C5 website) •Happiness (C5 Int.) 	<p>Barrier avoidance*</p> <ul style="list-style-type: none"> •Working with likeminded retailers (C5R5 Int.)

C6

C6 Data sources

Description of data source	Information this source provides
Investigator's notes. Notes were taken throughout the site visit on 25/09/2018 to cover the aspects of C6's operations which were not covered by the interview.	Practicalities of business operation, directors' views, customers' feedback
Interview. Interview with C6R6 was carried out on 25/09/2018 and lasted from 10AM until 2 PM. Since C6R6 was working, the interview was recorded as notes.	Interview provides data which relates to specific aspects of degrowth business.
Websites. C6's website was available throughout the data collection phase.	Provide insights into the main spheres of activity, company's history and vision.
Site visit. Site visit 1 took place on 25/09/2018 During the site visit business operations and products were discussed; several customers visited the store during that time, the PI had an opportunity to talk to them. Site visit 2 took place on 03/10/2018 at approximately 16 PM, the primary focus was speaking with the second director of C6.	Notes, interview notes from 25/09/2018 and notes from a conversation with the second director on 03/10/2018.
Social media pages. C5's social media page was available throughout data collection.	These were consulted to identify the presence of any discrepancy between customers' experiences and other data.
C6 leaflet. PI collected a leaflet from C6 which gives basic information about C6. C6 prefer not to give out leaflets due to environmental considerations.	Links to C6's online presence

C6 Data Analysis

Data	Coding and Themes	Analysis	Analytical Memo
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<p>“We’d like to be in a community of retailers. [Place] is a truly social space. We’d like it to be the most ethical [Place]. It is a community.” (C6R6 Int.)</p> <p>“C6R6 highlights the need for a community. C6R6 states: “we want seasonal fruit”, therefore they choose to buy from a greengrocer located in the same [Place]. C6 get the leftover fruit from this greengrocer in the end of the day. In the [Place] they prefer to buy from each other and support each other.” (C6R6 Int.)</p>	<p>Codes: Community of retailers, social place, ethical community</p> <p>Themes Ethical community of retailers, cooperation</p>	<p>C6R6 introduces cooperation on the level of community of retailers. Cooperation with companies nearby is also evident in C2, however, due to the nature of C6 business and location [the building where they are located is owned by the council, while a large shopping mall is nearby] they were able to develop close relationships with a number of retailers in the location.</p>	<p>C6 unlike previous cases is located in the same space as many other retailers, some have been in the same place for generations. C6’s experience is different to that of C3 that also value community but could not achieve the same level of cooperation with neighbouring companies as C6 did.</p>
<p>“It’s a company limited by shares, but in the articles, it is stated that it is not-for-profit.” (C6R6 Int.)</p> <p>“C6R6 tells me that himself and his wife considered various options and decided to set up a limited company to emphasise financial sustainability, however the company is not-for-profit, and profits are re-invested into the pro-social business operation.” (C6R6 Int.)</p> <p>“the profits going to secure the rescue and rehab of child soldiers around the globe.” (C6 website accessed 26/09/18)</p>	<p>Codes: Not-for-profit</p> <p>Themes: Alternative business models [Not-for-profit]</p>	<p>C6 is the first case in this research which is explicitly not for profit. They strive for a profit, but the profit is being re-invested into their main goal.</p> <p>This corresponds to “motives other than profit” in F1 and “consideration of other business models” in F1</p>	
<p>“They are planning to set up a charity “on a site” ([C6] foundation) to support survivors of human trafficking event further.” (C6R6 Int.)</p>	<p>Codes: Charity</p> <p>Themes: Establishing of initiatives [charity]</p>	<p>C2 and C4 likewise established initiatives (C2’s forestry initiative and C4’s pro-environmental initiative to reduce waste).</p> <p>This corresponds to “venturing into desirable sectors” in F1.</p>	
<p>“C6R6 shows me various aspects of C6 operations (coffee, tea) and interior (benches, boards, tables) and tells me that they source from small local companies or social enterprises. They prefer to work with social enterprises (benches, tea, coffee comes from those), while some aspects of the interior are made from upcycled wood.” (C6R6 Int.)</p> <p>“C6R6 tell me that their wood [benches, boards, counter] come from [Supplier] which is “a bit like” them, a social enterprise. Some wooden items [counter] come from a local small firm. Some wood [board with information leaflets attached] is upcycled.” (C6R6 Int.)</p>	<p>Codes: Sourcing from small firms, sourcing from social enterprises, ethical sourcing, transparency [values]</p> <p>Themes: Environmentally and socially minded sourcing, sourcing from small firms, transparency [value]</p>	<p>This also applies to C1, C2 (theme 1) and C2 (theme 2 here).</p> <p>This broadly corresponds to “redefining the meaning of economic activities” in F1 since C6 strive to source ethically and locally and do not pursue the lowest price.</p>	<p>Supplementary to this are the photos taken during the site visit (see C6 – Photos); one of those photos shows a display of leaflets from the coffee supplier of C6, which states: “[Supplier] is committed to coffee that is 100% slave-free from crop to cup” among other credentials (e.g. benefitting communities, employing local people).</p> <p>C6 disclose their supplier on the website, which contributes to transparency of their operation, e.g. C6’s tea supplier “Provide opportunities for refugees by teaching them to make tea.” (C6 website accessed 26/09/2018)</p>
<p>“The goal [of C6] is to provide support and employment for victims of human trafficking.” (C6R6 Int.)</p> <p>“C6R6 tells me that the goals are not financial, but pro-social.” (C6R6 Int.)</p>	<p>Codes: Pro-social goal</p> <p>Themes: Pro-social goals</p>	<p>This corresponds to “motives other than profit” in F1.</p>	<p>As a social enterprise, C6 pursues a pro-social goal</p>
<p>“I’d like them [survivors of human trafficking] to start their own shops, this is our language for growth.” (C6R6 Int.)</p>	<p>Codes: Growth to do more good, employee</p>	<p>Like C1, C6 pursue “growth to do more good” and like</p>	

