

Human Wellbeing and Local-level Sustainability

Amsale Kassahun Temesgen

NORD UNIVERSITY BUSINESS SCHOOL

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Nord University

N-8049 Bodø

Tel: +47 75 51 72 00

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Amsale K. Temesgen

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Abstract

The interconnected environmental, social, and economic problems we face today are closely associated with the expanding global economy. Scientific investigations of the sources and drivers of global carbon emissions find overwhelming evidence that international consumption levels, particularly in the affluent Western world, are the strongest determinants driving these emissions. Consequently, Ecological Economics questions the logic of infinite economic growth on a limited planet and deems unlimited economic growth as both environmentally and socially undesirable. Mainstream policy deliberations that address sustainability issues have emphasized technological innovations and green growth as solutions. Although technological innovations have had some positive impact, the increase in consumption and (to some degree) population have outstripped the benefits of technological change. As a result, there are growing calls for exploring ways of securing human wellbeing while reducing resource throughput. This insight is essential, both for academic deliberation and practice.

Local-level sustainability initiatives (alternatively referred to as community-led sustainability initiatives, grassroots initiatives, social movements, and social innovation initiatives in various academic fields) are important in investigating ways of combining wellbeing and sustainability objectives. Community initiatives have the potential to encourage a change in behaviors, norms, and practice that can spread to the larger society and embolden higher level policy changes. Previous research has identified their strengths: as a living setting where individuals can live low-impact lifestyles, promote a change of values, and experiment with collective decision-making. Despite their potential for prefiguring a wider societal change, there are gaps in the literature regarding the challenges they face, the strategies they adopt, and the implications for their members' wellbeing and sustainability practices.

Against this background of high expectations of local sustainability initiatives to be the drivers of social and cultural change, the PhD project investigates the interplay between wellbeing and sustainability in selected sustainability initiatives. The research

question that guides this dissertation is as follows: *How can local-level sustainability initiatives attain the twin goals of securing wellbeing and environmental sustainability in the transition towards low-impact societies?*

The dissertation includes four independent research papers that explore the interplay of wellbeing and sustainability at the local level. The first paper takes a close look at the concept of circular economy and examines its potential for bringing about a fundamental change to the current economic system. Two of the papers are based on empirical data from in-depth studies of two ecovillages. The last paper employs a similar approach as the other two empirical papers and assesses the interplay of wellbeing and sustainable transport practices in a Norwegian municipality.

The results show that one of the first and important processes local-level initiatives can engage in to attain the twin goals of wellbeing and sustainability is to examine their foundational principles, and initiate a change towards those principles that contribute to human flourishing within social and ecological boundaries. The dissertation identifies the following changes in foundational principles as crucial in the transition to sustainability: from the focus on unlimited economic growth to human wellbeing, from atomistic competition to relational cooperation, from instrumental to inherent values, and from mechanistic to organic worldview.

Local-level initiatives will be able to foster both wellbeing, as well as the success of their initiatives, by developing institutions, organizations, and processes in alignment with the above shift in foundational principles, thereby resulting in infrastructures, values, and practices that contribute to flourishing individuals and communities. Moreover, they generate environments that promote the adoption of sustainable practices, the satisfaction of fundamental human needs, and a low environmental impact. The results show that affordable housing and infrastructures, strong community relations, institutions for conflict resolution and communication, non-commercial and affordable shared spaces, and a slower daily pace are among the most important factors in this process.

Decision-makers can support the emergence of sustainable practices at the local level by earmarking resources for bottom-up initiatives that secure wellbeing and sustainability. It is also crucial to encourage an active participation of citizens in decision-making processes. The participation of citizens is a synergic satisfier that builds trust between communities and policy/decision-makers, develops the competence of all involved in the process, and opens the possibility of finding resource-saving solutions that activate and engage the citizenry.

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1 Introduction

We live in a time of interconnected environmental, social, and economic uncertainties. These interrelated problems have been described as *persistent* (Rotmans & Loorbach, 2009) and *wicked problems* (Rittel & Webber, 1973), indicating their complex, emergent, and uncertain nature. Our life support systems face significant uncertainty (Ripple et al., 2019; Ripple et al., 2017; Steffen et al., 2015). Climate change, with its risks of extreme weather variations, its threat to agriculture, food security, and natural disasters on a global scale, is one of the most daunting challenges (IPCC, 2018). Other environmental challenges include pollution, a loss of biodiversity, and resource scarcity (Costanza et al., 2014). Our time has also seen a financial crisis that came close to causing a systemic collapse on a global scale (OECD, 2009). Simultaneously, the level of economic inequality is unprecedented since the Second World War (Piketty, 2014; Roberts, 2012), with research showing that such an extreme level of inequality hurts individual and societal wellbeing (Wilkinson & Pickett, 2010).

These problems are closely associated with the expanding global economy (Jackson, 2017; Krausmann et al., 2017; Mardani et al., 2019; Parrique et al., 2019). Scientific investigations of the sources and drivers of global carbon emissions find overwhelming evidence that international consumption levels, particularly in the affluent Western world, are the strongest determinants driving these emissions (Chang et al., 2019; Mardani et al., 2019; Wiedenhofer et al., 2013; Wiedmann et al., 2020). Consequently, Ecological Economics¹ questions the logic of infinite economic growth on a limited planet and deems unlimited economic growth as both environmentally and socially undesirable (Boulding, 1966; Costanza et al., 2014; D. W. O'Neill, 2015). On the other hand, mainstream policy deliberations that address this issue have emphasized

¹ There are different camps in the field of Ecological Economics (see the discussion in article I on the main characteristics of these different camps). The views represented in this dissertation align with the socially oriented camp of Ecological Economics that is critical of unlimited economic growth in wealthy Western economies.

technological innovations and green growth as solutions. Although technological innovations have had some positive impact, the increase in consumption and (to some degree) population have outstripped the benefits of technological change (Parrique et al., 2019; Wiedmann et al., 2020).

Since absolute decoupling between economic activity and resource use is impossible (Hickel & Kallis, 2019; Parrique et al., 2019; Schröder & Storm, 2018; Simonis, 2013), scaling down the level of economic consumption and production in the wealthiest nations may be necessary (Parrique et al., 2019). In particular, there are growing calls for exploring ways of securing human wellbeing while reducing resource throughput (and Gross Domestic Product (GDP)) (Jackson, 2005, 2017; Koch, 2013; D. W. O'Neill et al., 2018; Wiedmann et al., 2020). This insight is essential, both for academic deliberation and practice (Wiedmann et al., 2020).

Local-level sustainability initiatives (alternatively referred to as community-led sustainability initiatives, grassroots initiatives, social movements, and social innovations initiatives in various academic fields) are important in investigating ways of combining wellbeing and sustainability objectives. Jackson (2009) refers to these initiatives as 'laboratories for social change' because 'intentional households and communities are vital in pointing to the possibilities for flourishing within ecological limits' (p. 152). Community initiatives have the potential to encourage a change in behaviors, norms, and technology that can spread to the larger society and embolden higher level policy changes (Otto et al., 2020; S. R. Smith et al., 2020).

For this reason, local-level sustainability initiatives are seen as 'initiators of social transformation' (S. R. Smith et al., 2020, p.1), and are credited for 'prefiguring the transformation as well as cultural and value changes as a necessary precondition for wider radical change' (Wiedmann et al., 2020, p.7). There is a rich amount of literature that focuses on their innovativeness and the positive contributions they make to their communities and the environment (Avelino & Kunze, 2009; Dumitru et al., 2017; Haxeltine et al., 2017; Haxeltine et al., 2016; Kunze, 2012, 2015; Kunze & Avelino, 2015). Despite their potential for 'prefiguring a wider societal change', there are gaps

in the literature regarding the challenges they face, the strategies they adopt, and the implications for their members' wellbeing and sustainability practices (Haxeltine et al., 2017; Haxeltine et al., 2016). As a result, there are calls for more research on the role of community-led initiatives in changing lifestyles, and the institutional, cultural, and individual barriers they encounter (Guillen-Royo, 2016; Wiedmann et al., 2020; Wilhite, 2016). This dissertation aims to contribute to this literature by focusing on local-level sustainability initiatives and their impact on individual and community wellbeing and sustainable practices.

1.1 Research questions

This dissertation is guided by the following overarching question:

How can local-level sustainability initiatives attain the twin goals of securing wellbeing and environmental sustainability in the transition towards low-impact societies?

This overarching question will be addressed through the answers to three sub-questions that link the introduction (kappa) to the articles included in this dissertation. Each of the sub-questions and brief introductory text is presented below.

- 1) What changes in foundational principles are necessary for a systemic change from the current economic system?

Many local-level initiatives are driven by the ambition to contribute in two areas: social life (that is, affording their members a higher quality of life as it relates to having a sense of meaning in life, providing a coherence between values and practice, and a sense of belonging in a like-minded community) and environmental sustainability (that is, having low-impact lifestyles and a better connection to their natural environment) (Guillen-Royo, 2016; Nelson, 2018; Seyfang, 2008; Singh et al., 2019). However, the sustainability concept has also been adopted by diverse mainstream actors such as businesses, investors, civil society, and the state. With this murky background, it is difficult to separate sustainability initiatives that have ambitions of bringing about systemic changes to the current economic system from those that aim to make minor

adjustments. This calls for a clarification of values, strategies, and path of action, and will be addressed by sub-question number one. This research question links the introduction to article I, entitled 'Circular economy – Reducing Symptoms or Radical Change?', published in *Philosophy of Management*.

2) How can local-level sustainability initiatives foster both wellbeing and the success of their initiative?

Local-level sustainability initiatives that are the focus of this research are also referred to as grassroots initiatives. Seyfang and Smith (2007) define grassroots initiatives as 'networks of activists and organizations generating novel bottom-up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved. In contrast to mainstream business greening, grassroots initiatives operate in civil society arenas and involve committed activists experimenting with social innovations as well as using greener technologies' (p. 585).

Many have conceptualized ecovillages as grassroots initiatives that experiment with social and technological innovations (Avelino & Kunze, 2009; Boyer, 2015, 2016; Kunze, 2012, 2015; Kunze & Avelino, 2015). However, their success rate is not very high. Success is understood in this dissertation (and in article II) as achieving (or working towards) the initiative's stated visions and goals and ensuring its continued survival. Approximately 90% of ecovillages and community groups do not survive beyond the first few years of their establishment (Andreas & Wagner, 2012; Christian, 2003).

Although the literature identifies that conflicts and tensions are a part of community life, there is a bias towards highlighting the positive aspects of these initiatives (Haxeltine et al., 2016). Studies have connected members' motivations to engage with sustainable practices in these initiatives with the satisfaction of their needs for autonomy, relatedness, and competence (ibid). Nonetheless, there is a gap in the literature regarding the processes that endanger the satisfaction of these needs and imperil these initiatives. To help address this issue, I pose sub-question number two and connect the introduction to article II in this dissertation: 'Wellbeing and ecovillage

success: An in-depth study of a Norwegian ecovillage's transformation', which received 'major revision' comments from the Journal of Cleaner Production. The updated version (which is included in this dissertation) will be re-submitted to the journal in April 2021.

3) What processes encourage/suppress the adoption of sustainable practices in communities?

Social practice theory posits that there are three elements to every practice: the material needed for the practice (including technology and infrastructure), the meaning or significance of the practice (including norms and culture), and the competence or skill (alternatively, tacit and discursive knowledge) to carry out the practice (Sahakian & Wilhite, 2014; Shove et al., 2012; Spaargaren, 2003; Wilhite, 2016). This theoretical insight is a departure from theories that focus solely on the agent, or on the structure that constrains or encourages certain actions (Giddens, 1984). Røpke (2009) identifies this theoretical approach as an important inspiration for ecological economics because it elucidates the deeper meanings of consumption practices. By illuminating how new practices get established, attract new practitioners, and flourish, the approach identifies opportunities and challenges to promoting sustainable practices. Although, practice theoretical perspectives often focus on the micro aspects of routinized practices, combining them with other approaches that bring their wider ramifications into focus can provide a deeper insight into possible pathways towards sustainability transitions (Røpke, 2009). Articles III and IV in this dissertation apply social practice theoretical approaches in combination with wellbeing research (article IV) and an examination of the wider context in which sustainable practices are enacted (article III) to illuminate how new sustainable practices can become established and flourish/diminish in local sustainability initiatives.

I explore the above research questions in four articles that apply complementary theoretical perspectives. The first article is conceptual, and highlights the importance of clarifying the foundational principles of sustainability initiatives. The second and

third articles focus on ecovillages. Ecovillages provide an interesting case to study local-level sustainability initiatives because of the following reasons:

- They can be easily delineated from their surroundings, as they often have clear borders and identifying markers that make them ideal as case studies.
- They aim to provide a 'living experiment' for sustainable lifestyles (Guillen-Royo, 2016; Jackson, 2009).
- When they adopt an intermediate position in society—that is, a position not too radical or too embedded in mainstream society, they increase their potential to influence the larger society towards sustainability (Boyer, 2015; A. Smith, 2007; Westskog et al., 2018).
- Studies have shown that ecovillages can have a positive influence on local policymaking (Avelino & Kunze, 2009; Boyer, 2015). In addition, their network organization, Global Ecovillage Network (GEN), has achieved a consultative status at the UN, which gives it the opportunity to contribute with its competence on community-level sustainability (Global Ecovillage Network, n.d.-a).

The fourth article (a book chapter) employs a similar theoretical and methodological approach as with the last two articles, but is based in mainstream society, thereby making it ideal to compare the findings in the two contexts regarding the interface between wellbeing and sustainability.

1.2 Contributions

This dissertation is situated within the field of Ecological Economics, and adopts a critical stance towards mainstream economics' goal of maintaining consumption-driven economic growth (Jackson, 2009). It does so by the choice of subject area—the interconnection between wellbeing and sustainability, the choice of case studies—local-level sustainability initiatives, and the choice of methodology—a combination of needs-based workshops, in-depth interviews, and web survey. It also draws on an interdisciplinary mix of theoretical perspectives for its analyses—wellbeing approaches (Brand-Correa & Steinberger, 2017; Guillen-Royo, 2010, 2016; Max-Neef, 1991), transition studies (Grin et al., 2010; Loorbach et al., 2017; Rauschmayer et al., 2015;

Clive L. Spash & Dobernig, 2017), and social practice theory (Giddens, 1984, 1991; Røpke, 2009; Shove et al., 2012; Clive L. Spash & Dobernig, 2017). By drawing on theoretical perspectives from different fields, it contributes to the further development of the field of Ecological Economics.

The dissertation has three specific contributions. First, I apply a philosophy of science approach to illuminate the role sustainability initiatives play in promoting *strong* sustainability² (as opposed to a weak one), by using Lakatos' model of research program. This novel way of connecting an initiative's goals and visions to its implicit ontological, epistemological, and axiological foundations helps identify the transformative potential of the initiative. Article I presents this approach by focusing on the concept of circular economy.

Second, by conducting an in-depth study of the transformation of a Norwegian ecovillage, I identify the wellbeing pitfalls that such initiatives may encounter as they aim to scale-up and mainstream their initiatives. This paper combines a wellbeing approach with the Multi-Level Perspective (MLP) of transition studies, and contributes new insights to both fields. There is an overemphasis of the positive attributes of these initiatives; therefore, a clear picture of their challenges and how they attempt to solve them is a contribution to the field (Haxeltine et al., 2016).

Third, through a comparative case study of two ecovillages that both aimed to scale-up their practices, I show how the elements of sustainable practices change in the ecovillages' transformation, ultimately impacting the practices themselves. I show how when one element is compromised, it leads to the deterioration of the other elements, hence endangering the practice itself.

The study of wellbeing and its relation to sustainability initiatives will contribute to the further development of the field of ecological economics. Through its engagement in ongoing processes in the selected case studies, the dissertation aims to contribute to both practice and the study of local-level sustainability initiatives.

²A discussion of the concepts strong vs. weak sustainability is addressed in section 2.1.2.

1.3 Outline of the dissertation

This dissertation is organized as follows: Chapter 2 discusses the theoretical perspectives employed in the articles, which will also be used in the introduction to synthesize the findings. Chapter 3 outlines the methodological considerations made during the PhD research activities, including reflections on philosophy of science, the strengths and weaknesses of the methods adopted, and ethical considerations. Chapter 4 presents the empirical setting where the data for the PhD were gathered. In Chapter 5, the research findings and their contribution to the dissertation will be presented. Chapter 6 will synthesize these findings. Lastly, Chapter 7 will conclude the dissertation and present implications and limitations, in addition to outlining areas for future research.

2 Theoretical Framework

2.1 Wellbeing and sustainability

The growing skepticism towards pursuing unlimited economic growth on a finite planet has brought about ethical investigations regarding the purpose of the economy (Capra & Jakobsen, 2017; Costanza et al., 2014; Holland, 2006; Jakobsen, 2017; J. O'Neill, 2008). Scholars investigating the relationship between society and nature emphasize that environmental considerations have to return to 'classical questions about the nature of the good life' (J. O'Neill, 2008, p. 125). Others investigate the relationship between wellbeing and material consumption, and emphasize the non-materialistic sources of wellbeing (Guillen-Royo, 2010; Jackson, 2009, 2017; Rauschmayer & Omann, 2015; Rauschmayer, Omann, & Frühmann, 2011).

On the other hand, sustainability research has a tendency to focus on 'bio-physical environmental issues' (Vallance et al., 2011, p. 342). Research in the intersection of the two fields is an emerging research area, and there are calls to explore this field more in depth (Guillen-Royo, 2016; Helne & Hirvilammi, 2015; Schöpke & Rauschmayer, 2014). This section explores literature in this area to both introduce and frame the PhD project.

2.1.1 Wellbeing traditions

The term ‘wellbeing’ is interchangeably used with other terms such as quality of life, living standards, life satisfaction, and human development. We also find ‘social welfare, well-living, utility, prosperity, needs fulfilment, empowerment, capability expansion and more recently, happiness’ (McGillivray, 2007, p. 3). McGillivray (2007) defines wellbeing as a description of the state of individuals’ life situation. McGregor et al. (2009) conceptualizes wellbeing as ‘a state of being with others, which arises when human needs are met, when one can act meaningfully to pursue one’s goals, and when one enjoys a satisfactory quality of life’ (p. 143). The concept is used at the individual, local, national, and global levels.

There are different attempts at categorizing the wellbeing research field into broad categories (Brand-Correa & Steinberger, 2017; Dodds, 1997; J. O’Neill, 2008; Ryan et al., 2008). Studies that explore the relationship between human wellbeing and environmental sustainability often categorize wellbeing conceptualizations into ‘hedonic’ and ‘eudaimonic’ traditions (Brand-Correa & Steinberger, 2017; J. O’Neill, 2008; Rauschmayer & Omann, 2015; Rauschmayer, Omann, & Frühmann, 2011). Both traditions draw their lineages to Greek philosophers—Aristippus (for the hedonic tradition) and Aristotle (for the eudaimonic tradition) (Ryan & Deci, 2001).

The Hedonic tradition

The hedonic tradition conceptualizes wellbeing as happiness, interpreted as maximizing pleasure and minimizing pain (Brand-Correa & Steinberger, 2017; Ryan & Deci, 2001; Ryan et al., 2008). This conceptualization gives the hedonic tradition the advantage of having ‘a clear and measurable target’, namely that of positive affect (Ryan et al., 2008, p. 139). The concept of utility—developed by Jeremy Bentham in the 18th century—is directly linked to pleasurable feelings derived from the pursuit of human appetites (Ryff & Singer, 2008), and is a central component of rational choice theory. Utilitarian philosophers argue that individuals’ efforts to maximize pleasure and self-interest lead to the good society (Ryan & Deci, 2001). In the modern era, this view is translated into the pursuit of pleasure through consumption in the market.

Consumers reveal their preferences for the goods and services that will generate them the most pleasure through their actions in the market. These preferences are expected to be stable and consistent, and consumers are expected to have full information about their options to make these preferences. With these assumptions, increasing income at the individual and national levels (GDP per capita) is seen as the overriding goal of economic policy.³ For this reason, income and expenditure data and GDP per capita can be understood to represent objective indicators employed in the hedonic tradition (see an overview of hedonic and eudaimonic indicators in **Table 2.1**).

There are widespread criticisms to rational choice theory (Kahneman, 2003; Kahneman & Anderson, 2003; Schlaile et al., 2018; Schlüter et al., 2017; van den Bergh et al., 2000). The assumption of full information is self-evidently not realistic, as information is asymmetric and involves costs. Psychologists challenge the assumption of stable, consistent, and rational preferences, stating instead that humans make predictable mistakes (Clark, 2018; Kahneman, 2003, 2011). The 2017 Nobel prize in economics was awarded to the behavioral psychologist, Richard H. Thaler, for his work in researching and documenting the human tendency not to behave rationally (Nobel Media AB, 2020).

Table 2.1: Summaries of indicators and theoretical approaches associated with the hedonic and eudaimonic traditions

	Eudaimonic	Hedonic
Objective indicators	Health, education, income, political participation...etc. Human Development Index	Income and expenditure; GDP per capita; physiological measurements of emotions
Subjective indicators	Satisfaction with life, subjective wellbeing, and articulations of needs and satisfiers at community levels	Indicators of affect (harmony, joy, sadness, anxiety... etc.) Happiness, subjective wellbeing
Theoretical approaches	Human Scale Development approach Capability approach Self-determination theory Social practice theory	Rational choice theory Utility functions Neoclassical consumer theory

Source: Adapted from Brand-Correa and Steinberger (2017)

³ A thorough discussion of this logic is included in article I in this dissertation.

Subjective indicators in the hedonic tradition include measurements of positive and negative affect and life satisfaction. These subjective wellbeing indicators require access to people's own evaluations of the quality of their life. There are two ways of accessing this information. One is asking people about the state of their emotions. Individuals would be asked to evaluate whether they were happy, harmonic, sad, anxious and the like, during the previous day, week, or two weeks. For example, in Kahneman's (2011) Day Reconstruction Method, study participants use a diary to reconstruct and log their emotional states, and how they experienced the various activities and settings of their life in the previous day. Kahneman (2011) refers to this aspect as experienced wellbeing (referring to the emotional experience of the 'moment'), as opposed to the evaluative aspect associated with questions regarding life satisfaction.

The life satisfaction indicator represents a score people give to the level of satisfaction with their lives. The question is often represented by a 'Cantril ladder', in which people are asked to assign a score on a range from zero at the lowest level (the worst possible life) to ten at the top (the best possible life). This indicator is widely used in national and international statistics. Kahneman (2011) calls for nuance in the interpretations of life satisfaction evaluations by emphasizing the different cognitive processes that produce evaluations of life satisfaction and experienced wellbeing. People's evaluations of their life (life satisfaction) are influenced by emotional peaks/dips and the last experience in the period under consideration—which he refers to as 'peak-end rule' (Kahneman, 2011, p. 376). Evaluations of life satisfaction overlook the moment-to-moment experiences of affect. However, he asserts that life satisfaction evaluations provide crucial insights such as people's goals in life and what they consider important. As a result, in order to give a balanced picture, he recommends subjective wellbeing studies to incorporate both people's experienced wellbeing and evaluations of life satisfaction. Others have connected (global) life satisfaction evaluations to satisfaction with various life domains such as work life, community, physical and infrastructural amenities, and the like, thereby strengthening

the departure of this indicator from affective and hedonic evaluation (M. Sirgy & Cornwell, 2002; M. J. Sirgy et al., 2010). For this reason, some have argued that the life satisfaction indicator has both hedonic and eudaimonic aspects (Brand-Correa et al., 2018).

Researchers have explored the linkages between subjective wellbeing and socio-economic outcomes, such as income, employment, health, and social network (Bruni, 2010; Bruni & Porta, 2005; Bruni & Stanca, 2008; Easterlin, 2004, 2005; Frey & Stutzer, 2005; Glatzer et al., 2015; Hagerty & Veenhoven, 2003; P. R. Layard & Layard, 2011). In reviewing 40 years of research, Clark (2018) has summarized the main findings of the subjective wellbeing (SWB) field. He finds a consensus that there is a positive correlation between income and SWB at the individual level, with richer people faring better than poorer people in their evaluations of their lives. Kahneman (2011) tempers this association by stating that richer people seem to experience a poorer emotional wellbeing (as opposed to the cognitive evaluation of satisfaction with life) as a result of the higher stress levels that many high-achieving and high-earning people are exposed to. Clark (2018) asserts that studies of the relationship between SWB and unemployment consistently show a negative relationship, which does not improve with time. Similarly, poor health has a lasting negative impact on SWB. Studies have also looked at the relationship between SWB and various demographic characteristics, such as gender, age, race, marital status, and social network (Clark, 2018).

Beyond studies of individual characteristics and their impact on SWB, there have been consequential studies at the aggregate level. One of the most well-known relationships is the link between average SWB and GDP per capita at the national level. Easterlin (1974) showed that there is a weak relationship between wellbeing and per capita income in cross-country comparisons—a phenomenon known as the Easterlin paradox. More recent studies have strengthened this finding. R. Layard et al. (2012) show that GDP per capita only accounts for a small proportion of average SWB (36%) when important factors such as social trust are controlled for in his analysis of SWB in European countries (p. 64).

SWB's reliance on interview data makes it a costly exercise, and therefore difficult to conduct over large population sizes. Others criticize the fact that such data may be biased because not everyone can adequately evaluate their own wellbeing and relay their assessment (Allardt, 1993; Nussbaum, 1993). The ability to assess one's own wellbeing depends on educational and socio-economic background, cultural norms, mental health, and access to information among others (Allardt, 1993; Nussbaum, 1993). Despite the above-listed criticisms, indicators of subjective wellbeing have gained prominence among policymakers. The OECD is one of the proponents of incorporating subjective wellbeing in national statistical surveys (OECD, 2011, 2013). The World Happiness Report is a survey of the state of global happiness, and ranks countries based on how happy their citizens are. In 2020, the report will also include life satisfaction in its statistics for the first time (World Happiness report, 2020).

Researchers of local-level sustainability initiatives have looked at the relationship between SWB and socio-economic and community characteristics in sustainability initiatives (Grinde et al., 2017; Mulder et al., 2006; Vita et al., 2020). These studies found a higher SWB among members of these initiatives than neighboring regions (or the national statistic), and argued that factors such as social cohesion, meaning in life, and a better balance between social, natural, and built capitals, produce the favorable SWB outcome. As indicated by Brand-Correa and Steinberger (2017), this finding relates closely with the eudaimonic view of wellbeing (the eudaimonic wellbeing tradition will be discussed below). I adopted this conceptualization of SWB, together with the approaches and methods employed in the eudaimonic tradition in the PhD project.

The Eudaimonic tradition

The eudaimonic tradition traces its roots to Aristotle, and conceptualizes wellbeing as human flourishing (Rauschmayer, Omann, & Frühmann, 2011). 'Aristotle distinguished between happiness as experiencing pleasure (i.e., hedonia) versus happiness as living well (i.e., eudaimonia). ... Eudaimonia is thus not conceived of as a mental state, a positive feeling or a cognitive appraisal of satisfaction, but rather as a

way of living' (Ryan et al., 2008, p. 143). Others describe the eudaimonic good life as 'the worthwhile life' (Holland, 2006, p. 137), and list as its constitutive elements, 'autonomy, freedom, achievement, and the development of deep interpersonal relationships, which cannot be decomposed into momentary affective experiences' (Kahneman & Sugden, 2005, p. 176).

Ryan et al. (2008) state that eudaimonic wellbeing focuses on 'the *content* of one's life, and the *processes* involved in living well' (p. 140, emphasis in original). It brings to light the social, cultural, economic, and political context of an individual's life, and sees wellbeing as the enabling of individuals to reach their highest potential in their societal context (Brand-Correa & Steinberger, 2017). The eudaimonic tradition also allows for a conceptualization of wellbeing that is compatible with less resource intensive lifestyles, as safeguarding environmental quality and ecological security can be seen as constitutive of human flourishing.

Theoretical approaches closely associated with the eudaimonic tradition are Amartya Sen's capability approach and human needs theories. These approaches emphasize the importance of the social, economic, cultural, and political *processes* that impact on wellbeing. Amartya Sen states wellbeing is influenced by the 'ability to do valuable acts or reach valuable states of being' (Sen, 1993, p. 30). '[W]ellbeing involves both *doing*, encompassing ideas of freedom and agency, and *being*, encompassing both mental and physical states' (Dodds, 1997, p. 102). Sen has not specified a universal list of capabilities and functionings, because he argues that such a list should be determined through a democratic process by considering the social, political, and cultural context (Robeyns, 2005; Stanton, 2007). Nevertheless, he inspired a host of objective indicators that indirectly link to a eudaimonic understanding of wellbeing. Most prominent is the UN's Human Development Index, which ranks countries based on how well they perform in three areas: health, education, and income (UNDP, 1990). The United Nations Development Program justifies for the choice of these three indicators by stating people are motivated to 'lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living'

(UNDP, n.d.). Note the absence of ‘seeking/maximizing pleasure’ as a motivator of human action from this definition.

The human needs theoretical approach is another manifestation of the eudaimonic view of wellbeing. Doyal and Gough (1991) emphasized minimally impaired social participation as a universal goal and two basic human needs that contribute to its fulfillment—physical health and autonomy of agency. Psychologists Ryan and Deci (2000) propose that the satisfaction of three basic psychological needs—autonomy, competence, and relatedness—fosters psychological and physical wellbeing. Max-Neef (1991) conceptualized wellbeing as the actualization of nine fundamental human needs that are universal, non-hierarchical, and interdependent. He argued that human needs must be understood as a system, and stated that ‘with the sole exception of the need ... to remain alive, no hierarchies exist within the system’ (Max-Neef, 1991, p. 17).

Max-Neef’s differentiation between needs and satisfiers is an important contribution to the wider field of human needs theory (Brand-Correa & Steinberger, 2017; Gough, 2015; Guillen-Royo, 2016; Koch et al., 2017; Max-Neef, 1991). Needs are essential for wellbeing, and are universal across cultures and historical periods. The means to satisfy these needs or satisfiers vary between cultures, traditions, and historical periods. He organized human needs as a matrix with two categories: existential and axiological needs. There are nine axiological needs: (1) subsistence, (2) protection, (3) affection, (4) understanding, (5) participation, (6) leisure, (7) creation, (8) identity, and (9) freedom. There are four existential needs: (1) having, (2) being, (3) doing, and (4) relating. The delineation between needs and satisfiers helps re-focus the discussion about the ideal size, structure, and purpose of the economy towards the satisfaction of needs, and away from unlimited economic growth (Costanza et al., 2014, p. 158).

The eudaimonic tradition is also associated with other theoretical approaches, such as social practice theory, because of its emphasis on wellbeing’s systemic nature and the focus on social, economic, and political structures. For example, Büchs and Koch (2017) connect wellbeing with social practices when they assert that wellbeing is

produced through the enactment of social practices or various ‘doings and sayings’ (Schatzki, 1996). They affirm that because social practices take place at the junction of the micro (agency) and macro (social structures), they have implications for wellbeing in the transition towards low-carbon societies. Social practice theoretical approaches will be addressed in section 2.3.

2.1.2 Sustainability

The World Commission on Environment and Development (WCED), also known as the Brundtland Commission, provided the first definition of sustainable development as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (WCED, 1987). Sustainability has implications for how we live with the environment (i.e., our use of resources and the waste we generate), and for how we organize our society.

There are several contradictory elements in the WCED’s proposal for sustainable development. It acknowledges that human economic activity is having a dire impact on the environment. However, it still proposes economic growth as a solution. It states ‘What is needed now is a new era of economic growth - growth that is forceful and at the same time socially and environmentally sustainable’ (WCED, 1987, p. 11). The implicit message is that economic growth will generate technological innovation, which will secure ‘socially and environmentally sustainable’ growth. This is an indication that the WCED’s understanding of sustainability falls under the category of ‘weak sustainability’. Weak sustainability is the assumption that natural and manufactured capital are substitutable, and that technology can fill the human-induced gap in natural resources (H. E. Daly, 1996). Much of the mainstream sustainability initiatives today do not question the underlying systemic problems of economic growth. Instead, terms such as green/sustainable growth, circular economy (for growth), and smart technologies imply that we can find solutions to today’s problems by making slight adjustments to our current system.⁴

⁴ Article 1 in this dissertation takes up this issue by focusing on the topic of circular economy.

There are strong objections towards this ‘technology optimism’, particularly from the field of Ecological Economics (Jackson, 2009). One of the founding fathers of Ecological Economics, Herman Daly (1990), has three criteria for how we can organize the economy to maintain ecological sustainability: 1) the rate of harvest of renewable resources should not exceed the rate of regeneration; 2) the rates of waste generation should not exceed the assimilative capacity of the environment, and 3) the depletion of nonrenewable resources should require the comparable development of renewable substitutes for that resource (Costanza et al., 2014). Such an understanding falls under ‘strong sustainability’, in which man-made capital and natural resources are not substitutable, but instead are understood to be complementary (H. E. Daly, 1996). Each must be maintained intact ‘because the productivity of one depends on the availability of the other’ (ibid, p. 50). The skepticism towards economic growth as a solution towards environmental problems is informed by an understanding of strong sustainability (Helne & Hirvilammi, 2015).

