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The use-impact relationship of outdoor-tourism in Denmark

How the Tourism Carrying Capacity can develop tourism instead of
keeping it on lock



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Abstract

With the ever increased focus on sustainability and not least the focus on sustainability in the tourism industry this thesis has critically investigated the suitability of the Tourism Carrying Capacity method in a Danish outdoor-tourism context. The research found that there are considerable limitations and challenges to implementing a TCC approach in Denmark, and even *if* implemented, legally, culturally and practically circumstances would challenge a proper and successful completion of a TCC approach too. In order to overcome these limitations and challenges, interviews with various outdoor-tourism actors in Denmark were conducted with the aim and purpose to find out what planning, development and management methods are then suitable for facilitating sustainable outdoor-tourism practices in Denmark. The research found that more scientific research about the use-impact relationship between tourism and nature in a Danish context is needed. Evidence based knowledge is key. Also an integrated approach between recreation and environmental management literature is needed in order for the future development of outdoor-tourism in Denmark to be sustainable. There is a lack of understanding the environmental management in a recreational perspective which could benefit the sustainable development of outdoor-tourism. The research found that in a Danish context there is a need for more stakeholder involvement in the process of indirect planning approaches like site development for outdoor-tourism purposes as well as such inclusion could lead to increased possibilities for more direct visitor management. The municipalities in Denmark as the responsible actor should be conscious of their obligation in regard to facilitate and encourage to more inclusion of various stakeholders such as national Non-Governmental Organizations, local associations and private businesses in order to be able to facilitate to sustainable outdoor-tourism practices.

Keywords: tourism management; destination development; environmental planning; tourism impact; sustainability; outdoor-tourism

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List of abbreviation

Abbreviation	Definition
CC	Carrying Capacity
DMO	Destination Management Organisation
INUT project	Innovation og Udvikling af bæredygtig bynær naturturisme
LAC	Level of Acceptable Change
NGO	Non-Governmental Organization
TCC	Tourism Carrying Capacity
SDG	Sustainable Development Goals
UNWTO	United Nations World Tourism Organization

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Left: Henning Larsen. Source: <https://www.tv2nord.dk/coronavirus/skagboere-om-turismekritik-fjendtligheden-er-mest-et-udtryk-folk-er-bange>

Right: Marcuss Meissner. Source: <https://www.atlasobscura.com/places/grenen>

The use-impact relationship of outdoor-tourism in Denmark: How the Tourism Carrying Capacity can develop tourism instead of keeping it on lock

1. Introduction, research question and problem area

Worldwide, planning for and management of outdoor-tourism follows the United Nations World Tourism Organization's (UNWTO) definition of the Tourism Carrying Capacity (TCC):

“The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction.” (University of the Aegean, 2002: 30 box 27)

Many tourism destinations have already applied such limitations and the latest tourist destination to follow these guidelines is the Mont Blanc Mountain in France, where the French president, in order to save the mountain from degrading due to increased tourism, will limit the number of tourist that visit it (CNN Travel, 2020). However, both recent literature and case studies show that this approach is only having limited effect and is not fulfilling the desired aims of protecting the environment. Therefore, the aim of the present research is to critically investigate the suitability of the Tourism Carrying Capacity concept in a Danish context.

In Denmark, the knowledge currently used for plan, develop, manage and analyze outdoor-tourism is built on a relatively sporadic base, and the development of outdoor-tourism is therefore often based on intuition and own interests (Dansk Kyst og Natur Turisme, 2019). This there are many and various reasons for: the nature in Denmark is not a danger to the users and it is not as unique and fragile compared to other places, which is why a strong regulation of one's whereabouts in nature is not as necessary as in other places. Furthermore, there is no strong outdoor-tourism tradition in Denmark, as tourists are mostly interested in the historic buildings and the culture, rather than the nature. Therefore, the Danish Coast- and Nature Tourism organization, an independent trader trust fund and developer of outdoor-tourism in Denmark is the sender of an action

plan for Danish outdoor-tourism and draw focus on the development of outdoor-tourism in Denmark and wish that the future development of outdoor-tourism shall happen with respect for nature. According to the Action Plan for Outdoor-Tourism in Denmark 2020-2022, the base of knowledge regarding outdoor-tourism in Denmark is limited. It points at the problem that there exists little data related to the demand of outdoor-tourism in Denmark as well as the information about the practices of visitors in relation to outdoor-tourism is sparse, due to the reasons mentioned above (Dansk Kyst og Natur Turisme, 2019). The action plan is the first time that sustainability is mentioned in outdoor-tourism planning and management in a Danish context, which is why this thesis wishes to contribute with an approach to the outdoor-tourism planning, development and management in accordance to the action plan: with respect for the nature. Therefore, this thesis contributes with approaches to develop, plan and manage the future outdoor-tourism in Denmark, and does not focus on other places. This as it is not relevant to compare other places with Denmark, however, other places will be used for reference, but not as direct comparison. With the increased global focus on sustainability and outdoor-tourism as a rather novel development field in a tourism context in Denmark, also the Danish outdoor-tourism business needs to look at how to become sustainable.

Since both the recent literature and cases from all over the world point at the limitations of using a TCC approach as defined by UNWTO, this thesis will follow a critical investigation of the TCC concept and through that detect methods that are most suitable at facilitating sustainable outdoor-tourism practices in a Danish context. The purpose of this research is to avoid that the future development of outdoor-tourism in Denmark is based on approaches not suitable in a Danish context. Therefore, the aim of this thesis is to address the problems of the use-impact relationship in Danish outdoor-tourism and contribute to one of the concrete actions suggested in the action plan: to find out what methods are suitable for analyzing, planning, developing and managing the tourism impact on nature areas used for outdoor-tourism in Denmark. This is done by analyzing empirical data conducted through qualitative interviews with outdoor-tourism actors in Denmark. By using a thematic analysis, this thesis has found that the TCC approach is not suitable in a Danish context. The research has identified challenges that limit the implementing of a TCC approach in a Danish context and thus found out how the limitations furthermore are challenging the implementation of sustainable

tourism practices in Denmark. This thesis has then, through a critical approach to the TCC method, found out how to overcome the identified limitations to be able to facilitate sustainable outdoor-tourism practices and based on the data suggested other planning, development and management strategies that are suitable in a Danish context. At last the bigger perspective of the implications of rejecting the TCC method and when and where the application of TCC can be useful will be discussed.

1.1 Problem statement and research questions

The aim and purpose of this thesis is to contribute to find out which methods are suitable for facilitating sustainable tourism practices in Danish outdoor-tourism planning, development and management. It does so by addressing the following research questions:

How can a critical investigation of the Tourism Carrying Capacity (TCC) concept as it is used in outdoor-tourism planning, development and management facilitate sustainable tourism practices?

In a Danish context, what are the limitations of using a TCC approach, and how can a critical approach to these limitations be overcome and thus facilitate sustainable tourism practices?

The carrying capacity concept is a method used to analyze tourism impact on nature and the environment and is one of the most frequently applied methods. It consists of finding or identifying the number of people there can be in a given area and which not to exceed on an annually, yearly, seasonally, monthly, weekly or daily basis in order not to degrade the environment. According to United Nations World Tourism Organization (UNWTO) the Tourism Carrying Capacity (TCC) is

“The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction.” (University of the Aegean, 2002: 30 box 27)

In the UNWTO's definition of Tourism Carrying Capacity (TCC) there is a so called 'magical number' not to exceed. Llausàs (2019) describes this 'magical number' as the core of a conventional perspective on natural area and resource management by policymakers and by Washburne (1982) it is called the traditional approach. As this concept is one of the most well-known and widely used concepts in tourist destination management all over the world, this thesis will find out if a TCC approach is a suitable approach for outdoor-tourism planning, development and management and if it is able to facilitate sustainable tourism practices in a Danish context.

1.2 Problem area

The tourism industry is predicted to have reached a year-on-year growth rate of 3,9% in 2025 and by then be worth USD 11,382 Billion (Market Watch, 2019). Copenhagen alone has 8,8 million cruise guests, couples on extended weekend stay and the family of four on round-trip in Scandinavia – all tourists (The Local dk, 2019; Statista, 2019; Wonderful Copenhagen, 2019). The problems arising from tourism are many and span wide: Bramwell and Lane (2008) estimate, that it is not solely the released CO₂ from tourism that constitutes unsustainable tourism. It is a regular environmental crisis spanning over social exploitation of workforce, tourist leaving plastic footprints and flora and fauna being abused or disturbed for the fun and attraction of the tourism business that makes up an unsustainable industry (Bramwell and Lane, 2008). These problems are defined as the impact, tourism is evoking in the places it occurs: tourism impact.

Throughout times there have been many approaches on developing, planning and managing tourist activities, and since the Rio Earth Summit in 1992, it has also become a matter of how sustainable the business is (World Travel and Tourism Council, World Tourism Organization, Earth Council, 1995; World Travel and Tourism Organization and International Hotel and Restaurant Association, 1999). With the 2019 Sustainable Development Goals (SDGs) directed by the United Nations, the tourism business needs to develop itself towards an even more sustainable direction and target 12.b of the SDGs has the goal of “*Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and*

products” (Inter-Agency and Expert Group on SDG Indicators, 2016). Therefore, also the Danish tourism business is looking into more suitable ways to monitor sustainable development impacts for sustainable tourism, amongst that through the Action Plan for Outdoor-Tourism in Denmark 2020-2022 (Dansk Kyst og Natur Turisme, 2019). However, as already mentioned, more research of the impact of outdoor-tourism in a Danish context is needed, as outdoor-tourism is not as developed in Denmark as other places in the world. As the action plan for outdoor-tourism in Denmark 2020-2022 is the first step towards a more sustainable approach of outdoor-tourism development in Denmark, therefore, it is crucial that the development of this rather novel field is done in a sustainable manner from the beginning. On this background, the purpose of this thesis is to address the challenge of the use-impact relationship and to find out what methods are suitable for analyzing, planning, developing and managing the outdoor-tourism in a Danish context and thus facilitate sustainable tourism practices.

2. Theoretical scope and analytical framework

In the following section the theoretical scope is presented. First, I introduce the field of recreational ecology that provides the theoretical angle from which the research questions will be highlighted. Some general concepts within this field and the more specific concept of tourism impact are presented. A more thorough introduction to the main method of this thesis, Tourism Carrying Capacity (TCC), is given through a historical rundown of the concept, followed by the critical investigation. At last planning, development and management approaches aimed at facilitating sustainable tourism practices are presented.

2.1 Theoretical scope: recreational ecology

The theoretical scope chosen for this thesis is ecology. Ecology spans wide from political ecology to feminist ecology, for this thesis it is chosen to work within the field of recreational ecology, which by Christopher Monz, Catherine Pickering and Wade Hadwen is defined as: “... *the study of the environmental consequences of outdoor recreation/nature-based tourism activities and their effective management*” (Monz et al., 2013: abstract). Their journal article from 2013, highlights the global importance of the use-impact relationship caused by anthropogenic disturbance on nature and has

based on reviews of several texts within the field concluded that “*Management decisions should not be based on any one factor (eg limiting use numbers).*” (Monz et al., 2013: 445). It is this view that will be pursued in this thesis.

Within the field of recreational ecology, there is a strong focus on protected areas, as Monz et al. (2013) and McCool and Moisey (2001) emphasize and also in the quantitative literature by Daminda Sumanapala and Isabelle D. Wolf (2019) they discover that even though there in the researched articles was a strong, necessary and useful focus on protected areas: “*However, research on tourism and recreation impacts and management external to these areas is also required.*” (Sumanapala and Wolf, 2019: 8). Therefore, as the nature areas in the empirical context are not protected areas, they fall into the research category of recreational ecology. Furthermore, within the 145 journal articles Sumanapala and Wolf analyzed they found that the most used keyword was ‘tourism impact’ which frequented in 19,4% of the journal articles, and keywords like ‘nature based tourism’ and ‘management’ where in the top three of most used keywords (Sumanapala and Wolf, 2019). Therefore, I have chosen the concept of tourism impact management for nature based tourism (here referred to as outdoor-tourism), as this angle appears to be working very well within the theoretical scope of recreational ecology.

2.2 *Tourism and recreation*

As the theoretical angle is recreational ecology, some definition of respectively recreation and tourism is needed. The two concepts are closely connected, covering activities primarily practiced in people’s free time, time off work or leisure time (Lexico, Oxford Dictionary; United Nations World Tourism Organization). Tourism and recreation can cover the activity being practiced, the person practicing the activity and the site where the activity is practiced; the difference lays in *where* the activity is practiced.

Recreational activities referrers to any activity that amuses, practiced in any setting (Lexico, Oxford Dictionary), whereas tourism are activities primarily done in settings away from the visitors home and which includes an overnight stay (United Nations World Tourism Organization). Being away on holiday and playing golf would be considered an act of practicing tourism whereas practicing golf every Thursday after

work would be considered an act of recreation. A person therefore playing golf on his or her's vacation is a tourist (visitor with an overnight stay), whereas a person practicing golf in the local golf club every Thursday is a recreationist (United Nations World Tourism Organization). The person playing golf on his or her's vacation is of course practicing a recreational activity, but the difference lies in where and for how long he or she is doing it, which is why a person with overnight stays away from home is considered a tourist.