<p>“C6R6 tell me that they would like to have a shop in every city near a safehouse [a term used for a dwelling where victims of human trafficking are based].” (C6R6 Int.)</p> <p>“C6R6 tells me that “Model we’ve got is reproduceable”, emphasising the growth of model, even if not the whole model, but some parts of it can be used by other firms.” (C6R6 Int.)</p> <p>“We are a stepping stone.” (C6R6 Int.)</p>	<p>empowerment, growth of model</p> <p>Themes: Growth to do more good, desire for social change, employee empowerment, growth of model</p>	<p>C4, C6 pursue growth of the model.</p> <p>C6 seek to empower people they work with.</p> <p>This broadly relates to “redefining the meaning of economic activities” in F1, since C6 aim to empower their employees and see their operations as a means to achieve this.</p>	
<p>“C6 view themselves as a “sympathetic employer”, which provides support and life skills to the survivors of human trafficking while recognizing the difficulties they have been through and their needs while at work, such as provision of a space where they feel comfortable and where they can retreat during the working day should they require some time on their own. C6 also view themselves as a platform which will open up further opportunities for employment for the survivors of human trafficking.” (C6R6 Int.)</p>	<p>Codes: Sympathetic employer, supporting employees, skills provision</p> <p>Themes: Supporting employees, skills provision</p>	<p>While C1 also aim for support, supporting employees and being a sympathetic employer differ in a way that C6 work with the survivors of human trafficking and hence have unique needs.</p> <p>This broadly corresponds to “development of human potential” in F1.</p>	<p>Importance of employee wellbeing runs throughout C6’s business operations and goals.</p>
<p>“What we want is to measure [success] in lives being transformed.” (C6R6 Int.)</p>	<p>Codes: Non-monetary success metric</p> <p>Themes: Non-monetary success metric</p>	<p>C6 is the first case in this study to directly mention their performance metric.</p> <p>This directly relates to “redefining the meaning of business success” in F1.</p>	
<p>“C6R6 highlights the importance of dignity, respect, trust which they are wishing to provide to the survivors of human trafficking.” (C6R6 Int.)</p> <p>“creating employment for survivors of human trafficking, restoring their dignity and giving them hope and a future” (C6 website accessed 26/09/2018)</p> <p>“We are looking at the whole of their [human trafficking survivors] life and recovery from trauma.” (C6R6 Int.)</p> <p>“C6R6 tells me about the importance of both mental and physical wellbeing, social inclusion, health [exercise]. “We want to help them be independent.”” (C6R6 Int.)</p> <p>“C6R6 says that flexibility is important and being a sympathetic employer.” (C6R6 Int.)</p>	<p>Codes: Employee dignity, respect for employees, trust, recognizing employees’ needs, mental and physical wellbeing, flexibility</p> <p>Themes: Employee dignity, respect for employees, trust, recognizing employees’ needs, mental and physical wellbeing, flexibility</p>	<p>C6 due to their unique employment principles emphasise the importance of dignity, respect and trust in relation to their employees.</p> <p>Broadly, this corresponds to “orientation towards wellbeing” in F1; this theme runs across other cases in various ways.</p>	
<p>“C6 use only biodegradable plastic, even though it is more expensive. “The packaging is expensive”, C6R6 says.” (C6R6 Int.)</p> <p>“Our packaging is 100% compostable: made from plants not plastic.” (Photos from Site visit 25/09/2018)</p> <p>“Some wood [board with information leaflets attached] is upcycled.” (C6R6 Int.)</p> <p>“C6 are in the process of stocking reusable coffee cups to address waste created by coffee cups.” (C6 site visit 25/09/2018)</p> <p>“We wanted to have least impact on the environment, support and use businesses that are doing the same.” (C6R6 Int.)</p> <p>“C6R6 tell me that they offer 20% off when a customer uses their own cup.” (C6R6 Int.)</p>	<p>Codes: Environmental change, pro-environmental orientation, preventing waste, waste avoidance, working with likeminded firms, single use plastic avoidance, compostable packaging, awareness of environmental impact</p>	<p>Even though pro-social orientation is central to C6, pro-environmental orientation is evident.</p> <p>Pro-environmental orientation is evident in all other cases even though it is manifested differently.</p> <p>This corresponds to “desire for environmental change” in F1 and C6’s actions regarding waste pollution corresponds to “preventing waste and pollution” in F1.</p>	<p>Working with likeminded firms requires further investigation in future research; personal communication with C1R1 suggests that environmentally and socially minded firms may have a tendency to work with firms which are similar to themselves in terms of their goals, business models etc. and not simply their environmental/social credentials.</p>

<p>“C6R6 tells me that they don’t produce food waste and the waste that is there is compostable.” (C6R6 Int.)</p> <p>“meringues are made from egg whites which is a by-product of ice-cream making [they use egg yolks in ice-cream].” (C6R6 Int.)</p> <p>“[we] are working for a carbon neutral footprint.” (C6 website accessed 26/09/2018)</p>	<p>Themes:</p> <p>Desire for environmental improvement, pro-environmental orientation, pollution prevention, waste avoidance, <u>working with likeminded firms</u>, pro-environmental values, single use plastic avoidance, compostable packaging, awareness of environmental impact</p>		
<p>“C6R6 tells me about the importance of Fair Trade in his supply chain. Even staff uniform is fair trade. “Our uniform is fair trade.”” (C6R6 Int.)</p>	<p>Codes:</p> <p>Fair trade</p> <p>Themes:</p> <p><u>Fair trade</u></p>	<p>This theme relates to the environmentally and socially minded sourcing entry above.</p> <p>This broadly relates to “redefining the meaning of economic activities” in F1, since choosing fair trade may be reflected in higher prices.</p>	<p>C6R6 notes, however, that “Getting people to think Fair Trade is difficult.” (C6R6 Int.) which relates to a “public expectations” barrier, i.e. people do not expect to pay a premium for a more ethically sourced product.</p>
<p>“One area that C6 would like to address is their carbon footprint.” (C6R6 Int.)</p> <p>“Carbon footprint is mentioned by C6R6.” (C6R6 Int.)</p> <p>“We don’t control our energy supplier; the council own the building.” (C6R6 Int.)</p>	<p>Codes:</p> <p>Carbon footprint, building ownership [lack thereof]</p> <p>Themes:</p> <p>Lack of building ownership as a barrier</p>	<p>The same barrier applies to C2 and C3.</p>	
<p>“We are going to use vehicles, we want to do something about it.” C6R6 mentions that when they deliver their ice cream, they need to use conventional transportation because there are no electric vehicles with a freezer.” (C6R6 Int.)</p>	<p>Barrier: lack of environmentally friendly alternative</p>	<p>The same barrier applies to C3</p>	
<p>“C6R6 tell me that the motive is profit with a purpose, the profit is sub-servant to the goal, they would like to make profit to employ people – survivors of human trafficking He tells me about other companies that have a similar goal, e.g. a bakery which employs women [ex adult industry workers] and trains them to bake goods.” (C6R6 Int.)</p>	<p>Codes:</p> <p>Profit with a purpose as a motive, profit to employ more people</p> <p>Themes:</p> <p><u>Profit with a purpose as a motive, profit to employ more people</u></p>	<p>This broadly corresponds to “redefining the meaning of economic activities” in F1.</p>	
<p>“Freedom [as value]. That’s why our slogan is “The joy of ice cream for the joy of freedom.” (C6R6 Int.)</p>	<p>Codes:</p> <p>Freedom as value</p> <p>Themes:</p> <p><u>Freedom as value</u></p>	<p>The category of value is mostly inductive.</p>	
<p>“C6R6 tell me that quality is very important, and they see themselves as premium, luxury ice cream company. He tells me that they use only fair trade, local wherever possible [e.g. mangos are not local], only natural</p>	<p>Codes:</p> <p>Quality, localisation of sourcing, ethics</p> <p>Themes:</p>	<p>Quality is emphasised by other cases.</p> <p>This entry is also related to environmentally and</p>	<p>Additionally, I have spoken to 2 loyal customers of C6 which enjoy C6’s products. (see notes from site visit from 25/09/2018). Another</p>