The most recent global initiative towards sustainable development is the United Nations Sustainable Development Goals (SDGs), adopted by the UN General Assembly in September 2015 (UN General Assembly, 2015). It contains 17 Development Goals and 169 targets. The SDGs aim to bring consensus among different actors at the local, regional, national, and international levels. Although the initiative is an improvement from its predecessor, the Millennium Development Goals, which focused solely on poorer countries, it is still not free from criticism. For example, Skirbekk (2019) launches a number of critiques. He laments the lack of clarity for the central concepts extensively used in the document, such as ‘sustainable economic growth’, ‘sustainability’, or even ‘development’. There are tensions between some of the goals, for example, between Goal 8, which promotes sustained economic growth, and Goals 12—responsible consumption and production—and 13—climate action. Most importantly, there is a lack of reflection on the interconnectedness of different goals and targets. For instance, mitigating climate change (Goal 13), economic growth (Goal 8), reducing inequality (Goal 10), peaceful, just, and inclusive societies (Goal 15), and

sustainable consumption and production (Goal 12) are all inter-related, which can open for possibilities of synergic processes or vicious cycles.

Grassroots initiatives sometimes develop their own approach towards sustainable development. For example, the Global Ecovillage Network (GEN) states this aim in its definition of an ecovillage: ‘an ecovillage is an intentional or traditional community that is consciously designed through locally owned, participatory processes to *regenerate social and natural environments*’ (Kunze & Avelino, 2015, p. 3, my emphasis). GEN refers to the communities in its network as ‘regenerative’, to indicate that they not only aim to reduce harmful impact on the environment, but also to enhance the quality of social and natural environments in their activities. In its ‘community sustainability assessment’ tool, GEN claims that the ecological aspects of a community are balanced when ‘human lifestyles regenerate, rather than diminish the integrity of the environment; consumption and generation of waste is minimized; natural life, its systems, and processes are respected; wildlife and botanical habitat is preserved; food comes primarily from local or bioregional sources, is organic ... and provides nutritional balance’ (Global Ecovillage Network, n.d.-b, p. 6). This conceptualization of sustainability aligns closer to the concept of strong sustainability, although its implementation/operationalization may be constrained by the larger social, economic, and regulatory contexts ecovillages operate in.

2.1.3 The wellbeing-sustainability interface

There is an emerging research that explores how societies can meet the twin objectives of human wellbeing and sustainability. The dialogue on this topic is most prominent in Western research communities, as the developed world’s impact on the environment is currently unsustainable (see e.g., Büchs & Koch, 2017; Guillen-Royo, 2016; Jackson, 2009, 2017; Koch, 2013; Koch et al., 2017; Koch & Mont, 2016). Spash (2012, p. 45) states that the ‘levels of material and energy consumption per capita prevalent in the industrialized world are excessive and its social and environmental consequences unacceptable’. Positions such as this have initiated research and practice in exploring the avenues, whereby one can maintain or enhance wellbeing as

one works to reduce environmental impact. The Ecological Economist Tim Jackson (2008) introduced the concept, 'wellbeing dividend', to describe this outcome by drawing on the theoretical discussion around the link between subjective wellbeing and income/consumption growth. Research focusing on low resource-intensive sources of wellbeing highlight non-materialistic aspects, such as strong social relationships (Bruni & Stanca, 2008), experiencing nature (Becker, 2006; Grinde et al., 2017), and building local community (Guillen-Royo, 2016; Seyfang & Longhurst, 2013). Although the scholarly focus on the environmental consequences of consumption is more recent, the relationship between consumption, modernization, and wellbeing is a research area with a long tradition among economists, sociologists, and social psychologists (Jackson, 2008). Prominent sociologists such as Veblen (1898), Bourdieu (1984), Hirsch (1977), and Durkheim (1903) have written seminal works addressing this issue (Jackson, 2008, 2009; Wilhite, 2016).

Scholars have also used the capability approach to link up wellbeing and sustainability. Schöpke and Rauschmayer (2014) combined the capability approach with environmental psychology to help guide sustainability-oriented policies. They incorporated 'other regarding motivations' (or altruistic motivations toward nature and future and current generations) in people's capability sets, in the form of an increased awareness of own impact. This leads to an expansion of people's capability sets, intrinsic empowerment, and engagement in environmentally friendly behaviors associated with improved wellbeing.

Max-Neef's 'Human Scale Development' (HSD) specifically links human wellbeing with environmental sustainability through its three pillars: self-reliance, balanced interdependence, and the satisfaction of fundamental human needs. The first pillar emphasizes the importance of participation, which empowers communities to take an active role in their own development. Self-reliance reverses the traditional view of socio-economic development as one that is top-down and guided by 'experts'. HSD assigns a central role to civil society (for example, grassroots movements, trade unions, indigenous groups, and the like) in guiding the type of development relevant to their

context (Guillen-Royo, 2016). The second pillar emphasizes the interdependence between various levels (the personal and social, micro and macro, state and civil society, and nature and society). It adopts the ontological view of society as a system embedded in the larger biophysical system. The approach is a paradigmatic shift from mainstream economics, in that it advocates for an economy that is sufficient for the satisfaction of fundamental human needs (as opposed to unlimited economic growth) (Guillen-Royo, 2016; Temesgen et al., 2019).

The third pillar delineates between needs and satisfiers, and shows how needs can be met at the level of the individual or the community. Human needs are conceptualized as a system exhibiting characteristics of ‘simultaneities, complementarities and trade-offs’ (Guillen-Royo, 2016, p. 45). Satisfiers are the particular ways in which we satisfy these needs. Satisfiers denote forms of organization, actions, norms, attitudes, social practices, and environmental characteristics that actualize needs (ibid).

The universality of needs indicates that current and future generations have the same fundamental needs, and that limiting the size of the economy to a scale adequate for need satisfaction increases the likelihood that future generations can also meet their needs. Moreover, by illuminating the differences between types of satisfiers, the HSD identifies satisfiers that can cater to both wellbeing and environmental sustainability. As described in **Table 2.2**, negative satisfiers (destroyers, pseudo-satisfiers, inhibitors) are harmful to sustainable development and human wellbeing, while synergic satisfiers satisfy several needs simultaneously, and therefore by definition, reduce the impact on the environment (Max-Neef, 1991).

Table 2.2: Matrix of needs and satisfiers

Satisfier	Description
Destroyer	Satisfiers when applied with the intention of satisfying a need, they frustrate the satisfaction of the need and possibly other needs. For example, an arms race to satisfy the need for protection.
Pseudo-satisfiers	Satisfiers that give the illusion of satisfying a need, but in the long run they may annul the satisfaction of the need, e.g., stereotypes for satisfying the need for understanding.
Inhibitors	These over-satisfy a given need, and curtail the satisfaction of other needs. For example, an overprotective family may seem like it is satisfying the need for affection, but it curtails the satisfaction of understanding, participation, identity, and freedom.
Singular	These satisfy only one need, and are neutral towards other needs, e.g., insurance systems that satisfy the need for protection.
Synergic	They satisfy a given need, but also contribute to the satisfaction of other needs. For example, breastfeeding fulfills the need for subsistence, affection, and identity.

Source: Manfred Max-Neef's Human Scale Development approach (1991)

Guillen-Royo (2016) highlights the potential of local sustainability initiatives in generating 'necessary synergic satisfiers', satisfiers that are 'a constellation of *Beings*, *Havings*, *Doings* and ways of *Interacting* that support human needs actualization and environmental sustainability' (Guillen-Royo, 2016, p. 146. Author's emphasis.).

To understand how local sustainability initiatives contribute to both wellbeing and sustainability in practice, and to analyze the impact from the socio-economic and institutional context they operate in, it is beneficial to combine wellbeing approaches with other complementary theoretical perspectives. The field of socio-technical transition studies (alternatively termed sustainability transition studies) examines the socio-economic and institutional context they operate in, and the tensions and dynamics between different levels of governance. Social practice theory illuminates how social practices emerge, become entrenched, or disappear by focusing on the role of norms, materials (including infrastructure and technology), skills, and institutions in

this process. The following two sections will present central elements from these two fields.

2.2 Sustainability Transitions Studies

The field of socio-technical transitions studies focuses on how changes in technology interact with, influence, and are influenced by socio-economic and cultural processes in society. The Multi-Level Perspective (MLP) is an influential framework in the field, and combines theoretical insights from socio-technical studies (STS), evolutionary economics, and sociology (Grin et al., 2010). The MLP 'views transitions as non-linear processes that result from the interplay of developments at three analytical levels: niches (the locus of radical innovations), socio-technical regimes (the locus of established practices and associated rules that stabilize existing systems), and an exogenous socio-technical landscape' (Geels, 2011, p. 26).

Evolutionary economists propose that 'radical innovations' emerge on the fringes of existing regimes, 'where niches act as incubation rooms that protect novelties against mainstream market selection' (Grin et al., 2010, p. 22). Niches depend on social networks to nurture and develop novelties, improve their performance, communicate their visions, and attract attention and funding (ibid).

The regime (or the socio-technical system) includes technologies, infrastructures, established practices, shared beliefs, capabilities, lifestyles, institutions, actors, favorable arrangements, and regulations (Geels, 2002). These features ensure the 'stability and lock-in of socio-technical systems' (Grin et al., 2010, p. 20). There are interlinked mechanisms that ensure the stability of regimes: established rules and codes, professional associations (for example, engineers' and builders' associations), interdependent linkages with supply chains of goods and services, financial sponsors such as investors sponsors, and the like (Grin et al., 2010).

The exogenous landscape provides the context where the dynamic between niches and regimes plays out and includes material and spatial arrangements, demographic trends, political ideologies, societal values, and macro-economic patterns (Geels, 2002, 2011; Grin et al., 2010). The transitions field sees the socio-technical landscape as

exogenous, and the direction of influence as one-directional: from the landscape towards the regime and niches.

The processes in niches are uncertain, and are affected by the dynamics at the regime and landscape levels (Grin et al., 2010). Niches gain ‘windows of opportunity’ to influence the regime when the regime faces pressure from the landscape in the form of changes in preferences/expectations/culture, policies, regulations, and environmental pressures (Grin et al., 2010, p. 21). These tensions open up the regime for new solutions and innovations.

Loorbach et al. (2017) trace the more recent intellectual expansions of the field that ‘represent a shift in the object and dimensions of sustainability transitions: from a focus on sociotechnical systems to a recognition of socio-ecological, socio-economic, and socio-political systems as equally relevant objects of transition’ (p. 603). Some of these expansions address transition processes at various geographical scales. For example, Wolfram (2016) used the sustainability transition lens to identify cities’ ‘transformative capacity’ to bring about socio-ecological and socio-technical change towards sustainable development (p. 121). Similarly, Wittmayer et al. (2016) examined how sustainability can be made meaningful at the level of cities, towns, and neighborhoods by reviewing literature that applied the theoretical perspective at the local level. Others addressed issues of power, politics, actors, and discourse (Avelino & Wittmayer, 2015; Grin et al., 2011; Paredis, 2013).

These explorations and expansions have resulted in new theories and perspectives that build on the MLP, and address different dimensions of sustainability transitions (Loorbach et al., 2017). Two such theoretical perspectives extensively applied to study local-level sustainability initiatives are the grassroots innovations and social innovation perspectives (Seyfang & Haxeltine, 2012; A. Smith, 2012).

2.2.1 Grassroots innovations

The grassroots innovations field focuses on grassroots initiatives’ role in advancing socially and technologically innovative practice. Seyfang and Smith (2007) define grassroots initiatives/innovations as ‘networks of activists and organizations

generating novel bottom-up solutions for sustainable development; solutions that respond to the local situation and the interests and values of the communities involved. In contrast to mainstream business greening, grassroots initiatives operate in civil society arenas and involve committed activists experimenting with social innovations, as well as using greener technologies' (p. 585). This literature identifies grassroots niche actors as existing outside the mainstream, and therefore may experience a shortage of resources and funds, and thus a degree of vulnerability (Seyfang, 2009; Seyfang & Smith, 2007).

Grassroots Innovation scholars identify three different pathways that grassroots initiatives (GI) may diffuse their practices to the rest of society: replications, scaling-up, and translation (Boyer, 2015; Seyfang, 2010; Seyfang & Haxeltine, 2012). Replication is a process by which grassroots initiatives spread their practices through a network of similarly dedicated activists. Much of the diffusion of practices from GIs occurs through this process (see for example, Seyfang (2010) and (Seyfang & Haxeltine, 2012)). Scaling-up happens when GIs diffuse their practices beyond their network to a wider group of individuals or the larger society. Boyer's (2015) study of three ecovillages identified cases in which ecovillage practices managed to inspire offshoot initiatives and educational programs in neighboring regions. Translation takes place when higher institutional entities (such as local authorities) adopt GI initiatives. A. Smith (2007) identifies this process as a socio-technical regime actor adopting a GI practice, in order to solve a particular problem or improve its own practices. He also contends that 'intermediate' projects/initiatives—projects that are not too radical or too similar to mainstream projects—are best able to initiate a niche-to-regime translation of practices. Some studies have applied this concept to investigate the translation of practices and values from ecovillages and cohousing initiatives to the mainstream (Boyer, 2015, 2018; Westskog et al., 2018).

2.2.2 Transformative Social innovation theory

In responding to societal challenges, scholars of social innovation emphasize the importance of social innovations as opposed to technological innovations (Howaldt &

Kopp, 2012). The Bureau of European Policy Advisors (BEPA) defines social innovations as ‘innovations that are social both in their ends and in their means. ... [They] simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations’ (BEPA, 2010, p. 24).

Building on the MLP, a consortium of European scholars developed a middle-range theory of transformative social innovation (TSI) to help explain the relations within social innovation initiatives and their networks, and their relation to institutional change (Haxeltine et al., 2017). They studied ecovillages, transition towns, time banks, and credit unions, among others, and distilled their findings of how these initiatives engage in transformative change processes. They conceptualize TSI as ‘innovation that challenges, alters or replaces dominant institutions, as a result of a co-evolutionary interaction between [four] distinct but intertwined dimensions of innovation and change: 1) social innovation, 2) system innovation, 3) game-changers, and 4) narratives of change’ (Avelino et al., 2019, p. 203). They define social innovation as new ways of doing, organizing, and knowing in the social sphere. System innovation takes place at a higher level, and implies interactions between social innovations and other processes (for example, technical innovation). System innovation can be viewed as the ‘co-evolution of innovations in material artefacts, socio-economic conditions, organizational and institutional re-configurations, while simultaneously accounting for evolutions in collective and individual values, moral interpretations, lifestyles, social capital, body activities, emotions, or knowledge’ (Rauschmayer et al., 2015, p. 216). Game changers are events that have a significant influence at a societal level such as demographics, dominant ideologies, environmental change, and the like. Game changers can be both exogenous and endogenous in TSI, whereas their equivalent in MLP—the landscape—is seen as exogenous. Narratives of change refer to ‘sets of ideas, concepts, metaphors, discourses or storylines about change and innovation’ in these initiatives (Avelino et al., 2014, p. 9).

The framework also gives insights into how a contention of power takes place between the different levels. Avelino (2017) does a thorough analysis of the power

dynamics in the interaction between the levels. Through their innovations of artifacts, values, and new ways of 'doing', niches challenge the power of the regime by exercising their 'innovative power'. The regime tries to maintain and assert its power through various means, such as regulations, institutions, and established ways of doing and, hence exercises its reinforcing power. When the challenge from the niche becomes too forceful, the regime will be forced to either adapt by absorbing the niche's innovations, or lose its dominance and be replaced by a new regime. Transformative power emerges when actors are able to develop new structures (e.g., legal structures, physical infrastructures) and institutions (e.g., new economic paradigm), and challenge the regime. A fuller analysis of the different synergic and antagonistic power relations that can emerge in this process is described in Avelino (2017).

As the STS' focus is on higher levels of organization, it has been criticized for overlooking the role of individuals and their routinized daily practices in bringing about social change (H. S. Brown et al., 2013). Social practice theoretical approaches are suggested as good complements to fill this gap, and will be discussed in the following section.

2.3 Social practice theoretical approaches

Social practice theory studies how routinized everyday practices are shaped and enabled by structures of rules, norms, meanings and technologies (Shove et al., 2012). For a long time, the study of human behavior and action has been focused on the individual. This approach occupies a significant place in contemporary policy discourse, and informs policy tools designed to influence private consumption decisions. Some examples are price incentives (taxes and subsidies on consumption), positive reinforcements (rewarding certain preferred actions), and educating people about the consequences of their actions. Conversely, other approaches emphasize the role of exogenous rules, norms, and (social and technological) structures in influencing daily life (ibid).

Anthony Giddens (1984, 1991) is credited for overcoming the so-called agent-structure dilemma by shifting the focus to the interaction between the two through

the enactment of social practices. Reckwitz (2002) defines a practice as ‘a routinized type of behavior which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, ‘things’ and their use, a background knowledge in the form of understanding, know-how, states of emotion, and motivational knowledge’ (p. 249).

Giddens (1984) emphasizes that a significant part of our daily practices are a result of internalized and subconscious patterns, although we can account for our actions in terms of conscious motivations and purposes. He characterized these taken-for-granted and routinized practices as lifestyles. He defines lifestyles as ‘the routines incorporated into habits of dress, eating, modes of acting and favored milieux for encountering others. [...] Each of the small decisions a person makes every day – what to wear, what to eat, how to conduct himself at work, whom to meet with later in the evening—contributes to such routines’ (Giddens, 1991, p. 81).

Social practice theory has found use in such diverse fields as social theory, discourse theory and theory of science, resulting in different interpretations and operationalizations of the theory (Corsini et al., 2019; Halkier, 2013). Some scholars have followed Bourdieu’s contribution, and focused on ‘habitus’ (that is, knowledge, experience, perceptions, expressions, and actions) and embodied knowledge (mind-body interactions) (Koch, 2020; Sahakian & Wilhite, 2014; Wilhite, 2016). Others approached social practices by focusing on the constitutive elements of infrastructures, norms, and resources (Kennedy et al., 2013; Southerton et al., 2004; Spaargaren, 2003). A common characteristic to these different interpretations is their emphasis on the interactions and co-evolution of the elements of practices.

Articles III and IV in this dissertation applied two interpretations of social practice theory to help elucidate the processes and dynamics that support sustainable practices at the local level. Article III examined the physical transformation of two ecovillages by following Shove and colleague’s (2012) interpretation. Shove et al. (2012) present three elements of a social practice: materials, competences, and meanings. The article applied this approach and investigated how decisions of physical expansion impact on

the elements of sustainable practices in the ecovillages. Article IV applied Kennedy and colleague's (2013) interpretation that sees resources, norms, and infrastructures as elements shaping social practices, and analyzed the interconnection between wellbeing and sustainable practices. Although the two interpretations may seem different, they have significant overlap. Shove and colleague's (2012) 'material' is incorporated in Kennedy and colleague's (2013) 'resources' and 'infrastructures'. Kennedy and colleague's (2013) 'resources' follow Bourdieu's work, and refer to social, economic, and cultural capital that overlap with Shove and colleague's (2012) 'competences' and 'material'. Both interpretations have similar understandings of norms (captured by 'meanings' of Shove et al. (2012)). The difference in emphasis between the two results from their focus of study: everyday practices for Shove et al. (2012) and sustainable transportation practices for Kennedy et al. (2013).

Social practice theoretical approaches have contributed important insights into how practices emerge, evolve, become entrenched, and dissipate, and therefore have been instrumental in highlighting the processes that create path dependencies of unsustainable practices (H. S. Brown et al., 2013; Hargreaves, 2011; Sahakian & Wilhite, 2014; Shove, 2003). However, they have faced criticism for neglecting the systemic aspects of social practices (H. S. Brown et al., 2013).

Büchs and Koch (2017) addressed this weakness in their examination of the micro and macro aspects of social practices. They showed how mundane daily practices contribute to upholding the dominant systems of production and consumption. Social practices exist at the intersection of the macro- (that is, 'social discourses, cultures, and institutions') and the micro- ('people's worldviews, identities, and competences') (ibid, p. 91). In a world where resources are unequally distributed, the performance of practices may uphold existing distributions of 'wealth, income, knowledge, worldviews, competences, as well as access to technologies, infrastructures and social networks' (p. 97). An example in their book shows how the simple act of buying a cup of coffee in the morning is part of the global chain of coffee production and consumption. Consequently, they argue that a transition to sustainability requires an emergence of

new social practices along with changes in dominant cultures, worldviews, and identities to prevent a loss of wellbeing in the transition process. There needs to be ‘a fundamental reorientation of culture and embedded wellbeing conceptions towards the fulfilment of basic human needs, framed by concern and care for the wellbeing of future generations’ (p. 99). Local-level sustainability initiatives can be seen as ‘niches’, in which new practices grounded in alternative worldviews, norms, and identities can emerge and serve as an inspiration for the wider population.

Combining the three theoretical perspectives—human needs, sustainability transitions, and social practice theory—can provide an insight into how local-level sustainability initiatives can bring about a change in worldviews, practices, and institutions that may combine the goals of security wellbeing and sustainability.

Before presenting descriptions of the empirical setting for the PhD research, the next chapter will present a reflection on the philosophy of science and the methodological considerations that guided the PhD project.

3 Methodological Considerations

3.1 Reflections on the philosophy of science and choice of methodology

The selection of theoretical perspectives and accompanying methodological approaches in this PhD are informed by the philosophy of science of critical realism. The English Philosopher, Roy Bhaskar, initiated the philosophical movement, critical realism (CR), with his book ‘A Realist Theory of Science’ in 1975 (Bhaskar, 2008a/1975). His interest in deeply engaging with the philosophical presuppositions of scientific theories, approaches, and methodologies was ignited while studying the relevance of economic theory for developing countries as part of his PhD studies (Bhaskar et al., 2018). Disillusioned with mainstream economics’ disinterest in (and restrictions against) critically examining its assumptions about the world, he set out to accomplish three tasks: ‘a) to show how all philosophy and discourse presupposes ontology, even if it contradictorily also denies that ontology; (b) to explain why the implicitly

presupposed Humean ontology of a flat, undifferentiated, unchanging world is wrong, and (c) to establish in its place a new ontology' (ibid, p. 27).

The epistemology of mainstream economics is empiricism, and it traces its origins to the philosopher, David Hume (1711-1776). Empiricism assumes that reality is nothing more than 'a constant conjunction of atomistic events', thereby implying that 'reality repeats itself since, whenever there is one empirical feature, this is always correlated with another empirical feature. Furthermore, it implies that the world is flat, i.e., is made up only of empirical entities, irrespective of the domain of reality in question' (Bhaskar et al., 2018, p. 26). Bhaskar refutes this presupposition of reality/ontology.

According to Bhaskar (2008a/1975), there are three domains of ontology: the real, the actual, and the empirical. The domain of the real is where we find generative mechanisms and structures that represent potentials for different outcomes. Even if we do not see any outcomes in the empirical realm, there are structures, mechanisms, and processes that have the potential to produce outcomes. The domain of the actual is where some of the potentials embedded in the real domain are actualized, while the domain of the empirical represents the act of observing the actual.

Vatn (2016) uses a metaphor of a leaf hanging on a branch as an example that can explicate the three domains. The leaf hanging on a branch has the potential to continue hanging on a tree (due to the strength of the twig) or the potential to fall when the strength of the twig is weakened in the autumn. The domain where these different potentials exist is the domain of the real. When, in autumn, the leaf falls from the tree with twists and turns due to the forces applied to it from the wind, it does so in the domain of the actual. Our observations and theorizations of this process reside in the domain of the empirical. It is possible to replicate this example in the social sphere by imagining structures such as culture, worldviews, and paradigms as residing in the domain of the real with the potential to produce different outcomes. When they influence norms, rules, regulations, and policy that have consequences on people's lives, we can conceptualize them as residing in the actual domain. When we study the

impact on people's lives and wellbeing as a result of norms, rules, and regulations, we make those observations in the empirical domain.

Bhaskar asserts that social structures are a part of an open-system context. Social life takes place in layers of four dimensions: 'material transactions with nature; social interactions between people; social structure per se (such as economic structures); and the stratification of the embodied personality' (Bhaskar et al., 2018, p. 34). This layered/structured ontology means that scientific investigation will depend on context, and theories that predict social outcome assuming a closed-system/laboratory-like context will be misplaced. Therefore, social theories should aim to explain phenomena and not predict them. Scientific processes of confirmation and falsification will, thus, depend on the interplay of agent, context, and mechanisms and structures (Bhaskar et al., 2018).

CR's understanding of reality as layered calls for an interdisciplinary approach to science. Just as CR rejects a predictive universal law for social life, it also distances itself from 'strong' social constructivism's assertion that social existence is entirely defined by language and concepts. Although there are 'no constant conjunctions in social life', it is possible to form law-like statements that describe and explain events. When there is a need to acquire a picture of how prevalent a certain event is in society (for example, ownership of cars), quantitative approaches such as statistics can be appropriate. When we want to understand people's motivations for their actions such as, for example, buying expensive cars or choosing to drive their cars as opposed to riding a bike, we turn to the 'conceptual' aspect of social life and apply the interpretive methods of hermeneutics. However, there are limits to hermeneutics. Not all motivations/intentions are conscious to the agent. Bhaskar et al. (2018, p. 38) stress the presence of 'unacknowledged factors, unconscious motivation, tacit skills, and unintended consequences' in most actions. It is, therefore, important to draw on different theoretical and methodological approaches to illuminate such complex processes. The social scientist should not be afraid to draw inspiration from different fields of study such as sociology, psychology, political-economy, and geography, and

employ a mix of methodological approaches appropriate for the study subject and focus.

The ecological economist, Clive L. Spash (2012), argued that Critical Realism can serve as a foundation for the field (see the discussion in the next section). I will follow his arguments as I present how this approach has guided the theoretical and methodological choices I have made in the PhD project.

3.2 Choice of methodology informed by critical realism

Clive L. Spash (2012) argues that ecological economics should adopt a critical realist approach, and suggests the following ontological presuppositions for the field (quoted from p. 45):

1. An objective reality exists independent of humans;
2. Humans create social reality;
3. Facts about social reality are inseparable from values;
4. Biophysical and social realities are distinct but are interconnected;
5. A hierarchical ontology is accepted in which there is an ordered structure (e.g., biophysical, social, economic);
6. Society and the individual are distinct in that the former cannot be reduced to the latter, nor the latter merely aggregate to create the former;
7. Complex systems and their interactions create emergent properties, and are inherently unpredictable;
8. Systems are continually subject to change and interaction.

As a PhD project situated in ecological economics, it is guided by the above presuppositions and is founded on a conviction that there are environmental systems in crisis, and considers this fact as an objective reality (point 1). The concepts we use to understand these systems and processes are social constructs (point 2), but the processes themselves operate outside of our mental models and constructs. Since the social and biophysical realities are interconnected (point 4), we have to accept our impact on the environment, and explore how we can reduce this impact (points 3 and 5).

Point 6 informs the choice of methods applied in the project: in-depth interviews and workshops to understand the social processes and dynamics that affect quality of life, and a web survey to give voice to the individual as an autonomous actor. The choice of needs-based workshops and in-depth interviews and their analysis is based on a weak social constructivist position that ‘asserts the epistemological claim that scientific theories are laden with social, cultural, and historical presuppositions and biases’, as opposed to a strong social constructivist position that ‘asserts the metaphysical claim that truth and reality are themselves socially constructed’ (Steup (2010) in Clive L. Spash, 2012, p. 40).

The epistemological claims outlined by Clive L. Spash (2012, p. 45) discuss the uncertain nature of scientific knowledge, and how ‘understanding and interpreting reality are in part social processes in which knowledge is often contested’. He also posits the following as part of his epistemological claims for Ecological Economics (p. 45):

- a. Knowledge comes in different forms, and is not the exclusive domain of the expert; indigenous and lay knowledge may challenge or complement expert knowledge;
- b. Knowledge is subject to reasoned critique and empirical investigation, and
- c. Critique can take a variety of forms, leading to the need for plural methods.

Based on the above ontological presuppositions and epistemological claims, the project primarily bases the research activities on an empirical (point b. in epistemological claims above) and a multi-method approach (point c. in epistemological approach). The choice of needs-based workshops as part of the mix of methods in the project relates directly to point a. of the epistemological claims. In needs-based workshops, participants are given the space to explore their individual and community wellbeing and the health of their environment. They envision the ideal scenario they wish to achieve for their community and the strategies to get there. The role of the researcher is to facilitate this exploration and learn from their reflections. The decision to conduct a web survey is informed by the understanding that although

communities influence people's identities and their actions, individuals can independently reflect on their own wellbeing, and may espouse opinions that differ from the 'consensus' in their community. This is in alignment with point 6 of the ontological presuppositions outlined by Clive L. Spash (2012) above.

Employing a multi-method approach is suited for a study dealing with such a broad and interdisciplinary research area as wellbeing. As discussed in the previous section, drawing on different relevant theories and methodological approaches helps to understand the context better, and illuminate processes that take place at different layers of the social structure (for example, the personal, interpersonal, community, and higher levels) and their implication for wellbeing and sustainability in the chosen context. The remainder of the section discusses the methodological approach employed in the PhD project in more detail.

3.3 Case study design: In-depth and comparative case study

To address the research questions of the PhD project, I adopted a case study research methodology. Case study methodology is appropriate when researchers want to focus on 'contextual and complex multivariate conditions' and investigate multiple sources of evidence (Yin, 2003, p. xi). As such, a case study design permits an in-depth examination of a topic, and can elucidate complex processes and mechanisms that generate particular outcomes. This makes it possible to draw inferences to other incidences/places/issues with similar characteristics (Saldaña, 2011).

A 'case' can be a person, group, organization, or event. A case may be selected because it espouses unique characteristics that can inform a certain topic or process; it can represent a typical example of a phenomenon; or it can be chosen purposely because of convenience (for example, it may be more accessible, or suits the resources the researcher has) (ibid). A researcher can also decide to select several cases to compare and contrast different aspects of a particular topic, and contribute with new knowledge relevant for theory and practice (George & Bennett, 2004).

In the PhD project, I decided to study the overlap between wellbeing and sustainability in local sustainability initiatives, and decided that ecovillages are ideal

case studies to investigate. I studied academic literature to determine which theoretical frameworks and methodological approaches were used to study intentional communities and ecovillages. I determined that if one could implement an in-depth case study of two to three ecovillages, it may be possible to combine different theories and methods, and draw lessons for other similarly oriented sustainability initiatives and the larger society.

With this intention, I reviewed Global Ecovillage Network's website to find a list of accessible ecovillages. I found the website adopted a loose and general definition that included, for example, Transition Town initiatives, cohousing initiatives, indigenous communities, or even groups that registered their intention to start an intentional community. This made it difficult to obtain a good overview to help me develop a clear criterion of selection for my case study.

I reviewed websites of ecovillages and studied documents to help me select case studies. When it was possible, I visited potential ecovillages. For example, I visited the intentional community, Järna in Sweden, which was established in the 1960s based on Rudolf Steiner's philosophy (Föreningen Ytterjärna Nätverk, n.d.). I learned that the community has been experiencing a decline in the past decades. There was no active intentional community residing on-site, but instead a constellation of small businesses and farmers working with biodynamic agriculture that commute from surrounding towns. Therefore, I decided against including Järna in my study. The decision helped me to clarify my criteria for selecting my case studies.

One criterion was that these communities have to have an active group of people living and possibly working on-site. It will be ideal if they have had a minimum of five years of existence. In these initial years, they will have formed an identity, a sense of belonging and initiated some collective institutions and projects that could provide good information for my study. I also wanted the communities to have a clearly defined boundary (and an identity connected to the place) that could help me identify members. The thematic focus of the community should be a clear objective of combining wellbeing with environmental sustainability. There are a number of

communities with a spiritual orientation that also have an environmental profile (for example, Camphill Villages). I opted not to include such communities, as I felt the inclusion of spirituality as an additional explanatory variable could add a layer of complexity for which I did not have the expertise to properly investigate. Lastly, I had to take my resource limitations into consideration when selecting cases.

Hurdal Ecovillage was an ideal case, as it was physically accessible to me. I have followed the ecovillage since its inception in the early 2000s, and am acquainted with some of the pioneers in the ecovillage. It is also of an ideal age. By the time of my field study, the ecovillage had been in existence for over 15 years. This has given it a strong identity and a position of influence locally, and to some extent nationally. A documentary detailing the origin and history of the ecovillage was aired on national television in 2015. The ecovillage and municipality jointly host a yearly 'sustainable valley festival', in which prominent politicians (some years including the Prime Minister) attend (Hurdal Den Bærekraftige Dalen, n.d.). These factors made Hurdal Ecovillage a clear candidate for my study. I visited the ecovillage several times, and used participant observation, in-depth interviews, needs-based workshops, and a web survey to gather a rich data.