Sites used for respectively tourism and/or recreation can also be defined depending on use. A tourist site would most likely be a place or an attraction where the main activity and purpose is to visit the site itself e.g. The Statue of Liberty in New York City, whereas Central Park, also in New York City, also can be used for other activities than solely visiting the park itself; many people come here for engaging in sporting activities and other recreational activities.

In the frame of the recreation ecology angle, both tourism and recreational activities are considered doable on the sites referred to in this thesis. That is due to the natural circumstances of the included sites in the empirical context as being public land accessible both for the local mountain-bike club and tourists, whose mode of travel is bike vacation. However, one can also be a local tourist – a visitor if not staying overnight - in one's own surroundings, whereas the activity would not be listed as being tourism (but visiting), but one is still using the site for tourism purposes. Therefore, taken the difference between tourism and recreation and the definition of recreational ecology stated in the section above in consideration, the present thesis is working with a focus on the activity practiced and the people practicing them - tourists practicing outdoor activities away from home: outdoor tourism. Regardless if they are international or local tourists (local visitors with an overnight stay), as the branding of the sites is targeted at tourists, and not the local mountain bike or horse riding club (Dansk Kyst- og Natur Turisme, 2019). Therefore, in the present thesis the word use of tourism will be emphasized over the use of recreation.

Outdoor-tourism is defined as activities that are taking starting point in nature surroundings and the experience pursued is for a recreational purpose and not e.g. sporting competition (Newsome et al. 2012). This means that whether the tourists are mountain biking or doing bonfire, it is categorized as outdoor tourism. Other activities

that are characterized as outdoor tourism could be any activity practiced outdoors, but not solely: kayak and canoeing, hiking, biking, horse riding, bonfire and camping, nature experience like bird- and wildlife watching and fishing. Hunting is also an outdoor activity but not an activity promoted at tourists in the present empirical context.

It is necessary to highlight the choice of using recreational ecology as the theoretical framework rather than a tourism framework, even though the emphasis lays on tourists and tourism rather than on recreation. This is due to the view that the activities practiced by tourists are done for recreational purposes, therefore it is the impact of the recreational activities that are at focus. Furthermore, it is the impact imposed by tourists that is at focus, as their recreational activities needs different planning, development and management approaches compared to local recreationists. Also the planning and management for and development of tourism sites and facilities needs various and different approaches than local recreationists do, even though they often use the same sites and facilities.

2.3 Use-impact relationship in a tourism context

2.3.1 What is tourism impact

Tourism impact as it will be used in the present thesis is defined by C. Michael Hall and Alan A. Lew as “ ... a change in a given state over time as the result of an external stimulus.” (Hall and Lew, 2009: 54), however, I want to point to the extended understanding Hall and Lew also present, of tourism impact as being *tourism related change* (Hall and Lew, 2009: 3) which will be taken in consideration when working with the concept.

Monz et al. (2013) but also Newsome et al. (2012) highlight, that the impacts on nature, because of the use of nature areas for tourism purposes, are many: soil erosion and loss, degradation of vegetation, decreased wildlife diversity, general stressed wildlife and loss of habitat. In aquatic systems impact such as nutrient influx, pathogen introduction and sedimentation have been proved to be caused by the presence of tourism (Monz et al., 2013). Impacts stem from outdoor-tourism activities like hiking, biking and camping, mentioned in the former section. A newer, or maybe since time has passed by, more present and severe impact showing in nature areas used for tourism purpose is the presence of litter, especially plastic and general pollution from e.g. cruise

ships (Newsome et al., 2012).

It is widely discussed if by tourism impact, solely negative impact is meant. As McCool and Lime (2001), Lindberg et al. (1997) and Butler (1996) mention, impact is inevitably in (nature) areas where tourism is practiced, but as Newsome et al. (2012), Hall and Lew (2009) and Coccossis and Mexa (2004) state, tourism can also contribute positive to the economic and social circumstances of the place where tourism is practiced and make a positive change for the people, who are employed in the tourism business.

As Hall and Lew (2009) state, impact occurs over time as the result of ongoing external stimulus. In the present thesis, it is the tourism in the form of outdoor activities that is seen as the external stimulus inflicted onto nature areas and which over time creates changes. The changes caused by the activities, as mentioned earlier, can then be positive or negative, however as Wagar (1974), Lindberg et al. (1997) and Cole (2006) argue, impacts only become negative in the sense of damage or degradation with a subjective judgment of what an area ought or used to be. As already stated, impact cannot be avoided, but the established objectives and understandings of the biophysical or social conditions desired, should be taken in consideration when planning for, developing and managing outdoor-tourism. The sources from where the undesired impact stems or the areas where undesired impact occurs can then be managed accordingly. But how do we understand the biophysical or social conditions? By measuring them.

2.3.2 Measuring and analyzing tourism impact

Tourism impact can be measured in several ways, depending on some variables: if the aim is to detect the changes before, during or after the impact is becoming visible, if it is the social or biophysical conditions that are supposed to be measured and at last which type of change or impact that needs to be measured e.g. soil erosion or employment of skilled worker in the tourism business in a given area (Washburne, 1982; Cole, 2006).

Biophysical or social conditions in an area tend to follow a path of consistency until they are disrupted, changes happen and a new stable state is reached (Alexander, 2008). The frequency by which disruptions occur can differ in predictable patterns like over the course of a year in form of e.g. seasons or over the course of an election period

occurring every 4th year. Random events occur like a storm that changes the biophysical surroundings abruptly or the murder of a president causing new political changes before the stable period had reached a new cycle. In most societies, fundamental changes can also happen over a long period of time with small, but consistent changes until the starting point is completely changed. Biophysical areas can also be exposed to protracted changes, e.g. changes occurring from persistent activities in the same area year after year, which is then also changing the starting point into something not recognizable in the end. Measuring the biophysical conditions provides a snapshot of the current state of the area in question, e.g. how the biodiversity is thriving in a specific forest from an objective calculation of e.g. how many diverse animals and plants are found in an area. High or low biodiversity is then seen as an indicator for the biophysical condition in that specific forest. The changes imposed to a given area can then either contribute to, worsen or not have any impact on the biophysical conditions. Whether the impact is positive or negative is still a subjective judgment of a desired state to reach (Wager, 1964; Lindberg et al., 1997; Cole, 2006).

Impacts can be measured at various stages during the process where the changes occur. Undesired or unacceptable changes can be anticipated negative consequences of planned future tourism impact, which means the analyzing, measuring or assessment of the possible impact is made before the changes happen and the impact occur (Coccosis and Mexa, 2004). Then there can be implemented planning, development and management strategies accordingly so that the negative consequences won't even appear.

The second stage to analyze the impact imposed by tourism is when the changes are happening, this process is also called monitoring (Newsome et al., 2012). Here the planning, development and management strategies are beneficial approaches to get a status quo of the current use-impact relationship in an area and assess the problems with the aim of changing policies or facilities to accommodate the eventual negative impacts that have shown weak signs already or which there is reasonable suspect that they might occur in the near future.

The third stage to analyze or assess changes occurring from tourism impact is when it is already too late and the negative impact is already visible and the damage has already happened (Coccosis and Mexa, 2004). Here it must again be highlighted that

damage and negative, undesired and unacceptable consequences of the change are a matter of judgment compared to a desired state; a fallen tree might cause damage to an electric wire but might also create new habitat for certain insects. What positive or negative impact is, is a process of subjective judgment – an analysis rather than an objective measuring.

One part of the recreation ecology literature agrees upon that tourism impact is a result of several variables like tourist behavior, development, management and planning practices as well as site conditions, season of use, the intensity and frequency of activities (McCool and Lime, 2001). The threshold to these changes is not inherent in the physical site, this body of literature argues. The acceptable amount of changes impacted on an area is a judgment made by social, political and institutional dimensions like an area's management objectives, and is furthermore permitted by these qua an area's management obligations (Frissell and Stankey, 1972; Llausàs et al., 2019, Krumpel & McCool, 1997). However, another body of the recreation ecology literature argues the quite contrary, namely that the amount an area will be impacted until unacceptable changes are reached and negative consequences become visible in the nature, is predestined by its physical features (Inskip, 1991; McIntyre 1993, O'Reilly 1986, Saleem, 1994). Proponents of this view are also proponents of using confinement strategies to minimize unacceptable changes (Monz et al., 2013).

Taken the aim of this thesis in consideration - contributing to find out which methods are suitable for facilitating sustainable tourism practices when practicing outdoor-tourism - it is the biophysical conditions and the changes that occur in nature that are at focus. Therefore, the aim is to find planning, development and management strategies which through their design make visitors avoid engaging in practices that changes the nature in a way where negative impact occurs from it. The method chosen to fulfill this aim is the Tourism Carrying Capacity (TCC) as defined by United Nations World Tourism Organization (UNWTO):

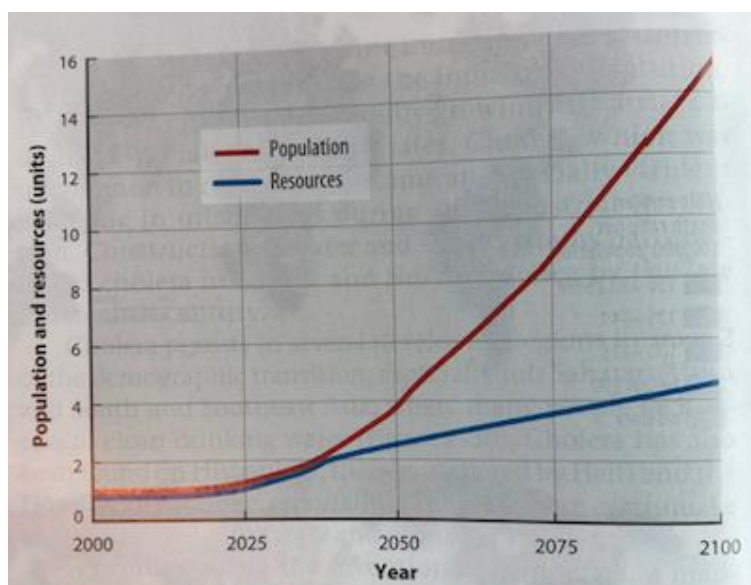
“The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic, socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction.” (University of the Aegean, 2002: 30 box 27)

However, as the research questions state, the method of TCC will be investigated critically to be able to answer them.

2.4 Tourism Carrying Capacity

2.4.1 Previous research

TCC – Tourism Carrying Capacity, is, as the name mentions, a method to measure the carrying capacity - ‘the maximum number of people that may visit a tourist destination at the same time without it having any negative consequences. As already mentioned, one part of the recreation ecology literature argues that any given area has an inherent fixed carrying capacity in form of a number of visitors that is not to be exceeded if not to harm the environment (O'Reilly 1986; Inskip, 1991; McIntyre 1993; Saleem, 1994). The original idea of a carrying capacity, where also the proponents of a fixed carrying capacity of an area stem from, begins with Thomas Malthus and what became the Malthusian theory about the relationship between population growth and resources available, primarily food resources (Seidl and Tisdell, 1999; Butler, 1996). The theory forecasts that the development of the population would exceed the development of food supplies as shown in figure 1:



(Figure 1: Malthus's Theory. Source: Rubenstein, 2017: 66, figure 2-34)

The core idea of the Malthusian theory, developed more than 200 years ago, can however still be found in various versions e.g. the book *The Limits to Growth* published 1972 by Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III. It is built on the same base, namely that the resources of the earth cannot follow the growth rate of economy and population increase.

It was in the 1960's and 1970's after World War II, where recreational activities in the outdoors, especially in the US National Parks increased, that also the focus on the concept of carrying capacity really took on and the field of recreational ecology emerged (Butler, 1996; McCool and Lime, 2001, Llausás, 2019). However, the concept was already known and applied in the first half of the 20th century, where the concept of a carrying capacity emerged in the ecology field with focus on wildlife and rangeland management (Butler, 1996; Washburne, 1982; McCool and Lime, 2001; Seidel and Tisdell, 1999). In each field, whether the focus of the concept has been food-, economic- or natural resources, it was an attempt to point to the fact that resources of any kind were not unlimited. The concept of carrying capacity has since been used wide and far. In the tourism field, the use of carrying capacity also contributes with perspectives on the impacts and effects of tourism in the second half of the 20th century (Butler, 1996; Mathieson and Wall, 1982). Butler (1996) gives a historic rundown of the emergence of carrying capacity in a tourism context where

“ ... research on carrying capacity over the past four decades [1960-1990] have moved from ignoring the topic, to a search for specific numbers, to management approaches based on social and experimental expectations.” (Butler, 1996: 186)

However, both Butler (1996), Lindberg et al. (1997) and Washburne (1982) also point to the fact that the tourism literature is not making too much notice of the carrying capacity concept as well as there is need for an integrated approach between environmental management in the scope of recreational literature and tourism literature in order for the business to become sustainable.