<p>ingredients. Local dairy is used, eggs comes from the local area, directly from a farmer.” (C6R6 Int.)</p> <p>“using only natural and fair-trade ingredients” (C6 website accessed 26/09/2018)</p> <p>“We only use natural delicious ingredients in our ice creams and sorbets Only Fair trade vanilla, chocolate and sugar is good enough for us.” (C6 website accessed 26/09/2018)</p> <p>“We also refuse to use artificial flavours and colours and try to keep local, natural and seasonal (so we don’t do strawberry in winter).” (C6 website accessed 26/09/2018)</p> <p>“delicious, ethical, artisan” (C6 website accessed 26/09/2018)</p>	<p>Quality, localisation of sourcing, seasonal produce, ethics [business]</p>	<p>socially minded sourcing. In terms of localisation of sourcing C6 is similar to C4 which also try to source locally.</p> <p>Being an ethical business has also been highlighted by C1.</p>	<p>customer was attracted to C6 after learning about C6’s ethics.</p> <p>Apart from the customers I have met during my site visit on 25/09/2018, I also consulted C6’s social media profiles to identify other customers’ feedback on quality; customers emphasise the product quality and the ethical credentials of C6.</p>
<p>“Word-of-mouth, social media, talks.” (C6R6 Int.)</p>	<p>Codes: Word-of-mouth, social media, talks</p> <p>Themes: Unorthodox marketing strategy [word-of-mouth, social media, talks]</p>	<p>Unorthodox marketing strategy applies to every case in this study.</p> <p>This corresponds to “restriction on advertising” in F1.</p>	
<p>“Our branding is done for free by a friend. C6R6 tells me that their pro-social initiative and the nature of their business attracted people who would like to contribute without charging them.” (C6R6 Int.)</p>	<p>Benefit: people’s willingness to contribute free of charge</p>	<p>While C6 and the other cases in this study experience a number of barriers, C6 experience an unusual benefit.</p>	<p><i>Further research is needed to understand people’s willingness to contribute to a firm’s goal by providing free services.</i></p>
<p>“Consumerism, public expectations, visibility, looks [products are not necessarily bright or colourful enough due to natural ingredients]. C6R6 tells me that liquorice, for example, that they use naturally gives brown and not black colour to ice-cream. Prices consumers expects to pay for ice cream are low.” (C6R6 Int.)</p>	<p>Barriers: consumerism, public expectations [e.g. price, product look]</p>	<p>C3 and C4 also cite public expectations as a barrier</p>	
<p>“Ethical banking” (C6R6 Int.)</p> <p>“We bank with Reliance bank.” (C6 website accessed 26/09/2018)</p>	<p>Codes: Ethical banking</p> <p>Themes: Ethical banking</p>	<p>C1 also use ethical banking</p>	
<p>“C6R6 tell me that they would like to work more to help child soldiers, currently they send money to charities that work with child soldiers.” (C6R6 Int.)</p> <p>“We intend to be a voice for those that have no voice.” (C6 website accessed 26/09/2018)</p>	<p>Codes: Donation to charitable causes, pro-social orientation</p> <p>Themes: Donation to charitable causes, pro-social values, pro-social orientation</p>	<p>Pro-sociality runs throughout C6</p>	<p>C6 via their website aim to provide an opportunity to the website visitors to donate to support the survivors of slavery and war (C6 website accessed 26/09/2018)</p> <p>C6 state: “Your donations would go towards supporting the [C6] cause and our “not for profit” business. Contributions should not [be] viewed as financial investments and in the event of winding up, all assets will go to charity.” (C6 website accessed 26/09/2018)</p>
<p>“C6R6 mentions that they are not competing, that they have “no desire to beat anyone.” (C6R6 Int.)</p>	<p>Codes: Cooperation</p> <p>Themes: Cooperation [not competition]</p>	<p>C2 also emphasise cooperation</p>	

During the site visit on 25/09/2018 C6R6 was the only person working. Both himself and his wife work as employees in C6.	Codes: Directors as employees Themes: Directors as employees	C2R2 highlight his willingness to work as an employee; this is also the case with C6R6.	
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Framework Construction

*When an element was featured previously, “Replication” is noted. Starting from this case [the analysis of this case was completed after C4], Attitudes, Values and Motives groups was re-named into “Worldviews”.