During my fieldwork in Hurdal, residents frequently referenced Findhorn Community and Ecovillage as an ideal example. The pioneers of Hurdal Ecovillage aspired to emulate Findhorn in Norway. When residents of Hurdal Ecovillage faced an intractable conflict, they invited a facilitator from Findhorn to try to work through their differences, chart a path forward, and forge a shared identity. I, therefore, made the decision to visit Findhorn, and conduct a field study that my resources could allow.

Findhorn Community and Ecovillage occupies a prominent place among intentional communities. It is close to 60 years old, and is a founding member of the Global Ecovillage Network. In 1998, it was recognized as a UN-Habitat Best Practice for holistic and sustainable living (East, 2018). I participated in an Experience Week program Findhorn organizes for prospective members and interested outsiders in the spring of 2019. I complemented this field stay with document study and digital interviews.

Combining these two cases (Findhorn and Hurdal) helps to shed light on how 'grassroots initiatives' collaborate, inspire, and replicate each other. It was also useful to compare the experiences of a younger and more established ecovillage, in addition to the differences in the strategies they chose and the decisions they made.

Thus, I adopted a combination of the approaches, an in-depth case study and a structured and focused comparison between cases. My fieldwork in Hurdal is an in-depth case study. I then used similar interview topics (modified by the particularities of the case) in both ecovillages to help me compare the findings from the two ecovillages. George and Bennett (2004, p. 67) state that such a 'method is "structured" in that the researcher writes general questions that reflect the research objective, and that these questions are asked of each case under study to guide and standardize data collection, thereby making systematic comparison and cumulation of the findings of the cases possible. The method is "focused", in that it deals only with certain aspects of the ... cases examined.'

These are heuristic and theory testing case studies (Seawright & Gerring, 2008). Although it can be difficult to develop generalized theories from cases studies, we can design case studies to test theory, and for heuristic purposes to identify new variables and relationships that can improve theory (George & Bennett, 2004).

George and Bennett (2004) also describe the flexibility one can adopt in mixing cases that can bring out similarities and differences and inform theory. A good theory explains the processes and mechanisms that produce particular outcomes, and as such 'provides insights and guidance for improving social life' (Saldaña, 2011, p. 114). Combining different cases that represent different aspects, therefore, contributes to building and improving theory. '[C]ase selection is an opportunistic as well as a structured process – researchers should look for whether the addition of one or a few cases to a study might provide useful comparisons or allow inferences on additional types of cases' (George & Bennett, 2004, p. 83). Following this reasoning, I included the findings of a study that I and colleagues conducted in Vågan Municipality in this dissertation. At the time of my field study, Vågan Municipality was drawing up a

development policy that aimed to combine wellbeing with environmental sustainability. We got the opportunity to conduct a needs-based workshop in the municipality. Our findings show several areas of overlap between my findings from the ecovillages and in Vågan. A description of each study site is included in Chapter 4.

In the following sections, I will provide a description of the methods employed in the case studies highlighting their strengths and weaknesses.

3.3.1 Participant observation

Participant observation is the ‘systematic, selective observation, and documentation of participants’ actions, reactions, and interactions in their natural social settings’ (Saldaña, 2011, p.47). There are different degrees of participant observation a researcher can employ in his/her study site. A *peripheral* position gives the researcher the possibility to observe social life as an outsider, from the position of a ‘fly on the wall’, observing and documenting small and large details in a written form (ibid). On the other end is a complete participation, whereby the researcher is engaged in the day-to-day activities of the study site, acquiring experiential knowledge (ibid). A research can also choose a middle ground where he/she is selective as to which activity and to what degree he/she is involved, varying the degree of participation in the span of the study.

In my study, I applied a varying degree of participation. In Hurdal Ecovillage, I took part in a weekend course on ecovillage design, where the residents were exploring their community’s strengths and challenges by applying GEN’s tool for designing and evaluating ecovillages. They evaluated Hurdal’s strengths and needs in regard to the different dimensions (social, cultural, ecological, and economic) of sustainability. This event introduced me and my project to the ecovillagers, and provided me rich information as to the history, current situation, and future prospects of the ecovillage. I limited my engagement in discussions and activities, since I was there to learn from their experiences. I took notes during the discussions, and talked to the participants during breaks. With their permission, I took pictures of schematic diagrams, organizational maps, and lists of local businesses the participants produced as one data

source for my study. At the end of the day, I wrote down my observations and reflections for future analysis.

This event also helped me recruit participants for interviews, and obtain the recommendations of other key informants for future interviews (that is, initiate snowball sampling (Patton, 2002)). Due to the rapport I developed with the ecovillagers, I was invited to other events in the ecovillage (e.g., meetings and social events), and attended when my resources allowed it. Spontaneous interactions in informal settings (e.g., shared meals and unplanned exchanges on the streets and in community houses) allowed me to develop a common vocabulary and empathy with the informants' lived experiences (Hirschman, 1986; Ozanne et al., 2008). I was also invited to join Facebook groups and other online forums, where I could follow ongoing discussions.

In Findhorn, I had the opportunity to take part in ecovillage life. I participated in an 'Experience Week' program that the ecovillage runs as a deep dive into ecovillage living facilitated by long-term residents. This program is mandatory for all who want to settle in the ecovillage, and is recommended for researchers (by Findhorn). During this week, participants take part in workshops/group activities, visiting and chatting with pioneer ecovillage members in their homes, and touring the ecovillage's projects. They also volunteer in one of three work departments: the common kitchens, the community gardens, or community care activities. In the evenings, participants take part in group activities that the ecovillage uses to facilitate communication and community building among its members. I volunteered in one of the common kitchens that serves 40 community members, in addition to ecovillage visitors.

In the evenings, or when we had breaks from the organized activities, I used the opportunity to talk to residents, volunteers, and employees about their experiences of living in the ecovillage. Volunteering in the community kitchen also provided an ample opportunity to talk to different community members whom I was assisting on a daily basis. Meal- and tea-breaks also afforded an opportunity to mingle with the wider community. These discussions often revealed a rich information regarding how social life and different practices unfolded in the ecovillage.

Due to resource restrictions, I was not able to conduct a separate and more extended research stay in Findhorn. However, I complemented the insights I gained from the experience week with an in-depth study of annual reports, websites, blogs, social media sites, research articles, books (about and from Findhorn), brochures, and other documents I acquired during my stay and from the internet. Findhorn has a relatively richer documentation regarding its history, ethos, current and past practices, and its visions for the future, as opposed to the younger Hurdal Ecovillage. After my field stay, I conducted digital interviews with leaders of community organizations and long-term residents of Findhorn to help fill gaps and clarify inconsistencies I found in my document study.

I also gained an insight into the networking activities of community sustainability initiatives from my membership in relevant networks and associations, such as the International Communal Studies Association, the Global Ecovillage Network, and the Foundation for Intentional Community. These networks frequently send out newsletters informing about different arrangements and activities, as well as results from online surveys and the like. In addition, international conferences such as the bi-annual European Conference of Ecological Economics, the Degrowth Movement, and Camphill Community events, where community members, activists, and researchers address various academic and topical issues, have been useful places to obtain good insights. I have also shared my research findings in these arenas, and received constructive feedback.

3.3.2 Interviews

Interviewing participants is 'an effective way of soliciting and documenting, in their own words, an individual's or group's perspectives, feelings, opinions, values, attitudes, and beliefs about their personal experiences and social world, in addition to factual information about their lives' (Saldaña, 2011, p. 32). The focus of the study, the subject matter, and the research questions determine the type of interview questions used in the field. Interview formats range from highly structured with specific questions, to a list of unstructured general topics for exploration (ibid). Interviews can be pre-

arranged with a single individual or in groups of two or more, or can happen spontaneously when the opportunity presents itself in the field.

The focus of my study benefitted from qualitative interviews because they provide a flexible and explorative approach. I gathered information through formal interviews and spontaneous informal conversations with 29 individuals in the two ecovillages (in addition to workshops and a web survey, which will be discussed in the next sections).

Researchers need to be good listeners in order not to influence the outcome of interviews (Miles et al., 2020). Researchers develop trust and empathy with their study participants when employing the techniques of active listening (Pearce et al., 1995; Spataro & Bloch, 2017; Weger et al., 2010). Weger et al. (2010) identify three main characteristics of active listening: (1) reflecting one's full attention through nonverbal body language such as maintaining eye contact; (2) paraphrasing the message back to the speaker to communicate (and ensure clear) understanding, and (3) to encourage the listener to elaborate further.

Active listening helps researchers to establish a strong connection with study participants, and avoid seemingly judgmental formulations of questions (Weger et al., 2010). It also helps researchers to identify assumptions and meanings behind vague or general statements through clarification questions posed in a respectful manner (Ferrari, 2012). These techniques/skills were especially useful to me, as my study coincided at a time when the ecovillages were experiencing inter-personal conflict (this was more pronounced in Hurdal Ecovillage).

I used semi-structured interview guides when conducting in-depth interviews. I allowed a degree of flexibility in my interviews, so that study participants could freely explore topics that were important for them. This helped to bring in topics that were unique to the time and context of each case study, and which may not have been reflected by the interview guide. It was important to give the respondent the impression that their opinions and experiences took precedence regarding the topic of the study. For example, this is reflected in how the ongoing conflict took a central place in the interviews in Hurdal Ecovillage, as it took up quite a bit of their energy during my

study, although it was not part of my interview guide in the initial preparation for the field.

The questions that guided the interviews in the ecovillages explored: (1) the motivations for moving to the ecovillage; (2) the values that guide the ecovillage; (3) the type of shared/sustainable practices prevalent in the ecovillage; (4) the advantages and challenges of living and/or running a business in the ecovillage, and (5) the main challenges that the ecovillage is currently facing. I adapted these questions to fit the particularities of each ecovillage. Follow-up questions helped me to explore new topics revealed during the interview.

Some criticize qualitative studies that they are not generalizable. This may be due to a lack of understanding of qualitative studies. Qualitative studies aim to illuminate processes, dynamics, and context that are not well explored in quantitative studies. In order to acquire a richer information source for my analysis, I used a sampling method to find informants who would illuminate various aspects of the topic under study, for example, interviewing people with different standpoints in a conflict, interviewing both pioneers and new members of the ecovillages, interviewing young families with small children, single individuals, and pensioners, etc. I followed this process until I felt that I did not uncover any new information with subsequent interviews (Saldaña, 2011).

3.3.3 Human needs workshops

I implemented needs-based workshops in the tradition of Max-Neef's (1991) Human Scale Development approach in Hurdal Ecovillage and in Vågan. Needs-based workshops have the potential to illuminate the rich and inter-connected nature of human needs and their satisfiers. The matrix of needs and satisfiers serves as a tool that both guides and gives the participants the opportunity to freely discuss the challenges and opportunities their community faces, and the impact on their wellbeing. The method creates an atmosphere of empowerment and enthusiasm (Guillen-Royo, 2016). Its re-configurative aspect encourages participants to reflect on strategies for achieving ideal scenarios they have drawn up, and solving the challenges they face

(Guillen-Royo, 2020). If connected to ongoing processes, it is a useful tool for initiating locally anchored change processes.

The process of conducting workshops follows similar steps. I sent an introductory letter presenting my research project, and explaining the method to potential participants. In Hurdal, I initially sent this information to my contacts in the ecovillage, and discussed with them the best way of recruiting participants. We agreed that I make a flyer that introduced myself, my project, and the method to ecovillage residents. These flyers were distributed in the mailboxes of all ecovillage residents a month before the workshop. Twelve ecovillage residents informed me of their interest to participate in the workshop, and we agreed on a date that was convenient for everyone. In Vågan, information regarding the workshop was disseminated in different arenas by the Public Health Coordinator to recruit participants. Fourteen individuals registered to participate, and received information explaining the workshop program through e-mail.

Needs-based workshops require a minimum of two facilitators. One of my supervisors, Mònica Guillen-Royo, assisted me in facilitating the workshops in both study sites. On the day of the workshop, we presented the method to the participants. After clarifying any ambiguities and answering questions, we divided the participants into two groups for the first half of the day. One group identified hindrances for optimally satisfying fundamental human needs, and filled in a 'negative' matrix. The second group identified the ideal situation for optimally satisfying fundamental human needs, and filled in a positive/utopia matrix.

When these parallel sessions were finished, the researchers made a preliminary analysis of the two matrices, and produced condensed negative and utopia matrices. In the second half of the day, we divided the participants into four groups, and provided them with printed copies of the condensed matrices. The four groups were asked to discuss the matrices, and identify 'bridging' satisfiers that would facilitate the transition from the negative to the utopia scenario. In this process, they identified the role individuals, communities, and policymakers play in moving towards the ideal

situation. At the end of this session, the participants were gathered in a plenary, and each group presented the results of their deliberations. In this session, participants became inspired and engaged while discussing concrete and specific measures to help solve their challenges, hence manifesting the empowering nature of the exercise as mentioned earlier in this section.

Although there are many strengths to this approach (as detailed earlier), there are some shortcomings. A full-day workshop demands time and energy from participants and facilitators. In modern times, in which many people experience time scarcity, devoting an entire day to a workshop may discourage some people from participating. To help counter the length and intensity of the workshops, I introduced a long lunch break, in addition to tea and coffee breaks that my project financed. The participants appreciated these breaks, and seemed to enjoy sharing this day and exercise together.

The workshop may also attract people with similar values, viewpoints, and worldviews (Guillen-Royo, 2016). In the workshops in Hurdal and Vågan, participants identified this possibility and consciously attempted to bring up the viewpoints of others who might disagree with the group consensus, and addressed them. Moreover, I interviewed people who expressed skepticism towards mingling with people they disagreed with in the workshops separately.

In addition, collective exercises such as needs-based workshops can have a power dynamic, whereby some participants will be more active than others. The facilitator needs to be observant of this dynamic and actively encourage everyone to participate. As mentioned earlier, some people may not want or be unable to participate (self-exclusion). Although all research methods are susceptible to different degrees of self-exclusion, combining different methods helps balance the shortcomings of a single method.

Another shortcoming of the method is that it requires resources. The fact that the workshop requires at least two facilitators increases the risk of cancellations if one of them is unable to take part for some reason. In addition to human resources, the workshop requires stationery such as large matrices for group exercise, post-its,

markers, and the like. Researchers also need access to printers (to print out condensed matrices) and projectors for plenary discussions. This may limit others from using the method in circumstances where such resources are in short supply. In the absence of these resources, the researcher may need to be creative in finding other solutions.

3.3.4 Web survey

In Hurdal Ecovillage, I complemented my study by employing a web survey. Quantitative methods are appropriate when researchers aim to study the prevalence of a certain outcome/characteristic in a group, to examine group differences on some measures, or to illuminate relationships between different variables, among others (Connell, 2016).

The web survey I conducted in Hurdal Ecovillage explores ecovillage residents' subjective wellbeing. I used questions similar to those used by Statistics Norway in national surveys to help enable a comparison (SSB, 2015). I also included questions that incorporated recent developments in the field of subjective wellbeing (SWB). For example, I added questions that explored both cognitive/evaluative (life satisfaction) and affective aspects of wellbeing, following Kahneman's (2011) reasoning for including both aspects (briefly discussed in section 2.1.1 in this dissertation). I also included insights gained from the needs-based workshops to assess whether the observations and perceptions expressed by workshop participants also apply to the larger community.

Forty-three individuals responded to the web survey out of the 96 who received the survey through email, yielding a response rate of 45% (see Appendix A for a statistical description of survey respondents). When compared to traditionally low response rates for web surveys (Fan & Yan, 2010), this was a good response rate. However, a sample size of 43 is still too small for reliable statistical analyses. As a result, the survey results played a minor, supplementary role in article II of the dissertation.

The link to the web survey was disseminated by the resident associations in Hurdal to protect the identity of the respondents. The web survey afforded respondents the privacy and security to give honest answers. This was important since many questions

in a SWB survey can be personal (for example, questions relating to emotional wellbeing, income, satisfaction with life, and social and environmental context can feel somewhat invasive if asked through personal or telephone interviews), and need to be handled confidentially.

Some criticize quantitative surveys for failing to incorporate participants' voices and the ambiguity in interpretation that this may entail (Gelo et al., 2008; Toomela, 2008). To counteract this shortcoming, I included open-ended questions in the survey to give respondents the chance to elaborate on their viewpoints regarding their community. Otherwise, the complementarity of the methods employed in the case study can counteract this weakness in the quantitative methods.

3.3.5 Document study

In my data material, I included academic publications (books, theses, and journal articles), grey literature (such as annual reports, organization/business reports, and evaluation reports), multi-media (such as publicly available video clips of community deliberations, documentaries, promotional short videos, and the like), social media (such as blog posts and Facebook posts), newspaper articles, and print material (such as flyers, brochures, leaflets, and booklets) for document study. I gathered this material before, during, and after my field study. Academic literature, documentaries, and blog posts were particularly useful as a preparation for my field study. The document study continued after the fieldwork, both to support my analysis of the data and as I come across new material on the internet.

Beyond familiarization with the field sites, document study helps to unveil the value systems, ideologies, and worldviews of the creators of the document (Saldaña, 2011). As a result, document study helps in interpreting field observations and interviews. In addition, the study of an organization's reports (annual and progress reports) assists the interview process by reducing the recall bias of study participants, and by complementing with concrete data that support interview and analysis.

The mix and sequence of the research methods applied aligns with CR's understanding of how a scientific investigation proceeds: from the observation of

phenomena to theorizing about them. The integration of the research methods was at the research design and data analysis stages. For example, findings from needs-based workshop inspired and informed the design of the web survey. Additionally, the insights gained by employing the different methods were used to understand the findings while analyzing data from various sources and methods (Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 2010).

The application of different approaches and methods helped to triangulate data, theory, and methodology (Denzin, 1970, 2012). It made the data source for the theoretical analyses richer, and helped fill gaps. Where there were gaps or inconsistencies in documents (such as annual reports, organizational blog posts, or newspaper articles), in-depth interview helped to clarify these (i.e., data triangulation). The extensive use of documentation also helped to facilitate in-depth interviews, such that relatively little time was used on information that was adequately covered through documents, thus allowing more time for exploring complex topics and processes in interviews.

3.4 Data analysis

In order to analyze the qualitative data I gathered, I adopted a coding approach using Nvivo 12 Pro (QSR International, 2018). Coding and category construction helps a researcher to organize, order, and extract meaning from a vast array of data (Saldaña, 2011). Miles et al. (2020) define codes as 'labels that assign symbolic meaning to the descriptive or inferential information compiled during a study' (p. 62).

Data analysis begins at the data collection stage as a researcher reflects on the data being gathered and notes these reflections. In the case of the needs-based workshops, a first analysis of the data takes place on the day of the workshop when researchers summarize and condense negative and utopia matrices in preparation for the group and plenary exercises. These condensed matrices continue to support the more in-depth analysis of the recorded and transcribed data, and are included as appendices of the articles.

The analysis continues while transcribing the data. I transcribed some of the workshop discussions (Hurdal Ecovillage) and interview data (Hurdal and Findhorn) in Nvivo, while I outsourced the transcription of the Vågan workshop discussions, and some interviews from Hurdal, to a transcriber who has a confidentiality agreement with my university in order to save time. Transcribing the data was helpful as new insights arose as I reflected on what the study participants said, how they emphasized certain aspects more than others, or the dynamic between participants. While transcribing the data, I created analytical memos in Nvivo to be included in the analysis of the data at a later stage.

Once the transcription was finished, I followed a stepwise coding process as suggested by Miles et al. (2020) and Saldaña (2011). In the first stage, I represented smaller portions of data (a paragraph or less) with phrases that captured their meaning to help reduce the volume of the data for further analysis. I then worked inductively, and created descriptive and in vivo codes to further distill and capture the essence in the data (Miles et al., 2020; Saldaña, 2011). These codes were revised and modified or deleted during the first cycle coding process.

In the second cycle coding, I worked with the first cycle codes in order to reveal patterns, categories, and themes that relate to the theoretical approaches employed in the articles (Miles et al., 2020). More specifically, I first used categories to group codes that speak to the same topic, and then grouped the categories using concept codes that corresponded to the theoretical approach I used in the different articles. For example, in article II, the concept codes corresponded to types of satisfiers (synergic, singular, destroyers, pseudo-satisfiers, and the like) and levels of organization (individual, community, and societal levels), whereas in article III, the concept codes corresponded to elements of sustainable practices (material, meaning, and competence).

Table 3.1: Overview of data material used in each article

Article	Article I: Circular Economy – reducing symptoms or radical change?	Article II: Wellbeing and local sustainability initiatives: The case of a Norwegian ecovillage	Article III: Building an island of sustainability in a sea of unsustainability? A study of two ecovillages	Article III: Towards sustainable transport practices in a coastal community in Norway. Insights from human needs and social practice approaches.
Case study	-	Hurdal Ecovillage	Hurdal Ecovillage and Findhorn Community Ecovillage	Vågan Municipality
Focus of analysis	Conceptual interrogation of the concept of a circular economy	Individual and community wellbeing	Transformation of ecovillages and impact on sustainable practices	Wellbeing and sustainable practices
Data material	Development of conceptual/analytical framework Literature review	Twelve interviews Workshop (12 participants) Web-survey (43 participants) Newspaper articles Business documents Documentary Blogs Academic articles Statistical data	Fourteen interviews Books written by pioneers and long-term residents Newspaper articles Short videos Blogs Social media Annual reports Academic articles	Workshop (14 participants) Communications with the Public Health Coordinator of the municipality Policy documents Reports Statistical data

3.5 Ensuring the quality and trustworthiness of the research findings

Researchers take different steps to ensure the quality and trustworthiness of their findings. Researchers applying a quantitative methodology are required to ensure the internal validity, generalizability (external validity), reliability, and objectivity of their results (Lincoln & Guba, 1986). These criteria aim to improve the accuracy, relevance, stability, and objectivity of quantitative research. Qualitative researchers have constructed corresponding criteria to judge the trustworthiness of qualitative research. Guba (1981) suggests four corresponding criteria for ensuring the trustworthiness of qualitative research: credibility, transferability, dependability, and confirmability.

Credibility refers to the accuracy with which the researcher conducts the research using methods and analysis that fit the identified research focus. It speaks to the trustworthiness of the data collection, analysis, and interpretation processes. In my research, I have utilized methods of data gathering that have been tested and tried in the field of human wellbeing. For example, I followed the steps of conducting needs-based workshops that have been successfully utilized in other projects/places, and by following the recommendations of one of my supervisors who has made significant contributions to the field.

To help ensure an adequate familiarity with my study subject and site, I visited the field repeatedly, stayed with members of the communities I studied, participated in meetings and workshops, and studied documents, blogs, and other media resources. This also helped to triangulate the information I gathered from the different sources. Triangulation helps reveal the various aspects of empirical reality, and reduces the likelihood of errors from inaccurate/biased responses that may be caused by, for example, recall bias.

‘Peer debriefing’ and ‘member checks’ are other ways of ensuring credibility (Lincoln & Guba, 1986, p.77). Peer debriefing is where the researcher tests the study design, hypotheses, and emerging results with professional ‘peers’ and more experienced colleagues. I discussed study design, interview guides, and data analysis plans with my supervisors, and updated them when I returned from my field visits. We discussed my

preliminary findings as they were developing, as well as the drafts of my articles when I was writing up my results. I have also presented my findings in several international conferences, which gave me new perspectives and insights from a larger academic community.

Member checks refers to ‘the process of continuous, informal testing of information by soliciting reactions of respondents ... and to the constructions offered by other respondents or sources, and a terminal, formal testing of the final case report with a representative sample of stakeholders’ (Lincoln & Guba, 1986, p.77). During interviews, I attempted to ascertain the correctness of my understanding by summarizing/repeating their statements back to them. I also cross-checked the information I gathered from interviews, documents, and other sources in subsequent interviews until I was certain that I had a solid grasp of the issue.

To acquire an understanding of a topic from different perspectives, I set up interviews with respondents who could espouse diverse viewpoints and experiences that reflect the reality on the ground. For example, respondents in different age groups and different life situations, people on opposing sides in a conflict, pioneers, and newcomers in communities, etc. Similarly, the workshops had participants with diverse backgrounds. Since the workshops have less flexibility regarding time and place (because once the time and place are fixed, it is difficult to change in order to accommodate one or two participants), one has to spread the information widely to attract as diverse participants as possible, and actively invite people who may contribute with unique insights.

I also presented my preliminary results to study participants and received feedback. The participants of the needs-based workshops received condensed matrices to reflect on and, if necessary, correct and update the results during the workshop. They kept these summaries with them after the workshop in case they wanted to refer to them again at a later time. After the fieldwork, I presented the preliminary results of my analysis at a meeting I organized with a group of study participants in Hurdal, and received useful feedback on the accuracy of my findings. I was not able to conduct a

similar exercise in Findhorn because of a lack of resources. However, I complemented my field research with an in-depth study of other information sources (presented earlier) and digital interviews towards the end to fill gaps and clarify inconsistencies.

Transferability refers to the degree to which the findings of the study can be applied in other contexts (Shenton, 2004). In qualitative research, transferability (which corresponds to generalizability in quantitative research) of the study to other contexts can be facilitated by including 'sufficient contextual information about the study site ... to enable the reader to make such a transfer' (ibid, p. 70). I included detailed information and quotes from interviews to help support my analysis results. For instance, I included detailed accounts of the historical developments of the communities I studied, the context around major milestones in their development, the regional dynamics, and the larger socio-economic and political-economic context in which they are operating. Based on this information, the readers of my articles could assess whether my findings will also apply to their own study sites by comparing the aspects I describe in my study with their own (Saldaña, 2011; Shenton, 2004). However, in qualitative research, the context in which the study takes place has tremendous importance. As a result, to understand the applicability of the study findings in other contexts, a similar study with a similar methodology in the new context would provide a more reliable result.

Dependability refers to whether the same study can be replicated by others and yield the same results. This criteria is closely related to credibility (Lincoln & Guba, 1986) and depends on the researcher applying 'overlapping methods' (Shenton, 2004, p.71), and reporting in detail the steps taken in the research process. Confirmability refers to the steps a researcher takes to reduce his/her own bias. The researcher does this by explaining the reasoning behind the choice of methodology, discussing the weaknesses inherent in the methods employed, and admitting his/her own predispositions in choosing the research topic and methods. The first two of these three elements have been discussed earlier in this chapter.

Regarding my own dispositions for the research topic and methods, I chose the topic, as community sustainability initiatives have always fascinated me. Instead of taking a passive role in society, committed individuals in these initiatives acquire new skills and knowledge, secure the material needed for the lifestyle/activities they are passionate about, and boldly establish initiatives that align with their values. I find this level of agency to be highly inspiring.

Coming to the field with this idealization (partly informed by the motivational videos and material I had consumed), I was met with the hard reality of the compromises these initiatives and their members had to make to realize their goals. I was surprised to find the intense conflicts that some of these initiatives experienced, which disillusioned some members. I also witnessed the dedication and perseverance of other members who stayed the course in the firm belief that they were setting an example for others. Aware of my predisposition, I included people with different perspectives in my study. I also studied documents critical of such initiatives to gain an understanding of different viewpoints regarding community initiatives.

Employing structured analysis methods, such as a stepwise coding of the corpus helps reduce researcher bias (Gibbert et al., 2008). I, therefore, employed this approach, and analyzed the data I gathered. Communicating my findings also contributed with added insight to a field that tends to highlight the positive aspects of bottom-up initiatives.

In order to be fair to my study participants in bringing out the complexity of their lived experiences, I deemed qualitative methods to be more appropriate. I had planned to complement my qualitative findings with an analysis of the survey data in order to increase the rigorousness of my study through a mixed-methods approach. Yet, as discussed earlier, the survey's small sample size limited its role in the overall research.

3.6 Ethical considerations

All research projects must make ethical assessments of study objectives, methodological approaches, and the presentation of findings. Scientific work is guided by a general set of values and norms conducive to the creation and dissemination of

knowledge. Robert K. Merton called these norms and values the 'ethos of science' (Merton, 1973, p. 268). The ethos of science comprises four institutional imperatives that guide the conduct of science: universalism, communism, disinterestedness, and organized skepticism. On Universalism, he states that empirical findings and 'truth-claims, whatever their source, are to be subjected to pre-established impersonal criteria: consonant with observation and with previously confirmed knowledge' (Merton, 1973, p. 270). Communism requires that substantive findings of science belong to the community of scientists and society at large. Findings are to be shared openly with the larger community, and contribute to the advancement of knowledge. Disinterestedness requires that the scientist maintain an impartial attitude towards his/her work. The researcher should not have an interest in influencing his/her work and results in any specific manner. Organized skepticism is 'a methodological and an institutional mandate' to maintain 'a detached scrutiny of beliefs in terms of empirical and logical criteria' (ibid, p. 277). I tried to follow these principles in the way I conducted my research (as detailed earlier), and by publishing my research in open access publications (to the extent that my resources could allow).

In his influential article, 'The Unanticipated Consequences of Purposive Social Action', Merton (1936) identified five sources of unintended consequences of social action: ignorance, errors, short-term interests overriding long-term interests (a willful ignorance as opposed to true ignorance), basic values requiring/prohibiting certain actions, and self-defeating predictions. To help avoid these and other pitfalls of unintended consequences, a researcher must devote particular attention to mapping the potential ethical consequences of their research project. I addressed this issue by subjecting my study design and tools to rigorous ethical assessments by the National Committee for Research Ethics (NESH).

In Norway, the National Committee for Research Ethics in the Social Sciences and the Humanities (NESH) sets out ethical guidelines for the conducting of research (NESH, 2006). The guidelines require that researchers 'show respect for human dignity in the choice of topic, in relation to their subjects, and in reporting research results' (NESH,

2006, p. 11). In addition, ‘researchers must respect participants’ autonomy, integrity, freedom, and right of co-determination’ (NESH, 2016, p.13). Participants should be given full information regarding the purpose of the study, the field of research, the source of funding for the study, and any practical consequences of participating in the study (ibid).

Following the recommendations of NESH, the Norwegian Center for Research Data (NSD) approved the study design, including interview guides, the web survey questionnaire, and data storage and analysis plans. At the start of interviews and workshops (and in the introduction page of the web survey), I provided a description of the project that explained the purpose of the study, and how the gathered data will be stored and analyzed, in addition to giving them the opportunity to review the recorded/transcribed data. This description also included contact details to my supervisors, the data safety and privacy protection representative at my university and NSD, in order to give them the opportunity to enquire further and give them channels to raise concerns, if any. Participants signed a consent form that guarantees their anonymity, and gave me permission to voice-record the discussions. When outsourcing the transcription of interviews and workshops, I used a professional transcriber who has a formal contract with my university to ensure data safety. In my analysis, I used codes to anonymize the study participants. Finally, to ensure transparency, the summaries of workshop results were sent to resident associations in Hurdal and the public health coordinator in Vågan for their files, and in order to make the results available for their use in ongoing processes.

4 The empirical setting: Sustainability transitions at the local level

This PhD project relies extensively on empirical evidence gathered from local-level sustainability initiatives. In-depth studies of two ecovillages take a central place in the PhD, which resulted in two of the articles included in this dissertation. Consequently,

the description of the study sites will start with a brief discussion of the literature on ecovillages before proceeding to describe the field sites.

4.1 Literature on ecovillages

Ecovillages are intentional communities focused on sustainable lifestyles. An intentional community is ‘a group of people who have chosen to work together in pursuit of a common ideal or vision. Most, though not all, share land or housing. Intentional communities come in all shapes and sizes, and display amazing diversity in their common values, which may be social, economic, spiritual, political, and/or ecological. Some are rural, some urban. Some house members in a single residence, some in separate households. Some communities raise children, some don’t. Some are secular, some are spiritually based, and others are both’ (Manzella (2010) cited in Pickerill, 2016, p.217).

There is no authoritative definition of an ecovillage with the accompanying criteria to determine which communities qualify to be designated as such. Communities designate themselves as ecovillages, while others hesitate to be called ecovillages precisely because of the lack of a clear definition. Two definitions that are widely used in the literature are by Robert Gilman (1991) and the Global Ecovillage Network (GEN). These two definitions are as follows:

Robert Gilman (1991, p.10) defines an ecovillage as ‘a human-scale, full-featured settlement in which human activities are harmlessly integrated into the natural world in a way that is supportive of healthy human development, and can be successfully continued into the indefinite future’.

GEN’s definition of an ecovillage is ‘a rural or urban community that is consciously designed through locally owned, participatory processes in all four dimensions of sustainability (social, culture, ecology and economy) to regenerate their social and natural environments’ (Global Ecovillage Network, n.d.-d).