According to Buckley (2012), the term 'sustainable tourism' was first used almost two decades ago. Bramwell and Lane (1993) point to the development of sustainable tourism as a reaction to the negative impacts occurring from tourism activities.

However, in their 2011 paper, Bramwell and Lane point at sustainable tourism development as a solution that is capable of creating positive changes. Sustainable tourism development has many definitions (Zolfani et al., 2015), but is for the aim and purpose of this thesis – to find methods that facilitate sustainable tourism practices and overcome the challenges of the use-impact relationship - sustainable tourism development will be used as defined by the World Tourism Organization:

“Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future. It is envisaged as leading to management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems.” (Cernat and Gourdon, 2007: 1)

Since the new millennium, new literature has contributed to the topic of carrying capacity, often found in the context of sustainability, but still lacking the distinct connection to tourism. Also Buckley’s (2011) review of cross-disciplinary papers with focus on sustainable tourism reveals that the link between sustainable tourism and environmental management is still lacking (Buckley, 2012; Buckley, 2011), just as Butler (1996), Lindberg et al. (1997) and Washburne (1982) also found out more than 20 years ago.

The lack of cross-disciplinary approaches between tourism and environmental management which both Butler (1996) and Buckley (2011) point to is because of the difficult distinction between tourism and recreation. As tourists often use facilities that are also used for recreation, the field is called recreational ecology, but is widely used for tourism planning, development and management. Therefore, a number of books have been published in the 21st century, investigating TCC, often in relation to natural resource planning, development and management approaches, either in a recreation or tourism scope: Coccossis and Mexa, 2004; Alexander, 2008; Hall and Lew, 2009; Newsome et al., 2012. Also journal articles, often with a case study such as Salerno et al., 2013; Llausàs, 2019; Simón et al., 2004 have contributed to the field. They all belong to the body of literature that support a critical approach to TCC, and argue for a more dynamic use of the concept. This thesis is aiming at contributing to the vague

cross-disciplinary field of tourism and environmental management in the scope of recreational ecology literature.

The body of literature supporting the fixed understanding of an area's carrying capacity with the search for a specific number, has not had as much power in the 21st as in the 20th century. However it is supported in some case studies e.g. Zacarias et al., 2011; Kurhade, 2013 and in recent years, several destinations have implemented a visitor regulating approach to remedy the increasing tourism pressure which the destinations were facing, e.g. Mont Blanc in France, the Machu Picchu Trail in Peru and Lord Howe Island in Australia (CNN Travel: 2019.A; CNN Travel, 2019.B; United Nations Educational, Scientific and Cultural Organization, 2017; Danish Radio, 2020; Lord Howe Island - 25 years of World Heritage Listing; UK Antarctic Heritage Trust, 2020). Even the official assessment approach of TCC by UNWTO entails the use of a static number to overcome the impact that occurs from tourism activities. Therefore, it sparks a wonder, why in the real world, the view on managing tourism impact by limiting numbers of visitors to a certain area thrives, when much literature suggests otherwise. Therefore, this thesis will critically investigate if the TCC approach is the most suitable approach, and if not, the research shall be able to answer the first research question and find planning, development and management approaches that then facilitate sustainable tourism practices in Denmark and thus hinder that the future outdoor-tourism development is making use of an approach not suitable for the Danish context.

2.4.2 Finding the magic number

The use of a TCC approach as suggested by UNWTO is finding or defining *the* number of visitors that a destination can carry without the destination being damaged (University of the Aegean, 2002: 30 box 27). This 'magical number' as Llausàs (2019) calls it, is found by measuring the level of acceptable change¹ for the respectively sphere where the change occurs: environmental/biophysical, economic or socio-cultural. Each sphere has its own carrying capacity and for this thesis the focus will only be on the

¹ Level of acceptable change is a method in itself called LAC. However, the difference between LAC and CC, is that LAC does only point out the level of acceptable change, whereas carrying capacity, when applied, points at the approach to apply so the level of acceptable change is not exceeded. LAC is therefore the measurement behind CC, and CC is then the applied method to the problem that LAC points at.

environmental/biophysical carrying capacity, whereas the other two spheres are left out. However, it must be noted that each biophysical environment needs its own carrying capacity assessment, as each ecosystem (mountain range, coastline, lake, forest) has its very own preconditions, and furthermore, no two coastlines or mountain ranges have the same preconditions (Lime, 1970; Alexander, 2008).

According to Washburne (1982), the first step of calculating a traditional carrying capacity, is that the current condition of the respectively area is determined: what is the wildlife population, how is the top-soil layer, what kind of vegetation is found where. Also pollution can be measured: how much litter is found on the beach, in the lake or in the forest. Is the ocean or lake polluted with particles from sunscreen and oil from boats? These are not only the indicator of the current condition of the area but are also the indicators for change and should preferably be made on objectives and a scientific background (Washburne, 1982; Lindberg et al., 1997; Cole, 2006). Then, the level of acceptable change and the desired condition for the environment is detected: how much can each indicator (top-soil layer, wildlife population, vegetation and amount of litter and pollution) change before the environment is altered into an undesired condition? Any change that exceeds this level is then determined as negative change or unacceptable change, as the desired condition is then altered into something undesired. Here, it must again be emphasized that this process is a subjective judgment (Washburne, 1982; Lindberg et al., 1997). It is a subjective evaluation of which indicator(s) and condition(s) to prioritize when developing tourism in nature areas (Frissel and Stankey 1972; Krumpel and McCool 1997). Preferably, all indicators were to take in account for, so that the conditions for everything were the most favorable, and the tourism practiced could be sustainable (Cole, 2006, Marion, 2016). However, that is rarely possible. After determining the current conditions, which for a great part is a scientific measurement, and determining the desired conditions, which are a subjective judgment, it is calculated how much impact it would take before the biophysical conditions are altered into a level that is not acceptable. The impact source must however also be taken in consideration: what type of activity is practiced in the area or is planned to be practiced in the area; Hiking causes a very different type of impact compared to mountain biking and also the frequency and intensity of the activity needs to be taken in consideration: is the activity practiced once every other week or several

times a week? (Olive and Marion, 2009). When that is determined, the number of people practicing an activity can be set accordingly low so no negative impact occurs (Washburne, 1982; Lindberg et al., 1997).

2.4.3 Critical assessment of Tourism Carrying Capacity

The carrying capacity method in the recreation ecology field emerged as a reaction to the beginning societal awareness on unsustainable environmental practices in the 1960's and 1970's (Butler, 1996; McCool and Lime, 2001). It was an attempt to point to the fact that resources were not unlimited and since, the concept has been transferred and applied in a tourism context. The goal when TCC is applied today is still an attempt to overcome unsustainable environmental practices, however, the critical argument is that this attempt is not overcoming the root of the problem. Mathiesen and Wall (1982) argue that there is “... *need for a clear and precise statements of goals and assessments of the extent to which the goals are realized*” (Mathiesen And Wall, 1982: 21). The goal of applying TCC is to bring down the undesired, unacceptable and negative impact on nature in areas where outdoor-tourism is inflicting such. However, if the goal is to protect the environment, the method used should aim at what is actually degrading the environment; the practices of the people, not simply the presence of the people (Lindberg et al., 1997; Washburne, 1982). The argument goes as follow: if there are 200 tourists in an area, and an assessment of the current state and condition of the area find that there is too much litter, too much trampling on the vegetation and too much noise that scares the wildlife in that area, an application of TCC would imply that the impacts were to diminish if only 100 people were allowed. This because 100 people litter less, tramples less and makes less noise than 200 people. The problem may be solved by allowing less people. But what if the problem is still too severe: there is still too much litter, too noisy and too much destroyed vegetation. Reassessing the problem and again using the TCC method would again imply to allow less people. As it has been argued, impact will occur wherever people are, which means that eventually no people will be allowed in the area because then no littering and destroyed vegetation will occur as well as no noise will scare the wildlife, which is what the goal was: to protect the environment (Lindberg et al., 1997, Washburne, 1997). The goal is now realized, as Mathiesen and Wall (1982) argue. But this will eventually result in tourism becoming

extinct as nobody wishes to degrade the environment and eventually an upper limit of 0 people will be the reality in all tourism destinations, as simply the present of people, according to the TCC approach, is the problem. However, a critical assessment of this thought of line argues that it is not the simple presence of the people that is the problem, it is their practices (Lindberg et al., 1997; Olive and Marion, 2009). So instead of just limiting the number to eventually zero, why not work with the root of the problem, the practices of the tourists? An example could be that a destination has experienced a line of severe negative impact with the increasing amounts of guests. They decide to do something about the problem and limit the accepted number of visitors, logically the TCC approach implies that this must also limit the negative impact. But even if only 3 persons were allowed, how will the application of a TCC approach ensure that these 3 persons allowed were not the once who were imposing the entire negative impact through their (unsustainable) practices.

Therefore, this thesis argues that a critical assessment of the TCC method within outdoor-tourism planning, development and management approaches will facilitate to far more sustainable tourism practices than just limiting the number of visitors will. It is the critical assessment of whether a TCC approach is the most suitable method for accommodating the undesired, unaccepted and negative impact which gives room for other types of planning, development and management strategies that allows the development of outdoor-tourism to facilitate sustainable tourism practices. Therefore, this thesis argues, that if left room for it when knowing the negative impact amount and source, the planning, development and management strategies pursued in outdoor-tourism development can design their strategies in such manner that the tourists avoid engaging in practices that degrade the environment. However, it must be noted that there are places and situations where an application of a TCC method *is* the most sustainable approach. This will be discussed later. But a TCC approach and the magic number cannot be taken as the only and most suitable method therefore, a critical assessment of each individual case is needed. In a critical assessment of TCC lies not only the necessity of rejecting the method of a magic number. It is the thought that 1) no environment is static and that 2) no environment is similar and needs specific and individual assessment (Lindberg et al., 1997; Lime, 1970; Alexander, 2008). The second

critique has already been touched upon as a general criterion when measuring impact, therefore, the first critique will be elaborated briefly.

The critique addressed by proponents of a critical approach towards the TCC method entails that environments are not static, they change throughout the course of a year, most likely following the seasons, not only requiring an individual place and activity assessment, but furthermore also requires a more dynamic approach in terms of different planning and/or management strategies throughout the course of a year (Marion, 2016; Olive and Marion, 2009; Alexander, 2008). It is emphasized by Cole (2006), that such comprehensive assessments of a tourist site both accordingly to the season, the type and intensity of the activity or activities as well as the various places the activities might be practiced is a costly job, both knowledge wise and economically, whereas the easy solution is to just limit the number of visitors and hope for the best.

3. Planning, development and management approaches

As this thesis addresses the problems of the use-impact relationship in Danish outdoor-tourism planning, development and management and proposes a critical assessment of the TCC method, other methods need to be addressed in order for the outdoor-tourism planning, development and management approaches to facilitate more sustainable tourism and a few approaches will be presented in the following. However, for the planning, development and management strategies to be sustainable, they must meet the criteria of sustainable tourism: “*Sustainable tourism development meets the needs of present tourists and host regions while protecting and enhancing opportunities for the future*” (Cernat and Gourdon, 2007: 1). Each planning, development and management approach must take the local circumstances in consideration and develop, adapt and adjust the approaches with respect for the local needs. Therefore, this chapter only point to some general approaches that facilitate sustainable tourism practices, the empirical analysis will reveal the specific needs and possibilities within the greater aim and scope of the present thesis.

Planning and management approaches can, according to Newsome et al. (2012) take shape as direct or indirect management and as management and planning of the sites or of the visitors:

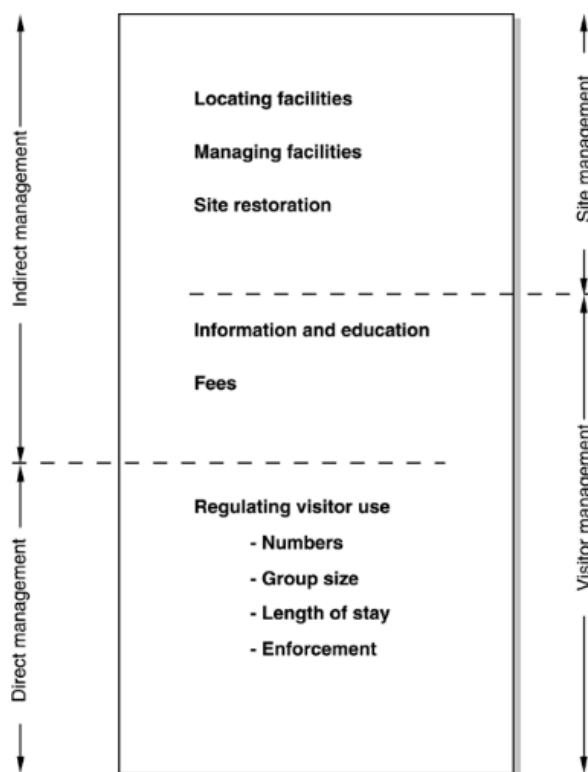


Figure 5.3 Common ways of classifying approaches to managing visitors to natural areas
 (Derived from Lucas, 1990a; Hammitt & Cole, 1998)

(Figure 2: visitor management approaches. Source: Newsome et al., 2012: 256, figure 5.3)

Taken the argument of the present thesis in consideration - addressing tourism planning, development and management through policies and approaches that address problems and not symptoms – this thesis also view the possibilities of indirect site- and visitor management as presented in figure 2 as the most beneficial. The argument rejects the direct management approach of visitors through regulating visitor use as figure 2 suggests.