Codes	Themes	Elements	Groups
Community of retailers, social place, ethical community	Ethical community of retailers, cooperation	Local Community [ethical community of retailers] Replication: Embeddedness [cooperation] <i>Embeddedness within community</i>	Society-orientated
Not-for-profit	Alternative business models [Not-for-profit]	Governance [alternative business models, not-for-profit] <i>Consideration of other business models</i>	Internal Business Operation [Governance]
Charity	Establishing of initiatives [charity]	charity Replication: Growth [Establishing of initiatives – charity] <i>Venturing into desirable sectors which serve needs</i>	Internal Business Operation [Growth]
Sourcing from small firms, sourcing from social enterprises, ethical sourcing, transparency [values]	Environmentally and socially minded sourcing, sourcing from small firms, transparency [value]	Replication: Production: Environmentally and socially minded sourcing; Sourcing from small firms Values - Transparency	Internal Business Operation Worldviews
Pro-social goal	Pro-social goals	Principles of management [pro-social goals] <i>Redefining the meaning of economic activities</i>	Internal Business Operation
Growth to do more good, employee empowerment, growth of model	Growth to do more good, desire for social change, employee empowerment, growth of model	Motives [desire for social change] Employee Wellbeing [employee empowerment] Replication: Growth [growth to do more good, growth of model] <i>Desire for social and environmental change Orientation towards wellbeing</i>	Internal Business Operation Worldviews
Sympathetic employer, supporting employees, skills provision	Supporting employees, skills provision	Employee Wellbeing [importance thereof, supporting employees, skills provision]	Internal Business Operation

		<p>Replication: importance of employee wellbeing</p> <p><i>Orientation towards wellbeing</i> <i>Development of human potential</i></p>	
Non-monetary success metric	Non-monetary success metric	<p>Performance: Non-monetary success metric</p> <p><i>Redefining the meaning of economic activities</i></p>	Internal Business Operation
Employee dignity, respect for employees, trust, recognizing employees' needs, mental and physical wellbeing, flexibility	Employee dignity, respect for employees, trust, recognizing employees' needs, mental and physical wellbeing, flexibility	<p>Employee wellbeing [employee dignity, respect for employees, trust, recognizing employees' needs, mental and physical wellbeing, flexibility]</p> <p><i>Orientation towards wellbeing</i></p>	Internal Business Operation
Environmental change, pro-environmental orientation, preventing waste, waste avoidance, working with likeminded firms, single use plastic avoidance, compostable packaging, awareness of environmental impact	Desire for environmental improvement, pro-environmental orientation, pollution prevention, waste avoidance, working with likeminded firms, pro-environmental values, single use plastic avoidance, compostable packaging, awareness of environmental impact	<p>Governance [working with likeminded firms]</p> <p>Replication: Desire for environmental improvement Pro-environmental orientation Pollution prevention [single use plastic avoidance, compostable packaging] Frugal use of resources: Waste avoidance Environmental values Awareness of environmental impact</p> <p><i>Desire for social and environmental change</i> <i>Preventing waste and pollution</i></p>	Worldviews Environment-related
Fair Trade	Fair Trade	Production: Fair Trade	Internal Business Operation
Carbon footprint, building ownership [lack thereof], lack of environmentally friendly alternative consumerism, public expectations [e.g. price, product look]	Lack of building ownership lack of environmentally friendly alternative consumerism, public expectations [e.g. price, product look]	<p>Replication: lack of building ownership lack of environmentally friendly alternative, public expectations</p>	Barriers
Profit with a purpose as a motive, profit to employ more people	Profit with a purpose as a motive, profit to employ more people	<p>Motives: profit with a purpose, profit to employ for people</p> <p><i>Redefining the meaning of economic activities</i></p>	Worldviews
Freedom as value	Freedom as value	Values [freedom]	Worldviews
Quality, localisation of sourcing, ethics	Quality, localisation of sourcing, seasonal produce, ethics [business]	<p>Replication: Principles of management [ethics] Production [quality, localisation, seasonal produce]</p> <p><i>Localisation of production</i></p>	Internal Business Operation

Word-of-mouth, social media, talks	Unorthodox marketing strategy [word-of-mouth, social media, talks]	Replication: Marketing [unorthodox marketing strategy – word-of-mouth, social media, talks] <i>Restriction on advertising</i>	Internal Business Operation
people's willingness to contribute free of charge	people's willingness to contribute free of charge	people's willingness to contribute free of charge	Unexpected Benefit
Ethical banking	Ethical banking	Replication: Finance [ethical banking]	Internal Business Operation
Donation to charitable causes, pro-social orientation	Donation to charitable causes, pro-social values, pro-social orientation	Principles of management [donation to charities] Replication: Pro-social orientation Pro-social values Pro-environmental orientation <i>Desire for social and environmental change</i>	Internal Business Operation Worldviews
Cooperation	Cooperation [not competition]	Attitudes: cooperation [not competition] <i>Redefining the meaning of economic activities</i>	Worldviews
Directors as employees	Directors as employees	Replication: Principles of management [directors as employees]	Internal Business Operation

Degrowth Business Framework (C6F). The elements and groups are presented in the form of an individual degrowth business framework. Includes data sources from which elements derive. **Please note that C6 is, unlike other cases, a social enterprise*

<p>Material and Energy Throughput and Waste, and Habitat (Environment-related) <i>Material:</i></p> <ul style="list-style-type: none"> •Pollution prevention [single use plastic avoidance, compostable packaging] (C6R6 Int., Photos from Site visit 25/09/2018, C6 site visit 25/09/2018) •Frugal use of resources [waste avoidance] (C6R6 Int., C6 site visit 25/09/2018) 	<p>Internal Business Operation - Governance <i>Finance:</i></p> <ul style="list-style-type: none"> •Ethical banking (C6R6 Int.) <p><i>Marketing:</i></p> <ul style="list-style-type: none"> •Unorthodox marketing strategy (C6R6 Int.) •Word-of-mouth (C6R6 Int.) •Social media (C6R6 Int.) •Talks (C6R6 Int.) <p><i>Principles of management/governance:</i></p> <ul style="list-style-type: none"> •Directors as employees (C6 site visit on 25/09/2018) •Donation to charities (C6R6 Int.) •Ethics (C6R6 Int., C6 website) •Working with likeminded firms (C6R6 Int.) •Pro-social goals (C6R6 Int.) •Alternative business models [not-for-profit] (C6R6 Int., C6 website) <p><i>Employee Wellbeing</i></p> <ul style="list-style-type: none"> •Importance of employee wellbeing (C6R6 Int.) •Employee dignity (C6R6 Int., C6 website) •Respect for employees (C6R6 Int.) •Trust (C6R6 Int.) •Recognizing employees' needs (C6R6 Int.) •Mental and physical wellbeing (C6R6 Int.) •Flexibility (C6R6 Int.) •Supporting employees (C6R6 Int.) •Skills provision (C6R6 Int.) •Employee empowerment (C6R6 Int.) <p><i>Production</i></p> <ul style="list-style-type: none"> •Localisation of sourcing (C6R6 Int.) •Quality (C6R6 Int., C6 social media) •Seasonal produce (C6R6 Int., C6 website) •Fair Trade (C6R6 Int., C6 website) •Environmentally and socially minded sourcing (C6R6 Int.)
<p>Community and Humanity</p> <ul style="list-style-type: none"> •Embeddedness [cooperation with charities] (C6R6 Int.) •Ethical community of retailers (C6R6 Int.) 	