Table 4.1: GEN’s tool for regenerative ecovillage design

Sustainability dimension	Principles
Social sustainability	<ul style="list-style-type: none"> Embrace diversity and build community Cultivate inclusive, responsive, and transparent decision-making Empower participatory leadership and governance Ensure equal access to holistic education and healthcare Practice conflict facilitation, communication, and peacebuilding skills Develop fair, effective, and accountable institutions
Cultural sustainability	<ul style="list-style-type: none"> Connect to a higher purpose in life Nurture mindfulness and personal growth Respect cultural traditions that support human dignity Engage actively to protect communities and nature Celebrate life and diversity through art Reconnect to nature and embrace low-impact lifestyles
Ecological sustainability	<ul style="list-style-type: none"> Clean and replenish sources and cycles of water Move towards 100% renewable energies Grow food and soils through organic agriculture Innovate and spread green building technologies Work with waste as a valuable resource Increase biodiversity and regenerate ecosystems
Economic sustainability	<ul style="list-style-type: none"> Reconstruct the concepts of wealth, work, and progress Work for equitable ownership of land and resources Cultivate social entrepreneurship to create sustainable solutions Empower and strengthen local economies Invest in fair trade and ethical systems of exchange Generate wellbeing for all through economic justice
Whole system design	<ul style="list-style-type: none"> Find strengths, weaknesses, and leverage points in all areas Engage all stakeholders in designs for the future Identify the right scale for each solution Honor traditional wisdom and welcome positive innovation Learn from nature and practice whole systems thinking Build networks for mutual support

Source: An introductory course in Ecovillage design in Hurdal Ecovillage May 4-8, 2018. More information on ecovillage design framework is found on GEN’s webpage (Global Ecovillage Network, n.d.-c).

GEN’s definition is practice-oriented, and links to their tools for ecovillage design and evaluation of community sustainability (See **Table 4.1** for GEN’s tool for ecovillage design). GEN’s four dimensions are comprehensive, covering topics ranging from personal development (such as ‘connecting to a higher purpose in life’ and ‘nurturing mindfulness’) to issues linked to ecology and societal transformation (for example,

‘working to reconstruct the concepts of wealth, work and progress’). This tool for ecovillage design is meant to be applied in participatory processes, whereby community members identify their community’s strengths, challenges, and leverage points to develop their ideal ecovillage (GEN, n.d.-a).

As a global network of ecovillages, GEN hosts a database of different community initiatives. At the time of this writing, there were 36 networks of ecovillages, 416 ecovillages, six eco-cities, 150 eco-communities, 299 eco-projects, 42 holistic centers, 60 transition towns, 67 cohousing initiatives, 40 shared housing initiatives, and 23 other unspecified categories registered in its database (GEN, n.d.-b). This totals to approximately 1139 different community level initiatives.

In his review of the literature on ecovillages, Wagner (2012) observes that there has been an increasing academic interest in ecovillages from different fields since the early 2010s. Ecovillages have been a focus of study in fields such as sociology, sustainability/environmental science, ethnographic studies, psychology, and to a limited degree, natural sciences. Wagner (2012) classifies the interest from the social sciences and humanities into three categories: ‘examinations of the perspectives of individuals, sociological investigations, and ethnological and cultural investigations’ (p. 85). Studies exploring the perspectives of ecovillage members focus on the motivations for joining ecovillages, their subjective wellbeing, the sense of belonging, identity construction, and personality development (Ergas, 2010; Grinde et al., 2017; Mulder et al., 2006; Weme & Madsen, 2018; Westskog et al., 2018). Others have studied the relationship between humans and nature (Kirby, 2003, 2009; Moore & Wight, 2007).

Sociological studies focus on the ‘community’ and its emergence, transformation, and dissolution (Forster & Wilhelmus, 2005; Jones, 2011; Kirby, 2003; L. Meijering, 2006; L. Meijering et al., 2007; van Schyndel Kasper, 2008). Studies have focused on the organization of ecovillages, their structure and functionality, the process of admitting and integrating new members, and the process of decision-making (Ergas, 2010; Kanter, 1972). For example, in her in-depth study of seven ecovillages and a survey of 113 intentional communities, Kunze (2012) finds three socially innovative

ways of organizing community: implementing effective tools of membership (that support individuality, community cooperation, and flexibility to accommodate diversity), applying consensus-based decision-making processes, fostering social competences, and authentic communication.

Ecovillages attract new members because they promise 'individual liberty, communal cooperation and responsibility and the sustainable embedding of the community in society and the ecological environment' (ibid, p. 60). However, Cunningham (2014) shows that decision-making processes can also be contentious in ecovillages. His study found a high-level of conflict and tension that resulted in half of the ecovillage residents in his case study in Ireland leaving the community. The community had to bring in outside experts to reset the tension, and rebuild trust and community cohesion. Kirby (2003) reports a similar process, whereby outside facilitators were brought in to deescalate tensions in the ecovillage at Ithaca in upstate New York, USA.

Other topics covered are the balance between the individual and the collective, the reconstruction of common values and norms, and a study of underlying worldviews (Litfin, 2009; Roysen & Mertens, 2019; van Schyndel Kasper, 2008). Some studies conceived of ecovillages as places of experimentation for new social relations and practices (Boyer, 2015, 2016; Roysen & Mertens, 2019), and investigated whether it is possible to replicate the model at higher scales (Litfin, 2009, 2014; Lockyer, 2017; Mychajluk, 2017).

Studies have also looked at the impact of ecovillages on the surrounding region and society, in general (Boyer, 2018; Ferreira & Eriksen, 2017; Kim, 2016; Loureiro & Chevitarese, 2017; L. Meijering et al., 2007; Tolle, 2011; Westskog et al., 2018). Ethnographic studies use participant observation methods, and focus on describing ecovillage culture and everyday lives, in addition to the interaction between the individual and the group (Chitewere & Taylor, 2010; Kirby, 2009; Sanguinetti, 2012). Some studies conceptualized ecovillages as utopian places, and others as

manifestations of 'counterculture' (Hong & Vicdan, 2016; Loureiro & Chevitarese, 2017; Sargisson, 2004, 2007).

At the junction between social and natural sciences, we find architectural studies that looked at the built environment in ecovillages (see for example, Tolle (2011)). For instance, Jenny Pickerill has studied ecovillages in different continents over several years, and documented the evolution of ecovillage buildings from traditional forms to state of the art eco-buildings (Pickerill, 2012a, 2012b, 2016, 2017). She addresses issues such as comfort, affordability, gender, and community as it relates to the built environment (Pickerill, 2016). Mason (2014) studied the equity implications of eco-buildings in eco-communities in the UK, and found that these communities emphasize environmental sustainability and neglect intra-generational equity. This may result in the exclusion of low-income groups in society. Pickerill (2016) calls for more research investigating the interaction between occupants and eco-buildings, the life-long costs vs. the savings of eco-buildings, and the types of practices eco-buildings engender or discourage.

We also find natural science-oriented studies focusing on environmental impact: energy consumption, energy supply, ecological footprints, sustainable water management, biodiversity, and permaculture (M. Daly, 2017; Sherry, 2019; Sherry & Ormsby, 2016; Tinsley & George, 2006). These studies find that ecovillages have a significantly lower environmental impact and ecological footprint than the larger society (see for example, Tinsley and George (2006), Vita et al. (2020), Sherry (2014, 2019), (Boyer, 2016), and Sherry and Ormsby (2016)). Other studies connected a low environmental impact with a higher quality of life (Mulder et al., 2006; Vita et al., 2020).

Critics of the ecovillage movement question its novelty, and state that ecovillages exhibit similar problems of conflict and community tensions of their earlier kin in the hippie movements of the 1960s (Garden, 2006a, 2006b). Contrary to their earlier kin, they claim, city elites who idealize a close-knit rural life are buying up private plots and housing in aspiring 'ecovillages', and raising property prices (ibid). Others decry the lack of explicit political position in the ecovillage movement (Fotopoulos, 2000; Mason,

2014). The 'Inclusive Democracy' movement rejects that 'social change will come about through changing values and developing alternative lifestyles with no agreement ... on ultimate ends' (Fotopoulos, 2000, p.288). However, these critical voices applaud initiatives, such as local currencies and cooperative banks (that one finds in well-established ecovillages), as important initiatives that work against the dominant power structure of the capitalistic system.

Against this background, I will now describe the study sites and fieldwork activities conducted at each site.

4.2 Hurdal Ecovillage

Hurdal Ecovillage is located 80 km north of the capital city of Norway, Oslo, and was established in the late 1990s by a group of individuals who had a vision of starting a small community around ecological farming and spirituality (Hurdal økolandsby, n.d.). Central individuals among the early pioneers in Hurdal spent their formative years in Findhorn Community in Scotland, and returned to Hurdal with the aim of establishing a similar community (Halvorson, 2003). They established a cooperative called *Kilden økosamfunn*—or Kilden eco-community—with a member size of somewhere between 50–60 individuals, and started searching for a suitable location within an hour of the capital for a few years (Torp, 2020).

After a few years of searching, a group of approximately 10 individuals, some with small children, from Kilden økosamfunn settled on a former priest's farm owned by Hurdal Municipality an hour outside of Oslo. Contrary to their experiences elsewhere, they met an enthusiastic municipality that recognized the potential in their vision, and saw it as a driver for population- and economic growth.

The group established a new cooperative where members had equal shares, and decisions were made through consensus. New members went through an introduction course and a trial period of six months. They built nine houses in a traditional ecological fashion with clay, straw, and wood in the period from 2002–2003 (Halvorson, 2003). In this early period, it was common to share living space until new members could find a footing in the community and have their own housing (Bakke-Kiøsterud, 2010; Eriksen,

2015) (See **Table 4.2** for an overview of the different phases of development of the ecovillage).

Their initial experiments of building their own houses were met with significant challenges, as some of the houses experienced construction problems. They also incurred economic liability from the endeavor (Bakke-Kiøsterud, 2010). As a result, the cooperative decided to sell the farm to an investor to solve the economic, infrastructural, and legal challenges they encountered from their initial experimentations (Bakke-Kiøsterud, 2010). The farm was sold to Vitrina (later Filago) in 2012. Members who did not agree with this decision left the ecovillage.

Filago invested large sums, and set out to build modern eco-houses in three clusters. Hurdal Ecovillage became part of a larger business plan aiming to construct small and medium sized eco-communities, such as eco-yards, eco-hamlets, eco-urban clusters, and ecovillages (Filago, n.d.). The first cluster was developed in two stages. Construction of the first group of houses began in 2013 and was completed in 2014/2015, and the second group was finalized in 2016. The original plan included a common house for the residents to use for social and economic activities. Nevertheless, the cost of the first group of houses exceeded the budget; therefore, Filago abandoned the plan of building a common house, and instead built the second group of houses on the plot to generate extra income. All in all, 70 houses were built and sold in the open market (Torp, 2018). The prices ranged between USD 220,000 and 435,000 in current exchange rates.

Table 4.2: Hurdal Ecovillage development milestones

	1996–2006	2006–2016	2016–Current
Significant events	A group of approximately 10 individuals search a community where they could pursue a life centered around agriculture and spirituality, and create the cooperative <i>Kilden økosamfunn</i> (Kilden eco-community). In 2004, the cooperative developed a zoning plan and bought the farm.	Members of Kilden eco-community struggled with financial problems after their initial attempts in building an ecovillage. The property was sold to an investor, Vitrina (later Filago), which took over the responsibility of developing Hurdal Ecovillage.	Structural problems with the houses (issues with smart technology and construction problems) created tensions and conflict between the residents and the developer, and among ecovillage residents. Construction of new houses was delayed due to these problems. Filago was declared bankrupt in the summer of 2019.
Main actors	Kilden eco-community cooperative, Hurdal Municipality	Filago (earlier Vitrina)	Uncertain after Filago is liquidated.
Physical infrastructures	Nine straw-bale houses built in the period from 2002–2003 designated as temporary structures by the municipality.	Seventy modern, ecological housing units (called ‘shelters’) were built in two phases: the first phase in 2014 and the second in 2016.	Further construction of new shelters is stopped pending the resolution of Filago’s financial commitments.
Source of funding for physical expansion	Personal financing and bank loans	Filago and its investors	Uncertain
No. of members	Approximately 10 individuals	Data not available	Approximately 150 individuals

Price of houses	Not available	USD 220,000–435,000	No new houses
Admission of new members	New members of the cooperative had to go through an introduction course and a trial period of six months.	New residents either buy homes in the ecovillage, volunteer on the farm or otherwise rent spaces.	New residents either buy homes in the ecovillage, volunteer on the farm or otherwise rent spaces.
Decision-making processes	The members of the cooperative had equal shares, and decisions were made through consensus.	Filago made infrastructural decisions. Resident associations took care of social activities and the maintenance of infrastructure.	Residents are in the process of establishing an umbrella organization, and aim to implement sociocracy as their decision-making system.
Sustainable practices	Self-built straw-bale houses, gardening, sharing of living spaces, sharing of tools, exchange of consumer goods such as clothes, garden produce...etc.	Community supported agriculture, composting, courses and workshops regarding CSAs, personal development, solar energy generation	Community supported agriculture, composting, carpooling, courses, and workshops regarding CSAs, personal development, and solar energy generation

Filago bought and upgraded a neighboring old school as space for businesses and cultural activities. However, the rental price of the business center became prohibitively expensive for the fledgling ecovillage businesses. Consequently, many small businesses were run out of peoples' homes (Interviewee HL11, 2018). Some of these businesses include beekeeping and bee products, producing soaps and detergents, running courses and workshops such as yoga courses, as well as various therapies (ibid). Residents also rented the nearby vicarage as an alternative space to run sharing initiatives (for the exchange of clothes, tools, garden produce, ridesharing, and the like).

There was a growing discontent among the residents with some of the houses, as they were experiencing technical problems (Eriksen, 2015). There were structural problems with the houses (such as leakages in some houses and disagreements about the building material used in the newer houses). The wireless smart technology that regulated lighting, window shades, ventilation valves, and electric outlets did not function well (Klingenberg, 2018). Some residents were also worried about radiation from the smart technology. The subcontractors of the developer who would have been legally bound to fix the problems went out of business, hence making it difficult for Filago to fix these problems. These complications broke down the trust between the developer and the residents, and led to rising tensions and conflicts (Randen, 2019a).

These problems had an economic toll on the developer. The prevailing tension and conflict in the ecovillage, and unresolved technical problems, hindered the further sales of shelters (Lund-Roland, 2019). In 2019, Filago was declared bankrupt by the tax authorities. The firm owed its investors, including national and international corporate finance organizations, banks, crowdfunding agencies, and tax authorities, over USD 40 million (Grieg, 2019; Grieg & Randen, 2019; Randen, 2019b). The bankruptcy exposed the ecovillage to uncertain futures. The banks, insurance companies and creditors will determine to what extent the ecovillage will remain intact with its properties, such as the business center, plots for future development, and agricultural land (Hurdal ecovillage, 2018).

4.3 Findhorn Ecovillage

Findhorn Ecovillage and Community is located in the northeast of Scotland, which has approximately 400 residents (Pickerill, 2013). It was founded in 1962 by three adults (a couple, their friend, and the couple's three children), who moved into a caravan to pursue a spiritual life and provide for themselves by producing most of their own food (supplemented by unemployment benefits and child support) (Findhorn Community, 1975). Their spiritual practices focused on self-development and co-creation with nature (ibid).

The community eventually grew, and attracted a significant membership. The community's physical development can be roughly divided into three broad phases (see **Table 4.3** for a summary of the different phases of development of Findhorn Community). The early phase spans the period from the 1960s to the 1980s, and is highlighted by significant physical and economic expansion (Forster & Wilhelmus, 2005). In 1972, the community established the Findhorn Foundation as an educational charity (Findhorn Foundation, 2019). In the following decade, the Foundation set up educational facilities and accommodations at four locations: The Park Ecovillage (popularly referred to as The Park), Cluny Hill College, and two retreat houses (on the Isle of Iona and the Isle of Erraid) (Findhorn Foundation, 2019). The Park accommodates the more than 40 community businesses, in addition to housing for Foundation members and new clusters of eco-houses. Cluny Hill College provides accommodation for the many thousands of visitors of the community, and houses Foundation members (ibid).

Full-time and associate members of the community go through a three-month-long orientation program, and volunteer in one of the Foundation's work departments (Forster & Wilhelmus, 2005). The orientation program includes the introductory 'Experience Week', a series of spiritual and self-development programs, spending a week at a community retreat, and once-a-week meetings. Participants in these programs learn the core principles of the community, and gain skills for community living and working with community projects. Full members receive a small stipend and

in-kind transfers in the form of free meals, accommodations and energy provision (Findhorn Foundation, 2018, 2019).

The physical expansion enabled an increase in educational activities, which resulted in economic gains. The Findhorn Foundation surpassed a total revenue of GBP 1 million in the early 1980s (Trahair, 1999). Educational activities have increased significantly since the early days, resulting in more than a doubling of income in recent years (Findhorn Foundation, 2018, 2019). However, the community also has significant labor and infrastructural costs, and therefore resources are often tight (ibid).

Since the 1990s, Findhorn Community and its affiliated community organizations have acquired neighboring lands to finance the further expansion of the community. The most recent phase of expansion started in the early 2000s in a neighboring area called the Whins. A community organization called Duneland Ltd was established to raise funds and develop this area (Duneland Ltd, n.d.). Emphasizing its role as a social enterprise, Duneland conducted community consultations prior to construction, reserved a significant portion of the land for nature conservation, and capped the dividends of shareholders (Duneland Ltd, n.d.).

Duneland experimented with different models and approaches to develop the land. It hired contractors to build cost-saving eco-buildings in a terrace design, to save on energy and costs, and to reduce built-up areas. The initial phase faced difficulty, as Duneland severely underestimated the costs of constructing the houses and incurred a debt of half a million pounds. In addition, a construction company went bankrupt without completing its tasks, and a local company had to finish the construction (Duneland Ltd, 2010). This was a period of a steep learning curve for Duneland.

In the following phases of developments, Duneland opted for solutions that reduced the risk of financial difficulty. For example, by selling plots for self-built houses, Duneland managed to make a profit and pay down its debt. However, the price of the houses became substantial. For example, the market price of the houses in the area called East Whins became quite high compared to local incomes, ranging between GBP 160,000 and GBP 238,000 (ibid).

Although Duneland hoped more community members would utilize their priority access to the housing units and acquire these new units, there were a number of single retirees (some living abroad) that acquired them (Right to Build Toolkit, n.d.). To avoid the houses from being used as vacation homes, Duneland required that the units be occupied nine months of the year (Anonymous respondent #FH05, 2020). However, some fulfilled this requirement by renting out their units.

The lack of affordable housing for community members is a persistent problem. The Foundation observed that young people—especially young families—left Findhorn Ecovillage for lack of a ‘suitable’ home, with more Foundation coworkers commuting to the ecovillage from the nearby town of Forres and Findhorn village, with vehicle running costs adding a strain on minimum wage earners (Park Ecovillage Trust, n.d.-a). In order to alleviate this problem, the community established a cooperative—the Park Ecovillage Trust (PET)—to serve as a delivery agent for affordable units (Park Ecovillage Trust, n.d.-b). Over the years, PET has overseen the acquisition and distribution of affordable units in the Whins by raising funds from Ekopia—a cooperative that serves as a ‘community bank’, local authorities, and in collaboration with Duneland (Ekopia Resource Exchange, 2012).

Table 4.3: Findhorn Ecovillage and Community

	1962–1980s	1980s–Early 2000s	Early 2000s–Current
Significant events	A couple, their friend and the couple’s three children move into a caravan, and start a spiritual community centered around an organic vegetable garden. Community expands with the acquisition of large properties.	Central individuals started to establish community organizations to build physical infrastructure and generate income for the Foundation. The first private eco-buildings started to be erected, and the concept of the ecovillage is launched.	Significant expansion takes place in three phases led by the community organization, Duneland Ltd. The project was plagued by financial crises, but manages to rebound and cancel outstanding debt.
Main actors	Findhorn Foundation	Findhorn Foundation, Ecovillage Ltd	Findhorn Foundation, Duneland Ltd, Ekopia, Park Ecovillage Trust, Moray Council
Physical infrastructure expansion projects	Caravans, annexes, whiskey barrel houses, Community Center, Cluny Hill College, Universal Hall, Holiday Caravan Park, and retreat houses	Field of Dreams, wind park, the living machine.	East Whins (2013), West Whins (2016) and North Whins (Planned for 2020)
Source of funding for physical expansion	Community and network (fundraising and sale of shares)	Community and network (fundraising and sale of shares), sale of plots	Community and network (fundraising and sale of shares), sale of plots
No. of members	Grew from 12 to 300+ members	Three hundred+ members	Four hundred members
Price of houses	Whiskey barrel houses cost app. £10,000	Av. price in Field of Dreams: £318,000–385,000	£160,000–£238,000

Admission of new members	Full members go through rigorous orientation programs that include spiritual and personal development and community building	Full and Associate members attend orientation programs. Associate members work part-time for the Foundation, and can access community facilities against a fee.	Private house owners are automatically part of the umbrella organization, New Findhorn Association. No orientation program for these members.
Decision-making	Hierarchical → consensus based	Consensus based → Sociocracy	Sociocracy
Sustainable practices	Self-sufficiency in food provision, sharing communal facilities, communal living, spiritual and personal development courses, community building practices, sharing and collaborative consumption	Renewable energy generation, waste treatment, eco-buildings, financing community projects, managing common resources, community building practices, sharing and collaborative consumption	Generating local economy, financing affordable housing projects (combining community and public funds),

The difference in the economic resources of the new members of the community led to differences regarding how to manage common properties. For example, Duneland built a common house for the area called West Whins that included common facilities like laundry, a meeting room, and a room for the guests of residents. However, residents of West Whins could not agree on the use and relevance of the common house (Anonymous informant #FH02, 2020). Consequently, the house was put up for sale at the time of this study. To avoid such a disagreement in future developments, Duneland left out common facilities in the next phase of development in an area called North Whins. However, Duneland has acquired government grants for eight affordable units for community members who cannot afford the more expensive houses. When the development of North Whins is completed, Duneland will conclude its activities, and cease to exist.

4.4 Vågan Municipality

Vågan Municipality is located in the Lofoten archipelago in Nordland County, and has a population of approximately 10,000 people. Its administrative center is the town of Svolvær, which has a population of approximately 5,000 people. After a dip during the early 2000s, the population has been growing since 2008, caused by a net positive immigration (Hjelseth et al., 2016).

Key business sectors are tourism, fisheries and aquaculture, fish processing- and the mechanical industry, in addition to typical urban sectors such as finance, insurance, and other services (SSB, 2018). Approximately one-fourth of the jobs in the municipality are in the public sector (Hjelseth et al., 2016). While traditionally important sectors such as fisheries are declining, the tourism sector has been growing rapidly in recent years.

The growth in the tourism and service sectors has contributed to an increased optimism, and helped to create an urban atmosphere in the municipality capital. This, on top of the spectacular nature in the region, attracts not only tourists but also people who wish to establish a new life in Vågan, and who enjoy the mix of urban and natural qualities. The growth in population and tourism has brought new challenges, such as

increased housing prices and pressure on land use. During the peak tourism season, the local population faces challenges with inadequate waste management, pressure on natural resources and overcrowding (SG Henriksen, personal communication, June 5, 2018).

The municipality is currently in a process of revising its municipal plan for the period from 2018-2030, and exploring ways of achieving a sustainable development for the region that also secures a high quality of life for the citizens. In order to gather information from the residents of Vågan in ways of achieving this goal, the Public Health Coordinator recruited 14 participants with various backgrounds for a needs-based workshop. The participants' ages ranged from 15 to 78 years old. They were engaged in various professions (students, professionals, pensioners). Nine participants were male and five were female. Otherwise, the group was relatively evenly distributed across educational background and occupation.

Due to the similarity in research focus (the interface between wellbeing and sustainability) and the methodology applied (needs-based workshop), this case presented an opportunity to compare findings from the different cases regarding factors that foster both wellbeing and sustainability at the local level. It also explored the conceptual compatibility between wellbeing approaches (human needs approach) and social practice theory.

5 The research papers: A summary

This chapter provides a summary of the articles in the dissertation. I present a brief overview of each article, its theoretical and methodological orientation, its main findings, and its contribution to the dissertation (see also the same in **Table 5.2**).

Article I was first published online in the journal *Philosophy of Management* in 2019, and then in a paginated issue in February 2021. Article II was submitted to the *Journal of Cleaner Production* in March 2020, and received comments for a major revision. The comments are implemented, and will be re-submitted in April 2021. Article III was published in *Sustainability* in December 2020. Article IV received minor revision comments, and will be published in the peer-reviewed anthology 'Consumption,

sustainability and everyday life: Essays in honor of Hal Wilhite' edited by Arve Hansen and Kenneth Bo Nielsen in 2021.

5.1 Article I: Circular Economy: Reducing symptoms or radical change?

5.1.1 Introduction and research question

The first article in the PhD dissertation sheds light on the role of worldviews, ontology, epistemology, and axiology in the transition to sustainability. The article focuses on a concept of practical and theoretical importance for sustainable development — the circular economy (CE). By contrasting mainstream economics with ecological economics, it investigates whether CE aligns with the former or the latter. Circular economy is a central element in both bottom-up and top-down initiatives to transform the economy towards sustainability. As such, a closer examination of its potential provides a blueprint for other endeavors aiming to have a transformative impact on the economy. The research question that guided the article is: Does Circular Economy present a real and fundamental change from the current economic system that has landed us in [today's interconnected environmental, economic, and social] problem[s]?

5.1.2 Theoretical orientation

We followed the Hungarian philosopher, Imre Lakatos' 'research program' model of philosophy of science as our framework for analyzing the role of CE in societal transformation towards sustainability. Imre Lakatos developed his 'model of research program' to understand how knowledge progresses among communities of scholars. A 'research program' organizes a community of scientists working with a series of theories and methodological rules to solve problems and explain new facts (Lakatos, 1970). Lakatos (1970) maintained that research programs have 'hard cores' and 'protective belts'. The methodological rules of a research program protect its hardcore from being refuted, while the protective belt 'has to bear the brunt of tests and get adjusted and re-adjusted, or even completely replaced, to defend the thus-hardened core' (Lakatos, 1970, p.113). The current environmental, economic, and social problems are conceptualized as a challenge to mainstream economics that it has to

solve through its methodological toolbox. The focus of the article is to examine the role of CE in the attempt to find a solution to these problems.

By applying Lakatos’ framework, the article conceptualizes mainstream economics and ecological economics as opposing research programs with differing hard cores (see **Table 5.1** below).

Table 5.1: Hard core differences between mainstream economics and ecological economics

Neoclassical Economics (NE)⁵	Ecological Economics (EE)
Growth	Wellbeing
Atomistic	Relational
Competition	Cooperation
Instrumental values	Inherent values
Mechanistic worldview	Organic worldview

Source: Temesgen et al. (2021, p. 49)

The hardcore assumptions of mainstream economics adopt unlimited economic growth as the goal of the economy. The pursuit of hedonic utility is seen as the primary motivator of human agents, whereas unlimited economic growth is perceived to support this pursuit. Mainstream economics views individuals as self-interested atomistic actors driven by competition against each other. Nature and non-human beings are assigned instrumental values, either as consumption goods or inputs to the production process. Inspired by the natural sciences, mainstream economics adopts a mechanistic worldview in which one can reduce nature and society to their constitutive parts, and views them as subordinates (and as inputs) to the economy.

⁵ Mainstream economics and neoclassical economics are used interchangeably here as the two are closely related in economic policy development and implementation.

Table 5.2: Summary of the articles in the dissertation

	Article I	Article II	Article III	Article IV
Title	Circular Economy – reducing symptoms or radical change?	Wellbeing and ecovillage success: An in-depth study of a Norwegian ecovillage	Building an island of sustainability in a sea of unsustainability? A study of two ecovillages	Towards sustainable transport practices in a coastal community in Norway. Insights from human needs and social practice approaches.
Co-authors	Vivi Storsletten and Ove Jakobsen	-	-	Mònica Guillen-Royo and Bjørn Vidar Vangelsten
Publication status	Published online in Philosophy of Management in April 2019. Published in a paginated issue (Philosophy of Management 2021, 20(1)) in February 2021.	Comments for major changes received from Journal of cleaner production in March 2020. Comments implemented, and will be re-submitted in April 2021.	Published in the journal, Sustainability 2020, 12(24) in December 2020.	Accepted for publication in the forthcoming book, 'Consumption, sustainability and everyday life: Essays in honor of Hal Wilhite' in 2021.
Research questions	Does Circular Economy present a real and fundamental change from the current economic system that has landed us in this problem?	What factors contribute to both wellbeing and the success of ecovillages at different levels?	How does the choice of developing the infrastructure needed for sustainable lifestyle promote/limit the development of the competence and meaning needed for such a lifestyle?	What are the interrelated elements that could support the consolidation of sustainable transport practices in Vågan?
Theoretical/ conceptual framework	Lakatos' research program applied to circular economy	Sustainability transitions and Human needs theory	Social practice theory	Human needs theory and Social practice theory

	Article I	Article II	Article III	Article IV
Title	Circular Economy – reducing symptoms or radical change?	Wellbeing and ecovillage success: An in-depth study of a Norwegian ecovillage	Building an island of sustainability in a sea of unsustainability? A study of two ecovillages	Towards sustainable transport practices in a coastal community in Norway. Insights from human needs and social practice approaches.
Methodology	Conceptual	Case study; Multi-method	Comparative case study	Case study
Contribution	The article emphasizes the importance of clarifying worldviews, ontology, epistemology, and the axiology of sustainability initiatives in the search for alternative paths of development. This process will illuminate whether sustainability initiatives play the role of a protective belt or a challenge to the hard core of mainstream economics (and therefore a fundamental change to the current economic system).	This article uses a wellbeing lens to study the process of transformation in a Norwegian ecovillage. The empirical findings show that the lack of transparent processes in the ecovillage's expansion led to a contradiction in values and a frustration of fundamental needs of residents, thus leading to interpersonal conflicts. Through workshop discussions, ecovillage residents identified transparent institutions of decision-making and conflict resolution as central to help solve their challenges, to develop a unifying vision and to thrive as a community.	This article studies how the process of expansion of ecovillages through the construction of new houses affects the competence and meaning necessary for sustainable practices. It shows that as ecovillages give less priority to their founding values, in order to increase economic viability, the competences needed to maintain sustainable practices start to decline. In a worst-case scenario, this may endanger their success and longevity.	This book chapter drew on Manfred Max-Neef's FHN approach to wellbeing and social-practice theory to investigate the elements that might support the emergence and consolidation of sustainable transport practices in Vågan Municipality. The paper suggested ways policymakers can support and make use of community initiatives to encourage sustainable transport practices.

On the contrary, ecological economics (EE) sees human wellbeing/quality of life as the ultimate goal of the economy (Costanza et al., 2014; H. E. Daly & Farley, 2011; Georgescu-Roegen, 1971; Jakobsen, 2017). Human beings are perceived as relational, and cooperation as superior to competition (particularly when it comes to working with environmental problems) (Capra & Jakobsen, 2017; Ingebrigtsen & Jakobsen, 2007). Nature and the non-human inhabitants of the planet are assigned inherent values. EE adopts an organic worldview, where social- and ecosystems are understood to constitute closely interacting and interdependent systems (Capra & Jakobsen, 2017).

The article then proceeds to analyze whether CE plays the role of ‘challenging the hardcore’ or as a protective belt of mainstream economics by comparing the main strands of CE to the two ‘research programs’.

5.1.3 Methodological approach

This article is a conceptual paper. Based on a traditional review of academic and grey literature on CE, it outlines categories/strands of CE conceptualizations for further analysis. These strands were compared with the hard cores of mainstream and ecological economics (see **Table 5.1** above).

5.1.4 Findings

The article identifies two broad strands of CE conceptualizations. The first strand advocates for utilizing the circular economy to enhance the market value of goods, to improve the branding of consumer products, and to open possibilities for boosting economic growth. CE documents from practitioners (for example, business organizations, foundations, and policymakers), and international institutions such as the EU, are found to adopt such an approach. This approach is seen to be playing the role of the protective belt of mainstream economics, as it does not openly engage with foundational issues of mainstream economics.

The second strand focuses on bottom-up initiatives, such as sharing economies, local currencies, rooftop agriculture, transition towns, and ecovillages, which are seen as examples that aim to generate activities locally and reduce the environmental

impacts of consumption-focused lifestyles. These initiatives may slow down the resource throughput of consumption and production systems, and may result in reducing economic growth. Many aim to find an alternative goal to the economy other than unlimited economic growth. The strands are seen to be challenging the hardcore of mainstream economics.

5.1.5 Contribution to the dissertation

The article highlights the importance of clarifying foundational issues and their implications for both top-down and bottom-up sustainability initiatives. By identifying ecological economics and mainstream economics as opposing research programs, and presenting ecological economics as a field trying to find an alternative to the current economic system, it positions the dissertation within ecological economics. The dissertation follows ecological economics, and adopts an organic and holistic view of the economy and society.