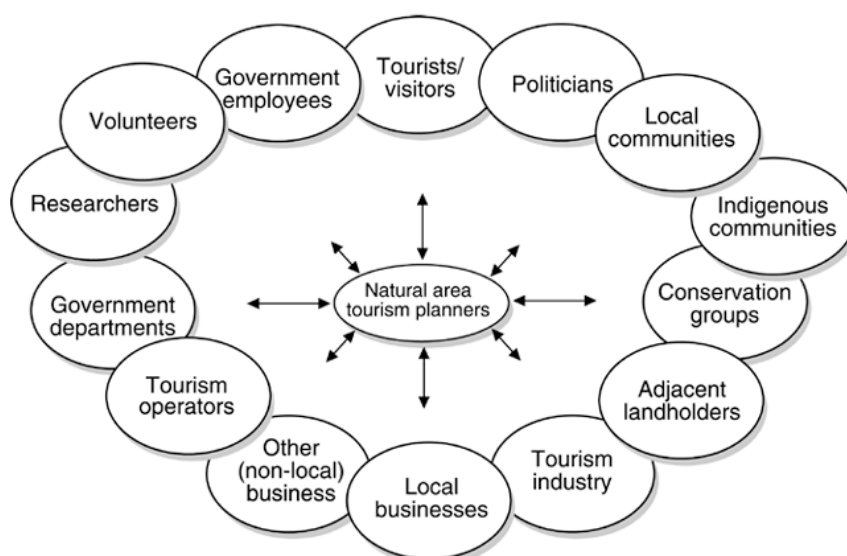
Hall and Lew (2009) point towards the complexity of the sustainable tourism industry, and also point at the difficulty of addressing the development of such tourism from one point of authority. They point to the same approaches as Newsome et al. and add a dimension of supply and demand approaches (Hall and Lew, 2009). Supply approaches manage the tourism resources (site management) and demand approaches

manage tourists to increase or decrease their numbers or change their behavior in relation to travel and tourism (visitor management). Hall and Lew suggest that this type of planning and management is done from the local government or local planning/management authority which are at national or regional level, compared to approaches from the international, global or supranational level, where few agreements or regulations plan, develop and manage tourism activities directly. This is due to the 'soft' regulation policy such as suggestions and guidelines which supranational authorities exercise compared to the possibilities that national or regional levels have to exercise 'hard' rules and regulations (Lew and Hall, 2009).

Indirect site management or supply approaches consists of managing the sites and facilities e.g. trails and roads, built accommodation and other facilities like toilets as well as riverbanks and coastlines (Newsome et al., 2012). The sites and facilities need to be plenty enough to accommodate the demand and furthermore be accessible to be attractive and the concentration or dispersing of them also needs to be proportioned right in order to complete the aim of not degrading the environment and being environmentally sustainable (Hall and Lew, 2009).

Direct visitor management according to Newsome et al., includes the traditional application of TCC – limiting the impact through limiting the visitors. But the demand approach to visitor regulation as Lew and Hall present and the indirect visitor management approach presented by Newsome et al. are targeting the practices of the visitor, both through education and information through guidelines and regulations, rather than limiting the numbers through a TCC approach.

Newsome et al. (2012) also point at a development approach that doesn't include the authorities as primary actor, like the planning and management approaches do in the above-stated. They point at the possibility that various stakeholders are also to be included in the planning, development and management process of natural areas used for tourism purposes:



(Figure 3: possible stakeholders in outdoor-tourism planning. Source: Newsome et al., 2012: 203)

Figure 3 shows the various stakeholders that natural area tourism planners can work together with. One of the benefits of using a stakeholder involvement approach is the acceptance and understanding of e.g. the local community that can be obtained through their involvement as well as the expert knowledge of some of the local stakeholders can also be beneficial when planning, developing and managing outdoor-tourism (Newsome et al., 2012). Failure to include local stakeholders could be an obstacle to the work the natural areas tourism planners wish to execute, moreover, a lack of including them could lead to false approaches, as the natural area tourism planner acts like an expert but might fail to fully understand the local circumstances.

4. Methodology

In the following the methodology for the present thesis is presented. The research design used for collecting the empirical data is presented, as well as an introduction to the target group and the questionnaire used to execute the interviews is given. Some reflections about the choices will also be presented. At last the method for executing the analysis; thematic analysis is demonstrated. The methodology is a realist epistemological paradigm, as this thesis seeks to represent the reality of the interviewed

informants in regard to the researched field, as it is the aim and purpose of the present thesis is to contribute to the lack of knowledge regarding the use-impact relationship in a Danish outdoor-tourism context.

4.1 Research design

4.1.1 Target group

To be able to answer the second research question: *In a Danish context, what are the limitations of using a TCC approach, and how can a critical approach to these limitations be overcome and thus facilitate sustainable tourism practices?* I have conducted interviews with various actors who in one or another way have to do with the planning, development and management of outdoor-tourism in Denmark. Therefore, the informants represent different organizations within the tourism and/or outdoor field in Denmark: a tourism planner from the Danish Coast and Nature Tourism Organization, a forest ranger at the Danish Nature Agency, a project leader for Danish Nature Parks from the Danish Outdoor Council, a nature disseminator and organization consultant from the Danish Nature Protection Organization, three tourism researchers from the INUT project initiated from Roskilde University, a tourism chief from Visit Århus, a tourism researcher from Southern University Denmark and a tourism business executive from Destination Bornholm. In total 10 people were interviewed.

The Danish Coast and Nature Tourism Organization, an independent trader trust fund, has developed the action plan for Danish Outdoor Tourism 2020-2022 and are both contributing with knowledge and funding to the development of outdoor-tourism in Denmark. The Danish Nature Agency, a state-owned agency, has executed some tourism initiatives around Denmark on the state-owned areas. The Danish Outdoor Council, a Non-Governmental Organization (NGO) interest organization, are initiating activities in the nature and fund initiatives, however, their executive role in the planning and developing phase is rather limited. The Danish Nature Protection Organization, a NGO interest organization, is the voice of the nature. They have a strong opinion on where to develop outdoor-tourism due to their role as nature protector. Participants in the INUT project initiated by Roskilde University have together with an architect company initiated sustainable tourism in two nature parks. The Southern University Denmark has done a great deal of research within the tourism development in Denmark.

Visit Århus and Destination Bornholm represent the business ‘voices’ of the tourism industry in Denmark and are having close cooperation with the municipalities as well.

The above-mentioned organizations represent the various actors who in one or another way have to do with outdoor-tourism and development in Denmark: interest organizations (NGOs), private and state owned companies. Talking to them will provide the necessary insight into the complex problem of the outdoor-tourism use-impact relationship in a Danish context.

4.1.2 Questionnaire

I executed an open questionnaire phone-interview with a planner from the Danish Coast and Nature Organization as the first step of accessing the problem area. From that I developed the final questionnaire with which to interview the rest of my informants. I use an open questionnaire with some key questions that I ask all the informants, but I will also be able to ask questions that are not planned for if they tell me something of importance or interest. This gives me the best possible outcome as I get an answer from everybody on the key questions but I will also be able to pursue information that my informants find relevant for the topic. See appendix 1B for the full questionnaire in English. The interviews are conducted in Danish as that is the first language of both interviewer and informants and this gives the informants the possibility of expressing themselves to the fullest and without language barriers. The interviews were supposed to be conducted in person at a place that suit the informants and was set to take approximately 1 hour. However, due to the health situation in Denmark at the time the interviews were to be conducted², all interviews were executed by phone instead of a personal meeting. A limitation of phone interview is the disadvantage that it cannot be recorded as a live interview can. However, informing the informant beforehand that the interviewer would write everything possible down on computer while executing the interview made the informants give some small pauses in their talking and asking the informant to repeat a sentence was not an insult of not listening. Since the interviews were not recorded, I have chosen not to include quotes from the interviews. As I only have my own handwritten notes it is a weak and invalid data source for direct quotations

² The global pandemic of the Corona virus causing Denmark to introduce a national lock-down to hinder the spread of the virus made it prohibited to meet the informants in person

and it would not represent the informants correctly. Therefore, the analysis will lack direct quotes.

4.1.3 Reflections

The informants are contacted in person through an e-mail directed at them personally (see appendix 2B for the English version), however the e-mail also asks that if they are not the correct person to please redirect the e-mail to the person they think will be appropriate. The reason for choosing to contact the potential informants directly by e-mail instead of a general social-media search is because the researched questions need to be put in a professional context. Therefore, it was chosen to narrow the potential informants to few experts, contacted directly, instead of a wide spread social-media or word-to-mouth search, as the chances of getting to the right people would be rather unlikely through that method.

Already in the first e-mail sent to the informants, they were informed about that the interviews would be recorded, but that they as a person would be anonymized. However, they were also informed about that it is necessary for the understanding of the thesis to know which organizations were participating, and that it therefore is not possible to anonymize which company or organization has participated. A possible limitation by choosing this approach is that some informants might not want to participate if their participation cannot be fully anonymized.

Due to the health situation in Denmark at the time the interviews were to be conducted the interviews were executed over phone and the recording of the interview was therefore not possible. The interview was as far as possible written down while talking to the informant. The limitation of not having a record of the interview is the possibility for lack of precise information as the interviewer was not able to write as fast and get every detail and therefore there can be certain impreciseness in the written notes. Therefore, the analysis will also lack direct quotes, as the data material is too imprecise for using direct quotations. The informants get the text where they are mentioned beforehand to approve what has been written, in that manner the impreciseness of the notes is overcome to a certain point.

4.1.4 Thematic analysis

For the analysis of the conducted empirical material it has been chosen to use the thematic analysis as presented by Braun and Clarke (2006). It involves the searching across the conducted material - data - which in the present thesis consists of a number of expert interviews, with the purpose to find repeated patterns of meaning and divide the findings into themes that represents the patterned response within the data (Braun and Clarke, 2006). As the informants are experts in the researched field, the analysis will be executed from the realist epistemological paradigm, which reflects experiences, meanings and the reality of the informants (Braun and Clarke, 2006). Therefore, the themes are identified at the semantic level, where the data is organized to show patterns in order to theorize the significance of them, their broader meaning and the implications of them in relation to the researched question (Braun and Clarke, 2006). In the present thesis, the researched question which the analysis of the data shall answer is: *In a Danish context, what are the limitations of using a TCC approach, and how can a critical approach to these limitations be overcome and thus facilitate sustainable tourism practices?* Therefore, the themes and patterns identified in the data will be analyzed from a theoretical approach (Braun and Clarke, 2006). The theoretical approach entails that the data will be coded for this specific research question. This form of thematic analysis will then provide a detailed analysis of some of the aspects of the data, and not give an overall description of it (Braun and Clarke, 2006). There will be an emphasis on consistency and accordance between the statements of the informants to be able to detect continuous issues and answer the research question and contribute to find out which methods are suitable for facilitating sustainable tourism practices in Danish outdoor-tourism planning, development and management.

5. Empirical context

In the following a short introduction to the empirical field of outdoor-tourism planning, development and management in Denmark is given. The relevant actors as well as the legislative framework are presented in order to provide the necessary understanding of the later analysis. The places taken in consideration in the present thesis are the public, state owned nature areas always accessible to everybody.

5.1 The Danish context for outdoor-tourism planning, development and management

5.1.1 Legislation

The tourism business development in Denmark is per 2018 a job handled by the destination companies or destination management companies (DMO's) and is a decentralized job, coordinated at the national level by The National Tourism Forum (Retsinformation, 2018; Danske Destinationer, 2020). It is the goal that 15-25 DMO's, each handling one geographical part of Denmark, are managing the tourism in that respectively area, in close cooperation with the municipalities in the geographical area (Retsinformation, 2018; Danske Destinationer, 2020). The municipalities can choose which DMO to belong to, some are more obvious due to the geographic location, others due to accordance in activities practiced in the other municipalities who are part of the same DMO, however there need to be a geographical proximity to the DMO's each municipality chooses. The municipalities are obligated to contribute with financial support so the destination company can brand, develop and execute tourism initiatives (Retsinformation, 2018). The law where this is determined – Erhvervsfremmeloven - is from fall 2018, and the final 15-25 destination companies are to be settled and the municipalities should have 'chosen side' by the end of 2020. Some municipalities can choose not to belong to a DMO for various reasons. Some find that they don't need the possible income tourism would bring, this is mostly rich municipalities. Other municipalities don't have the funds to support the needed tourism infrastructure and others find they don't have any tourism attractions to offer. This leaves a scattered Denmark.