	<ul style="list-style-type: none"> •Sourcing from small firms (C6R6 Int.) <p>Performance</p> <ul style="list-style-type: none"> •Non-monetary metric of success (C6R6 Int.) <p>Growth-related</p> <ul style="list-style-type: none"> •Establishing of initiatives [charity] (C6R6 Int.) •Growth of model [not business] (C6R6 Int.) •Growth to do more good (C6R6 Int.)
<p>Attitudes, Values, Motives</p> <p>Motives:</p> <ul style="list-style-type: none"> •Desire for environmental improvement (C6R6 Int.) •Desire for social change (C6R6 Int.) •Profit with a purpose (C6R6 Int.) •Profit to employ more people (C6R6 Int.) <p>Attitudes:</p> <ul style="list-style-type: none"> •Cooperation [not competition] (C6R6 Int.) •Pro-environmental orientation (C6R6 Int., C6 site visit 25/09/2018) •Pro-social orientation (C6R6 Int., C6 website) •Awareness of environmental impact (C6R6 Int., C6 website) <p>Values:</p> <ul style="list-style-type: none"> •Freedom (C6R6 Int.) •Pro-social values (C6R6 Int., C6 website) •Pro-environmental values (C6R6 Int.) •Transparency (C6R6 Int.) 	<p>Barriers & unexpected benefit</p> <p>Barriers:</p> <ul style="list-style-type: none"> •Lack of building ownership (C6R6 Int.) •Public expectations [price, product look] (C6R6 Int.) •Lack of environmentally-friendly alternative (C6R6 Int.) <p>Unexpected benefit:</p> <ul style="list-style-type: none"> •people’s willingness to contribute free of charge (C6R6 Int.)

C7

C7 Data sources

Description of data source	Information this source provides
Site visits. The first site visit took place on 11/09/2018 and the second site visit took place on 25/09/2018.	Practicalities of business operation, including barriers, owner’s views, C7’s creative projects.
Investigator’s notes. Notes were taken during and immediately after the site visits.	Insights into C7R7’s motives and principles of operation.
Interview. Interview with C7R7 took place on 03/10/2018 at 2 PM.	Interview transcript provides data which relates to specific aspects of degrowth business (see Interview Framework above) from the perspective of C7R7.
Website and social media. These were available throughout the data collection.	Customers’ feedback.

C7 Data Analysis

Data	Coding and Themes	Analysis	Analytical Memo
<p>“When I work, I make sure that whoever I’m working with, I am actually getting exactly what they want rather than just snapping a shot, flat, and hoping they are going to get something from it. I try to understand what my client wants and then from there I can then actually focus on those details...” (C7R7 Int.)</p> <p>“you get 150% more and it’s directed specifically to your requirements rather than standing there on the floor and just getting flat screen pictures.” (C7R7 Int.)</p> <p>“personalised settings to create a bespoke... event.” (C7 website accessed 04/10/18)</p> <p>“C7R7 mentions she always try to do something creative with her photos.” (personal communication, site visits)</p>	<p>Codes:</p> <p>Client’s wants, customer requirements, creativity</p> <p>Themes:</p> <p>Consideration of customers’ needs, creativity</p>	<p>Consideration of customers’ needs, trying to understand and accommodate them well is important to C1, C2, C3, C4. C6 being a new company have not yet established mechanisms for doing so, however to C7 customers’ needs and wants are essential since C7 participate in events and provide photography services where it is important to ensure everything goes well from the first attempt.</p>	<p>While visiting C7, C7R7 demonstrated several of her works and editing she does to capture and represent the event well. She tries to accommodate customers’ style and wishes as well as bring some creativity to her work, she mentions creativity [value] throughout our conversations during site visits.</p>
<p>“if they wanted an aerial shot, we can send a drone up and then get it from an angle that you can’t get standing on the floor with your own phone” (C7R7 Int.)</p>	<p>Codes:</p> <p>Expertise</p> <p>Themes:</p>	<p>Like C1R1, C7R7 works with sophisticated equipment, and brings her expertise (technical in terms</p>	<p>Arguably, production of photography equipment could be decreased if individuals would prefer</p>