The article also sets the stage for the more in-depth studies of local-level sustainability initiatives addressed in articles II and III. Local-level sustainability initiatives serve as experimental sites for new values, worldviews, lifestyles, and practices (Guillen-Royo, 2016; Wiedmann et al., 2020; Wilhite, 2016). As such, focusing on selected cases of such initiatives to study their potential, challenges, the strategies they adopt, and the impact on wellbeing becomes important. This understanding influenced the choice of case studies, as well as the theoretical and methodological approaches adopted for the case studies.

5.2 Article II: Wellbeing and ecovillage success: An in-depth study of a Norwegian ecovillage

5.2.1 Introduction and research question

This article is based on an in-depth case study of the process of transformation in a Norwegian ecovillage. Ecovillages are often presented as examples of grassroots/community-level sustainability initiatives that challenge the mainstream tenets of private ownership and individual accumulation. They are praised for aiming

to minimize their impact on the environment, for working towards social inclusion, and for adopting collective decision-making processes (Guillen-Royo, 2016; Nelson, 2018; Wilhite, 2016).

Many ecovillages aim to scale-up their activities through physical expansion, generate local economic activity, and exert a positive influence in their region and in the larger society. The success of ecovillages in this endeavor depends on positive gains to individual and community wellbeing, to help maintain motivation and engage in sustainability transitions (Grabs et al., 2016; Haxeltine et al., 2017). Success is understood as achieving (or working towards) the ecovillage's stated visions and goals, and ensuring its continued survival. The research question that the article addresses is: What factors contribute to both wellbeing and the success of ecovillages at different levels? The article addresses this question by implementing an in-depth study of the transformation process of a Norwegian ecovillage, Hurdal Ecovillage.

5.2.2 Theoretical orientation

The study applies a wellbeing approach to examine the transformation of Hurdal Ecovillage and the impact on its residents' wellbeing. The wellbeing approach draws on two theoretical perspectives: subjective wellbeing (SWB) and the satisfaction of Fundamental Human Needs (FHN).

Subjective wellbeing (SWB) is an approach that emphasizes people's evaluations of the quality of their life (Diener, 2000). Subjective wellbeing surveys are conducted in social groups to obtain an insight into people's satisfaction with their life and their emotional wellbeing. Satisfaction with life is often represented by a score people give on a scale between zero and 10 when they are asked to evaluate their satisfaction with their life. Emotional wellbeing includes people's experiences of happiness, calmness/harmony, sadness, and nervousness.

The FHN perspective is based on the Human Scale Development approach of Manfred Max-Neef (1991). The Human Scale Development (HSD) approach understands human wellbeing as human need fulfillment (Max-Neef, 1991). Max-Neef identifies nine fundamental human needs: subsistence, protection, affection,

understanding, participation, idleness, creation, identity, and freedom. These nine fundamental human needs are expressed through ways of being (which denote our individual or collective characteristics), having (refers to institutions, norms, resources, and tools), doing (our personal or collective actions), and interacting (or characteristics of settings and environments conducive to an optimal satisfaction of needs) (Max-Neef, 1991).

The FHN perspective distinguishes needs from satisfiers. Needs are understood as both requirements for a good life and end-goals that motivate everyday action (Guillen-Royo, 2020). Satisfiers are a broad category that includes strategies, actions, behaviors, attitudes, political and social organization, and characteristics of natural and physical spaces that lead to optimal satisfaction of needs.

The two perspectives (FHN and SWB) complement each other as FHN engages communities to illuminate processes and dynamics that lead to the optimal satisfaction of human needs, while SWB engages individuals to explore their views on their life goals and important life-domains (work-life, community, access to services and the like).

To examine the transformation process of the ecovillage, the study applies the Multi-Level Perspective (MLP) of transition studies. Ecovillages are perceived as niches and sites of social innovation, where people engage in sharing and collaborative consumption (for example, shared living spaces, ridesharing, cloth swaps), experiment with self-sufficiency (in food and energy production), and establish a local economy (Avelino & Kunze, 2009; Haxeltine et al., 2013; Kunze, 2012, 2015). Transition studies focuses on 'non-linear processes ... at three analytical levels: niches (the locus of radical innovations), socio-technical regimes (the locus of established practices and associated rules that stabilize existing systems), and an exogenous socio-technical landscape' (Geels, 2011, p.26). Niches provide 'protective spaces' where radical innovations that challenge the regime get support and develop (Seyfang & Haxeltine, 2012). Combining these two traditions (wellbeing and transition studies), the study examines how the

transformation of the ecovillage and the broader context (including the regime and landscape) impacted on ecovillage residents' wellbeing.

5.2.3 Methodological approach

The study combines participatory workshops in the tradition of the Human Scale Development (Max-Neef, 1991), in-depth interviews, a web survey and document study (previous research, newspaper articles, websites, blogs, and a documentary).

Needs-based workshops were conducted in November 2018. Twelve people participated in the workshop, which took a full day and was conducted in three phases. In phase one, the participants were divided into two groups of six people each, discussing the challenges the ecovillage faced (first group) and the ideal scenario for the ecovillage (second group). The two groups produced a 'negative matrix' of challenges and a 'utopia matrix' of ideal outcomes. In the second half of the day, workshop participants worked in groups, and identified synergic bridging satisfiers that could move the ecovillage closer to the ideal scenario. The day concluded with a plenary discussion among all participants that resulted in a matrix of endogenous (internal to the community) and exogenous satisfiers (external to the community).

These discussions were recorded, transcribed, coded, and categorized. The negative and utopia matrices, as well as the table of synergic bridging matrices, were condensed and cleaned for redundancy and clarity. The transcription and analysis were conducted using the software, Nvivo (QSR International, 2018). Descriptive and concept coding were used to analyze workshop discussions and generate categories and themes that correspond with theory and account for new insights. The preliminary results were presented to workshop participants in May 2019 to validate the results and receive feedback.

Due to conflicts, separate interviews were conducted with ecovillage residents who did not want to participate in the workshops. The main points raised in the interviews were in alignment with, and complementary to, the workshop findings. Attempts to interview representatives of the developer (which was a central actor in the ecovillage's transformation) were unsuccessful, as they turned down several

invitations to participate in the study. The sources of information about Filago are their website, documents found on the internet, and interviews with individuals who worked closely with them.

Informed by the field study described above, a SWB web survey was launched in July 2019. Resident associations distributed the web survey to ecovillage residents to protect the identities of respondents. In total, 96 adults received the questionnaire, and 43 individuals responded. This yielded a response rate of 45%. Because the sample size was small, the survey played a subordinate role and complemented the findings of the workshops through descriptive statistics.

5.2.4 Findings

The analysis of the empirical data focuses on the transformation of the ecovillage and its impacts on residents' wellbeing. The ecovillage evolved from its original form, in which spiritual and ecological values were dominant, with traditional straw-bale houses to a more mainstream form while maintaining its 'ecovillage' identity. The grassroots innovations literature terms this transformation as acquiring 'an intermediate form' (a form not too radical or too aligned with mainstream) (A. Smith, 2007). This process was driven by a developer who bought the ecovillage's property in 2012. To appeal to the mainstream, introductory courses that established a common ground for the ecovillage and introduced newcomers to the ecovillage lifestyle were scrapped. It was up to each newcomer to define what an ecovillage life was for them. Previous studies identified this transformation of Hurdal Ecovillage as successful, since it received the acceptance and admiration of the local population and authorities (Westskog et al., 2018).

However, the article showed that subsequent to earlier studies, the underlying tensions and conflicts worsened and negatively affected the residents' wellbeing. It also resulted in a crisis of survival for the ecovillage. The transformation of the ecovillage resulted in expensive houses, and conflicted with the values of those residents who were originally driven by the values of simplicity and low-impact lifestyles. It also introduced economic insecurity (due to large mortgages), and

deprived the residents of time sovereignty (large mortgages require high paying full-time jobs). The article identifies expensive infrastructure, large mortgages, a powerful developer driven by different value sets, and the resulting conflicts as negative satisfiers.

The study identified synergic satisfiers that could facilitate the success of local sustainability initiatives. Community organizations and institutions are essential to clarify shared identity, values, goals, and the appropriate strategies for achieving these goals. Institutions for conflict resolution and communication could tackle conflicts before they escalate. A free, informal, and accessible common house provides a venue for residents to negotiate a common identity, and for community building activities. Courses and workshops play important roles in fostering positive individual and collective attributes that foster a supportive and inclusive community. Exogenous satisfiers such as local jobs in the region, in addition to funding for new ideas and initiatives, could help support the success of ecovillages by strengthening their connection to the region and providing vital resources to encourage local initiatives.

5.2.5 Contribution to the dissertation

As indicated by article I, ecovillages are often cited by scholars of ecological economics as examples of bottom-up initiatives that represent an alternative to mainstream ideals (Capra & Jakobsen, 2017; Jackson, 2009, 2017). This second article takes up that thread, and presents an in-depth study of a Norwegian ecovillage. It aimed to examine how the wellbeing of local-level sustainability initiatives is affected by their endeavor to grow their infrastructure, and set an example to the larger society.

The article shows a significant challenge that community initiatives face—financial insecurity—and the consequences of trying to solve it through a partnership with investors that may be guided by a different value system. It also shows how such initiatives negotiate with public actors, rules and regulations, and societal norms in their attempt to expand their infrastructure and ensure their survival. It shows the risks these initiatives take as they adjust/relax their visions and goals, their expectations

from new residents, and the standards of infrastructures they build to appeal to the wider society.

5.3 Article III: Building an island of sustainability in a sea of unsustainability? A study of two ecovillages

5.3.1 Introduction and research question

Local-level/community initiatives play an important role in the endeavor to promote sustainable lifestyles. Ecovillages are one manifestation of community-level initiatives to change habits, practices, and lifestyles. They are credited for advocating for alternative values and practices that enhance wellbeing and reduce environmental impact (Wilhite, 2016). Most prominent ecovillage practices are collective decision-making, organic agriculture and gardening, collaborative housing (communes and cohousing), developing a local economy and currency, generating renewable energy, fostering a deeper connection to nature, building a strong social fabric, and collaborative consumption practices such as clothing swaps, toy sharing, shared workspaces, ride sharing, food co-ops, time banks, bartering, and the like (ibid).

In this article, I study the development paths of two ecovillages, Hurdal Ecovillage in Norway and Findhorn Ecovillage in Scotland, and the impact their expansion strategies has had on ecovillage practices. I follow Shove et al.'s (2012) interpretation of social practice theory to study the impact on the elements of sustainable practices. The article is guided by the research question: How does the choice of developing the infrastructure needed for a sustainable lifestyle promote/limit the development of the necessary competence and meaning for such a lifestyle?

5.3.2 Theoretical orientation

The focus of social practice theory is not the individual actor or social structures, but instead the combination of the two in the enactment of social practices (Giddens, 1984). Reckwitz (2002, p.249) defines a practice as 'a routinized type of behavior which consists of several elements, interconnected to one another: forms of bodily activities,

forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge'.

Shove et al. (2012) present three elements of a social practice that help sustain it as an entity and a performance over space and time: materials, competences, and meanings. Materials include 'technologies, tangible physical entities and the stuff of which objects are made'; competences include 'skills, know-how, and technique', and meanings include 'symbolic meanings, ideas, and aspirations' (p. 14).

Practices can either compete or collaborate with each other. Competition for the same elements of a practice may displace some practices, whereas collaboration between practices—that is, drawing on similar materials, meanings, and competence—strengthens the connections between practices, and turn them into what social practice theorists call bundles and complexes (Shove et al., 2012). Strong connections between practices in bundles and complexes form the patterns of everyday life.

Communities and networks play an important role in developing and propagating new practices or limiting their diffusion. Communities of practice foster 'social learning' by providing environments in which people can engage in, learn, and reproduce new practices and skills (Russell, 2013). Ecovillages can be perceived as communities of practice for sustainable living (Avelino & Kunze, 2009; Kunze, 2012; Seyfang & Smith, 2007). They encourage ways of living that promote sharing economies and slower lifestyles, where the emphasis is on strengthening social networks and lowering environmental footprint (Christian, 2003; Guillen-Royo, 2016; Pickerill, 2016; Sevier et al., 2008; Sherry, 2014; van Schyndel Kasper, 2008; Wilhite, 2016). Many aim to be economically self-sufficient and experiment with forms of self-governance (Bang, 2007; Christian, 2003; Cunningham, 2014). These alternative practices can be seen as a paradigm shift from the mainstream, bringing about a change in ways of thinking and acting.

5.3.3 Methodological approach

Hurdal and Findhorn Ecovillages are selected as comparative cases because they collaborate, inspire, and support each other. This fact makes them good cases to illustrate how grassroots innovations replicate each other and scale up their practices in their respective communities. Both ecovillages have good working relationships with their local authorities, and have influenced local planning processes in several instances.

Data for the study was gathered from the two ecovillages through participant observation, document study, and interviews with ecovillage residents. In Findhorn Ecovillage, I participated in an 'Experience Week' program that the ecovillage runs as a deep dive into ecovillage living in March/April 2019. During this week, I volunteered in a common kitchen that serves approximately 40 community members. I kept detailed notes during this week of participant observation. In the evenings, or when we had breaks from the organized activities, I used the opportunity to talk to residents, volunteers, and employees about their experiences of living in the ecovillage. In addition to document study, I conducted digital interviews with key informants from the community to fill gaps and triangulate information gathered from document study.

I visited Hurdal Ecovillage multiple times in the period from May 2018–July 2019, and conducted participant observation and semi-structured interviews. I participated in a two-day workshop the ecovillage organized for its residents and interested outsiders to discuss the challenges and advantages the ecovillage faces, and chart future paths. Eighteen ecovillage residents participated in the workshop. In addition, I gathered information from 15 ecovillage residents, and studied academic and grey literature, newspaper articles, blogs, and a documentary film about the ecovillage. The developer of the ecovillage declined to take part in the study. To help fill this gap, I interviewed residents who worked closely with the developer, and studied publicly available business letters, presentations, and reports.

Content and thematic analysis were conducted on interviews, documents, and participant observation notes (Miles et al., 2020). Descriptive and concept coding were

conducted on the data material using the software NVivo 12 Pro (QSR International, 2018). Descriptive coding captured new themes arising from interviews and documents, while concept codes identified themes corresponding to the theoretical discussions elaborated on in Chapter 2, for example, the elements of social practice following Shove et al. (2012). Preliminary results were presented and discussed with study participants in Hurdal Ecovillage to identify gaps, and give back to the community to support ongoing processes in the ecovillage.

5.3.4 Findings

The two ecovillages have humble beginnings, and were initially guided by idealistic visions. In both ecovillages, spiritual development and self-sufficiency were a priority in the early phase of their development. Findhorn's spiritual grounding earned them a strong following and a growing community in the 1960s and 70s. Hurdal was established three decades later in the 1990s with inspiration from Findhorn. Both ecovillages prioritized simple and traditional infrastructure in this early phase.

With growing size, economic insecurity became a significant challenge for both ecovillages. Findhorn had the advantage of a community of individuals with diverse skill sets and networks that could generate economic and physical resources. On the other hand, Hurdal did not have this advantage and, as a result, opted to sell its land to an investor who could build eco-houses and market an 'ecovillage lifestyle' to the wider society.

Findhorn prioritized community financing of its expansion through the building of housing clusters, and experienced some losses and gains. Lessons from the challenges were used to improve on economic decisions, and led to financially successful projects.

Hurdal's cooperation with an investor was not successful. The cooperation was plagued with tensions and conflicts as a result of structural problems with the houses, a conflict of values and the lack of trust towards the developer. In both cases, some suppliers and contractors went bankrupt. However, Findhorn was able to better endure these difficulties due to its strategy of community financing and maintaining control of its own development, whereas Hurdal's developer declared bankruptcy and

the ecovillage faced the risk of losing its property (agricultural land, plots for new houses, and a business center).

Houses in both ecovillages became more expensive than their original members or the local population could afford. Findhorn tried to counteract this tendency by building affordable units for community members, while there was no such provision in Hurdal. Both ecovillages abandoned introductory courses that used to be mandatory in order to appeal to a wider range of house buyers.

The article argues that two elements—expensive houses and the abandonment of introductory courses—had negative impacts on the competence and values necessary for ecovillage practices. Expensive houses attracted well-off buyers who brought with them mainstream values of individualized property and a lack of interest for the management of shared spaces and social activities. In Findhorn, well-off homeowners tended to use their houses as vacation homes for short periods of the year and rent them out the rest of the time. In a housing cluster that maintained a common house, residents were able to initiate sustainable practices such as food composting systems and shared social activities, and were able to reduce their ecological footprint as they shared services such as a common laundry and bike shed.

In Hurdal, the developer opted to build more homes on a plot that was planned for a common house. With no shared space for common activities and no introductory courses, the value-basis and necessary competence for ecovillage practices was compromised. Ecovillage residents lamented the skills they lacked for communication and social activities, and the lack of a shared space to develop these skills.

The picture that emerges when studying the ecovillages' development paths shows the interdependence of the elements of sustainable practices and the dynamic ways they influence each other. If one element, for example, materiality, takes priority at the expense of the other elements, the very foundation for sustainable practices can be shaken. The lesson from the two cases is that diversifying the source of financial resources and prioritizing affordable infrastructures opens possibilities for maintaining the values and competence necessary for sustainable practices in ecovillages.

5.3.5 Contribution to the dissertation

The article discusses the implications for sustainable practices when ecovillages make strategic decisions to grow their size and ensure economic security. The case studies show that without a clear assessment of these implications, a collaboration with partners motivated by shareholder profit could weaken the value basis of community-led initiatives and sustainable practices.

Community initiatives are best served by diversifying financial resources, fundraising within the community and from public sources to retain control of how their community develops. Affordable infrastructures and shared spaces are important to maintain the values and competence necessary for sustainable practices. The support of local authorities is crucial in this endeavor as shown in Findhorn, where local authorities such as the Moray Council and Scottish Rural Housing Fund gave crucial support and facilitated the provision of affordable housing. This provision is non-existent for community initiatives in Norway.

5.4 Article IV: Towards sustainable transport practices in a coastal community in Norway. Insights from human needs and social practice approaches

5.4.1 Introduction and research question

This book chapter draws on two complementary scholarly fields: wellbeing and social practice theory to study the elements that support a transition toward sustainable transport practices in Vågan Municipality in Northern Norway. Both wellbeing (understood as the satisfaction of fundamental human needs (Max-Neef, 1991)) and social practice theoretical approaches highlight the role of socio-economic structures, norms, actions, and the natural environment in shaping everyday practices. With this understanding, the paper addresses the following research question: What are the interrelated elements that could support the consolidation of sustainable transport practices in Vågan?

5.4.2 Theoretical orientation

The two theoretical approaches employed in this paper are the Human Scale Development (HSD) approach of Manfred Max-Neef (1991), and the social practice theoretical approach following Kennedy et al. (2013). The HSD asserts the satisfaction of fundamental human needs as the ultimate goal of the economy. Max-Neef's delineation between human needs and satisfiers is a significant contribution to human need theory. Needs and their satisfaction are seen as both pre-requisites for wellbeing and sources of motivation for action (Guillen-Royo, 2020). Satisfiers denote the strategies, norms, forms of organization, spaces, attitudes, and actions we employ to meet needs.

Satisfiers provide a useful interface with social practice theoretical approaches, as they can encompass practices and their constitutive elements. We followed Kennedy et al.'s (2013) approach, and adopted an interpretation of social practice theory with the constitutive elements: resources, norms and infrastructures. Following Bourdieu (1977), resources include cultural, social, and economic capital. Norms refer to expectations of behavior and competence in social situations. Infrastructures include the physical/material and technological context where practices are enacted.

5.4.3 Methodological approach

We conducted a one-day participatory needs workshop in Vågan Municipality in cooperation with the municipality's Public Health Coordinator (PHC). The PHC disseminated the information about the workshop among different social groups in the municipality: youth, pensioners, members of professional and volunteer organizations, and the local chamber of commerce. Fourteen individuals with different backgrounds signed up to participate in the workshop, with the age-range of the participants being 15-78. Their occupations were as students, employed in various private and public organizations, and as pensioners.

Workshop discussions were recorded with written consent from the participants. Transcriptions of the discussions were analyzed using the software Nvivo 12 Pro (QSR International, 2018). Descriptive and concept coding were used to sort and summarize

workshop discussions (Miles et al., 2020). Descriptive coding accounted for themes not initially considered in the research question, but that were dominant in people's discussions. Concept coding ensured a correspondence between workshop discussions, human needs, types of need satisfiers, and elements of practice.

5.4.4 Findings

This paper employed a social practice lens to analyze workshop discussions and identify the elements that support the emergence of sustainable transport practices. The fundamental human needs perspective illuminates the systemic relationship between satisfiers, which contributes to both an optimal satisfaction of human needs and the emergence of sustainable transport practices.

The study identified singular and synergic satisfiers that could break the current lock-in of using private cars as the primary mode of transport. Satisfiers that engender a strong and well-functioning community are essential for the emergence of sustainable transport practices. Some of these satisfiers are non-commercial meeting places, flexible institutions that foster cooperation between different actors (individuals, groups, and organizations), a slower daily pace, communication platforms for different groups, and volunteering. These satisfiers facilitate the emergence of sustainable transportation practices such as cycling, ridesharing, and the use of public transport (see **Figure 5.1** for a schematic presentation of the findings).

Workshop participants reflected on the interdependence of elements that link individual lifestyles with the resilience of their community and, ultimately, on sustainable practices. For example, a hasty and individualistic lifestyle erodes community spirit and the enthusiasm for volunteering for community projects. An achievement-oriented lifestyle is also linked with the increased use of the private car. A slower daily pace allows for high levels of community interactions, and opens possibilities for carpooling and ridesharing. These initiatives can also enable minority groups to access social and economic resources that they otherwise would be excluded from.

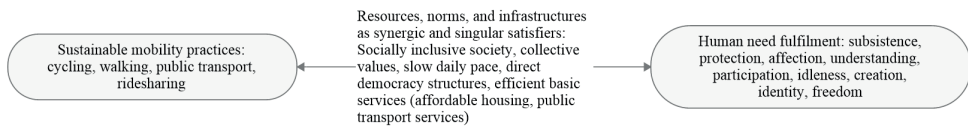


Figure 5.1: Satisfiers and elements of sustainable mobility practices

The study also illuminated how engaging communities in municipal processes may lead to reducing costly investments, such as the building of roads and cycling networks by creating space for flexible solutions, including the use of mobile apps to encourage ridesharing and carpooling. Through such examples, the paper shows the myriad ways the satisfaction of fundamental human needs can contribute towards long-term sustainable solutions and community resilience.

5.4.5 Contribution to the dissertation

The paper shows that singular and synergic satisfiers that enhance human wellbeing are also associated with the emergence of sustainable practices. For example, a slower, less stressful, and less achievement-focused lifestyle is associated with more volunteering for community projects, better communication between groups, more time for family and community, and the emergence of sustainable practices.

The paper also showed that a transition towards sustainable practices is supported when the larger socio-economic context is positively inclined towards sustainability. Changes in norms in the larger society (for example, greater environmental awareness) has positive knock-on effects for community initiatives, in terms of an acceptance of more sustainable lifestyle choices and the availability of resources to support community initiatives. This finding concurs with the findings of article II (focusing on Hurdal Ecovillage), where we saw attitudes toward alternative lifestyles and bottom-up solutions become supportive as norms in mainstream society shift towards sustainability.

6 Discussion

Local-level sustainability initiatives play a crucial role in the societal transition to sustainability. Previous research has identified their strengths: as a living setting where individuals can live low-impact lifestyles, promote a change of values, and experiment with collective decision-making (Guillen-Royo, 2016; Jackson, 2009, 2017; Wilhite, 2016).

Mainstream economics' focus on consumption-powered economic growth is unsustainable. Jackson (2009) envisions three overarching goals for an alternative economy operating inside ecological boundaries: the economy should contribute to human flourishing, it must provide decent livelihoods, and there must be a low material and energy throughput. He conceptualized human flourishing as the capability to engage in the life of a society fully and meaningfully. However, this capability should be socially and ecologically bounded to account for intra- and intergenerational justice, and to consider other life on earth (ibid). The primary driver of economic activities in this new economy would be public investments in renewable energy, on technology that improves resource efficiency, 'ecosystem enhancements' (such as climate adaptation, afforestation), and so on (p. 139). These investments are envisioned to reduce material and energy throughput, and provide decent jobs to people. With this shift of spending from private consumption to public investment in ecological assets, there is a need for a new culture, work life (in which sharing work will play a role in reducing unemployment), and new conceptualizations of social progress.

In this alternative economy, community-led initiatives play a role in local service provisions such as education, health, locally produced food, maintenance and repair, and recreation. Studies have documented community initiatives' role in providing care work and social services in their regions, for example, childcare, education, care for the elderly, building local resilience against environmental shocks, etc. (Christian, 2003; Fois & Forino, 2014; Hall, 2015; Kirby, 2003; Price et al., 2020; Watson, 2016). Nevertheless, others have cautioned that unless accompanied by a change of culture and the social significance of consumption, the reduction in economic growth and

societal transformation could lead to a loss of wellbeing (Büchs & Koch, 2017; Koch et al., 2017).

Against this background of high expectations of local sustainability initiatives to be the drivers of social and cultural change towards sustainability, the PhD project set out to investigate the interplay between wellbeing and sustainability in these initiatives by undertaking empirical studies in selected sustainability initiatives. The research question that guides the synthesis of the PhD project is as follows:

How can local-level sustainability initiatives attain the twin goals of securing wellbeing and environmental sustainability in the transition towards low-impact societies?

This overarching research question will be addressed through the answers to three sub-questions discussed in the following sections. One of the first and important processes local-level initiatives can engage in to attain the twin goals of wellbeing and sustainability is to examine their foundational principles, and initiate a change towards those principles that contribute to human flourishing within social and ecological boundaries. The first sub-question addresses this issue by asking: What changes in foundational principles are necessary for a systemic change from the current economic system? The dissertation identifies the following changes in foundational principles as crucial in the transition to sustainability: from unlimited economic growth to human wellbeing, from atomistic competition to relational cooperation, from instrumental to inherent values, and from mechanistic to organic worldview. Section 6.1 elaborates in more detail the argument for initiating these changes.

The second sub-question is: How can local-level sustainability initiatives foster both wellbeing and the success of their initiative? Local-level initiatives will be able to foster both wellbeing, as well as the success of their initiatives, by developing institutions, organizations, and processes in alignment with the above shift in foundational principles, thereby resulting in infrastructures, values, and practices that contribute to flourishing individuals and communities (see section 6.2 for a more detailed discussion of the answer to sub-question number 2).

The third sub-question is: What processes encourage/suppress the adoption of sustainable practices in communities? Local-level sustainability initiatives can generate environments that promote the adoption of sustainable practices that foster both high levels of wellbeing (characterized by the satisfaction/actualization of fundamental human needs) and a low environmental impact. Among other things, crucial factors in this endeavor are strong community relations, voluntary community building exercises, affordable infrastructures, non-commercial and affordable shared spaces, and a slower daily pace (see section 6.3 for a more detailed discussion of the answer to sub-question number 3).

6.1 The importance of clarifying foundational principles

Sustainability has become a ubiquitous concept. It occupies a central place in global initiatives such as the UN's Sustainable Development Goals, in national policies, and in business plans and goals. Most mainstream institutions and business organizations advocate for policy measures often referred to as ecological modernization, selectively focusing on efficiency improvements of production processes, the pricing of environmental resources to 'internalize' environmental costs, recycling, and reducing emissions and pollution from production processes, among others (Wilhite, 2016, p.63).

These policy measures assume that technological innovation and price incentives will 'decouple' economic activity from environmental consequences (Haberl et al., 2020), although this assumption has been debunked by scholars working in the field (Haberl et al., 2020; Parrique et al., 2019; Schröder & Storm, 2018; Simonis, 2013). These scholars stress that to bring about a significant improvement in our impact on the environment, we have to ask the foundational questions regarding the purpose of the economy. As J. O'Neill (2008, p.125) emphasizes, environmental considerations have to return to 'classical questions about the nature of the good life'. This is the reasoning for asking the first research sub-question addressing foundational principles for sustainability initiatives that aim to bring about systemic changes: What changes in foundational principles are necessary for a systemic change from the current economic system?

As discussed in article I of this dissertation, there are five core principles that characterize mainstream economics: pursuing unlimited economic growth, promoting atomistic competition among self-interested individuals, assigning an instrumental value to nature and society, and espousing a mechanistic worldview of these systems (see **Table 6.1**). The polar opposite of these principles is focusing economic activities towards the goal of human wellbeing, emphasizing the relational and cooperative aspects of human interaction (especially when working to find solutions to environmental problems), and asserting the inherent value of humans and nature. These principles align with an organic worldview.

As Bhaskar points out, there are ontological presuppositions in all economic and social objectives (Bhaskar et al., 2018). The goal of unlimited economic growth presupposes self-interested, atomistic individuals, and fosters technologies, institutions, and social norms that reward ‘self-enhancement, materialistic individualism and consumer novelty’, as that is what drives continued economic growth (Jackson, 2017, p.197). Such societal reward systems promote myopic and selfish behaviors, rather than more considered, altruistic, and long-term motives that encourage cooperation among individuals, organizations, and communities.

Table 6.1: Necessary changes in hardcore assumptions of sustainability initiatives

Neoclassical Economics (NE)	Ecological Economics (EE)
Growth	Wellbeing
Atomistic	Relational
Competition	Cooperation
Instrumental values	Inherent values
Mechanistic worldview	Organic worldview

These presuppositions are deeply embedded in our culture, language, and conceptualizations of social progress. Jackson (2009) discusses what he terms the social logic of consumerism as follows: ‘material goods provide a vital language through which we communicate with each other about the things that really matter: family,

identity, friendship, community, purpose in life' (p. 143). As such, dislodging the social significance of consumerism requires that people find an inspiration to 'flourish in less materialistic ways' (ibid).

Establishing community initiatives, and an economy that operates within social and ecological boundaries, require a shift of foundational principles away from those espoused by mainstream economics (see **Table 6.1**). Although these principles provide inspiration 'on paper', operationalizing them to guide practice in the current economic system is not easy. Community initiatives are embedded in a socio-economic, technological, and regulatory context driven by the principles of mainstream economics (see **Figure 6.1**). Community initiatives that want to appeal to the larger society resort to adopting language, technology, and marketing strategies that appeal to the mainstream. For example, housing in ecovillages can be guided by ambitions (and use marketing language) such as 'modern', 'aesthetically pleasant', 'state of the art/smart technology', 'comfortable', or 'fashionable'. These ambitions and marketing strategies may appeal to the social logic of consumerism discussed above and the presuppositions of mainstream economics.

Some community initiatives, for example, GEN, seem to appeal to a different set of values that align more with a eudaimonic view of wellbeing, such as connecting to a higher purpose in life, nurturing mindfulness and personal growth, reconnecting to nature, and embracing low-impact lifestyles, among others (see GEN's tool for ecovillage design in **Table 4.1**) (K. W. Brown & Kasser, 2005; Ericson et al., 2014; Kasser, 2002, 2017).

The difficulty of implementing these principles in the real world is evidenced by the fact that up to 90% of ecovillages and community initiatives fail in the first few years of their establishment. In addition, not all ecovillages are driven by the vision of building alternative economies and communities. For instance, Hong and Vicdan (2016) discuss how ecovillages can be used as an escape from the demands of modern day disconnectedness, and may not be based on a thorough understanding of the foundational issues that create the disconnect. He pointedly elaborates an 'escape to

nature and escape from body may represent an undercover desire for ultimate entertainment and pleasure in an esoteric and indeterminate time and space' (p. 121). Others have levied criticism on the ecovillage movement by highlighting its internal contradictions (for example, emphasizing ecological sustainability but disregarding environmental and social justice (Mason, 2014), the superficial commitment of wealthy urban dwellers moving to the countryside to live 'green lives' (Garden, 2006a), or for lacking an explicit political statement (Fotopoulos, 2000, 2006)).

These contradictions result partly from the initiatives not seriously engaging with their founding principles, clarifying whether they are genuinely interested in bringing about systemic change, and identifying the appropriate strategies and end goals. Conflict is often a result of such a lack clarification of values among initiative members, and may thus endanger the success and very existence of initiatives. The next sub-question addresses this issue by highlighting the overlapping themes of wellbeing and the success of sustainability initiatives.

6.2 Human wellbeing and local-level initiatives

The second sub-question that guides this synthesis of the PhD project is: How can local-level sustainability initiatives foster both wellbeing and the success of their initiative?' Success is understood as achieving (or working towards) the initiative's stated visions and goals, and ensuring its continued survival. To help answer this question, two theoretical approaches will be utilized: The Multi-Level Perspective of transition studies and a eudaimonic understanding of wellbeing.