5.1.2 Actors

The roles of the DMO's is mostly branding the destinations and provide statistics as well as being the voice of the business and collaborate with the tour- and activity operators. They are in Denmark known as the 'Visit'-brand. Other actors participating more specific in the development of tourism are private tour- and activity operators and incoming bureaus as they develop the product and offer it directly to the guest. However, the development falls in two categories: 1. developing the actual activity, which for a great deal is done by the private market through supply and demand and 2. developing the infrastructure that makes the activity possible. Responsible for the

second area are many and many different actors: Visit Denmark, The Danish Coast and Nature Tourism organization, Danish City Tourism and Danish Business- and Meeting Tourism (Retsinformation, 2018; Danske Destinationer, 2020). They cooperate with various private funds to finance the development and maintain the tourism infrastructure for each area. The outdoor-tourism is then further developed from the legally collaborators like The Castle and Culture Agency, The Danish Nature Agency, The Danish Outdoor Council and the municipalities. Other partners are developing the city-based and business- and meeting tourism, however also in cooperation with the municipalities, depending on what the respective municipalities can offer to the tourists. At last various NGOs and private associations and organizations are representing the voice of the users of the facilities and the executers of the activities. This is for a great deal representing the locals and the local tourism (as a person travelling from one municipality to another to visit a nature park is also considered tourism).

6. Analysis

In the following analysis of the conducted interviews, limitations of using a TCC approach in a Danish context for outdoor-tourism planning, development and management are identified and presented. By using a thematic analysis, there will be identified challenges which the data points at as limiting the implementing of a TCC approach in a Danish context. Furthermore it will be demonstrated how the informants see that the limitations are challenging the implementation of sustainable tourism practices in Denmark. The challenges and limitations are presented in themes identified in the data and are based on a patterned response by the informants. That means that the informants across the interviews conducted have mentioned the aspect, concern, actor, challenge or implication, which through the thematic coding is characterized as having significance for the researched question and is chosen as a theme to include and present in this analysis. The themes identified are 1. A lack of scientific measuring of the tourism impact on the Danish nature. 2. The legislative circumstance of everybody's right to common property. 3. The necessary role of the municipalities to become more proactive in the process of planning, developing and managing outdoor-tourism in Denmark. 4. The importance of including local stakeholders like associations and organizations in the process. 5. Private actors as important actors to include in the

process too and finally 6. Other approaches towards sustainable outdoor-tourism practices which the data also pointed at.

It was anticipated that the TCC approach was in consideration as an outdoor-tourism planning, development and management strategy in Denmark, however, the empirical data points to that this is only very limited the case. Therefore, the identified limitations are not currently present as an active processes in Denmark, but are thought of as an argument against using the TCC approach in future outdoor-tourism planning and management. The data revealed information about why a TCC approach is challenging to implement in Denmark. Along with the limitations of implementing and using the TCC approach in a Danish context, the following analysis will also present which approaches the data identified as being able to facilitate sustainable tourism practices within the Danish context and thus answer the research question: *In a Danish context, what are the limitations of using a TCC approach, and how can a critical approach to these limitations be overcome and thus facilitate sustainable tourism practices?* At last other challenges concerning the planning, development and management of sustainable practices for outdoor-tourism that are more present than a TCC approach which the data pointed at will also be presented.

6.1 Tourism impact

A consistent pattern identified in the data highlights the lack of measuring the tourism impact on the Danish nature. An application of the TCC approach should be based on knowledge and evidence showing where and what kind of outdoor-tourism is harming the nature. This point is highlighted by both the theory (Washburne, 1982; Lindberg et al., 1997; Cole, 2006) and agreed upon by the informants. However, as the data points at, there is a lack of knowledge regarding tourism impact on Danish nature. This causes a limitation of applying the TCC approach in a Danish context: there is simply no valid data that supports the decision of using a TCC approach as a planning and management tool. However, here it must be noted that there is also no data proving the opposite, as there is only very limited measuring of tourism impact on the Danish nature in general. As the framework of this thesis is the use-impact relationship of tourists practicing outdoor tourism, it is necessary to look at the tourism impact in a Danish context, as the theory demonstrates, a TCC approach should be applied based on objective research.

The data expresses the overall attitude that a TCC approach should not be implemented just based on the impression of the visitors in the nature, as the conflicts between user groups is more often the background for limiting outdoor-tourism activities rather than with regards to nature. This point is also reflected in the theory and is best emphasized with the statement by Hall and Lew (2009): tourism impact is the tourism related change that changes a given state over time as the result of an external stimulus. Therefore, the limitations of visiting the nature should not be based on the impressions expressed by the visitors. The data points at that it without measuring the activities and keeping track of how many are actually using the nature, it in some places can be hard to unambiguously determine that it is the tourists rather than the locals who are inflicting an impact on nature and what people do in the nature.

This leads to another aspect identified in in the data: who decides when the nature is impacted negative and therefore needs to be protected? What is nature? Where is the nature? And what nature is more important than other so it needs protection? This is also a challenge emphasized in the theory by Wagar (1974), Lindberg et al. (1997) and Cole (2006): it is a subjective judgement when impacts become negative in the sense of damage or degradation in the light of what an area ought or used to be – and what it is wished to be. And as there in the Danish context are no such defined standards, some organizations take the responsibility and are the voice of nature. Where other organizations are the voice of the activities and others again are the voice of the business from an economic perspective, some organizations take the voice of the nature. This seems necessary, as there is no cross-disciplinary tradition for including natural science in tourism research or vice versa, which the lack of an integrated approach emphasises, as previous research about environmental management in the scope of recreational literature shows (Butler, 1996; Lindberg et al., 1997; Washburne, 1982). The data points at some specific research executed by interest organizations to provide information about tourism and wildlife and internally at the Danish Nature Agency they are also aware of this issue. However, this still proposes a grey-zone for objectively and informed to work with the use-impact relationship and take decisions that are based on research regarding which planning, development and management strategies to follow.

When looking at the current state of tourism impact on Danish nature, some of the data points towards that the Danish nature is resilient enough, other parts of the data

point at some hotspot areas where it is obvious that the tourism is tearing on the nature. A coherent solution to these challenges identified in the data – and an already widely accepted and used method, is to work with dispersion. Either a geographically or a seasonal dispersion – or both at the same time is possible. This will take pressure off some of the bottlenecks of people that occur at some of the hotspots, this could be e.g. nature areas around summerhouses, however this acquires that there are other alternative (and attractive) places the tourists can go. A seasonal dispersion also requires an offer of outdoor activities to practice all year round, compared to the current peak of the summer-season.

The data conform points at zoning as the ideal approach to the current known issues of §3 protected areas as well as in regard to the current discourse about increasing biodiversity. Zoning is also in the theory emphasized as an ideal tool to accommodate intense activities that are tearing a lot on the nature as well as take regards to areas that are less resilient (Cole, 2006; Olive and Marion, 2009). In a Danish context, zoning also facilitates to a balance between activities practiced, where more calm activities also often provide less stress on the environment and are to be found in one zone, and more intense activities are found in another zone with more resilient nature. In that manner the conflicts between user-groups are also accommodated and overcome.

A positive attitude towards using the TCC approach as a monitoring tool was identified in the data as well as in the theory (Newsome et al., 2012). In order to accommodate the lack of research based knowledge about use-impact relationship in Denmark, a measuring of the number of visitors in an area would give valuable knowledge about where the above-mentioned bottlenecks are, which areas are more resilient than others, what activities interfere with each other and which areas are completely unexplored for their potential as outdoor-tourism destination. This would lead to a mapping of the status quo of the current use-impact relationship in an area, as Newsome et al. (2012) emphasize as ideal for sustainable development of outdoor-tourism. This will then help facilitating sustainable outdoor-tourism practices by leading to changed policies and/or changed facilities that accommodate the eventual negative impacts that have shown weak signs already.

6.2 Everybody's right to common property

It was anticipated that the TCC approach was in consideration as the outdoor-tourism planning, development and management strategy in Denmark, however, the empirical data found that this is only very limited the case. The data shows conform statements about the lack of legal warrants to make use of a strict TCC approach like UNWTO suggests it. This means that the data points at a limited possibility in the Danish legislation for a strict TCC approach to be implemented. The planning of sustainable outdoor-tourism is a matter of a legal opportunity spectrum – what is possible to execute in regard to national law? Therefore it is relevant to look at everybody's right to common property – the common property system – as the data identifies a Danish mentality closely connected to the Danish legislation about common property and sees it as a limitation of applying a TCC approach in a Danish context.

Even though the data points at the lack of legal warrants to implement a strict TCC approach, the informants mentioned a few places where some visitor regulations have been put in place, albeit they were not to one hundred percent limitations in guest numbers. The places are Naturpark Maribosøerne, Nationalpark Thy and Nationalpark Vadehavet, where structured access is provided through respectively guided tours (Naturpark Maribosøerne and Nationalpark Thy) and a code of conduct (Nationalpark Vadehavet). However, access without using one of the above-mentioned offers is still possible. It is possible, as Denmark has a system that entails everybody's right to common property. The Danish common property system entails that most of the nature areas are public accessible as they belong to the Danish state. Some forest is private owned just as land used for agriculture is also private property. Also ones private garden is not accessible by the public as per the law about everybody's right to private property, however one is allowed to access private forest from sunrise to sunset.

In the data it is expressed that the Danish mentality about the right to common property is one of the limitations for making use of a TCC approach. Due to the right to common property, three challenges of implementing, executing and enforcing a strict TCC approach to manage outdoor-tourism in Danish nature areas were identified.

The first challenge was conform expressed by the informants: to apply a TCC approach in Denmark in order to regulate tourist visitor numbers in nature areas is difficult to implement within the legislation about rights to common property. The data

points at a Danish mentality strongly influenced by and based on the common property system, which makes it difficult to change the law in order to implement a strict TCC approach. This represents the first challenge of why the informants see the lack of legal warrant in the Danish legislation as a limitation for implementing a strict TCC approach, as it would be a challenge to implement legally.

The second challenge the data points at in connection to the common property system, is that it would be a challenge to execute a limitation of visitors in practice. As several informants pointed at, this would entail that you put a fence around the areas where limited access is wished. This idea seems implausible, as many of the nature areas in Denmark do not have a defined fixed space and many nature areas have multiple (unguarded) entrances, which would mean a lot of resources would be needed to define and execute the external boundaries where the guest limitation in the form of a strict TCC approach is implemented.

This leads to the third challenge connected to the common property system: to enforce it would also take a lot of resources and is morally not in accordance with the Dane's mentality about everybody's right to common property. The data points at a difficulty to enforce who has the right to access: first come, first serve? Those who can afford to pay an entrance fee? And without fences and guarded entrances, which there are no economic resources (or legal warrant) to implement, how should it be observed and controlled who has access to the area? The various Danish nature managers, amongst others the The Danish Nature Agency, are working under a political agenda of getting as many people as possible out in the nature, which means making the nature accessible. A control of unauthorized access – trespassing – on common property as an enforcement of a TCC approach is not in accordance with the Danish mentality and current law about that everybody can walk wherever he or she wishes (almost) whenever. Furthermore, the idea of charging entrance for going in the nature is also very conflicting with the Danish mentality about right to common property, therefore, in the data there was identified a consistent concern about that an application of a strict TCC approach would limit the user group that would have access to the nature due to financial reasons.

The limitations identified concerning the mentality about everybody's right to common property is not explicit theorized, as this is a culturally phenomenon not found

in any previous research about TCC. However, the challenge of implementing a TCC approach due to legal circumstances is the opposite of what the theory suggests. Cole (2006) suggests that the application of a TCC approach is the easy solution, as it doesn't take many resources to limit the number of visitors and hope for the best. He argues that it is a way more costly job to do the comprehensive assessments of alternative planning and management approaches, which is why the TCC approach is easier implemented (Cole, 2006). However, this seems not be the case in a Danish context, as the data sees the legislative context of the rights to common property as a costly limitation to apply a TCC approach in order to plan for, develop and manage outdoor-tourism in Denmark as not only the legislation is difficult to change but also the culture that is rooted in the legislation is difficult to change.

6.3 The necessary role of the municipalities

The following challenges identified seem similar to the challenges identified in relation to the common rights system. However, it might be the same issues, but the trigger for the issues is to be found some place else than in the Danish legislation.