<p>“I would do ground work” (C7R7 Int.)</p>	<p>Expertise</p>	<p>of technology and skill) to C7.</p> <p>Broadly, this relates to “decreased productivity” in F1, alongside other entries in this case, since C7R7 emphasises quality, expertise, groundwork as opposed to quantity.</p>	<p>photography artists as opposed to taking photos with their own cameras or asking friends to do so, especially when in C7R7’s experience this often results in disappointments.</p>
<p>“we have used high-end cameras” (C7R7 Int.)</p> <p>“I use the highest quality equipment.” (C7 website accessed 04/10/18)</p> <p>“The cameras I use give me a much more 3D finish to a photo than just a standard phone.” (C7R7 Int.)</p> <p>“I can do the tweaking and make sure that it’s 100% before the customer sees it.” (C7R7 Int.)</p> <p>“It just need to be a good impression, you know, cleanliness, quality products, quality prints.” (C7R7 Int.)</p> <p>“Quality. [over productivity increase]” (C7R7 Int.)</p>	<p>Codes: High-end, better quality, quality products</p> <p>Themes: Quality [production], quality [value]</p>	<p>Quality was mentioned by the participants throughout data collection. Quality of photography artwork is importance since consumer preferences towards quality could reduce the amount of low-quality photographs taken by consumers with their phones.</p> <p>Quality broadly related to “durability of product” in F1.</p>	<p>C7 is different to other firms in terms of its product. Art for degrowth society can be investigated in future research.</p>
<p>“I don’t need a flash, so therefore I’m not using batteries, so again, it’s not effecting the environment.” (C7R7 Int.)</p> <p>“I’m on LED lights, things like low LEDs, the lowest voltage I can.” (C7R7 Int.)</p> <p>“All my display lights are on timers, I only have them on a couple of hours when it gets dusk.” (C7R7 Int.)</p> <p>“I try to keep the lights down to a min.” (C7R7 Int.)</p> <p>“No heat in here, there’s no heat in this building either. So, come winter, the door is shut, I will have a little fan heater, I generally have that on and that’s it, it warms the whole room.” (C7R7 Int.)</p>	<p>Codes: Minimising energy use, LED lights, voltage minimisation, over-lighting avoidance, pro-environmental orientation</p> <p>Themes: Energy use minimisation [LED lights, voltage minimisation, over-lighting avoidance], pro-environmental orientation</p>	<p>Frugality was mentioned by other firms that participated in this research, frugality in energy use is also a part of F1.</p> <p>Pro-environmental orientation broadly relates to “desire for social and environmental change” in F1.</p>	<p>Even though, like for C3, environmental orientation is not central to firm’s operations, it is important and embedded throughout the business operations. C7R7 is environmentally aware and looks forward to minimising her environmental impact further when she moves her company home from the premises where she is based.</p>
<p>“I don’t print extras, I only print display ones that I’m hoping to sell, there’s one picture of each of them, I don’t have back catalogues.” (C7R7 Int.)</p> <p>“C7R7 mentioned reducing environmental footprint via printing on-site (reduces transportation costs) and only printing the photos that are needed.” (Notes from Site Visit 1)</p> <p>“All my paper’s recyclable. I recycle, I have a bag at the back, all my cardboard goes, I take it home, all my plastic, drinking bottles, whatever, paper cups, they all go into my blue bin at home. Cans, everything goes.” (C7R7 Int.)</p>	<p>Codes: Avoiding material waste, recycling</p> <p>Themes: Frugal use of materials, recycling</p>	<p>Frugality in material use also runs throughout cases investigated and is a part of F1.</p>	
<p>“I work for me, it’s not about money.” (C7R7 Int.)</p> <p>“For me, it’s about the finished article, it’s the service that I give, the impression I give, the results I give.” (C7R7 Int.)</p> <p>“for me, it’s about the professional side, it’s just that, satisfying my own needs, and drive,</p>	<p>Codes: Money not important, primacy of service and result, own needs satisfaction, compensation not profit seeking</p>	<p>It is also the case for C3 that passion for the product/service is the motive behind the business rather than profit.</p> <p>An aspect worth noting here is C7R7 seeking</p>	

<p>and passions, so yeah, money doesn't really come into it." (C7R7 Int.)</p> <p>"Money is not essential, as long as it pays the bills and pays for my time, it's been productive as well." (C7R7 Int.)</p> <p>"As long as I'm financially paid for the time I've been there, the materials, potentially, that I've used, that's fine." (C7R7 Int.)</p> <p>"C7R7 mentioned that if she was pursuing profits, she would move out of the premises long time ago. She wanted to showcase her work, even if it became not viable financially due to the cost of renting the premises." (Notes from Site Visit 2)</p>	<p>Themes:</p> <p><u>Passion over profit, compensation not profit seeking</u></p>	<p>compensation (for the time spent and materials used) rather than profit.</p> <p>Satisfaction of her own needs via the business is also not in line with business as a profit maximiser understanding of business in conventional economics.</p> <p>This related broadly to "redefining the meaning of economic activities" in F1.</p>	
<p>"I think when you come down to a small business, it's our reputation that's on the line, whereas with bigger companies it doesn't really matter, because there always be someone else who wants cheap, tacky, cheerful, and normally the boss of that company is not in that company anyway." (C7R7 Int.)</p> <p>"you want to give the best impression" (C7R7 Int.)</p>	<p>Codes:</p> <p>Reputation</p> <p>Themes:</p> <p><u>Reputation</u></p>	<p>C7R7 values reputation and giving the best impression, this appears to be important for small firms where the owner is the one who communicates with the public.</p>	
<p>"I'd be an actual trainer and observer and work on the customer service side, and let the younger people go out and do the running around." (C7R7 Int.)</p>	<p>Codes:</p> <p>Training employees, director as employee</p> <p>Themes:</p> <p><u>Training employees [knowledge sharing], director as employee</u></p>	<p>This is a new insight into the understanding of growth for a degrowth economy on a firm level. This should be viewed alongside the entry below. Growth plans in C7 are sophisticated in a way that C7R7 not only wants to employ more people (2-3), but also remain a micro business and share her knowledge with others. It related to "development of human potential" in F1.</p>	<p>Since C7R7 has not yet employed those trainees she mentioned, this entry is seen in terms of "growth" rather than employee wellbeing. In every firm investigated directors adopt a hands-on approach, C7R7 highlights her desire to be creatively involved in business even when she employs 2 more people.</p>
<p>"I wouldn't want to grow too big, ideally, I've got a couple of friends or fellow enthusiasts that come out every now and again." (C7R7 Int.)</p> <p>"Two or three, just a couple of photographers that can go out and do the field work and then they bring the pictures to me." (C7R7 Int.)</p>	<p>Codes:</p> <p>Staying small</p> <p>Themes:</p> <p><u>Staying small [2-3 employees]</u></p>	<p>Similarly to C1, C7 is open to employing more people, but staying within a certain predetermined number is important (50 for C1 and 3 for C7). Smallness of units of production is desirable for a degrowth economy. Smallness of business units/operation is a part of F1.</p>	
<p>"I'd like to take a back seat on it, so I'm not actually out every weekend, and spend some family time." (C7R7 Int.)</p>	<p>Codes:</p> <p>Growth to increase wellbeing</p> <p>Themes:</p> <p><u>Growth to increase wellbeing</u></p>	<p>Interestingly, apart from training, another aspect of growth that C7R7 pursues is spending more time with her family. This still deviates from growth for the sake of profit logic of mainstream understanding of business.</p> <p>In broad terms this relates to "orientation towards wellbeing" in F1.</p>	<p>It appears that growth strategies vary for degrowth firms, from non-growth to growth for non-profit reasons.</p>
<p>"I go to work to pay the council to exist." (C7R7 Int.)</p> <p>"if they don't come back to me or I lose that sale, it doesn't matter, because I don't have</p>	<p><u>Barrier: lack of unit ownership</u></p>	<p>Alongside public expectation, the largest barrier C7 faces is lack of ownership of the premises where C7 is located. This</p>	<p>The need for profit to pay rent should be researched further since it concerns the question of "ownership" and seeking rent/interest which</p>