Following the Multi-Level Perspective of transition studies, local-level sustainability initiatives are conceptualized as 'niches' embedded in a series of overlapping systems: a regime that includes established practices, rules, norms, and lifestyles, and a landscape that includes the dominant paradigms, ideology, and exogenous factors, such as demographic trends (see Figure 6.1 for a schematic presentation of these overlapping systems) (Avelino & Kunze, 2009; Avelino et al., 2019; Haxeltine et al., 2013; Haxeltine et al., 2017). Dominant paradigms and ideology inform mainstream society's policies, practices, rules and regulations, and influence norms, culture, and

lifestyles. As a result, they set the boundaries within which local-level initiatives operate. Local initiatives have to follow rules, regulations, and codes in their activities. If they choose to operate outside of these boundaries, they may face restrictions and penalties from local authorities, which may expose them to economic vulnerabilities.

Mainstream economics is the dominant paradigm that influences policies, societal norms, rules, and regulations (Jackson, 2009, 2017). Firms have to innovate and be competitive in order to attract more capital and investment. Their innovation activities aim to reduce costs, increase demand, and generate profit, in order to motivate more production and resource use, more profit, more shareholder value, and more investment in perpetual continuity. If this process fails, businesses will stagnate and eventually wither away.

Governments have to make sure that the system works smoothly, and therefore provide the incentives to promote growth (for example, through tax reductions, subsidies, and interest rates). Banks provide favorable credit to businesses to stimulate growth and expansion. When employment goes up, people spend more money and businesses can earn profits. The government earns revenue through the tax system. If this system experiences a problem, unemployment may rise along with social costs and debts. In the worst cases, the economy may enter into a recession.

Communities and grassroots initiatives can be seen as 'green niches' (Seyfang & Smith, 2007) and 'transformative social innovation sites' (Haxeltine et al., 2017) that challenge dominant paradigms and ideologies (Avelino, 2017). In the search for a path towards a controlled transition away from the resource-intensive path described above, they provide inspirations and new ideals for mainstream society (Jackson, 2009, 2017; Longhurst et al., 2016). Scholars look to them to find inspirations for eudaimonic wellbeing that do not depend on materialistic expressions. By finding new ways of doing, organizing, and knowing, they challenge mainstream ideologies and paradigms (Avelino, 2017) (see the upward facing arrows in **Figure 6.1**).

In this embedded reality, local sustainability initiatives face challenges such as a lack of financial resources, specific skills, and institutional capacity (Seyfang, 2010). One

way that they aim to solve the challenge of scarce financial resources is by scaling up their physical infrastructure to attract new members. As they have gained in popularity in recent decades, land has been one of the most valuable resources they can utilize to gain access to financial resources. The experiences of Hurdal Ecovillage in Norway, Findhorn in Scotland, and Cloughjordan Ecovillage in Ireland testify to this reality (Cunningham, 2014; Pickerill, 2016, 2017; Temesgen, 2020).

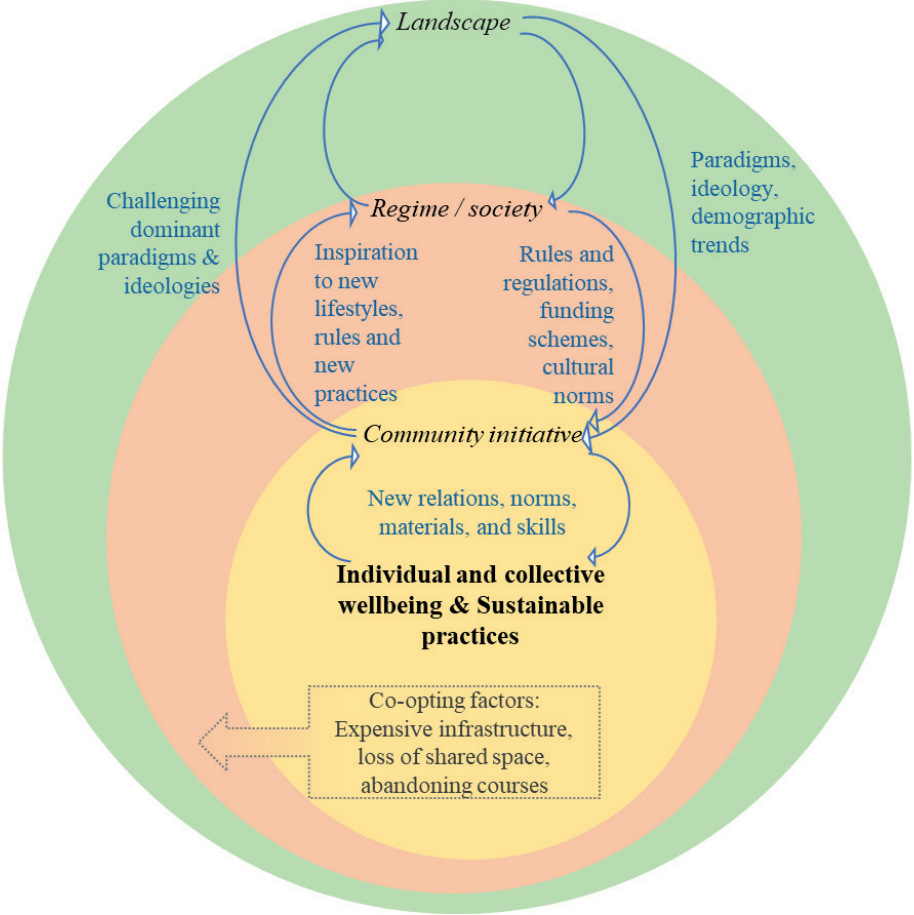


Figure 6.1: Local-level sustainability initiatives embedded in society

In attempting to expand their physical infrastructure, ecovillages have three ways of gaining access to resources: private investors, the state, or the community. When

collaborating with private investors, there is a risk that they will diverge from their founding values (of simplicity and low-impact lifestyles). As articles II and III in this dissertation show, collaboration with investors and developers will most likely result in expensive houses and infrastructure. Building codes, rules and regulations, and zoning plans enforced by local authorities all push the initiatives towards expensive houses and infrastructures. Expensive houses also fit into mainstream norms of ‘modern comfort’ and aesthetics, and thus can attract more buyers than simpler and more cost-saving house designs. As a result, local initiatives with alternative worldviews will often experience tensions with mainstream society’s norms and institutions.

With expensive infrastructures and large mortgages that finance them, many features (such as shared spaces and activities) can become obsolete, hence making them less distinguishable from mainstream neighborhoods. The transitions studies field terms this process as co-option, or the capture of niche initiatives by the mainstream (Martin et al., 2015; Pel, 2016; Pel & Bauler, 2017). Co-option or capture processes can be the domestication, commoditization, or commercialization of local-level initiatives and their alternative economic models by the regime (Martin et al., 2015; Pel, 2016). See the rectangular box in **Figure 6.1** symbolizing this process.

In Hurdal Ecovillage, the investor’s move to commoditize the ‘ecovillage’ concept to market eco-houses on the open market falls in this category. In Findhorn, Hurdal, Cloughjordan, and other ecovillages that followed the path of marketized ecovillage expansion, expensive houses ended up excluding pioneers and community members who did not have the financial capacity to buy the houses in the new settlements.

Although the transition studies field can illuminate these processes that take place on meso and macro-levels, the impact they have on individual wellbeing is not well covered (H. S. Brown et al., 2013). Combining the study of wellbeing with the transition studies perspective contributes to filling this gap. Members of local-level initiatives that were initially motivated by simpler lives, but experience the capture of their initiative by the ‘mainstream’, may experience a crisis of identity and a clash of values with their

local context. Instead of living simpler lives, they may live stressful lives where they maintain employment outside of their community to service their debts. This returns them to the mainstream norm of debt-driven consumption, something many may had hoped to avoid (see **Figure 6.2**).

When initiatives abandon introductory courses and workshops, as observed in Hurdal and Findhorn, in order to sell houses, they forfeit the opportunity to clarify values and establish a common identity among members. The most common outcome is interpersonal conflicts. Conflicts plague many such initiatives as documented in articles II and III in this dissertation, and in other ecovillages (Cunningham, 2014; Garden, 2006b; Hong & Vicdan, 2016; Sherry, 2014).

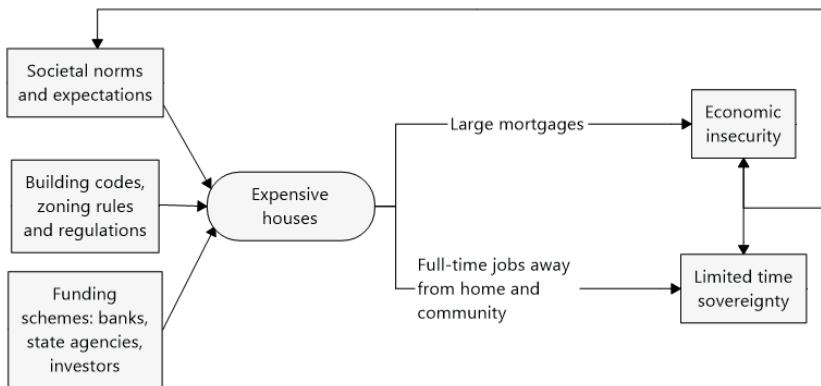


Figure 6.2: Processes that reinforce expensive houses and associated outcomes in ecovillages

Protracted conflicts can endanger local-level initiatives. In Hurdal Ecovillage, it contributed to the bankruptcy of the developer and subsequent financial insecurity of the ecovillage. In Cloughjordan, conflict led to half the members leaving the ecovillage (Cunningham, 2014). In Findhorn, members report that the turnover of tenants disturb the flow of social life and leads to tensions and conflicts (see article III in this dissertation).

Community organizations can facilitate the learning process from conflict, and help to clarify common goals, values, and appropriate strategies for achieving these goals. Institutions for conflict resolution and communication could initiate these processes before conflicts can escalate and become difficult to manage. A free, informal, and accessible shared space provides a venue for members to negotiate a common identity, and for community building activities. Courses and workshops play important roles in fostering positive individual and collective attributes, which then foster a supportive and inclusive community.

In the language of the Human Scale Development approach to wellbeing, these institutions are identified as necessary synergic satisfiers: satisfiers that initiative members identify as catering to their fundamental needs, and by virtue of being low-resource- intensive, are environmentally sustainable (Guillen-Royo, 2016). These institutions have the potential to improve initiative members' wellbeing, and support the community in achieving its end goals.

6.3 Sustainable practices and human wellbeing

The third sub-question in this dissertation is: What processes encourage/suppress the adoption of sustainable practices in communities? This question will synthesize the findings of articles III and IV, and will draw on perspectives from wellbeing and social practice theoretical approaches.

Social practice theoretical approaches (SPT) have shed light on how routinized practices become entrenched by highlighting the interaction between individual (consumption) decisions and systemic structures, such as norms, values, meanings, and the material basis of practices. SPT elucidates the processes that take place at the intersection of agency and structure (Giddens, 1984, 1991), and has been crucial to explaining path dependency and the lock-in of unsustainable practices.

Scholars have addressed the significance of social practices for people's wellbeing (Büchs & Koch, 2017; Koch, 2020; Røpke, 2009). Røpke (2009) highlights the intrinsic significance of practices as opportunities for individuals to engage in valued activities, and to demonstrate their abilities as competent practitioners (as opposed to passive

consumers). Büchs and Koch (2017) show the link between routinized practices at the micro level and macro systems of production and consumption, in addition to their political-economic significance. As such, a transition towards sustainability requires a 'reorientation of culture' that shifts the focus of practices from hedonic and materialistic exercises, to one where the focus is on activities that contribute to a eudaimonic human flourishing, and the fulfilling of human needs within ecological and social boundaries (ibid, p. 99).

As articles III and IV show, there is a considerable overlap regarding the factors that contribute to wellbeing and sustainable practices in community sustainability initiatives and mainstream society. Strong community relations, voluntary community building exercises, affordable infrastructures, non-commercial and affordable shared spaces, and a slower daily pace, are all factors that support both wellbeing and sustainability. These synergic satisfiers were identified during workshops in Hurdal Ecovillage and Vågan Municipality. The subjective wellbeing literature identifies these satisfiers as promoting intrinsic aims, such as relatedness, competence, autonomy, and safety (Kasser, 2009, 2011, 2017).

Social practice theoretical approaches emphasize three elements that constitute practices: the norms and meanings of practices, the knowledge, skills, and competence to enact the practices, and the material, technological and infrastructural basis for the practices. The characteristics of materials compatible with human wellbeing and sustainability are affordability, inclusivity, and low-resource intensity. As the case studies in this dissertation show, this applies to eco-houses, smart technology, and transportation infrastructure. Expensive infrastructure will exert a demand on people's resources and time, something that limits participation in community building and sustainable practices, and negatively affects wellbeing (Kasser & Sheldon, 2009). Time scarcity encourages resource-intensive habits such as the use of private cars, and also inhibits volunteering for community.

The inclusiveness of materials requires the active involvement of future users in their acquisition. For example, this applies when choosing housing standards, the

installation of smart technology and the building of new roads and infrastructures. In communities that are resource-constrained, an active participation by community members can save resources and help find creative solutions.

Values that are compatible with wellbeing and sustainable practices are simplicity, sufficiency, and less resource-intensive lifestyles. These values support time affluence for community activities that support eudaimonic wellbeing; they strengthen relatedness, build competence, and support autonomy/self-reliance. With these values and an active engagement in community activities, one builds competence in maintaining good social relations, knowledge about the natural environment (for example, when engaged in community supported agriculture) and a sustainable infrastructure (for example, when participating in setting up community buildings or being involved in processes to provide local infrastructures).

Decision-makers can support the emergence of sustainable practices at the local level by earmarking resources for bottom-up initiatives that secure wellbeing and sustainability. It is also crucial to encourage an active participation of citizens in decision-making processes. The participation of citizens is a synergic satisfier that builds trust between communities and policy/decision-makers, develops the competence of all involved in the process, and opens the possibility of finding resource-saving solutions that activate and engage the citizenry.

7 Conclusions, implications, limitations, and further research

7.1 Conclusions

This dissertation is guided by the overarching research question: How can local-level sustainability initiatives attain the twin goals of securing wellbeing and environmental sustainability in the transition towards low-impact societies? This chapter will summarize the main findings and conclude with implications for theory and practice, discuss limitations, and outline areas for future research.

The overarching research question was addressed through three sub-questions. The first question addressed changes in foundational principles necessary to reorient the economy towards sustainability. Statements and expectations about social reality are inseparable from values and worldviews, although they are rarely acknowledged. The dissertation (and article I) identified the mainstream economy's ontological, epistemological, and axiological foundations, and argued that without addressing and altering these foundations it is difficult to solve the wicked and persistent problems our society is facing. Shifting the purpose of the economy towards securing human wellbeing within social and ecological boundaries is necessary. Accompanying changes in principles are from an atomistic competition to relational cooperation, from focusing on the instrumental value of nature and human beings to respecting their inherent value, and from a mechanistic to an organic worldview.

These principles seep through to the language and strategies adopted by local sustainability initiatives. Community initiatives that want to appeal to the larger society may resort to adopting a language, marketing strategy, infrastructure, and technology that appeal to the mainstream. However, many marketing strategies and practice appeal to the social logic of consumerism and the presuppositions of mainstream economics, which stand in contradiction with the objective of adopting a simpler, more environmentally friendly lifestyle. An awareness of such contradictions can reduce the risk of conflicts that may result from the subsequent identity crisis and misalignment between vision and practice. Exploring ontological and epistemological presuppositions of sustainability initiatives and policies at different levels helps reveal the different outcomes connected to different value choices.

The second sub-question explored how local-level sustainability initiatives can foster both wellbeing and the success of their initiative. The dissertation and article II identified resource constraints as a significant challenge that plagues many local sustainability initiatives. One way that they aim to solve the challenge of scarce financial resources is by scaling up their physical infrastructure to attract new members. Building codes, rules and regulations, and zoning plans enforced by local

authorities, all push the initiatives towards expensive houses and infrastructures. Expensive houses also fit in mainstream norms of 'modern comfort' and aesthetics, and therefore can attract more buyers than simpler and more cost-saving house designs. As a result, local initiatives with alternative worldviews will often experience tensions with mainstream society's institutions.

With expensive infrastructures and large mortgages that finance them, many features (such as shared spaces and activities) can become obsolete, making them less distinguishable from mainstream neighborhoods, hence facilitating the capture of niche initiatives by the mainstream.

Members of local-level initiatives who were initially motivated by simpler lives, but who experience the capture of their initiative by the 'mainstream', may experience a crisis of identity and a clash of values with their local context. For some initiatives, the resulting tensions and conflicts can hasten their failure.

Community organizations can help facilitate the learning process from conflict, and clarify common goals, values, and appropriate strategies for achieving these goals. Institutions for conflict resolution and communication could initiate these processes before conflicts can escalate and become difficult to manage. A free, informal, and accessible shared space provides a venue for residents to negotiate a common identity, and for community building activities. Courses and workshops play important roles in fostering positive individual and collective attributes that foster a supportive and inclusive community. These institutions have the potential to improve initiative members' wellbeing, and support the community in achieving its end goals.

The third sub-question addressed the necessary processes which foster the adoption of sustainable practices that align with human wellbeing. Inclusive processes in the development of the physical infrastructures of local initiatives can help facilitate the adoption of sustainable practices. Values that are compatible with wellbeing and sustainable practices are simplicity, sufficiency, and less resource-intensive lifestyles. These values generate time affluence for community activities that support eudaimonic wellbeing. They strengthen relatedness, build competence, and support

autonomy/self-reliance. With these values and an active engagement in community activities, one builds competence in maintaining good social relations and knowledge about the natural environment (for example, when engaged in community supported agriculture) and man-made infrastructure (for example, when participating in setting up community buildings or local infrastructures).

Decision-makers can support the emergence of sustainable practices at the local level by earmarking resources for bottom-up initiatives that secure wellbeing and sustainability. It is also crucial to encourage an active participation of citizens in decision-making processes. The participation of citizens is a synergic satisfier that builds trust between communities and policy/decision-makers, builds the competence of all involved in the process, and opens the possibility of finding resource-saving solutions that activate and engage the citizenry.

7.2 Implications

7.2.1 Implications for theory

To understand how local sustainability initiatives contribute to both wellbeing and sustainability in practice, and to analyze the impact from the socio-economic and institutional context they operate in, I combined wellbeing approaches with other complementary theoretical perspectives. Each theoretical approach has its focus on a particular angle, and may overlook other aspects. Thus, combining different theoretical approaches helps fill these 'blind spots' and further theoretical development (see **Table 7.1** for an overview).

The Human Scale Development approach puts forth three pillars of a socially inclusive and environmentally friendly development: self-reliance, balanced interdependence, and the actualization of fundamental human needs. It asserts that the actualization of fundamental human needs fosters environmentally sustainable human wellbeing. Yet, the approach is highly context dependent, and therefore benefits from being combined with other theoretical approaches to improve its application to other contexts (Guillen-Royo, 2016).

Table 7.1: Contributions to theory

	Human Scale Development approach (HSD)	Multi-Level Perspective of Sustainability Transition Studies (MLP)	Social Practice Theory (SPT)
Main premise	The three pillars of a Human Scale Development are self-reliance, balanced interdependence, and the actualization of fundamental human needs. The actualization of fundamental human needs fosters environmentally sustainable human wellbeing.	Sustainability transitions are a result of non-linear processes at the interplay of developments at three analytical levels: niches, socio-technical regimes, and an exogenous socio-technical landscape.	Routinized practices are shaped and enabled by structures of norms, rules, meanings, competence/knowledge, and a material basis. These structures are again 'reproduced in the flow of human action'. Society is constituted by the bundles and complexes of social practices that form dominant patterns of everyday life.
Identified gaps	HSD is highly context-dependent, and therefore benefits from being combined with other approaches for theoretical insights (Guillen-Royo, 2016).	The theory addresses systemic processes at the meso and macro-levels, and does not provide much insight regarding the role of- and impact on individuals in these processes (micro-level dynamics) (Brown et al., 2013).	Social practice theoretical approaches have not incorporated the role of markets and economics in perpetuating/altering practices. Moreover, they have provided a limited insight into how we can break out of the current lock-in of unsustainable practices.
The dissertation's contribution to the field	By combining HSD with MLP (article II) and SPT (articles III and IV), the dissertation has shown how socio-economic and political processes impact on people's wellbeing.	By studying the impact on wellbeing from change processes at the niche and regime levels, the dissertation identified institutions and structures that contribute to both wellbeing and the success of local-level sustainability initiatives (niches).	Through needs workshops, the dissertation identified synergic satisfiers important for maintaining sustainable practices and human wellbeing.

By combining the Human Scale Development (HSD) approach with the Multi-Level Perspective (MLP) (article II) and social practice theoretical (SPT) approaches (articles III and IV), the dissertation showed how socio-economic and political processes at higher levels impact on people's wellbeing. Participants of needs-based workshops identify impediments to the satisfaction of their fundamental human needs from the viewpoint of their community and context. By combining these reflections with insights from MLP, the dissertation showed the importance of processes that take place outside their context to individual and community wellbeing in the theoretical discussion. It showed how co-option and capture of bottom-up initiatives (processes highlighted by the MLP field) are facilitated by negative satisfiers that affect wellbeing at both the individual and community levels.

Insights from the HSD approach also complemented areas not covered by the MLP field. The MLP addresses systemic processes at the meso and macro-levels, but does not provide much insight regarding the role of- and impact on social groups and individuals in these processes (H. S. Brown et al., 2013). The field does not address how these initiatives might affect social change, and how public policy could help to encourage the spread of sustainable practices adopted by these initiatives. By highlighting the importance of affordable infrastructures, institutions for collective governance and conflict resolution, and shared spaces as catalysts of social change, the dissertation has contributed insights to the theoretical discussion in these fields.

SPT approaches have not incorporated the role of markets and economics in perpetuating/altering practices (H. S. Brown et al., 2013). Moreover, they have provided a limited insight into how we can break out of the current lock-in of unsustainable practices (ibid). By combining HSD with SPT, insights from needs workshops included in this dissertation identified synergic satisfiers important for maintaining sustainable practices and human wellbeing.

7.2.2 Implications for practice in community initiatives

There are a number of lessons and implications that can be drawn from this dissertation. The central message is the importance of maintaining coherence between

vision, objective, and strategies for achieving a transition towards low-impact communities and community organizations. A genuine desire to bring about a fundamental change to the current economic system must make explicit the worldviews and values that guide the process of change.

By adopting a holistic view of the economy, society, and ecosystems, communities and organizations can examine the role they play in the transition to sustainability, and network with other socially and environmentally engaged communities and organizations. Many social, economic, and environmental problems operate across spatial and temporal boundaries, and therefore can benefit from cooperation rather than competition. Communities and organizations that build cooperative networks are best placed to address such cross-cutting issues. A move towards cooperative and relational values, as well as a holistic worldview can also secure both human flourishing (or eudaimonic wellbeing) and sustainability.

Communities and organizations can also benefit by examining the strategies for achieving their goals. As shown in this dissertation, expensive infrastructure, a lack of transparency in decision-making processes, prioritizing economic (profits) over social considerations, and uncritical adoption of technological innovation can imperil local sustainability initiatives. If not accompanied by a clear assessment of their connection to the overarching vision, they can lead to conflicts that may lead to a failure of the initiative. Needs-based workshops and an open dialogue ahead of strategic and investment decisions can hopefully identify these risks beforehand.

7.3 Limitations

There were some challenges encountered during the field study that should be presented here. Due to the economic difficulties the developer in Hurdal Ecovillage was experiencing, and the heightened tensions in the ecovillage, the developer turned down an invitation to participate in the study. I, therefore, resorted to studying business documents and interviews with people who worked closely with the developer to obtain a perspective that might represent them. In general, doing research during an ongoing conflict can make people hesitant to take part in field

studies. I took steps to combine workshops with interviews and a web survey to access the viewpoints of people who may want to avoid engaging in group activities. With more resources and time, it might have been possible to wait longer in order to gain access to informants who turned down my invitations to attend.

Resource constraints also limited my field study of community initiatives to ecovillages. Following Saldaña (2011), I included detailed descriptions of processes, milestones, strategies, and outcomes/impacts to help improve the transference of my findings to other types of initiatives such as transition towns, solidarity economy, and time banks. However, with more resources, it could have been ideal to combine a case from different forms of local sustainability initiatives.

7.4 Further research

Following from the above discussion, future research could combine different sustainability initiatives, and conduct a comparative study. For example, one could envision comparing the strategies different initiatives adopt in regard to the standard of infrastructure they adopt, the practices they enact, and the consequence of the interaction between the two in various contexts.

Another limitation discussed in the previous section was the role of conflict in sustainability initiatives. In this dissertation, the analysis stopped at the climax of different processes in inter-personal conflicts and the immediate impact it had on the initiatives. Other studies have highlighted the positive aspect of conflicts. Although conflicts can be demanding, and may sometimes imperil local sustainability initiatives, literature in the climate and security field also highlight its transformative and energizing effect (Kallis & Zografos, 2014; Nursey-Bray, 2017). Nursey-Bray (2017) argues that 'conflict is normal and [should] not be feared' (p. 165). Kallis and Zografos (2014) emphasize that conflict can 'instigate progressive institutional change' (p. 3). Andrade et al. (2008) argue that conflict can facilitate social learning. It can be 'an energy source, a fuel [that] generates opportunity and growth. In effect, eliminating conflict will also eliminate potential learning and innovation' (Nursey-Bray, 2017, p.166).

I saw the galvanizing effect of conflict during the needs-based workshops in Hurdal. Although the developer of Hurdal Ecovillage went bankrupt and the ecovillage was on the verge of losing some of its properties, the ecovillage residents were organizing to find ways to have their voices heard in future transformations of the ecovillage. Residents of a cluster in Findhorn founded new community organizations to help improve social interaction after a period of sustained conflict. Future research could follow the positive outcomes of conflict, so that individuals and local initiatives do not fear conflict, but instead engage with it to utilize its transformative potential.

Lastly, measuring the ecological footprint of the transformation of the ecovillages and the practices they engender was beyond the scope of this PhD project. Future research could combine studying both the social and environmental consequences of the transformations of local sustainability initiatives.

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Appendix A: Descriptive statistics of survey participants in Hurdal Ecovillage

Background variable	Category	Values
Average age		42
Gender	Male	35%
	Female	65%
Civil status	Single	24%
	Married/partnership	60%
	Widow/widower	2%
	Separated	5%
	Divorced	9%
Education level	Primary education	2%
	High school education	10%
	Vocational education	12%
	Bachelor/college education	43%
	Master level education	31%
	Doctorate	2%
Employment	Full-time employed	33%
	Part-time employed	24%
	Full-time self-employed	7 %
	Part-time self-employed	10%
	Unemployed	2%
	Pensioner	7%
	On disability	12%
	Other, not in the labor market	2%
	Other	2%
Income (NOK)	Under 200,000	10%
	200,000-299,999	15%
	300,000-449,999	12%
	450,000-599,999	24%
	600,000-749,999	12%
	750,000-899,999	7%
	900,000-1,099,999	5%
	1,100,000-1,299,999	10%
	1,300,000-1,599,999	2%
	DK	2%

Appendix B: Articles included in this dissertation

Article I

Temesgen, A. K., Storsletten, V., & Jakobsen, O. (2021). Circular Economy – Reducing Symptoms or Radical Change? *Philosophy of Management*, 20(1), 37-56. doi:10.1007/s40926-019-00112-1

Article II

Temesgen, A. K. (To be submitted to JCLP in April 2021) Wellbeing and ecovillage success: An in-depth study of a Norwegian ecovillage's transformation. This article received major revision comments from Journal of Cleaner production in March 2020. The comments are implemented and the revised article will be submitted in April 2021.

Article III

Temesgen, A. K. (2020). Building an Island of Sustainability in a Sea of Unsustainability? A Study of Two Ecovillages. *Sustainability*, 12(24): 10585. <https://doi.org/10.3390/su122410585>.

Article IV

Guillen-Royo, M., Temesgen, A. K., Vangelsten, B. V. (Minor revisions received in October 2020 and implemented.) Towards sustainable transport practices in a coastal community in Norway. Insights from human needs and social practice approaches. To be included in the book: 'Consumption, sustainability and everyday life: Essays in honor of Hal Wilhite' edited by Arve Hansen and Kenneth Bo Nielsen in 2021.

Article

Building an Island of Sustainability in a Sea of Unsustainability? A Study of Two Ecovillages

Amsale K. Temesgen ^{1,2}

¹ Nordland Research Institute, N-8049 Bodø, Norway; akt@norsk.no; Tel.: +47-913-699-47

² Nord University Business School, N-8049 Bodø, Norway

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Abstract: Ecovillages aim to foster community around sustainable practices and encourage low-impact lifestyles. This article explores the strategies employed by two ecovillages to scale up their practices through physical expansion and the consequence for the maintenance of said practices. The ecovillages under study are Hurdal in Norway and Findhorn in Scotland. The study employed a multi-method approach: document study, participant observation, and interviews with ecovillage residents. The ecovillages applied different strategies to gain access to economic resources for expansion. Hurdal ecovillage sold its land to a private developer while Findhorn chose a different path: raising funds within the community, accessing public funds, and adopting low-cost building designs. The study finds that collaborating with investors and developers results in expensive housing that excludes low-income individuals and attracts well-off house buyers with mainstream values. Both ecovillages dropped introductory courses that aimed to equip new members with the necessary skills for shared practices and establish a common ground. These two consequences led to a weakening of competences for shared practices as private property took precedence. Prioritizing affordable infrastructure and accessing local (community and public) financial resources opens up paths for expansion that can maintain the necessary skills and meaning for community living.

Keywords: ecovillages; social practice theory; sustainable practices; sustainable lifestyles

1. Introduction

We are in a critical decade where we must change our prevailing economic system towards one with a lower impact on the environment. Local-level/community initiatives play an important role in this endeavor by promoting sustainable lifestyles. In this article, I focus on how these initiatives attempt to scale up their practices by the physical expansion of their infrastructure. I will follow Shove and colleague's [1] interpretation of social practice theory and examine the development paths of two ecovillages as case studies.

The interrelated environmental, social, and economic problems we face today are closely linked with the current neoliberal economic paradigm and its resource-intensive systems of production and consumption [2,3]. This paradigm perpetuates itself through resource-intensive habits and daily social practices [3]. Studies indicate that up to 40% of carbon emissions originate from everyday energy use and transportation habits [4]. Popular policy tools employed to mitigate the environmental impact of private consumption are price incentives (taxes and subsidies), information campaigns, and positive reinforcements, among others. Many of these tools have their roots in 'cognitive centered, rational, individualist conceptualization of consumption' [3] (p. 22).

Traditionally, the consumer/individual has occupied a central place in both academic and policy endeavors to understand the drivers of private consumption. Some examples of theories with this perspective are rational choice theory in mainstream economics, bounded rationality in behavioral

economics, the attitude–behavior model in environmental studies, and the theory of planned behavior in social psychology [5,6]. These approaches have been criticized for focusing on individualized decision-making processes and disregarding the facilitating/constraining influences of social and material structure on human behavior [1,3,7].

More recent explorations of the drivers of private consumption and habits have emphasized the role of social structures (norms, rules, meanings) and material/technology on human behavior [7–10]. Giddens [7,8] is credited for shifting the focus from the individual to routinized social practices that characterize private consumption and lifestyle patterns. The lifestyle of an individual includes ‘the routines incorporated into habits of dress, eating, modes of acting and favored milieu for encountering others’ [8] (p. 81). Sustainable consumption researchers have studied lifestyle domains (energy, hygiene, transport) using social practice theory to illuminate how practices in these domains are established, how they persist, and the potential for a transition to sustainability [11–17].

Since it pays attention to ‘social relations, the particularities of place (culture), and the influence of technology and materiality’ [3] (p. 23), social practice theory has been useful in conceptualizing the emergence/consolidation of sustainable lifestyles in local-level initiatives such as ecovillages [18–21]. The Global Ecovillage Network defines an ecovillage as ‘a rural or urban community that is consciously designed through locally owned, participatory processes in all four dimensions of sustainability (social, culture, ecology, and economy) to regenerate their social and natural environments’ [22]. Scholars of social innovation refer to ecovillages and other community-based initiatives as ‘niches’ where people explore ‘new ways of doing, organizing, framing, and knowing’ that leads to changing social relations and practices [23] (p. 197).

Previous studies have used social practice theory to show how ecovillages reconfigure daily practices to establish new norms [19] and achieve significant energy and resource savings [18]. In this article, I study how the two ecovillages under study—Hurdal ecovillage in Norway and Findhorn ecovillage in Scotland—attempted to scale up their practices through physical expansion and the consequences for maintaining these practices. The research question that will guide this study is: how does the choice of developing the infrastructure needed for a sustainable lifestyle promote/limit the development of the necessary competence and meaning for such a lifestyle?