A concern identified in the data was the challenge of how to distinguish between local users and tourists when determining the maximum number of visitors in a nature area. This concern brought up questions like, if a strict TCC approach is implemented, is the local dog-walker also tearing on the environment in such a manner that he/she is included in the count when letting people access an area? It is the responsibility of the municipality and legal obligation qua the Erhvervsfremmelov to make sure that there are facilities that facilitate to outdoor experiences. In relation to this concern, a repeated pattern also identified in the data is the responsibility of the municipalities and it is therefore relevant to look at the role of them as the responsible actor for and having the executing role of both planning and developing sustainable tourism. As the aim is to demonstrate how the limitations of using a TCC approach in a Danish context are overcome, it is necessary to look at the responsible actor who faces the limitations.

The data points at a challenge of implementing the TCC approach in Denmark is including the local users when there is a visitor limitation count, as the facilities the municipality make available for their local citizens can (and will in many cases) also be used by international tourists. This links back to challenge of enforcing and controlling

who has access to the nature and who hasn't. There is no tradition for strict citizen control in Denmark, which is why the idea about implementing an access distinction between tourists and local citizens - between tourism and recreation - by using a TCC approach seems not doable according to the data. In the frame of the recreation ecology angle, both tourism and recreational activities are considered doable on the public nature areas in Denmark. It is the lack of cross-disciplinary approaches between tourism and environmental management that complicates the distinction between tourism and recreation, as both Butler (1996) and Buckley (2011) point to. As already pointed at in the section above, the nature areas are public land accessible both for the local mountain-bike club and tourists whose mode of travel is bike vacation, should a Danish citizen from another municipality then pay entrance to a nature area just because he or she is considered a tourist? Or would completely be denied access to his/hers local forests or beach, because to many people where already there that day? This is not just a conflict with the mindset about everybody's right to common property, but also a question of the planning, development and management approaches the municipalities make use of.

The above stated challenges, which represent a limitation of using a TCC approach in a Danish context, can be found theorized in the planning, development and management approach for sustainable tourism practices. Hall and Lew (2009) point at the possibility that national or regional legislation levels can exercise 'hard' rules and regulations, compared to the 'soft' regulation policy such as suggestions and guidelines which supranational authorities exercise, as figure 2 in the theory section presents.

However, the recent decentralization of the tourism responsibility from former being regional matters to now being municipality matter, reveals that there in Denmark is no tradition for exercising 'hard' rules and regulations concerning people's whereabouts (demand approaches through visitor management as direct management) in nature areas from neither the national, regional or municipality level. This as the municipalities traditionally only have history of planning, managing and developing the facilities for the local users for occasional recreational purposes and not for everyday tourism purposes. The data points at the municipalities as responsible for fulfilling this task through accommodating facilities (site management) for outdoor-tourism. Therefore, the facilitating of sustainable tourism practices must be enforced through

supply approaches as site management through an indirect management as demonstrated in figure 2. Just like the theory, the data points at the importance of that the authorities - in the Danish context the municipalities - now acknowledge and fulfil this task so the planning, development and management approaches they implement also facilitate sustainable outdoor-tourism practices (Hall and Lew, 2009). The data furthermore highlights the necessity of a functioning infrastructure that accommodates the increasing development of outdoor-tourism in order for it to be environmentally sustainable. Therefore does the data not see the direct visitor management approach as a possible strategy for planning, developing and managing outdoor-tourism executed by each municipality. However, the data points at other actors who the municipalities should work together with in order to be able to facilitate sustainable outdoor-tourism practices.

6.4 The importance of local associations, organizations and co-ownership

In relation to the legal warrants as a limitation to using the TCC approach in a Danish context, the data points at the lack of a national strategy towards outdoor-tourism planning, development and management. All data points at the responsibility to be found at the municipality level, however, a national approach is identified as welcome but also as rather unlikely. Even though there is the possibility that national or regional levels can exercise 'hard' rules and regulations, the data states that such rules and regulations regarding a sustainable approach towards planning, developing and managing outdoor-tourism will not be implemented as a top-down national approaches but rather come from a municipal level, including a bottom-up approach from associations and organizations. This is also what Newsome et al. (2012) point at in figure 3 in the theory section.

In figure 3 the various actors a natural area tourism planner can include in the development of areas used for outdoor tourism is demonstrated. Associations and organizations are local communities, which it is necessary to include the importance of. This as they have an important role to play in order to contribute to the planning and development of outdoor-tourism, as there is a strong association culture in Denmark. Furthermore it is relevant to look at this point as the data identifies local stakeholders like associations and organisations as being in a strong position as an actor that is able to facilitate management of the visitors in order for the outdoor-tourism practices to

become sustainable. However, an economic aspect must also be included, as it is the economic difference between municipalities and associations and organizations that is at stake.

An identified limitation of applying a TCC approach in Denmark is the conflict between needing the economic benefits that outdoor-tourism brings the municipalities where tourists frequent, and on the other side the wish to take care of the environment by limiting guests, but where a limitation of guests through a TCC approach would bring less tourism based income. An argument represented in the data points at the challenge of that a municipality is too far away from tourists and tourism as the direct income source, compared to various local associations and organizations who represent the business. This is where the TCC approach falls short, as previous research shows, there is a lack in the inclusion of the carrying capacity concept in tourism literature as well as there is a need for an integrated approach between environmental management in the scope of recreational literature and tourism literature in order for the business to become sustainable. It is especially important that future research is able to combine these fields, as the data points towards the importance of associations and organizations as a driver of increased sustainable outdoor-tourism practices.

That the associations and organizations become such actor happens through a created co-ownership of the nature and facilities, which leads to an increased facilitating of sustainable outdoor-tourism practices by the associations and organizations. Associations and organizations are not just a club for the local citizen memberships. They help to facilitate awareness about the need for new or increased maintenance of the infrastructure used for outdoor activities, which the international tourists use just like the local citizens do, as both Butler (1996) and Buckley (2011) point at. Furthermore, associations and organizations contribute to the offering of outdoor-tourism activities to international tourists just like they also attract international tourists because of the activities (and facilities) they offer. A concrete example consistently repeated in the data is the mountain bike community in Denmark. In cooperation with local authorities they build and maintain mountain bike tracks, but the local clubs also offer guided tours to tourists and have 'friendships associates' in other countries whom they visit and who visit Denmark to practice mountain biking. Their co-ownership of the mountain bike tracks on public land leads them to practices that are sustainable and

leads them to disseminate best practice to the visiting tourists, as they have an interest in upright holding their influence.

As the above-mentioned states, the associations and organizations are having an interest in being included in the planning and development process of the respective facilities needed for their activities. As this seems to benefit the facilitating of sustainable outdoor-tourism practices, the municipalities should become more proactive in their role as the responsible for outdoor-tourism planning, development and management and include the local associations and organizations in this process. In this way, the management of outdoor-tourism can be inherited in the planning and development strategies. The data points at good infrastructure and facilities as well as zoning of activities as part of the planning process towards sustainable outdoor-tourism practices, but which is limited to be executed by the municipalities within the legal framework of the right to common property. But by including the local stakeholders in the development process of outdoor-tourism the municipalities (should) be able to plan for the most beneficial facilities and infrastructure that ‘automatically’ facilitates sustainable tourism practices. In that manner the guests are managed indirectly through nudging and leading the guests through nature without harming it. This could be through boardwalks and direction signs as well as an overview over other areas in close proximity that also offer facilities for outdoor-tourism activities. This aspect is pointed at in figure 3 by Newsome et al. (2012), as also the data like the theory points at, the knowledge the local community can contribute with is facilitating sustainable outdoor-tourism practices.

The local stakeholders like associations and organizations can through such inclusion in the development process contribute to the management of outdoor tourism and even execute a more direct management of the visitor as figure 4 suggests, but without making use of a TCC approach:

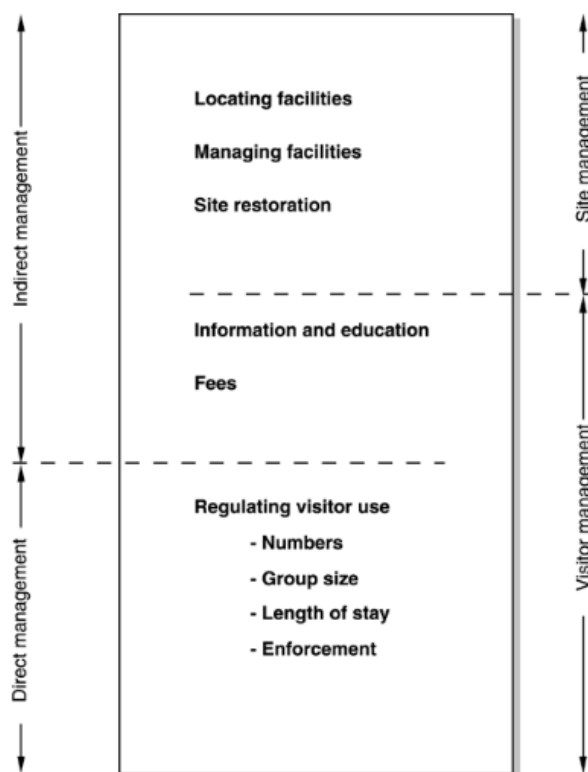


Figure 5.3 Common ways of classifying approaches to managing visitors to natural areas
(Derived from Lucas, 1990a; Hammitt & Cole, 1998)

(Figure 4: visitor management approaches. Source: Newsome et al., 2012: 256, figure 5.3)

Through a more direct visitor management approach the local stakeholders compliment the rather indirect site management practiced by the municipalities. Taken the argument of the present thesis in consideration - addressing tourism planning and management through policies and approaches that address problems and not symptoms – this thesis views the possibilities of indirect site- and visitor management as presented in figure 4 as the most beneficial. The argument critically challenges the direct management approach of visitors through regulating visitor use as figure 4 suggests. However, as the theory implies, the development of such tourism is difficult to address from one point of authority. The theory mentions national, regional, international, global and supranational levels where the planning and development can take place. However the data points at a whole different actor - associations and organizations - who can execute a more direct management strategy which the authorities in Denmark are not able to due to the ‘lose’

and 'soft' regulation policy, as the local stakeholders are closer to the tourists than the municipalities are. As figure 3 suggests, by including local communities in the form of local associations and organizations, benefits like obtaining acceptance and understanding of the local community towards development projects is obtained. Resistance from the local community can otherwise be an obstacle for developing areas for outdoor-tourism purposes.

6.5 Private actors as important actors too

The data points not only at local stakeholders like organizations and associations as important actors when planning, developing and managing outdoor-tourism in Denmark. It is relevant to look at private actors as the data also identifies them as actors having a responsibility of contributing to the planning, developing and managing the outdoor-tourism in Denmark in a sustainable direction. Therefore it is important to include this perspective, as it is pointed at that the importance of the private sector, consisting of tour- and activity companies and private land-owners. They should contribute to the development of e.g. all-year activities, sustainable products and accessibility to nature areas in order for the business to move towards a more sustainable state. At the same time it is also pointed at that a sustainable development of the outdoor-tourism business at the private market is only possible when also the consumer demands or even expects the business to be sustainable. This point will be elaborated later in this section.

In the data there is identified an opinion about the overall responsibility of planning, developing and managing the outdoor-tourism in a sustainable direction is - or should be - a partnership task between municipalities and local stakeholders as the municipalities speak the voice of the law and the local stakeholders speak the voice of the activities. But the data also points at the responsibility of sustainable tourism practices by the private market, however they are not too present an actor in the scene. The development of outdoor-tourism seems to be facing challenges with private landowners who don't want to cooperate about opening up their land for outdoor activities for tourists. As the overall aim of this thesis is to point at planning, development and management strategies that in a Danish context are suitable for facilitating sustainable tourism practices and in that manner decrease the negative

tourism impact on nature, it is crucial that the data points at a limitation of the development of sustainable outdoor-tourism. In order for the municipality, local stakeholders and private tour- and activity operators to be able to develop the outdoor-tourism, it takes land where the activities can take place. The public land serves this purpose, however, as the data points at, private landowners are not contributing in a manner that is beneficial for the development. An issue identified in the data is the hotspot effect at certain tourist areas where there are too many visitors at peak times which creates bottlenecks. In order to overcome this, a management strategy suggested is to direct the visitors to another area where there still is capacity for more visitors - dispersion. However, if private landowners are not willing to open up their area, the over-tourism problem at the hotspot areas is not overcome. Furthermore, a connected perspective identified in the data is that private tour- and activity companies could offer more all-year activities at some private-owned land, but this is not possible if the private landowners do not wish to open up their land. As figure 3 suggests, for natural area tourism planners, who in the Danish context are identified as being the municipalities, there can be obtained some benefits by including private actors like e.g. adjacent landholders and tourism operators into the development of outdoor-tourism (Newsome et al., 2012). The data points at a possible reason for the lack of inclusion of private stakeholders is the fear of over-tourism on the private owned land areas - exactly the problem that is tried to be overcome at the hotspots at some public nature areas. However, as already pointed at, research regarding tourism related impact in nature areas in Denmark is sparse. There exists a grey-zone for objectively and informed research regarding the use-impact relationship in Denmark, so there is a lack of knowledge about if there even is an use-impact problem. In order to overcome the fear of an over tourism problem at the land of the private actors, it is possible for them to make use of a more direct visitor management approach as figure 4 suggests. Depending on how the laws and regulations would be implemented, they could advocate for a benefit of using a strict TCC approach through limiting numbers on their land, and even be able to enforce it as their private land has a physical boundary. In some cases it would be easier to manage a strict visitor count as well as charging fees, as it as private land could be run like a business. That would also allow tour- and activity operators to offer activities that are resource costly like e.g. tree-top climbing, as one needs a permit

for practicing such activities on the public areas as well as it is not allowed to run commercial business on the state owned areas. However, benefits of using an indirect site management approach on private properties would allow less enforcement and fewer resources used for enforcement like guides, as the resources like paths and signs most likely also are needed if a direct visitor management approach is implemented on the private land. In the data here is identified an opinion about that private tour- and activity operators could and maybe even should make use of direct visitor management approaches in order to facilitate more sustainable tourism practices when doing outdoor-activities. Therefore, if there is a wish about the private tour-and activity operators to play a more present part in the outdoor-tourism management, more direct management approaches need to be taken in consideration, despite it being hard to combine with the Danish mentality about rights to common property. However, as already mentioned, a lack of demand for sustainable products by the user and a lack of obligation to a national approach keep the business in old habits. In regard to these considerations, the data points not solely at concerns about over-tourism in regards to nature, but also in regard to visitor experience.