<p>a huge debt over my head to have to pay.” (C7R7 Int.)</p> <p>“when you’ve got a business unit, and a rent, and a landlord, well, I don’t think you are in control. You are forever chasing whatever to make your landlord, or your renter, or your bank manager if you’ve taken out a loan, happy” (C7R7 Int.)</p> <p>“Once I don’t have it [rent] round my neck...”</p> <p>“I can’t put anything anywhere, I can’t even put a sign on the walls outside.” (C7R7 Int.)</p> <p>“I can’t put shutters, I can’t put security on my building unless it’s inside. There’s huge drawbacks of not being in your own premises.” (C7R7 Int.)</p> <p>“There are a lot of barriers when you haven’t got a property or when you are renting or when you are governed by someone else. Lots, lots, lots which do impact on the business.” (C7R7 Int.)</p> <p>“Renting premises is expensive.” (Notes from Site Visit 1)</p>		<p>applies to other firms investigated.</p>	<p>is a question degrowth researchers should address.</p>
<p>“it’s interesting for me to try different areas within the county.” (C7R7 Int.)</p>	<p>Codes: Working locally</p> <p>Themes: Working locally</p>	<p>Like C1, C7 also has a preference towards working locally. Localisation and embeddedness are parts of F1.</p>	
<p>“This morning I called into a shop, a café and they had quite a few blank walls...” (C7R7 Int.)</p> <p>“a café and they had quite a few blank walls, so again, “would you like to exhibit my artwork, and if you sold it, you’d have a commission of what I sold”” (C7R7 Int.)</p>	<p>Codes: Cooperation opportunities, mutual benefit</p> <p>Themes: Seeking cooperation with local firms, mutual benefit</p>	<p>C7R7 tries to investigate ways to cooperate with other firms despite her failure to find firms to cooperate with when she moved into the premises where she is based.</p> <p>Like C6, she finds value in this cooperation and in mutual benefit that results from this cooperation, and like C2 and C4, C7R7 is looking for a cooperation opportunity which would result in a mutual benefit.</p> <p>In broad terms this relates to embeddedness in F1.</p>	
<p>“I then use a picture frame maker who is based in [Location], just two roads away from me. And I go to him and he does all my frames and my mounts.” (C7R7 Int.)</p> <p>“I can walk to his shop, I don’t have to drive. It’s always someone down the road, it’s always someone.” (C7R7 Int.)</p> <p>“I have a website which I have run by an external company, again, he is a sole trader.” (C7R7 Int.)</p>	<p>Codes: Local supplier, working with small firms</p> <p>Themes: Buying local, working with small firms</p>	<p>Like C6, C7R7 identified local firms which specialise in products she needs. Working with local small firms is beneficial for embeddedness and cooperation and is also pro-environmental (reduces traveling).</p> <p>Localisation of sourcing is a part of F1.</p>	
<p>“They [firms C7R7 tried to cooperate with] are like, “What’s in it for me? ... A lot of that. They are suspicious, a lot of people are suspicious.” (C7R7 Int.)</p> <p>“local businesses are not cooperating.” (Notes from Site Visit 1)</p> <p>“When she moved in to the premises, she tried to cooperate with local businesses and</p>	<p>Barrier: lack of cooperation from local firms, lack of trust [suspicion]</p>	<p>Despite the fact that C7R7 identified local firms she sourced from, and is seeking for other firms to cooperate with, her attempt to cooperate with firms located near her premises did not result in any cooperation. She cites laziness and</p>	

<p>invited them to her studio, and none came.” (Notes from Site Visit 1)</p>		<p>suspicion as potential reasons.</p> <p>C2R2 also cited disbelief he experienced towards his pro-environmental initiative from people.</p>	
<p>“I’d say, at least 75 % of people nowadays just want the cheapest option, cheapest picture.” (C7R7 Int.) “they don’t care what colours there are, as long as they’ve got a visual memory and that’s it.” (C7R7 Int.) “I visited C7 for the first time on 11/09/2018. C7R7 spoke about public expectations regarding the cost of professional photography. She mentioned that technology cheapens craft.” (Notes from Site Visit 1)</p>	<p>Barrier: people’s expectations, changing attitudes to art Barrier: consumer technology [cheapens craft]</p>	<p>This barrier is also one that C3 faces and cites. For C3, people’s expectations regarding the cost of making clothing is a barrier while for C7 it is people’s expectations regarding the cost of professional photography. Other firms also face this barrier (people’s expectations to purchase single use plastic bottle for C4 and the cost of artisanal ice-cream and natural food colour for C6).</p> <p>While technology-aversion is a barrier for C1, for C4 technology (consumer technology) is a barrier which cheapens professional photography art.</p>	
<p>“for me it’s a social thing. It’s getting all the families together, and having a bit of a laugh, and it’s an experience.” (C7R7 Int.) “whoever comes in, they always say: “It’s been so much fun, I really loved it.” And for me it’s the whole thing, the excitement of going, and the anticipation of going, ... enjoying it, having fun, having a bit of giggle.” (C7R7 Int.) “it’s my buzz when they look at the pictures, and they react, and yeah, I think, I got that right” (C7R7 Int.)</p>	<p>Codes: Dematerialised social experience, pro-social orientation, happiness in the process of production</p> <p>Themes: <u>Dematerialised social experience</u>, pro-social orientation, happiness in the process of production</p>	<p>Pro-social orientation in case of C7 is exemplified in a dematerialised social experience that C7R7 is able to provide for families. She mentions that people enjoy this experience. It is also beneficial to C7R7 in terms of happiness in the process of production that she can experience due to her passion for the service. This also applies to C3.</p> <p>This broadly relates to “meaningful jobs” in F1.</p>	<p>Essentially, the Production and Wellbeing categories in F2 should be viewed together, not separately.</p>
<p>“I’m not an IT expert, I’m not a strategist, I’m not a marketing guru.” (C7R7 Int.) “I don’t want to get involved in that [marketing].” (C7R7 Int.)</p>	<p>Codes: Lack of marketing strategy</p> <p>Themes: Unorthodox marketing</p>	<p>Restriction on advertising is a part of F1. All firms investigated as a part of this study use unorthodox marketing “strategy”. C7 uses a local firm to maintain her website, and also uses social media and leaflets, but C7R7 does not outline any marketing strategy.</p>	<p>Due to investigated firms’ embeddedness within their local communities and importance of reputation, they do not appear to manipulate consumer wants, rather, their marketing is targeting awareness.</p>
<p>“I did plan to leave things here and cycle in, but just watching the area, and as the area’s changed, I don’t want to leave anything here.” (C7R7 Int.)</p>	<p>Barrier: lack of security/safety</p>	<p>C7R7 drives to/from work due to security concerns for her professional equipment.</p>	
<p>“C7R7 mentions she charges a fair amount per photos, e.g. [Another Photography Studio] in [Location] would charge £700 for the same size print she charges £75 for.” (C7 site visit 2)</p>	<p>Codes: Fair price</p> <p>Themes: Fairness</p>	<p>In terms of fairness (including fair price) C7 is similar to C1.</p>	

Framework Construction

*When an element was featured previously, “Replication” is noted.