The article is structured as follows. Section two lays out the theoretical perspectives most relevant for answering the research question above. Section three presents the research methods. Section four describes the study sites, their history, and their transformation to their present form. Section five presents the research findings/results. Section six will discuss the implication for theory and practice. Section seven concludes the article.

2. Theoretical Perspectives

The ethos of capitalism remains unchallenged despite criticism that it is causing climate breakdown, environmental degradation, and social and economic vulnerability [2,24,25]. Wilhite [3] identifies the main features of capitalism as the quest for unlimited economic growth buttressed by individual ownership, consumerism, indebtedness, and high speed of product turnover (extraction, consumption, and disposal). The growth imperative of capitalism drives the tenets of business, private lives, and national economic plans. Financed by loans and debts, corporations and businesses are motivated to pursue unlimited growth and generate profits for shareholders, often at the expense of labor or the environment [3]. Similarly, private lives have become accustomed to energy-intensive comfort levels in the Western world [3,25,26]. For example, recent research published in *Nature* shows how resource intensive lifestyles centered around choice, convenience, and comfort drive the global biophysical resource use [26,27].

This prevailing economic system leaves its imprint on values and norms and reproduces itself in everyday practices [28]. Wilhite [3] argues that the ‘seeds of growth and accumulation’ are embedded ‘in an interlocking set of narratives, materialities, and incentives’ of many everyday practices (p. 24). These practices are further entrenched by formal codes and regulations that guide and lock lifestyles in unsustainable paths (ibid). Community-level initiatives are credited for promoting low impact lifestyles and negotiating with regulations that entrench unsustainable

practices [3,29,30]. Social practice theories are well-suited to study how this process unfolds by focusing on the materials, norms, values, and competences that constitute everyday practices.

2.1. Social Practice Theory

Scholars of social practice theory trace its origins to the philosopher Wittgenstein [10] and sociologists Bourdieu and Giddens, among others [1,3,5,6]. Hal Willhite [3] discusses the contributions of scholars such as Thomas Veblen, James Dewey, William James, Marcel Mauss, and Pierre Bourdieu in applying the lens of 'habits' to theorize about social practices and patterns. Anthony Giddens' structuration theory [7,8] is credited for overcoming the so-called agent–structure dilemma in sociology by shifting the focus to the interaction between the two through the enactment of social practices [7]. This approach negates individual-focused approaches that put sole emphasis on the agent and his/her decision-making processes. It defies the belief that sustainable practices are solely the result of 'green beliefs', commitments, and individuals' actions [17] (p. 395).

Earlier formulations of practice theory emphasized the role of habits, (tacit and discursive) knowledge, rules, routines, and paid less attention to material foundations of practices [3]. More recently, the impact of materials in shaping and reinforcing resource-intensive routines and practices have gained ground [3,16,17]. In this latter approach, lifestyles consist of 'inconspicuous' routines, habits, and practices that people take to be normal and are intimately bound up with the material and technological infrastructures of modern life [17] (p. 395). The physical structures and technologies of everyday life, coupled with the social significance of our actions, entrench the patterns of daily life. Consequently, practice theories have been useful in explaining path dependencies of consumption practices [11,14,17].

Due to its robustness, social practice theory has found applications in diverse fields (such as social theory, discourse theory, and theory of science) [6]. This has led to many interpretations and operationalizations of the theory and no unified theoretical approach [6,31]. For example, some scholars have followed Bourdieu's work and emphasized 'habitus' (that is, knowledge, experience, perceptions, expressions, and actions) and embodied knowledge (body and mind interactions), in elucidating the processes that result in entrenched practices [3,32]. Others have emphasized the role of infrastructures, norms, and resources as constitutive elements of practices [5,16,33]. Despite the emphasis scholars put on different constitutive elements of practices, what unifies the different approaches is their analytical focus on the elements' interconnection and co-evolution.

Practice is broadly defined as 'a routinized type of behavior which consists of several elements, interconnected to one another: forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion, and motivational knowledge' [9] (p. 249). In this article, I will follow Shove and colleague's [1] interpretation of social practice theory to address the research question raised in section one. Shove et al. [1] present three elements of a social practice that help sustain it as an entity and a performance over space and time: materials, competences, and meanings. Materials include 'technologies, tangible physical entities and the stuff of which objects are made', competences include 'skill, know-how, and technique', and meanings include 'symbolic meanings, ideas, and aspirations' [1] (p. 14). They make the case that practices emerge, persist, and disappear as connections between these elements are made, sustained, and broken, respectively (ibid).

The co-evolution of elements of practices leads to the reinvention of old practices and the diffusion of new ones [34]. Shove et al. [1] describe how elements of a practice travel across time and space. The practices themselves, however, do not travel and are 'localized' and adapted to the new site of enactment with its agents, institutions, culture, and norm (p. 39). Materials can most often be transported across space and time. Competences depend on past experiences and typically migrate between space and time primarily through practitioners (individuals). Meanings spread more easily as they do not require past experience or prior knowledge.

Practices do not usually change in isolation; they often co-evolve with other practices. Practices can either compete or collaborate with each other. When they compete for the same elements (materials, meanings and competence), some practices may displace others. However, when elements

collaborate, that is, when they effectively draw on similar materials, meanings, and competence, they form connections and turn into what social practice theorists call bundles [1]. When such connections become stronger, and practices depend and draw on each other, they form complexes (ibid). Once the connections between practices strengthen, these practices become dominant and form the patterns of everyday life.

Communities and networks play an important role in developing and propagating new practices or limiting their diffusion. New and sustainable practices are more easily adapted if they are part of a practice shared with others [31]. For example, in their study of transportation practices in two neighborhoods in Edmonton, Canada, Kennedy, Krahn and Krogman [16] show that sustainable transport practices (such as cycling, walking, and using public transportation) are easily adopted in neighborhoods where such practices are prevalent and where the physical infrastructure is adapted for these practices. However, when people move to areas where unsustainable value systems are prevalent, mainstream norms of transportation (the use of private cars) take precedence.

Access to resources may either limit or encourage participation in sustainable practices. This could be access to the materialities, competence, and meaning of a practice for it to take root in a new place or among a new social group. The design of homes, neighborhoods, cities, and regions can engender or discourage sustainable practices [1,3,16,17]. Housing is one important materiality that entrenches the unsustainable lifestyles that are prevalent in modern societies. Willhite [3] asserts that the growth in house sizes and the associated emergence of energy and material intensive practices related to the modern house exemplifies how the habits and practices of capitalistic lifestyles have entered everyday life. House sizes have increased in both absolute and per capita terms across all OECD countries over the past decades. While family sizes have declined (40–50% of dwellings had only one person living in them in 2010 [3]), the idea of sharing house space with extended family members or others has practically disappeared, leading to the increase in absolute and per capita use of energy for heating and housekeeping activities [3].

The marketization of house provision has led to the consideration of housing as a ‘reliable financial investment’ [35] (p. 126). It changed ‘the status of housing from being regarded as an engine for social improvement to being a consumer good like any other’ [36] (p. 128). Consequently, housing and land prices have increased significantly in many urban areas, making these areas inaccessible for people with lower incomes. Investing in vacation homes has also become more popular [37]. Sheard [37] shows how vacation homes are often located in peripheral areas with lower standards of living and result in negative consequences for the local population by raising the cost of local housing and hurting the local labor and product markets. His study also shows that policy responses such as requiring homeowners to reside in these houses have dampened some of the negative impacts.

2.2. *Ecovillages as ‘Communities of Practice’*

Communities of practice are ‘groups of people informally bound together by shared expertise and passion for a joint enterprise. ...People in communities of practice share their experiences and knowledge in free-flowing, creative ways that foster new approaches to problems’ [38] (p. 139). Communities of practice foster ‘social learning’ by providing environments where people can engage in, learn, and reproduce new practices and skills [39].

Ecovillages are inspired by diverse and at times overlapping movements such as intentional communities in the global North, the Kibbutz movement in Israel, the hippie and commune movements of the 1960s and 1970s, the feminist and eco-feminist movements, and green movements among others [40,41]. There is no universally agreed-upon definition of ecovillages [42]. One of the pioneers of the Global Ecovillage Network, Robert Gilman [42] (p. 10) characterizes ecovillages as ‘full-featured settlement[s] in which human activities are harmlessly integrated into the natural world in a way that is supportive of healthy human development and can be successfully continued into the indefinite future’.

Ecovillages are perceived as grassroots innovations and communities of practice for sustainable living [43–45]. They encourage ways of living that go against the typical capitalistic lifestyle by promoting sharing economies and slower lifestyles where the emphasis is on strengthening social

networks and lowering environmental footprint [3,35,46–49]. Many aim to be economically self-sufficient and experiment with forms of self-governance [46,50,51]. These alternative practices can be seen as a paradigm shift from the mainstream, bringing about a change in ways of thinking and acting.

There are a few studies that have documented how sustainable collective practices emerge and become established in ecovillages. Roysen and Mertens [19] studied how new sustainable practices emerged and became normalized in an ecovillage in Brazil. They focused on two social practice complexes: ‘community care’ (which involves maintaining common spaces in the community, cooking shared meals, composting waste...etc.) and car sharing [19] (p. 3). They showed how ecovillagers developed meanings, acquired competences, and put together materials that would help them reproduce and normalize these practices. In this process, they also generate new ideas for other innovative social practices that reduce their environmental impact and help improve their local economy.

Boyer [18] followed a similar path and used social practice theory to study how residents in Dancing Rabbit ecovillage (in Missouri, USA) significantly lowered their environmental impact to less than 10% of the average American citizen. They achieved this by ‘transitioning away from the exclusive ownership of capital goods, investing in skills that facilitate the collective management of resources and eliminating waste by taking advantage of locally available resources’ [18] (p. 1). They eschewed the exclusive (individual) ownership of motorized vehicles, the use of fossil fuels for purposes such as powering vehicles, heating and cooling of physical spaces, and required the exclusive use of renewable energy on their premises among others. He found that their investment in social competence (of interpersonal communication and conflict-resolution skills) contributed to their success in lowering material and energy consumption.

Pickerill [52] emphasizes the important role of the buildings of an ecovillage. Ecovillage buildings often symbolize an ecovillage’s aims, principles, and doctrine. They structure its functions and practices and set opportunities or constraints for the type of activities that can be performed in the ecovillage. Scholars that have studied eco-buildings in ecovillages and eco-communities raise their concern that property prices are increasing in these communities as the ideal of a close-knit, rural life close to nature enters the mainstream [53,54]. Similarly, Mason [55] takes issue with the heavy emphasis eco-communities put on environmental sustainability at the expense of social justice. Barring these criticisms, scholars call for more research on the impact of ecovillage buildings and infrastructure on sustainable practices [35,56,57].

This article will aim to contribute to this research gap by focusing on the endeavors of two ecovillages to build new houses and infrastructure and scale up their practices. I will pay attention to the effect this has on the (elements of) sustainable social practices. The analysis will be at the level of complexes of social practices, as opposed to individual practices.

3. Research Methods

Data Collection and Research Methods

Data for the study were gathered from the two ecovillages through participant observation, document study, and interviews with ecovillage residents. In Findhorn ecovillage, Scotland, I participated in an ‘experience week’ program that the ecovillage runs as a deep dive into ecovillage living in March/April 2019. The experience week was led by two long-term residents of the ecovillage. This program is mandatory for all that want to settle in the ecovillage and recommended for researchers that want to study the ecovillage. During this week, participants take part in workshops/group activities, visit and chat with pioneer ecovillage members in their homes, tour the ecovillage’s projects and volunteer in one of three work departments: the common kitchens, the community gardens, or community care activities. In the evenings, participants take part in group activities that the ecovillage uses to facilitate communication and community building among its members. I volunteered in the common kitchen at Cluny Hill College—a 19th century building that houses about 40 community members.

I kept detailed notes during this week of participant observation. In the evenings or when we had breaks from the organized activities, I used the opportunity to talk to residents, volunteers, and employees about their experiences of living in the ecovillage. Volunteering in the community kitchen also provided ample opportunity to talk to different community members whom I was assisting on a daily basis. Volunteers in the kitchens worked under two community members that gave them tasks. These community members rotate on a daily basis. Therefore, I got the opportunity to meet and work with different community members in the kitchen during the experience week. Meal- and tea-breaks afforded an opportunity to mingle with the wider community and learn about the challenges and opportunities of living in an intentional community. These discussions often revealed rich information regarding how sustainable social practices unfolded in the ecovillage.

Due to resource restrictions, I was not able to conduct a separate and more extended research stay in Findhorn. However, I have complemented the insights I gained from the experience week with an in-depth study of annual reports, websites, blogs, social media sites, research articles, books about and from Findhorn, brochures, and other documents produced by the Foundation. Findhorn has a relatively richer documentation regarding its history, ethos, current and past practices, and its visions for the future as opposed to the younger Hurdal ecovillage. To fill gaps and clarify ambiguities in these documents, I conducted interviews digitally with key informants with deep knowledge regarding the evolution of the ecovillage (this part of the study coincided with COVID-19 lockdowns around the globe). These interviews also helped to triangulate the information I gathered from documents. In total, I got the opportunity to engage in extended conversations with 14 members of Findhorn community (through home visits, as facilitators of the experience week program, digital interviews, or through their presentations to participants of experience week). The digital interviews with four long term members lasted between 1–1.5 h.

Hurdal ecovillage is in Norway, and therefore, more accessible to me. As a result, I was able to visit the ecovillage multiple times in the period May 2018–July 2019 and conduct participant observation and semi-structured interviews. I participated in a 2-day workshop the ecovillage organized for its residents and interested outsiders to discuss the challenges and advantages the ecovillage faces and chart future paths. There were 20 participants in this workshop, and only two (including me) were outsiders. In total, I gathered information from 15 ecovillage residents. I have also used other sources to complement my field study such as academic articles, master's theses, newspaper articles, blogs, and a documentary film about the ecovillage. The developer that was a central actor in the ecovillage's expansion declined to take part in the study. To fill this gap, I interviewed residents that worked closely with the developer and studied publicly available business letters, presentations and reports. Interviews in Hurdal ecovillage typically lasted 1–1.5 h.

The questions that guided the interviews in the ecovillages were (1) the motivations for moving to the ecovillage, (2) the values that guide the ecovillage, (3) the type of shared/sustainable practices prevalent in the ecovillage, (4) the advantages and challenges of living and/or running a business in the ecovillage, and (5) the main challenges that the ecovillage is currently facing. I adapted these questions to fit the particularities of each ecovillage. Follow-up questions helped explore new topics revealed during the interview and that I did not anticipate at the start of the field study.

The Norwegian Center for Research Data approved the study design, including interview guides and the data storage and analysis plans. I informed the study participants about the purpose of the study and how the gathered data would be stored and analyzed at the start of the interviews. When interviews were recorded, I asked the respondents for their consent and guaranteed them anonymity. The interviews were transcribed and analyzed in the software Nvivo 12 Pro [58].

I conducted content and thematic analysis on interviews, documents, and participant observation notes [59]. Descriptive coding captured new themes arising from interviews and documents while concept codes identified themes corresponding to the theoretical discussions elaborated in section two—for example, the elements of social practice following Shove et al. [1]. Where possible, I presented and discussed preliminary results with study participants (this was possible for Hurdal ecovillage).

4. The Ecovillages: Findhorn and Hurdal

Findhorn and Hurdal have several decades of experience with ecovillage living. Findhorn is almost 60 years old and a strong actor in the ecovillage movement. It is a founding member of the Global Ecovillage Network and was recognized in 1998 as UN-Habitat Best Practice for holistic and sustainable living [60]. Hurdal is over 20 years old and was founded with an inspiration from Findhorn. It has about 150 inhabitants today [61]. These two ecovillages collaborate, inspire, and support each other. This fact makes them good cases to illustrate how grassroots innovations replicate each other and scale up their practices in their respective communities. Both ecovillages have good working relationships with their local authorities and have influenced local planning processes in several instances.

4.1. Findhorn Ecovillage—History and Recent Expansion

Findhorn Foundation community is located in the North-East of Scotland and has approximately 400 residents [56]. It was founded in 1962 by three adults (a couple, their friend, and the couple's three children) who moved into a caravan and worked to sustain themselves by producing most of their own food and providing for the rest of their needs from unemployment benefits and child support [62]. The central features of their spiritual practice are tuning in to intuitions/inspirations and connecting with what they called 'nature spirits' (through meditations) to find guidance on how to tend to their gardens. Their spiritual and environmental values attracted other similarly inclined individuals which tended to be single and able-bodied and could engage in a full day's hard work [63]. The community eventually expanded and became demographically diverse with members in different age groups and family situations.

The community's development can be roughly divided into three broad phases in relation to physical/infrastructural development. The early phase stretches from the 1960s to 1980s. This is a phase of significant transformation from a small spiritual community struggling to find a solid footing to one of physical and economic expansion [63]. In 1972, the community established Findhorn Foundation as an educational charity [64]. In the following decade, the Foundation set up educational facilities and accommodation at four locations: The Park Ecovillage (popularly referred to as The Park), Cluny Hill College, and two retreat houses (on the Isle of Iona and the Isle of Erraid) [64].

The Park and Cluny Hill facilities occupy prominent status in the community. The Park is the initial settlement near Findhorn village and hosts several community businesses, the community center, privately owned eco-houses, and residential buildings for Foundation co-workers (see Figure A2 in Appendix A for a map of the Park Ecovillage). Some examples of the more than 40 businesses established in affiliation with Findhorn community are Findhorn Foundation College (a tertiary education institution), New Findhorn Directions Ltd. (a trading subsidiary of the Foundation), Moray Steiner School (supported by the Foundation), Trees for Life (a nature conservation organization), Living Technologies (an organization that builds biological sewage treatment plants and restores lakes), Earthshare (an organic agricultural co-operative), Ekopia Social Investments Ltd. (a cooperative that serves as a 'community bank', runs the community's local currency, funds social enterprises like the community's Phoenix Cafe and finances affordable housing projects) among others. These businesses belong to an umbrella organization, New Findhorn Association, which gives them access to the Foundation's facilities such as the Community Center and other benefits [63] (see Figure A1 in Appendix A for an organizational map of the Findhorn community). Cluny Hill also hosts courses and retreats and houses about 40 Foundation co-workers [64]. At its busiest, Cluny Hill can accommodate up to 150 guests and residents [65]. The foundation acquired these properties either through gifts and charities or it bought/leased them with resources generated through fundraising or from educational activities [63].

In the early days, all community members were part of the Foundation (ibid). With time, different forms of memberships evolved to accommodate an increase in interest from the outside world. Full-time and associate members go through a three-month-long orientation program and volunteer in one of the Foundation's work departments. The orientation program includes the introductory 'Experience Week', a series of spiritual and self-development programs, spending a

week at a community retreat, and once-a-week meetings. Participants in these programs learn the core principles of the community and gain skills for community living and working with community projects. Full members receive a small stipend and in-kind transfers in the form of free meals, accommodation and energy provision [64,66]. Non-residential foundation workers receive a minimum pay of GBP 9/h. [64].

Many of the community organizations were founded by associate members 'allowing the foundation to focus on what it considers its core business, which is education' [63] (p. 371). The flexibility in types of membership attracted individuals with different sets of skills: environmentalists, engineers, people with background in finance and organizational management among others. More recently, with the expansion of the community through housing developments, people could join the community as property owners or tenants without going through the formal process.

The second phase of development is the period from the 1980s–2000s, where the ecovillage concept gained prominence. The impetus to establish an ecovillage came about after Findhorn hosted the conference, 'Towards a Planetary Village', in the early 1980s [67]. The concept 'planetary village' (a village whose social and environmental principles have global perspectives) can be seen as a precedent to the 'ecovillage' concept. Inspired by this conference, central individuals galvanized the community to raise funds and buy the land the Foundation occupied, reducing costs and providing revenue sources for the Foundation.

This expansion of the physical premises and accompanying economic activities resulted in economic gains. The Findhorn Foundation surpassed a total revenue of GBP 1 million in the early 1980s [68]. Educational activities have increased significantly since the early days resulting in more than doubling of income in recent years [64,66]. However, the community also has significant labor and infrastructural costs and therefore, resources are often tight [64,66].

In 1995, a group of Foundation members established the company, Ecovillage Ltd., to buy an adjacent land and set up eco-friendly buildings [63]. Ecovillage Ltd. raised funds by selling shares to community members and plots to people that wanted to build eco-houses [63]. About 30 private houses were completed in an area they called Field of Dreams in the early 2000s [69]. With time, these houses became much more expensive than the rest of the ecovillage, with average prices of around GBP 318,000 in 2019 and a peak of GBP 385,000 in 2013 [70]. The earlier, more experimental Whiskey Barrel houses that the Findhorn community is known for cost about half of the price of the higher quality, timber-frame houses in Field of Dreams at GBP 165,000 [71].

The last phase of physical infrastructure expansion took place in the early 2000s. A neighboring land came up for sale and a community organization, Duneland Ltd., was set up to acquire this piece of land and build new houses [72]. Duneland raised money by selling shares to community members and outsiders and promising priority access to future developments. It successfully bought 292 acres of woodland, dune, and marram grass landscape (ibid). Duneland made several decisions that emphasize its role as a social enterprise: it converted 95% of the acquired land as a nature reserve (in cooperation with Findhorn village) and implemented a financial policy of capped dividends for its shareholders [73]. Duneland will also cease its activities after developing the land it acquired (ibid).

Duneland conducted two community consultations in 2004 and 2006 and created a development plan which included a mix of educational, community, commercial, and eco-friendly residential buildings [74]. The plan was granted permission by the Moray Council in 2008. The construction of houses was planned in three phases in the area called the Whins: 1. East Whins, 2. West Whins and 3. North Whins [75]. East Whins was planned as a cohousing cluster with 25 two- and three-bedroom units (70 sqm and 105 sqm, respectively) [69]. Phase one was expected to pay for the infrastructure and to honor shareholders' investments [75]. Half of the cluster was reserved for shareholders as part of the commitment made to them by Duneland Ltd. [76].

Phase one faced some serious challenges. Duneland had severely underestimated the costs of constructing new houses. Consequently, it incurred a debt of half a million pounds [77]. In addition, a construction company went bankrupt without completing its tasks and a local company had to finish the construction [78]. This was a period of a steep learning curve for Duneland.

After completion (in 2014), the market price of the units in East Whins became quite high compared to local incomes, ranging between GBP 160,000 and GBP 238,000 [78]. Although Duneland hoped more community members would utilize their priority access to the housing units, there were a number of single retirees (some living abroad) that acquired the new housing units [76]. To avoid the houses from being used as vacation homes, Duneland required that the units should be occupied nine months of the year [79]. However, some fulfilled this requirement by renting out their units.

Lack of affordable housing for community members was a persistent problem. The Foundation observed that young people—especially young families—left Findhorn Ecovillage for lack of a ‘suitable’ home and more Foundation coworkers commute to the Ecovillage from the nearby town of Forres and Findhorn village, with vehicle running costs adding strain on minimum wage earners [80]. In order to alleviate this problem, the community established a cooperative—Park Ecovillage Trust (PET)—to serve as a delivery agent for affordable units [69]. PET has over the years overseen the acquisition and distribution of affordable units in the Whins by raising funds from Ekopia—a cooperative that serves as a ‘community bank’, local authorities, and in collaboration with Duneland [81].

Duneland chose a terrace design for East Whins to use land sparingly and reduce built-up areas. The design also reduces building costs and uses energy efficiently. All houses are fitted with solar panels for hot water and they get their electricity from the wind park. The houses are connected to the biological sewage treatment plant that the Foundation manages [65]. The layout of East Whins supports co-housing principles of shared/collective facilities with shared common room, laundry, bike shed and communal garden areas (in addition to small private gardens). The management of the natural area is guided by permaculture principles. Ground floor flats are designed to cater for the elderly and physically impaired. Other considerations that went into designing the housing units are linking important sites, such as the community gardens and the Universal Hall for cultural activities, from the original site at the Park with the new developments [74].

Learning from East Whins, Duneland set up the West Whins project to ensure its financial viability. It hired an experienced contractor and included low-risk elements such as self-build plots for people interested in building their own homes in consultation on house design and ecological footprint with Duneland and Findhorn community [72]. PET also oversaw the building of six affordable housing units (ibid). The funding strategy for the affordable housing units prioritized borrowing within the community (through Ekopia Ltd. and private loans) and a grant from the Scottish Rural Housing Fund. Construction was finalized in 2017, and PET made the six single-bedroom flats in West Whins available as eco-friendly and affordable rented units for community members and employees working in the Park (ibid). West Whins was financially successful and enabled Duneland to pay down its debt.

Duneland built a common house for West Whins that included common facilities like laundry, a meeting room and a room for guests of residents. However, as the focus in this project was the financial viability and the community aspect received less attention, there were disagreements regarding the use and relevance of the common facilities [77]. Consequently, the house was put up for sale at the time of this study.

The final phase of development is in North Whins with a possibility for 38 one- and two-bedroom houses and commercial units designed as a terrace [82]. There is no plan to set up a common house with shared facilities [83]. Government grants for eight affordable units have been secured and construction will start as soon as the COVID-19 pandemic lockdown in Scotland is lifted [77,84]. Duneland has the ambition of finally being able to repay the investments of shareholders and possibly some dividends after the completion of North Whins.

4.2. Hurdal Ecovillage—History and Recent Expansion

Hurdal ecovillage is located 80 kms north of the capital city of Norway, Oslo, and was established in the late 1990s by a group of individuals that had a vision of starting a small community around ecological farming and spirituality [85]. Central individuals among the early pioneers in Hurdal spent their formative years in Findhorn and returned to Hurdal with the aim of establishing

a similar community [86]. They established a cooperative called *Kilden økosamfunn*—or Kilden eco-community—with a member size of somewhere between 50 and 60 individuals and started searching for a suitable location within an hour of the capital for a few years [87]. They visited several locations that fulfilled the conditions of having good agricultural land and being close to Oslo.

They eventually found an ideal location—a former priest's farm owned by a willing and eager municipality in Hurdal, an hour outside of Oslo. A group of about 10 individuals, some with small children, from Kilden økosamfunn decided to settle in Hurdal municipality and established a cooperative called *Hurdalsjøen Økologiske Landsby SA*. This decision meant that the Kilden eco-community split into two. The other group continued with their search, but it appears that this other group did not establish any other ecovillage and may have disbanded. They signed a letter of intent (LoI) with the municipality and rented the farm in 2002 [86]. The members of the cooperative had equal shares and decisions were made through consensus. They built nine houses in traditional ecological fashion with clay, straw, and wood in the period 2002–2003 (ibid). Although, these houses did not meet the Planning and Building regulations, the municipality allowed them to stand temporarily until more modern housing could be built [88,89]. The dispensation from the Building and Planning Regulations was extended several times and these houses were used as residence for seven years. When the ecovillage finally got built, the inhabitants of these houses moved into the new houses. The old traditional houses are still standing at the time of this writing and are used to house volunteers and temporary visitors.

In this early period, it was common to share living space until new members could find a footing in the community and have their own housing [89,90]. New members had to go through an introduction course and a trial period of 6 months. After the trial period, they could pay a deposit to own a share in the cooperative and then a monthly payment to cover common expenses [89]. They envisioned that everyone would build their own house but soon realized that this was unrealistic. Some of the traditional houses they built had construction problems and they did not have the necessary legal and economic expertise for other forms of expansion (ibid).

The cooperative bought the farm from the municipality in 2004 and decided to collaborate with Gaia architects—a firm working on sustainable design—to develop zoning plans for the development of the ecovillage [91]. This plan was unanimously approved by the municipality which paved the way for the cooperative to buy the farm in 2006 [88].

Architects and investors saw the potential in this new venture. The cooperative's members looked for actors with the financial capacity and legal know-how to relieve them of the economic burden they were carrying from their attempts at building an ecovillage on their own [89]. The company Vitrina (later Filago) offered to buy out members of the cooperative and take over the responsibility of developing Hurdal ecovillage. The farm was sold to Vitrina in 2012.

The decision to sell the farm to an investor was not unanimous [85]. Some members left the cooperative because they felt that they were straying away from a locally anchored, bottom-up process of building the ecovillage. Those that remained argued that expanding an ecovillage through self-built houses required considerable time, energy, financial resources, and expert knowledge, which they did not have (ibid). They saw a legally binding recruitment of new residents for future (modern) houses with prospectus as the most efficient and secure option.

Filago (earlier Vitrina) adopted an innovative business concept when they took over responsibility for developing the ecovillage [92]. Their business concept, which they termed 'living and lifestyle concept', was to set up eco-communities of different sizes where social and environmental values were central [93]. They founded their business on the stated goal of balancing 'the triple bottom line of sustainability: people, planet and profit' [92]. They aimed to realize this vision through building eco-houses and collaborating with municipalities, residents and the local business community (ibid). Filago aimed to set up the infrastructure for social life (for example, common houses, gardens, greenhouses) but the residents were responsible for creating activities [94]. The 'products' they promoted to potential customers include ecovillages with 50 or more housing units, eco-hamlets with 20–50 housing units, and eco-yards of 5–20 housing units among others [92]. Hurdal ecovillage was marketed as the physical manifestation of Filago's business concept and as

such received funding from state enterprises, for example, from Enova—the state-owned funding agency for innovative and environment-focused projects [95], banks (for example, Husbanken provided affordable mortgage loans to residents) and crowdfunding agencies.

The houses were constructed with four fundamental principles: natural indoor ventilation (using small, sensor-operated valves on walls that are breathable), environmental considerations (for example, using non-toxic building materials), energy efficiency (including use of solar energy), and modern comfort [93,95]. With these considerations in mind, different sizes of module-based buildings, called shelters, were designed. The houses were smaller in size than the average Norwegian home for energy and cost efficiency [94].

Filago planned to develop Hurdal ecovillage in five housing clusters (*ibid*). The first cluster was developed in two stages. Construction of the first group of houses began in 2013 and was completed in 2014/2015, and the second group was finalized in 2016. The original plan included a common house for the residents to use for social and economic activities. However, the cost of the first group of houses exceeded the budget and therefore, Filago abandoned the plan of building a common house and instead built the second group of houses on the plot to generate extra income [96]. All in all, 70 houses were built and sold in the open market [97]. The prices ranged between USD 220,000 and 435,000 in current exchange rates.

Some cooperative members expressed concern early on that these prices were too high and needed large mortgages, implying that ecovillage life would be exclusive to those with good economic resources [89]. Others countered that although the prices were high, there would be substantial savings in the long run through the production of solar energy, by adopting ‘simpler lifestyles’ advocated in ecovillages, and other initiatives like establishing an information center for visitors (*ibid*).

Filago bought and upgraded a neighboring old school as space for businesses and cultural activities. The new center was named *Fremtidssmia økologiske næringscenter*—Fremtidssmia ecological business center or simply referred to as Fremtidssmia. Initially, some ecovillagers received discounted rental prices from Filago and made use of this space to host cultural activities and courses. However, when the rental prices went up to market levels, it became prohibitively expensive for the fledgling businesses. As a result, many small businesses run out of peoples’ homes [98]. Some of these businesses include beekeeping and bee products, producing soaps and detergents, running courses and workshops such as yoga courses, and different therapies (*ibid*).

Residents started initiatives where they could share and exchange resources: sharing circles for clothes, household tools, garden produce, and other goods. Some of these activities take place in the old vicarage that a group of residents rent. They also established a carpooling scheme for ecovillage residents using social media. An association assigns work duties in the ecovillage’s organic farm and started a composting initiative to support the farm. Association members cover some of their own needs with the produce from the farm and they organize workshops that focus on food production. Members collaborate with farmers in the municipality to create a local brand and market the region’s food products [99].

There was a growing discontent among the residents with some of the houses as they were experiencing technical problems [90]. Some houses experienced leakages and structural damage. The wireless smart technology that regulated lighting, window shades, ventilation valves, and electric outlets did not function well [100]. Although the technology was billed as energy and cost effective, its instability made it lose favor with the residents. In addition, some residents are concerned about radiation from the wireless technology. Consequently, some opted to change to an old-fashioned but stable cable-based technology at extra costs [101].

Subcontractors of the developer who would have been legally bound to fix the problems went out of business and made it difficult for Filago to fix these problems. These complications broke down the trust between the developer and the residents [102]. There were rising tensions between the residents and the developer, and between different groups within the ecovillage.

These problems had an economic toll on the developer. In early 2018, their financial security became uncertain [103]. The prevailing tension and conflict in the ecovillage and unresolved technical

problems in the houses hindered further sales of shelters [104]. A year later, Filago was declared bankrupt by the tax authorities. The firm owed its investors, including national and international corporate finance organizations, banks and crowdfunding agencies, and tax authorities over USD 40 million [103,105,106]. The bankruptcy exposed the ecovillage to uncertain futures. The banks, insurance companies and creditors will determine to what extent the ecovillage will remain intact with its properties, such as Fremtidssmia, plots for future development, and agricultural land [107]. Many ask themselves ‘will we continue as an ecovillage?’ (ibid). At the same time, some see this situation as an opportunity to reinvigorate the drive to gain more control of the ecovillage’s future development. However, with the extensive debt that the ecovillage currently carries, they are dependent on finding an investor that can take over the financial burden (ibid).