6.6 Other approaches towards sustainable outdoor-tourism practices

Even though this was not a focus area in the interviews, a pattern identified in the data is planning, development and management strategies not only to decrease the negative tourism impact on nature, but also to optimize a positive visitor experience. The data points at the possibility that an outdoor-tourism experience can lose its attraction if being too crowded. Therefore, it is necessary to find out not only what methods are suitable for analyzing the tourism impact on nature areas used for outdoor-tourism in Denmark, but also to find what methods can take the visitor experience into consideration. This is also an aim of the TCC approach, to prevent an *”unacceptable decrease in the quality of visitors' satisfaction”* (University of the Aegean, 2002: 30 box 27). However, the data points at a different approach than the TCC method to fulfill the aim of preventing the decrease in the quality of visitors' satisfaction.

Some of the data pointed at planning, development and management strategies which have already been mentioned: the importance of good infrastructure and facilities, dispersion and zoning of activities and an all-year activity-offer are what take the visitor

experience and the nature in regard while at the same time developing outdoor-tourism in a sustainable direction. However, other strategies to explicitly analyze the tourism impact on nature areas, and not solely taking regards for the need of nature, but also the visitor experiences were identified. These strategies were also identified as contributing to a sustainable development of outdoor-tourism. The strategies pointed at in the data, however not pointed at consistently, were the implementing of a monitoring of tele-data as well as a tourist tax. These approaches are however the responsibility of actors being placed at an authority level where they need to exercise indirect management and are far away from actors who can execute more direct management of tourism practices. This again demonstrates the necessity of supply approaches as site management through indirect management by the municipalities in cooperation with the local stakeholders and the inclusion of private actors.

The data also identified certification systems as a possible approach for facilitating sustainable tourism practices in outdoor-tourism. National and nature parks were by the data identified as an actor responsible for making use of such certification system as a management approach for sustainable outdoor-tourism practices, however there is a lack of a unifying unit that rectifies e.g. guiding standards in national and nature parks in Denmark. Some certifications already exist, however it is not as organized and structured as it is in the Scandinavian neighbours to Denmark. Some of the data points at the lack of direct management approaches in the Danish outdoor tradition as a reason for the lack of a structured certification system. Partly this aspect is about trust, as there in the data was identified an overall level of trust towards that the tourists take responsibility for their whereabouts when practicing outdoor tourism, however under the precondition that the facilities facilitate sustainable whereabouts. And partly this aspect has to do with the character of the Danish nature, as there is nothing much that makes the Danish nature an unsafe place to be, compared to other places with high direct tourism management, e.g. the threat of wildlife or extreme weather conditions. This approach again leads to looking at the indirect and decentralized tourism management the authorities of Denmark practice (Hall and Lew, 2009). As there is no such thing as a Nature and National park council or other joint authorities (neither state owned nor private) in Denmark that take the lead on sustainable development of outdoor-tourism like the Swedish Nature Tourism Enterprise or the Norwegian Tourist

association does. Denmark got their first national park in 2009 after almost a decade of work towards such decision. In the United States a national park has a director and is driven like any other business, so the National Park Service stand outside the political decision process, though still obligated to the Land Management Act and other legislation as it is still public land. Private land owners in Denmark could use this model as a prerequisite for opening up their land for outdoor-tourism purposes for both visitors but also for development possibilities for private tour- and activity companies. As the analysis pointed at, it is the lack of a national coherent approach towards the development of nature areas for outdoor-tourism purposes that make it difficult to execute and implement approaches that facilitate to sustainable practices, why a differentiation in planning, development and management strategies at respectively public and private land should be taken in consideration by the natural tourism area planners placed at the municipality level.

In the Scandinavian neighbor countries to Denmark – Norway and Sweden, they however have an even more open access system than the Danish rights to common property, but yet they manage to unify the work towards sustainable tourism practices. In Sweden the earlier named Swedish Eco Tourism Association (Svensk Ekoturismeföreningen), but since 2018 named Nature Tourism Enterprise (Naturturismförtagen) that is a “*national non-profit representative and interest organization for nature and ecotourism companies, politically unbound [and] the sum of its members*” (Naturturismföretagen: om oss. 2020) is unifying the work towards sustainable tourism practices. Amongst their initiatives they have introduced a certification system and are gathering members who consist of (amongst other) tour- and activity companies, accommodations, tourism organizations of various kinds e.g. visitor centers but also nature protecting companies and institutions of educational purposes within the tourism field. The members pay a member fee, which is put into costs linked to activities aimed at marketing initiatives as well as business development processes and to review and continue the quality work by the Nature Tourism Enterprise. The bottom-up non-political stakeholder approach consisting of either associations and organizations or private actors (or all together in a joint collaboration) is a possible approach to facilitate sustainable outdoor-tourism practices in a Danish context, as a top-down national approach was identified as rather unlikely.

7. Discussion

The analysis wanted through a critical investigation of the TCC method find out how to overcome the limitations of implementing a TCC approach in Denmark and based on the data suggest planning, development and management strategies that in a Danish context are suitable at facilitating sustainable tourism practices.

As it was anticipated that the TCC approach already was an implemented approach in the planning, developing and managing of outdoor-tourism in Denmark, but then turned out not to be the case, the analysis found that a critical approach towards a TCC approach was already existing in the informants approach of how to plan, develop and manage outdoor-tourism in Denmark. But since the TCC approach is a widely used approach for outdoor-tourism planning, developing and managing elsewhere in the world and the development of outdoor-tourism in Denmark is at its very beginning, the data revealed information about why a TCC approach is challenging to implement in Denmark. Furthermore, the data pointed at what limitations and challenges the informants identified as a possible reality *if* a TCC approach was to be implemented in Denmark, but also pointed at other challenges concerning the planning, development and management of sustainable practices for outdoor-tourism that are more present than a TCC approach.

Answering the second part of the research question the limitations and challenges the informants identified as a possible reality *if* a TCC approach was to be implemented in Denmark, was the practical circumstances about how to decide who has the right to visit what areas if a certain visitor number was applicable. This is what Newsome et al. (2012) and Hall and Lew (2009) pointed at with direct and indirect management at the different levels of authority, as Denmark has a tradition for 'loose' and indirect management, enforcing the practical circumstances following an implementation of a TCC approach would become a challenge.

The data pointed at that a TCC approach is challenging to implement in Denmark due to the lack of knowledge and research about tourism use-impact relationship in the Danish nature, as the theory demonstrates that such approaches need to be based on informed and objective knowledge (Butler, 1996; Lindberg et al., 1997; Washburne, 1982). No appropriate decisions can be made about if the tourism industry is harming the nature without such research and knowledge, and if, then how much and where to

intervene the planning, development and management process with a TCC approach also demands an informed and comprehensive knowledge base in a Danish context. A positive attitude towards a TCC approach was identified in the possibility of using it as a monitoring tool, as Newsome et al. (2012) suggests it.

Furthermore, legislation about common property is challenging an implementation of a TCC approach as it would be difficult to bypass the law. It was also highlighted, that connected to the law, the cultural mentality about everybody's right to walk on all public lands at all times is going to be an obstacle to implement a TCC approach. This is contra dictionary to what Cole (2006) uses as an argument for implementing a TCC approach: the ease of it. Both to bypass the law but also to change the mentality of the Danes seems as an almost impossible task to the informants, which is why an implementation of a TCC approach in Denmark is doubtful.

Other challenges identified concerning the planning, development and management of sustainable practices for outdoor-tourism – or approaches to overcome these limitations and facilitate sustainable tourism practices, was the need for more proactive municipalities and their cooperation with local stakeholders to facilitate sustainable outdoor-tourism practices through indirect site management. In connection to that a challenge to plan, develop and manage sustainable practices for outdoor-tourism and a challenge more present than a TCC approach, was the lack of participation in that process by the private market – both private landowners but also the tour- and activity operators would strengthen the Danish tourism business and lead it in a more sustainable direction if they took action and were included in the process. There was identified a need for a more integrated approach between environmental management in the scope of recreational literature and tourism literature, hence a better understanding across the fields in order for outdoor-tourism planning, development and management of outdoor-tourism in Denmark to become sustainable. The direct and/or indirect management according to authority by Newsome et al. (2012) and Hall and Lew (2009) demonstrated in figure 4 falls short of actors that can fulfil the direct management of visitors in a Danish context. However, figure 3 demonstrated that various stakeholders like local actors could be included in the process and the natural areas tourism planners through that could obtain benefits and at the same time avoid some negative consequences. In the data it was pointed at that the natural area tourism

planner – in the Danish context identified as the municipalities, should include such stakeholders and that they are also responsible for moving the business in a sustainable direction through the possibility of a more direct management since there most likely will not come a direct approach from the national authority.

Pointing at other strategies and methods than the TCC concept to plan, develop and manage outdoor-tourism in Denmark it should however be kept in mind that a TCC approach might be the only sustainable solution for the given surroundings at the given time. The implications of rejecting a TCC approach and when and where an application of it can be useful will be discussed in the following.

When suggesting that a certain area can only hold a certain fixed number of people due to the risk of degradation of the environment, maybe, it should be explored if any initiatives could be implemented to accommodate more people by improving the site facilities so the environment is protected and at the same time as more people can visit the area. This has been looked upon in the analysis above where various alternative approaches to the TCC method have been presented. Implications however must be taken in consideration if rejecting the TCC approach e.g. if the act of construction of the needed facilities will just contribute to and increase the negative impact, worsening the degradation. However, this depends on the stage of the impact – for how long time the change already has influenced in a negative way and how severe and urgent the impact is. Therefore, this thesis does not completely deny the necessity of using a confinement strategy of locking in or closing off an area for the benefit of preserving nature. However, the argument here is that it should never be the first-coming solution, but it can be used temporarily for recovery of a severe degraded environment that for an extended period of time has suffered from unsustainable tourism practices and resulted in extensive change and negative consequences of the impact. At other places where the confinement strategy like only permitting a limited number of visitors to an area as the TCC approach suggests is in built environment; settlement, cities and urban areas, experiences which rely on an environment with few visitors and certain types of outdoor-tourism.

In built environments, the environment actually holds an inherent carrying capacity also pointed towards in the definition of TCC, namely that the socio-cultural environment is not to be destructed, when tourists are visiting a destination: “*without*

causing destruction of the physical, economic, socio-cultural environment” (University of the Aegean, 2002: 30 box 27). As the thesis has been focused at the physical environment, tourists can also degrade the socio-cultural environment; this phenomenon is called over tourism (Peeters et al., 2018) Again, the decision of when something is destroyed compared to just altered is a subjective judgment, but when the quality of life of the locals is so influenced by the presence of tourists, considering a numerical restriction on guests visiting on a yearly, monthly, weekly, daily or seasonal basis seems legit. The built environment holds some physical boundaries in terms of width of sidewalks, capacity on the streets, and eventual old town centers with even smaller roads and old buildings can simply not accommodate the number of tourists. The tourists can physically not be in the environment and the locals are bothered in their everyday life. Here the planning and management strategies in the development stage of (new) tourism can reach the conclusion that the built environment in question has reached its carrying capacity and that no further tourism initiatives can be developed. This could e.g. be the planning of a new hotel. However, the objective judgment of how many are too many and are then degrading the socio-cultural life can be distorted by the wish or need to keep the positive economic influence that tourism brings with it.

Planning and management initiatives could however, when applied as a monitoring tool, facilitate to ease the pressure of the socio-cultural environment. When the conclusion of monitoring the current use-impact relation shows that there is a case of over-tourism in the area – the carrying capacity for the built environment is reached – planning and management strategies can act upon that and search for alternative places where to facilitate to tourism. This could be areas outside the built environment where tourism isn’t yet established or less known and/or less visited boroughs of the built environment that haven’t yet reached the maximum of visitors and still can accommodate new ones.