Codes	Themes	Elements	Groups
Client’s wants, customer requirements, creativity	Consideration of customers’ needs, creativity	Replication: customer’s needs [consideration of] Creativity	Society-Orientated Worldviews
Expertise	Expertise	Replication: Expertise <i>Decreased productivity</i>	Internal Business Operation
High-end, better quality, quality products	Quality [production], quality [value]	Replication: Quality <i>Durability of product</i>	Internal Business Operation Worldviews
Minimising energy use, LED lights, voltage minimisation, over-lighting avoidance, pro-environmental orientation	Energy use minimisation [LED lights, voltage minimisation, over-lighting avoidance], pro-environmental orientation	Replication: Frugal use [of energy] Pro-environmental orientation <i>Frugal use of resources Desire for social and environmental change</i>	Environment-related Worldviews
Avoiding material waste, recycling	Frugal use of materials, recycling	Replication: Frugal use [of materials, recycling] <i>Frugal use of resources, recycling</i>	Environment-related
Money not important, primacy of service and result, own needs satisfaction, compensation not profit seeking	Passion over profit, compensation not profit seeking	Motives [Passion not profit, compensation over profit seeking] <i>Redefining the meaning of economic activities</i>	Worldviews
Reputation	Reputation	Values [reputation]	Worldviews
Training employees, director as employee	Training employees [knowledge sharing], director as employee	Growth Replication: Director as employee <i>Development of human potential</i>	Internal Business Operation
Staying small	Staying small	Replication: Growth [staying small] <i>Smallness of business units/operation</i>	Internal Business Operation
Growth to increase wellbeing	Growth to increase wellbeing	Growth to increase wellbeing <i>Orientation towards wellbeing</i>	Internal Business Operation
Working locally	Working locally	Replication: Working locally <i>Embeddedness within community, localisation of production</i>	Society-orientated
Cooperation opportunities, mutual benefit	Seeking cooperation with local firms, mutual benefit	Replication: Embeddedness [cooperation]	Society-orientated Worldviews

		Cooperation [values] <i>Embeddedness within community</i>	
Local supplier, working with small firms	Buying local, working with small firms	Replication: Localisation of production Sourcing from small firms <i>Localisation of production</i>	Internal Business Operation
Dematerialised social experience, pro-social orientation, happiness in the process of production	Dematerialised social experience, pro-social orientation, happiness in the process of production	Dematerialised social experience Replication: Pro-social orientation Happiness in production <i>Redefining the meaning of economic activities</i>	Society-related Internal Business Operation Worldviews
Lack of marketing strategy	Unorthodox marketing	Replication: Unorthodox marketing <i>Restriction on advertising</i>	Internal Business Operation
Fair price	Fairness	Replication: Fairness [value]	Worldviews
Lack of unit ownership lack of cooperation from local firms, lack of trust [suspicion] people's expectations, changing attitudes to art consumer technology [cheapens craft] Lack of security/safety	Lack of unit ownership lack of cooperation from local firms Lack of trust [suspicion] People's expectations Changing attitudes to art Consumer technology [cheapens craft] Lack of security/safety	Lack of cooperation [from local small firms] Lack of trust/suspicion Changing attitudes to art Consumer technology [cheapens art] Lack of security/safety Replication: Lack of ownership Public expectations	Barriers

Degrowth Business Framework (C7F). The elements and groups are presented in the form of an individual degrowth business framework. Includes data sources from which elements derive.

<p>Material and Energy Throughput and Waste, and Habitat (Environment-related) Material: •Frugal use of materials (C7R7 Int., notes from site visit 1) •Recycling (C7R7 Int.) Energy: •Energy use minimisation [LED lights, voltage minimisation, over-lighting avoidance] (C7R7 Int.)</p>	<p>Internal Business Operation - Governance Marketing: •Unorthodox marketing strategy (C7R7 Int.) Principles of management/governance: •Director as employee (C7R7 Int.) Production •Buying local (C7R7 Int.) •Quality (C7R7 Int., C7 website) •Expertise (C7R7 Int.) •Happiness in the process of production (C7R7 Int.) •Sourcing from small firms (C7R7 Int.) Growth-related •Training employees [knowledge sharing] (C7R7 Int.) •Staying small [3 people] (C7R7 Int.) •Growth to increase wellbeing (C7R7 Int.)</p>
<p>Community and Humanity •Seeking cooperation with local firms (C7R7 Int.) •Dematerialised social experience (C7R7 Int.) •Working locally (C7R7 Int.) •Consideration of customers' needs (C7R7 Int., C7 website)</p>	
<p>Worldview [Attitudes, Values, Motives] Motives: •Passion over profit (C7R7 Int.) •Compensation not profit seeking (C7R7 Int., notes from site visit 2) Attitudes: •Pro-environmental orientation (C7R7 Int.) •Pro-social orientation (C7R7 Int.) Values: •Cooperation (C7R7 Int., notes from site visit 1) •Mutual benefit (C7R7 Int.) •Fairness (C7 site visit 2)</p>	<p>Barriers •Lack of unit ownership (C7R7 Int.) •Lack of cooperation from local firms (C7R7 Int., notes from site visit 1) •Lack of trust [suspicion] (C7R7 Int., notes from site visit 1) •People's expectations (C7R7 Int., notes from site visit 1) •Changing attitudes to art (C7R7 Int.) •Consumer technology [cheapens craft] (notes from site visit 1) •Lack of security/safety (C7R7 Int.)</p>

<ul style="list-style-type: none">•Reputation (C7R7 Int.)•Quality (C7R7 Int.)•Creativity (notes from site visit 1)	
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