5. Results—Connecting Material Expansion to Values and Competence

5.1. Material Expansion and Values

5.1.1. Findhorn Ecovillage

Throughout its history, Findhorn has experimented with co-existence and community living. The values that drive sustainable practices in Findhorn community were initially informed by the founders’ spiritual practice that focuses on inner listening, co-creation with nature and love in action. Spaces such as Cluny Hill College have served as a collective where residents have shared a large communal kitchen, spacious living room areas and laundry facilities since the 1970s. The community center at the Park serves lunches and dinners to community members (see Figure A2 in Appendix A for an overview of common facilities at the Park). The common garden provides some garden produce to the community and serves as a site of therapeutic work for troubled youth from the Moray area. These sharing practices have, historically, contributed to lowering the community’s impact on the environment: a 2006 study of the community’s ecological footprint found that the community had half the footprint of the average UK resident, primarily because of Cluny Hill that houses so many residents with shared facilities [108].

The values espoused in the spiritual guidance of the founders have inspired many of the organizations and infrastructural projects in the community. They have guided the organization of social life in the community, informed social practices such as self-sufficiency in food and energy provision and inspired the building of physical structures. As one long-term Foundation member involved in several of the community organizations stated:

Spirituality is the community glue that keeps people together. [...] the ecovillage is ... an expansion of the spiritual side of it. So, it made sense for the community to build up the wind park. [...] It ultimately is about how to take that and make it into ‘love in action’ which is the cohousing or what you experience in the Foundation (FH07).

The Findhorn Foundation built a strong foundation by weaving together values/meaning, material expansion, and competence. The interweaving of values and competence happened through educational courses and workshops. The competences cultivated by these activities are, among others, taking seriously the impulses and inspiration that arise within through attunement and ‘deep inner listening’ and manifesting these ideas into reality (i.e., ‘love in action’) by working with nature (i.e., ‘co-creation with nature’) [62,109]. Attunement is one of the first practices new members get introduced to and it is one way the community perpetuates the values and practices of the community. Typically, people would sit/stand in circles, hold hands for a few minutes in silence to turn the attention inward, reflect on the issue at hand and take note of ideas/inspiration/concerns that may arise before sharing with the group. This practice is conducted at the start of duties in work departments and before managerial teams make decisions after all other considerations are evaluated [109]. These values inspired many key individuals to utilize their particular skill sets and prior experiences and initiate different projects with diverse goals: self-sufficiency in terms of energy, building eco-houses, natural conservation projects, infrastructural maintenance, building affordable

homes for members, etc. These activities serve several goals: they provide empowerment through self-sufficiency; they reduce the community's environmental footprint and they build community. A longtime community member that was involved in many of the early projects sees it as a 'learning process':

We could have taken a very different approach. Again, if I go back to 'Towards a planetary village' conference, we could have said 'Look, we don't want to do any of this stuff. It's a huge distraction. Nobody is interested in digging ditches and looking after roads. You know? We want to read books about the Buddha and inform ourselves [about] life. Perhaps, we could have done that. But we didn't. The big advantage is that it forces us to work together. It's very difficult to see the Park becoming a kind of suburban place that used to be a community. Because people have to work together whether they like it or not. The electricity supply, the water supply bla bla bla, all of these things, even if we choose not to pay much attention to it, you have to pay for it and you have to, by some mechanism, engage in it. And so, it's kind of part of the curricula, if you like. It's part of a learning process even if it's not very economically efficient or not the most economically efficient thing. (FH02)

5.1.2. Hurdal Ecovillage

The founders of Kilden eco-community were inspired by the spiritual values of Findhorn community and wanted to manifest it in their own community [86,89]. They aimed to utilize ecological building materials and adopt circular processes in food production and waste processing. The pioneers envisioned treating water resources with care: collecting rainwater, implementing biological treatment of wastewater and protection of ground water quality. They viewed development of an integrated energy system with renewable energy sources as an important aspect of an ecovillage. They aspired to reduce consumption and live simpler lives to protect the environment and to contribute to intra- and inter-generational equity.

They envisioned a local economy that can be adapted to support the community and financial systems that can encourage the circulation of money locally. They advocated for a sharing circle where individuals can share and exchange artefacts and services and a value-based education system that includes permaculture and meditation courses. Seasonal celebrations and cultural diversity were envisioned to foster interconnectedness with other human beings and nature [86].

The wish to expand the ecovillage a decade later required some fundamental changes to the idealistic view espoused by the pioneers in Kilden eco-community [85]. They had to find a workable common ground with the local municipality's zoning and planning rules, building codes, and the already existing infrastructure [89]. The decision to opt for a developer-led expansion of the ecovillage meant that the introductory courses and trial periods of the early days had to be abandoned. Several residents saw this as a negotiation between the idealist origins of the ecovillage and the capitalist world it tries to engage with. A pioneer involved from the early stages of this process describes it as follows:

I have also gradually come to a kind of demanding position because when you... start to involve companies and banks and eventually also investors, it becomes, in a way... I have to build a lot of bridges [between] a commercial capitalist world and... an idealistic world which is where I come from. And then you try to find a balance and then you have to create enthusiasm for it and constantly try to keep a momentum. And that has in a way been my life for maybe 20 years. (HL14)

In trying to appeal to a broad base of potential buyers, Filago referenced sustainability—mainly in the form of eco-houses—and social life in broad terms. Different buyers had their own expectations of what an ecovillage is. For some, it represented a possibility to be close to nature, for others it represented a possibility to raise children in a community, and yet for others, it represented a possibility to explore spirituality in a community of like-minded people. These motivations did not always align well with each other.

The lack of a clear identity for the ecovillage resulted in some residents feeling that the ecovillage did not reflect their convictions or identity. For example, one resident explained that she moved to the ecovillage to pursue her deep convictions about food self-sufficiency and living a simple life. However, there was no longer a place for her vision of a low-tech, simpler form of an ecovillage in Hurdal any longer.

I mean, there's a difference between people here, but I do not live in this house because I think the house is so nice. I came to the ecovillage to live down there [in the straw-bale houses] and I could have stayed there. For me, the house here does not represent me, I do not want smart house solutions, I would have liked a compost toilet, I would have liked to have had all those things, but it was in a way... [the ecovillage] became a package, so either you bought the house here, or not. (HL08)

5.2. Material Expansion and Competence

5.2.1. Findhorn Ecovillage

As elaborated in Section 4.1, the Foundation has always operated with small economic margins which led to the ambition of physical expansion to bring in more people and generate economic activity. With the construction of new houses by Ecovillage Ltd. and Duneland Ltd., the strict adherence to introductory programs for new members was relaxed. Without an introduction to the ethos of the community, new owners and renters do not start from a common vision, nor do they gain skills for community living. An additional problem is the turnover of tenants that disturbs the flow of social life. Consequently, these new clusters experienced conflicts around the use of common facilities. An East Whins resident lamented the fragmentation that this caused the community:

East Whins is a cohousing...and that would indicate that these 25 units ... should have more in common than just anyone... these 25 should be more jelling together than the other 200 [in the wider Findhorn community]. And we don't. [...] And if you have a conflict and you spend a lot of time solving that conflict and then that person moves away because they are a tenant, that's ok because the next one that comes in, you hope, may be different. But when you have moving parts all the time, then you are like in a spinning machine. ... So, in my numerical mind, we're 37 adults who are owners in 25 units, of those 37 adults, maybe 13 or 14 are here at any given moment in time. And that's an important figure because it's the adults in the cohousing, that make it jell (FH05).

In many of the units there are two individuals that neighbors have to relate to: the owner and tenant. The owner is expected to be a part of the infrastructural decisions concerning the units while the tenant is the one that has to engage socially with other residents. Managing the dynamics described above requires a certain level of competence. Residents developed solutions to improve the situation by organizing meetings and working through difficulties. There are two examples of solutions they found that improves the dynamics in East Whins. The first is that they assigned one resident to be responsible for social activities in the community. The other solution is the separation of property ownership from the social life in the cluster to ensure tenants could fully participate in daily decisions and activities.

I think we have done pretty well here; in that we separated the ownership from the social. That's something we did 2 years ago. ... We have owners who're not here and we have residents who are not owners. ... Two years ago, we formed a company limited by guarantee and all owners are members. ... That company looks after the financial viability and our commonly owned facilities. ... This is East Whins Cohousing Company. Ever since 2013, we have operated ... with sociocracy. So, when we formed the company, we just made it more clear to people that the company is for the owners and the sociocratic circles, that is for everyone who lives here. If it's a 6-week tenant or a 6-year tenant, everyone should be involved in [the sociocratic] circles... [for] the day to day running. And they run the budget

that has been applied by them but approved by the company. So, this makes the safe running [of the cohousing] possible... (FH05).

The adoption of sociocracy—a decentralized decision-making system [110]—is similar with the practices of the larger Findhorn community. This is an area where we see an alignment of competences between the smaller community of East Whins and the larger Findhorn Foundation. Through this decision-making system, information flow and coordination with other community organizations becomes easier and facilitates transfer of skills and competences.

East Whins residents have also successfully started a food composting initiative led by one resident. This resident attended an educational presentation organized by PET and felt inspired to initiate a composting initiative for East Whins residents. A community leader working in PET describes how the process unfolded:

We had a presentation about Drawdown. Probably the first one was 5 years ago which I believe PET actually facilitated and sponsored. [...] Evelyn became aware of the role that food waste played in the global footprint and how [...] composting of food waste [...] will have a huge impact if it is taken up on a larger scale. So, she felt inspired to take that up locally by buying what she calls... I think they're called hot boxes. And hot boxes are simply super insulated composting bins that are capable of accelerating the decomposition of food waste. So, [...] she transfers the compost on to a nearby garden which she also tends in East Whins right in the corner, in front of what's called the sunshine room in East Whins. So, there she's got a nice little self-contained community facility she's inviting anybody with food waste to contribute and quite a number of people do. ... I believe she now has something like eight of these hot bins; processes quite a lot of food of her own accord. Now, those are for ... home owners or tenants because the Foundation also does something similar with its food waste on a much greater scale (FH14).

West Whins had a different developmental trajectory. As mentioned earlier, to avoid the financial troubles Duneland faced after East Whins, they prioritized the financial and infrastructural side of the project. However, the community aspect of it was neglected. A common house was built in the cluster to foster 'community bond' through the management of the collective facility. To recall, West Whins is composed of two housing types: self-built and affordable units. The more affluent owners of self-built houses were less interested in the common house that came with the cluster as it requires time and effort to maintain and manage. A key informant with knowledge of how the process unfolded stated it as follows:

[I]n glib terms, the bigger the person's house, the less interest they had in a common facility with a washing machine in it. They got four bedrooms and two washing machines. What the hell do they need a common facility for? Whereas, you know, people in affordable housing were much more attached to it. So, as an experiment that didn't work either and the place is now up for sale. [...] May be, in 10 years' time, people will be complaining bitterly about the fact that there are no more of these facilities (FH02).

Learning from the two earlier projects, Duneland decided not to build a common house in North Whins. Instead, they left a plot of land open for future development should this be interesting for residents. This decision and the quote above indicate that community leaders see a value in a common physical venue to foster community and nurture skills for shared practices.

To summarize, there are three groups of residents in the Findhorn community: Foundation members/co-workers, home owners, and tenants. The Foundation's members gain a wide array of skills that align with the spiritual values of the community. They engage in different work departments such as the gardens, the kitchens or community care or they run community organizations as associate members. Working with practical tasks such as energy generation, growing food or biological treatment of waste gives them the skills needed for a low-impact community life. The social competences they build through attunements, community building

exercises and communal living (for full-time members) help them improve communication and conflict resolution skills.

Newer residents in the Whins are not required to attend orientation programs. However, as the quotes above show, East Whins residents managed to develop new skills and institutions of social organization such as separating ownership from social activities. Their food composting initiative shows how meaning travelled from PET—an affiliate of Findhorn Foundation—to residents that started their own successful food composting system. A carbon footprint study conducted by PET found that close to 70% of residents compost food waste while 88% compost garden waste [111]. The report credits the East Whins initiative for the high rate of food composting among East Whins residents.

The move away from including a common house and common facilities in West and North Whins reduces opportunities for developing the necessary skills for sustainable living—interacting with each other to create room for new ideas and initiatives, communication and conflict resolution skills to work on common projects, establishing local businesses that could reduce commuting, and the like. However, West Whins is still a young community and North Whins is not yet built. Therefore, it will be interesting to see how the situation develops a few years down the road.

5.2.2. Hurdal Ecovillage

In Hurdal, longtime residents of the ecovillage lament the loss of the introductory courses of the early days. In addition to creating a common ground in terms of values and meaning, the introductory courses imparted competence for a life in community. The course aimed to give a balanced view of what it means to live in a close-knit community by incorporating the type of challenges that might arise and ways of solving them. This nuanced view of ecovillage life was replaced by a romanticized and marketable image to facilitate a quick sale of houses. A longtime resident describes this change of perspective during the different phases of development as follows:

...I liked [the introductory course] very much. [...] Because you got a lot out of the course. When you come here and buy a house, you are told about all the nice things, but the course also had a lot of focus on the challenges of living together in a social community. You have to be willing to undergo personal development, you will get to know other aspects of yourself that you may not know, so I think it was an incredibly good presentation of all the challenges that also follow with living in community: there will be quarrels, there will be dishes flying through the air, there will be, yes, it can be very close, very, very scary, too. ... Many ecovillages have such admission requirements and things like that. So, it is in a way quite common, but it was stopped here because ... I feel we are in the interface between the idealistic and the economic world. And here, a lot of the idealism has been lost to economy. Here ... there is a developer and the houses should be sold and when you are going to sell something, you have to present it as heaven on earth so that everyone comes to buy it, and what happens afterwards, you don't give it much thought (HL08).

The developers marketed an ecovillage where social life could unfold while engaging in sustainable and social activities. However, as the economy of the project became tight, they decided against building a common house where these social events could unfold, and residents could informally develop the skills to communicate with and learn about each other. Residents lacked an avenue where they could negotiate the ecovillage's identity and its purpose through the everyday, spontaneous meetings and discussions that would arise in such a place. One resident explains how sorely missed such infrastructure is:

[We] lack informal meeting places that may actually help us discover that we can resolve these conflicts or contradictions. That we may realize that we actually do not have very different interests. Because I think maybe we attribute to others some qualities that they do not necessarily have. I think maybe people would recognize they have much in common (HL01).

Another resident expresses the lack of such skills to resolve conflicts and find a common ground:

Yeah, so there it is... a lot of things to learn there is the personal, the interpersonal, which is, how you talk to all these people when you are not used to talking to others... and talk to people who strongly disagree with yourself. [...] [T]here must somehow be [training in] modern conflict management ... and communication and different communication platforms. These are the two things that could have made it go faster, so that one could understand each other faster and better (HL02).

Communication and conflict resolution skills are important as they form the basis of social practices that characterize ecovillages. Complexes of practices such as sharing circles, carpooling systems, growing own food and the like draw on similar competences of being able to communicate and work with each other. The protracted conflicts caused by the structural problems of the houses, the lack of trust towards the developer, and the lack of consensus regarding the social organization and identity of the ecovillage means that residents do not have the opportunity to develop these skills and establish a thriving local economy.

The business center, Fremtidssmia, was initially planned to be a place where ecovillage businesses could be established. However, with the level of investment that went into upgrading it, the costs became prohibitive. Many residents express their hesitation to establish their businesses in Fremtidssmia for fear of not being able to afford the rent. Others have to find jobs in larger cities such as Oslo. A resident describes the resilience of residents starting their businesses in their homes while others commute long distances as follows:

People are producing things. We are producing honey. And now there are some guys producing *jød*—or mead, almost like beer but with honey—it is a Viking beverage. A lot of people are producing kombucha [...] and exchange in different ways. Some people are producing soaps and detergents. These are mainly running out of people's homes because the rent has been so high up there. That's been the situation because they spent so much money restoring this place so the rent went up. That kind of put a lead on the entrepreneurship, I think. [...] Now many people are commuting and it takes a lot of time and some people are not able to get jobs. They'll want to go to Oslo to work so, it's a difficult situation for some people (HL11).

To summarize, the physical expansion in Hurdal ecovillage took the form of high standard, expensive housing and the business center—Fremtidssmia. The costs of building eco-houses exceeded the budget and resulted in significant losses, possibly due to limited competence in the economics of building eco-houses. Ecovillage introductory courses were abandoned in the marketization of the ecovillage and with this decision, competence building for community living were down prioritized. The resulting lack of consensus regarding the identity and vision of the ecovillage meant that there were increasing tensions and conflict as residents were starting to establish common activities and businesses. Technical problems with the houses exacerbated this problem. The decision to abandon a common house in order to build more homes means there was limited opportunity to build social competence that could help them start common projects or engage in sharing and collaborative consumption that decreases environmental impact. The high cost of rentals in Fremtidssmia dampened the possibility for establishing a strong local economy with a diversity of businesses that can utilize local products or generate innovative ideas.

As the developer was going through its own financial crisis, the ecovillagers were setting up meetings and workshops to come to a consensus on common values and identity. They started the process to establish an umbrella organization with a wide enough mandate that will encompass all ecovillagers. They were organizing courses on sociocracy as they believe it to be a suitable governance system. They committed to reinvigorate social activities (such as a regular communal dinner, children's activities... etc.) to try to rebuild trust and repair community bonds. They were setting up an initiative to bring together residents with business ideas to create a common platform for all ecovillage businesses. They hoped that these initiatives would help them rebound from the extended period of uncertainty and insecurity they experienced in the previous year.

6. Discussion

Ecovillages are important community-level experiments in alternative and sustainable lifestyles. Willhite [3] (p. 108) maintains '[the ecovillage concept] combines the goals of minimal environmental intrusion, social inclusion and collective decision making. It challenges the capitalist fundamentals of private ownership and individual accumulation'. Typically, ecovillages implement one or more of the following mechanisms to achieve this: collaborative housing, for example, communes and cohousing, a local economy and local currency, connection to nature, a strong social fabric, and collaborative forms of consumption such as clothing swaps, toy sharing, shared workspaces, ride sharing, food co-ops, time banks, bartering, local exchange trading systems and the like (ibid).

The ecovillages under study in this paper have experimented with several of the above-mentioned practices (for example, collaborative housing, local currency, collaborative consumption, ride sharing, clothing swaps and the like). These practices fit the definition of complexes as they draw on similar materials, meanings and competence. This article aims to examine how the expansion of these ecovillages affected the elements that are necessary to maintain these complexes of practices. By following Shove et al. [1] approach to social practice theory, the article poses the research question: how does the choice of developing the infrastructure needed for a sustainable lifestyle promote/limit the development of the necessary competence and meaning for such a lifestyle?

Findhorn ecovillage is the source of the meaning and competence for the development of the ecovillages. Findhorn's founders grounded their core values on their spirituality and developed relevant competences for self-sustenance. The competences they developed were tuning in to one's inspiration and intuition and to work towards that 'calling' in a dedicated manner. This has resonated with people from around the world that flocked to the far-flung community in Northern Scotland. These newcomers brought with them prior experiences with spirituality, construction know-how, environmental expertise, and organizational work among others. As Seyfang and Haxeltine [112] (p. 32) observed in their studies of grassroots innovations, individuals with innovative ideas were given a 'protective space' in Findhorn to develop these ideas. When their ideas generated good economic returns as in the Field of Dreams project, the Foundation benefits by diversifying its sources of revenue through service provision such as energy and infrastructure, gaining access to resources such as land or spreading risk. This will again help it to continue with its core work of education and spirituality.

In the early phases of their development, both Findhorn and Hurdal ecovillages had similar paths (see Figure 1 below). Both started out with clearly developed 'meanings' and value orientation that revolved around spirituality and deep connection to and working with nature. Both places started with simple and traditional housing as the 'material' basis for living out their principles. In Findhorn, this took the form of caravans and annexes while in Hurdal, it took the form of straw-bale buildings. Both started acquiring 'competence' on food provisioning and building technologies. However, they soon started facing economic problems and began to experiment with different economic models. Here, Findhorn benefited from its larger community of practitioners with diverse backgrounds that could raise funds from within the community and from the community's extensive network. Hurdal, however, had to find investors that could take over the economic burden. From here onwards, the experiences of the two ecovillages started to diverge.

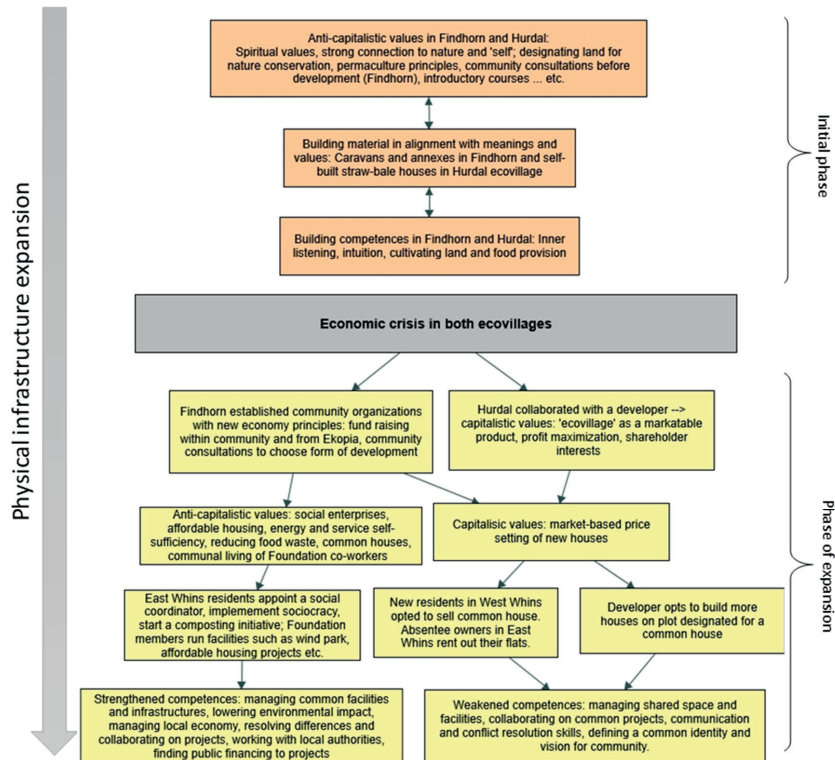


Figure 1. The path of expansion of Hurdal and Findhorn ecovillages and the impact on the elements of sustainable practices.

Findhorn's community organizations such as Ecovillage Ltd., New Findhorn Directions (with its investments in the wind park and the 'Living Machine'), Duneland Ltd., and Ekopia could diversify the economic risk (See Figure A1 in Appendix A for organizational map of the Findhorn community). However, the Foundation has always operated with small economic margins and expansion is one of the ways it can sustain its practices and provide affordable housing to its co-workers. The development in the Whins has been an important step in this regard. It has provided co-housing that sustains some of the practices that are common in ecovillages: shared spaces and facilities such as common laundry, workshop and bike store, renewable energy sources, communal gardens, and a common room. However, since the co-housing units were sold on the open market, there was no initial introduction to the ethos of the Foundation and its larger community. In addition, the combination of absentee owners and tenants (with uncertain tenure) contributed to the further fragmentation of the value-grounding of the residents and led to tensions and conflicts. However, as they were forced to work together to maintain their common infrastructure, they developed innovative ways to solve tensions and found ways to work on common projects such as the food composting system that drastically reduced their food waste.

In contrast to East Whins, West Whins was an economic success for the developer—Duneland Ltd. However, residents with different economic means and backgrounds could not agree on how to use the common house and consequently, decided to put up the space for sale. This is a return towards the mainstream tendency of prioritizing privately owned spaces and facilities. Duneland's decision to eliminate a common house from North Whins follows in this path, although architecturally, the design encourages social interaction between neighbors as compared to

mainstream neighborhoods. Community leaders in Findhorn hope that the vicinity to Findhorn Foundation with its historical track record in community building and alternative economic model serves as inspiration for future developments in the Whins.

Hurdal's experimentation with alternative community organization with self-built homes was comparatively short lived. With the sale of the property to outside investors, the community lost the power to influence decisions regarding the ecovillage. In contrast, Duneland Ltd. was a community organization with a local funding source. As a result, it could implement decisions that were not exclusively geared towards profit maximization for outside shareholders. Examples of such decisions are the conservation of 95% of the land it acquired, capping shareholder dividends, encouraging affordable housing, and adopting building designs that reduced environmental impact and encouraged social interaction.

In contrast, the developers of Hurdal ecovillage wanted to appeal to the larger society and, therefore, did not adopt a radically different design for the houses. The environmental and economic aspects of the houses took priority over social considerations, which indicates a technocratic approach to sustainability. The lack of competence regarding eco-buildings led to many structural problems with the houses, paving the way for their survival crisis. The decision to abandon a common house in order to build more houses and secure economic viability reveals a fidelity to the mainstream capitalistic worldview, as Wilhite [3] identified.

In both cases, mainstream values seem to infiltrate the ecovillages. In Findhorn, it came through the buyers of the houses in the Whins. We see a gradual tendency to move closer to mainstream values of individualized lifestyle, albeit close to an intentional community that could serve as inspiration. In Hurdal, it came with the developers and their business model. With weakened values, we see the competences needed for sustainable practices being compromised. As Boyer [18], Roysen and Mertens [19], and Wilhite [3] show, social skills for community living play crucial roles for facilitating sustainable practices such as collaborative consumption, self-sufficiency in food and energy provision, and generating a local economy. With the loss of a common house, the material for sustainable practices is also weakened, for example, communal dinners and a sharing economy. The pattern that emerges when studying the ecovillages' development paths shows the interdependence of the elements of sustainable practices and the dynamic ways that they influence each other. If one element, for example, materiality, takes priority at the expense of the other elements, the very foundation for sustainable practices can be shaken. This may also have implications for how long these ecovillages will continue to be 'communities of sustainable practice'. Future research could expand on such an analysis by measuring the environmental impacts of sustainable practices along the developmental trajectories of ecovillages.

7. Conclusions

This article examined the development paths of two ecovillages by adopting a social practice theoretical approach. The study tracked the physical, social, and economic decisions these ecovillages made in order to expand their practices. Ecovillages continuously negotiate with mainstream values, rules and regulations, and societal expectations of standards of physical structures.

Ecovillages with a robust local economy and social network are better equipped to adopt alternative economic paths in this negotiation, such as financing affordable housing, encouraging social enterprises, and experimenting with new modes of economic activities. However, ecovillages that do not have these resources are forced to resort to mainstream business models where there is the expectation of generating revenues and profit for investors. In this interface, there is a risk that ecovillages can compromise the elements that are essential to maintain sustainable social practices. Materials (in this study, houses and physical infrastructure) become more expensive than what ecovillagers can afford. As a result, these houses are sold in the open market to individuals with resources, diluting the values of simplicity, sharing and collaborative consumption prevalent in ecovillages. This, in turn, leads to the weakening of the social and practical competence needed for these practices. The interdependent nature of the elements of sustainable practices has significant implications for ecovillages interested in expansion and the paths they embark on in this quest.

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Appendix A

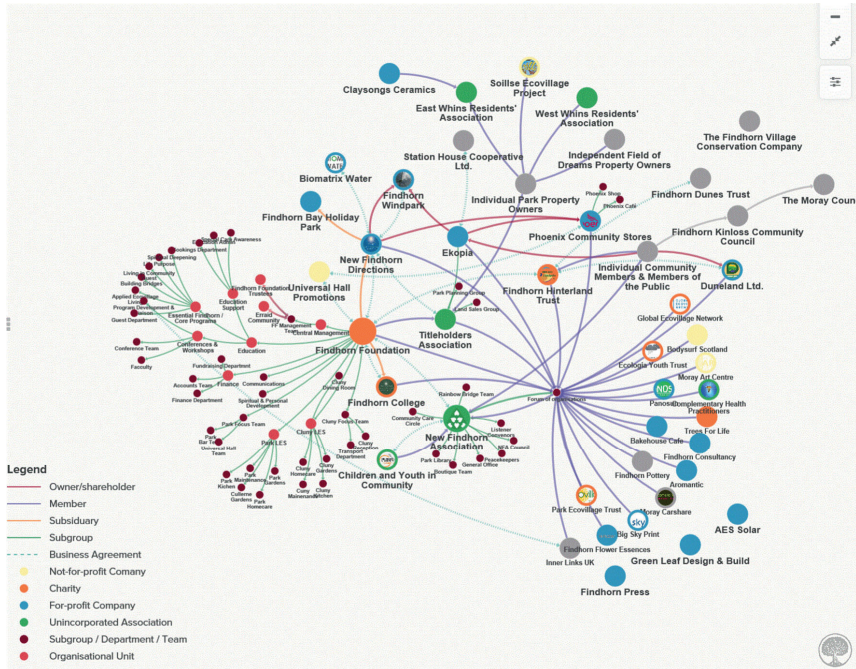


Figure A1. Organizational map of the Findhorn community (source: Findhorn Ecovillage Community [113]).

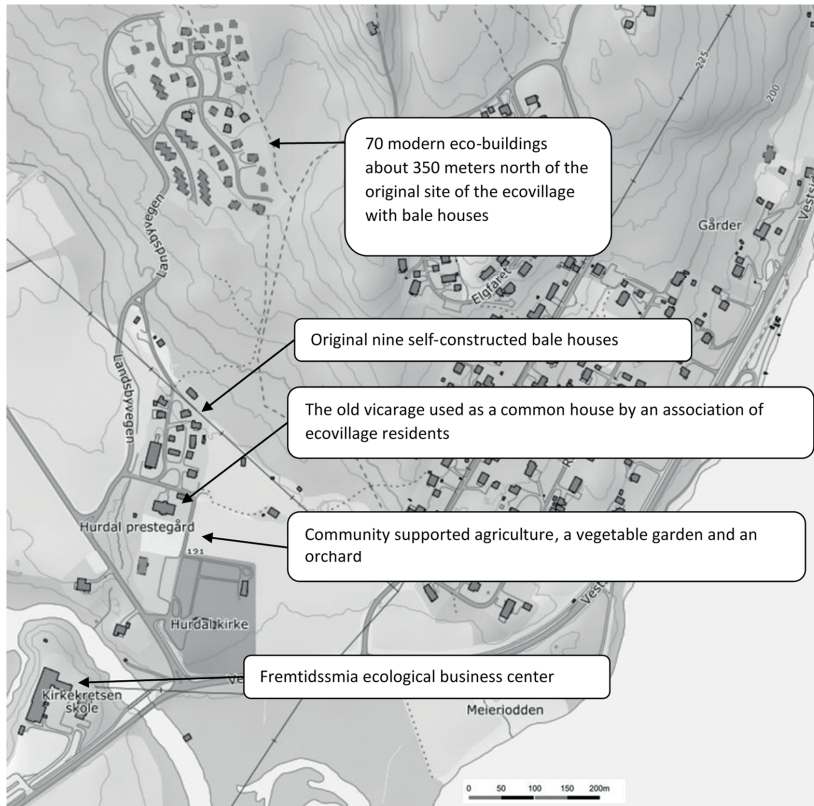


Figure A3. Map of Hurdal Ecovillage (source of background map: ©kartverket/norgeskart.no [115]).

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Human Wellbeing and Local-level Sustainability

Scientific investigations of the drivers of global carbon emissions find overwhelming evidence that international consumption levels, particularly in the affluent Western world, are the strongest determinants driving these emissions. Consequently, Ecological Economics deems the pursuit of unlimited economic growth as both environmentally and socially undesirable. Although technological innovations have had some positive impact, the increase in consumption and (to some degree) population have outstripped the benefits of technological change. As a result, there are growing calls for exploring ways of securing human wellbeing while reducing resource throughput.

Local-level sustainability initiatives are important in investigating ways of combining wellbeing and sustainability objectives as they have a strong potential to encourage a change in behaviors, norms, and practice. My findings suggest that one of the first and important processes local-level initiatives can engage in to attain the twin goals of wellbeing and sustainability is to clarify their foundational principles, and if necessary, initiate a change towards those principles that contribute to human flourishing within social and ecological boundaries. The following are suggested shifts in foundational principles: from the focus on unlimited economic growth to human wellbeing, from atomistic competition to relational cooperation, from instrumental to inherent values, and from mechanistic to organic worldview. By developing institutions, organizations, and infrastructures in alignment with the above shift in foundational principles, they can also contribute to the success of their initiative. My findings suggest that affordable housing and infrastructures, strong community relations, institutions for conflict resolution and communication, non-commercial and affordable shared spaces, and a slower daily pace are among the most important factors in this process.