Another situation where a TCC approach could be useful is for the purpose of avoiding ruining the visitor experience “*an unacceptable decrease in the quality of visitors' satisfaction*” (University of the Aegean, 2002: 30 box 27), as the TCC definition stated by UNWTO defines it. Some types of tourism e.g. retreat, wildlife, wilderness or some forms of outdoor tourism rely on the environment where the activities are practiced to be – or at least seem - pristine, untouched, remote, as it is that

kind of experience the visitors seek. Therefore, if a tourism area that is expected by tourists to be remote as they find that relaxing is crowded and noisy, their quality of vacation decreases and the visitor satisfaction decreases and as their expectation, maybe even the promotion of the place, was that it was remote and quite, the quality is unacceptable. Therefore, in such places the only way to reach an acceptable quality of visitor satisfaction would be to limit the number of visitors to a maximum of when it doesn't feel crowded.

At last, some outdoor-tourism facilities also need a TCC approach in order to be the most sustainable, taking both the visitors satisfaction as well as the respect for the natural circumstances in consideration. This is e.g. experiences like cave tourism, river experiences as well as some mountain experiences that all have limited physical space for people. A cave can only hold a certain amount of people just like a mountainside or a basecamp also only has physical space for a certain number of people, and partly such limitations of visitor numbers are also due to the safety aspect of being in a more or less dangerous environment. At such places it could however be looked at if the accepted number of guests really is not degrading the environment, or, if a lower number of visitors might benefit the nature even more, which is the never ending perspective of profit-use instead of use-impact.

8. Concluding remarks

With the negative impact the current tourism industry is evoking on destinations all over the world as the background for the present research, approaches to avoid and overcome the negative consequences of tourism in the Danish nature were suggested in the present thesis. However tourism is not solely negative. It is pointed at that sustainable tourism development can be a solution that is capable of creating positive changes as tourism brings economic growth and creates jobs. This is why it is important to develop the tourism business in a sustainable direction. In a Danish outdoor-tourism context that means with respect for the nature as the action plan for outdoor-tourism suggests. As outdoor-tourism is a rather novel field in Denmark, it was the aim and purpose of the research in the present thesis to contribute to develop this novel field in a sustainable manner from the beginning and to avoid that the future development of outdoor-tourism in Denmark is based on approaches not suitable in a Danish context. An often-applied

approach to overcome the negative consequences of tourism is the Tourism Carrying Capacity method, however, a critical investigation of the concept has been presented.

The critical investigation of the TCC concept argued that approaches to facilitate sustainable outdoor-tourism practices takes much more than just limiting the numbers of visitors: each destination needs its own assessment and its own complex approaches depending on many variables such as the source of the negative impact, the intensity of the activity and accordingly the seasons and alternative facilities needs to be taken in consideration. The goal of applying a TCC method at a tourist destination is to bring down the undesired, unacceptable and negative impact on nature in areas where outdoor-tourism is inflicting such. However, if the goal is to protect the environment, the method used should aim at what is actually degrading the environment; the practices of the people, not simply the presence of the people. Therefore, this thesis has contributed to find out what methods are suitable for analyzing, planning, developing and managing the tourism impact on nature areas used for outdoor-tourism in Denmark and furthermore how such approaches can facilitate sustainable tourism practices, not just limit the number of visitors.

However, the present thesis also recognises the TCC approach as the only suitable approach in certain places. That is e.g. where a limited number of people is the only way the environment can recover or in places with physical boundaries like built environment. There can also be implications of rejecting a TCC approach, e.g. the construction of better facilities can cause even more degradation to the nature as well an important aspect to planning, developing and managing outdoor-tourism is the need for focus on the visitor experience. Too many guests might be a negative experience for the visitors, even though the biophysical carrying capacity of the tourist destination was not exceeded. All of these aspects however take time and consistent measuring to accommodate in a sustainable manner, why this thesis is only uncovering a very small amount of the complex use-impact relationship of outdoor-tourism in Denmark and points at the need for further research of the use-impact relationship between tourism and the Danish nature. A theoretical limitation is the lack of use of theory that focuses on the sustainable visitor experience. This is a core matter of the TCC approach and should be explored further.

A general limitation to the present research is that the findings only represent the Danish perspective. This was however chosen on purpose due to time limitations for completing the research, but further studies would benefit from comparing with other countries in order to find approaches that have been successful elsewhere and investigate if similar approach could also work in a Danish context. As briefly mentioned, Norway and Sweden have some approaches to outdoor-tourism planning, development and management that might be doable in a Danish context too.

As outdoor-tourism is a rather novel field in a Danish context, it was anticipated that a TCC approach was in consideration for planning, developing and managing it. However, interviews with 10 actors within the outdoor-tourism field revealed that this was not the case. The challenge of the use-impact relationship was addressed and it was found out that the TCC approach was not suitable, but rather zoning, dispersing and alternative areas are suitable planning, developing and managing approaches for the future outdoor-tourism in a Danish context and thus suitable for facilitating sustainable outdoor-tourism practices. However, a limitation of the present thesis is that it is not geographically representative for all nature areas of Denmark. Geographically the informants were dispersed all over Denmark, but one informant from each region of Denmark and only 10 informants in total is not to be considered as expressing a representative view from the whole Danish outdoor-tourism business.

A more integrated approach between environmental management and recreational literature is needed in order to map the full potential of the role of stakeholders in the work with facilitating sustainable outdoor-tourism practices. Other methods like a tourism tax or the use of tele-data to map the presence and impacts of tourists as well as a more structured approach to e.g. nature and national parks through certification were also identified as possible approaches to fill the gap of lacking knowledge about tourism impact in a Danish context. The lacking knowledge about the current tourism impact on the Danish nature is a limitation to the present thesis, as it was anticipated that it is an existing problem. But as the research found, it is actually not known for certain that the degradation of the nature is due to tourists practicing outdoor-tourism – or even if there is a negative impact, as the decision when the impact is negative is a subjective judgement where the standards are not agreed upon. Further studies could benefit from doing scientific measurements of the current state of the Danish nature, investigate the

sources of impacts on it as well as investigating the benefits and consequences of the suggested approaches.

The TCC approach was identified as suitable for monitoring the tourism impact as this would allow for more targeted efforts at places that are challenged by negative impacts due to unsustainable tourism practices and reveal other places which still haven't unfolded their full potential for hosting more outdoor-tourism.

Therefore, the short answer to how the tourism carrying capacity can develop tourism instead of keeping it on lock is that a critical approach should make use of it as a monitoring tool to open up the field and provide knowledge of how many tourist visit a destination, what activities they practice and through appropriate planning, development and management approaches then facilitate sustainable outdoor-tourism practices, which should be implemented by the responsible municipalities in cooperation with stakeholders.

Appendix

Appendix 1A: Questionnaire, Danish

Research question:

I en dansk kontekst, hvad er begrænsningerne ved at bruge TCC til udviklingen af outdoor turisme / bæredygtig turisme?

Hvordan oplever du udviklingen af outdoor turisme I danmark lige nu?

Hvordan har den været tidligere?

Hvilken retning går udviklingen nu?

Oplever du at der er noget der hindrer/står i vejen for udviklingen?

Hvad oplever du er i vejen for turisme udvikling?

Oplever du at der er der konflikter I udviklingen af outdoor turisme?

Hvis ja, hvilke konflikter er det der opstår i udviklings processen?

Hvad er jeres tilgang til turisme planlægning – jeres agenda?

Hvor synes du at ansvaret for udviklingen af outdoor turisme ligger?

Bør det (ansvaret for outdoor-turisme udviklingen) samles?

Hvem (institution) skal samle dette ansvar?

Hvem synes du har ansvaret for at få udført konkrete outdoor-turisme tiltag?

- Kommunikationen
- Forvaltningen
- Ift. Allemandsretten

TCC – har du hørt om det før?

Bliver TCC implementeret lige nu i Danmark?

Hvad synes du om brugen af et begrænset antal gæster for et område hvis det er formålet at passe på naturen/miljøet

Hvad synes du der skal til for at udviklingen af turisme kan gøres bæredygtigt / optimalt (ud fra jeres synspunkt)) – er det overhovedet muligt?

Hvilke begrænsninger kunne du se at en anvendelse af TCC (begrænset antal gæster i et område) kunne føre med sig ifm outdoor-turisme udviklingen i Danmark?

Turisme 'fodaftrykket' – impact? Hvordan oplever du at turisterne har 'impact' på de områder de færdes i? I forhold til lokale brugere?

Må du citeres:

Må andre læse opgaven:

Appendix 1B: Questionnaire, English

Research question:

In a Danish context, what are the limitations of using TCC, and how can a critical approach to the TCC method overcome these limitations and facilitate sustainable tourism practices?

How do you experience the current development of outdoor tourism in Denmark?

How has been earlier on?

Which direction goes the development currently?

Do you experience that something is hindering / limiting the outdoor-tourism development in Denmark?

If yes, what is hindering/limiting the outdoor-tourism development?

Are there conflicts in the development of outdoor tourism in Denmark?

If yes, which conflicts are happening in the development process and between whom?

What is your approach to outdoor-tourism development – your agenda?

Where do you think the responsibility for the development of outdoor-tourism lays?

Should this responsibility be gathered by one institution/authority? Who?

Who do you think has the responsibility of executing the plans for outdoor-tourism development?

- Communication
- Administration or management
- Relative to the 'allemandsret' – the law of public/commons access

Have you heard about the TCC before?

Is TCC implemented in Denmark at the moment?

What do you think about the idea of TCC to limit the numbers of visitors to a certain area in order to protect the environment?

What do you think it takes in order for the outdoor-tourism to be developed in a sustainable manner?

Is that even possible?

What limitations regarding the outdoor-tourism development could you identify if implementing a TCC approach in Denmark?

The tourism impact – how do you experience the tourist have an impact on the areas they use? In comparison to local users?

Can you be quoted:

Can others read the paper (regards to publishing at liveatlund):

Appendix 2A: e-mail sent to informants, Danish

Emnefelt: Interview til speciale om udvikling af outdoor-turisme i Danmark

Kære

Jeg er studerende på min kandidatuddannelse i Human Geografi på Lunds Universitet og er i gang med mit speciale. Jeg skriver om udviklingen af outdoor-turisme i en dansk kontekst og derfor vil jeg høre om du eller nogen andre i XXX vil deltage i et interview om netop udviklingen af outdoor-turisme i Danmark? Baggrunden for specialet er min praktik i Naturstyrelsen Hovedstaden i efteråret 2019, hvor jeg arbejdede med udviklingen af outdoor-turisme på udvalgte områder i Naturstyrelsen Hovedstaden. Mit speciale har fokus på hvilke muligheder og begrænsninger der er i den danske kontekst (lovgivning, jordfordeling, forvaltning m.m.) i forhold til udviklingen af outdoor-turisme samt hvilke værktøjer der i en dansk kontekst kan bidrage til denne udvikling - især set i et bæredygtigt perspektiv. Interviewet vil foregå hvor og hvornår det passer dig bedst, jeg forventer at interviewet vil tage en times tid. Interviewet vil blive optaget og analyseret og inddraget i mit speciale. Du som person vil blive anonymiseret, dog bliver jeg for forståelsens skyld nødt til at nævne hvilken organisation der er tale om. Optagelsen vil blive slettet umiddelbart efter jeg er færdig med analysen.

Skulle du ikke være den rette vedkommende, beder jeg dig lede mig videre til nogen du måske tænker er den rette. Jeg ser frem til at høre fra dig og har du nogle spørgsmål må du endelig kontakte mig.

Venlig hilsen

Solveig Reichert

Mobil: 60244832

Appendix 2B: e-mail sent to informants, English

Subject: Interview regarding thesis about development of outdoor-tourism in Denmark

Dear

I am a master student in Human Geography at Lund University and I am about to write my master thesis. I am writing about the development of outdoor-tourism in a Danish context and in that regard I would like to ask if you or somebody else at your workplace would like to participate in an interview about exactly the development of outdoor-tourism in Denmark? The background for my thesis is an internship at the Danish Nature Agency Department Capital Region in fall 2019, where I worked with the development of outdoor-tourism at various of their areas in the Capital Region. My thesis is focused on which possibilities and limitations the Danish context (legislation, distribution of land, management etc.) represent in regard to the development of outdoor-tourism as well as which tools in a Danish context can contribute to this development – especially seen in a sustainable perspective. The interview will be held at a place that suits you, and I expect the interview to take around one hour. The interview will be recorded, analyzed and used in my thesis. You as a person will be fully anonymized, however, in regard to the understanding, I need to make it visible which organization have participated. The recording will be deleted when I am done with the analysis.

Should you not be the right person for this task, I ask you to forward this e-mail to the person you think is the right person. I am looking forward to hear from you and if you have any questions please don't hesitate to contact me.

Kind regards

Solveig Reichert

Mobile: 60244832

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