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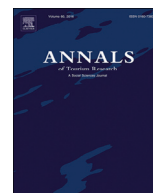
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## Sustainability approaches and nature tourism development

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### ABSTRACT

This article shows how combinations of different sustainability approaches of tourism entrepreneurs and other actors restrict nature tourism development in a nature park context. Drawing on the literature on nature tourism and sustainable entrepreneurship and a case study of a Danish nature park, we show how different actors' sustainability orientations cannot clearly be assigned specific theoretical sustainability approaches. Instead, they express different degrees of focus on various parameters of sustainability, thereby shaping the actors' 'sustainability DNA'. The analysis shows how different DNAs are incommensurable and that this limits nature tourism development. The incommensurability arises from underlying ontological beliefs about sustainability, including the reasons for which sustainability is included in organisational strategies. We suggest a root-cause model to help solve conflicts arising from the incommensurability.

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### Introduction

This article discusses and illustrates how combinations of different sustainability approaches of tourism entrepreneurs and other actors can present a barrier to the development of nature tourism products in a nature park context. Further, the article suggests an analytical approach based on 'sustainability DNA' to help address the development limitations.

The commodification of nature (Katz, 1998) and the economic importance of nature experiences have increased during recent decades, as has the importance of nature tourism (Margaryan & Fredman, 2017; Matilainen & Lähdesmäki, 2014). This has occurred as the local and global environmental consequences of the growth-oriented tourism industry have become evident (for a review, see Buckley, 2012), and it has become obvious that changes towards more sustainable modes of tourism are required (Sørensen & Bærenholdt, 2020).

However, growth-oriented development approaches have dominated much of sustainable tourism development, which has been accused of prioritising economic development over social and environmental sustainability (Andriotis, 2018; Flagestad & Hope, 2001; Fletcher et al., 2019). Sustainability in tourism seems to be a matter of moral judgement, ideology and branding. Meanwhile, there is little evidence that tourism practices actually contribute to sustainability (Sørensen & Bærenholdt, 2020). However, as a response to the impacts of failed growth-oriented tourism developments (Hall, 2013), new socially and environmentally sustainable green growth, steady-state and degrowth approaches to tourism development have been proposed (Fletcher et al., 2019).

Drivers that can lead tourism towards sustainability include regulatory instruments, environmental policies, management measures and technological developments (Buckley, 2012), but new business models and changing practices by tourists are

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also fundamental (Sørensen & Bærenholdt, 2020). Furthermore, tourism entrepreneurship is crucial to tourism development (Koh & Hatten, 2002) and for the sustainable or non-sustainable directions of the development in destinations.

As tourism extends into more natural areas, there is an increasing need to understand the characteristics, roles and possibilities of nature tourism entrepreneurship. Previous research has emphasised the lifestyle- and family-based characteristics of many tourism entrepreneurs (Ateljevic & Doorne, 2000; Solvoll et al., 2015; Sundbo et al., 2007). Studies on nature-based tourism entrepreneurs have emphasised similar characteristics (e.g. Lundberg et al., 2014; Lundberg & Fredman, 2012; Margaryan and Stensland, 2017; Mc Kercher & Robbins, 1998; Nybakk & Hansen, 2008; Weiss et al., 2007). However, this literature has barely interrogated sustainable entrepreneurship, which is broadly defined as entrepreneurship that considers environmental and social issues in addition to economic concerns (Lordkipanidze et al., 2005).

In this article, we draw on the aforementioned literature to theorise interests, potentials and barriers for sustainable tourism entrepreneurship in a nature park context. We discuss approaches to sustainability by different nature tourism entrepreneurs and how these interact and/or conflict with the sustainability and non-sustainability orientations of other local tourism and non-tourism actors. We go on to explore how this impacts the development potential of entrepreneurs and nature tourism destinations. Therefore, the overall research question asks how the sustainability approaches of nature tourism entrepreneurs and other local tourism and non-tourism actors can be characterised and explained and how they impact nature tourism development potential.

A case study on the Danish nature park Åmosen constitutes the empirical foundation. For reasons explained later, Åmosen can be considered a representative case of conflicting viewpoints over sustainability approaches and different stakeholder's suggestions on what needs to be sustained and what to be developed. The findings indicate how different actors' sustainability orientations cannot clearly be assigned specific theoretical sustainability approaches. Instead, these orientations shape different and incommensurable sustainability DNAs, distinctive sustainability orientations composed of various social, environmental and economic perspectives on sustainability. We set out to illustrate how the incommensurability of these DNAs limits nature tourism development potential and to identify the root causes of their existence. We suggest how a root-cause model can help to overcome the incommensurability and support nature tourism development.

## Tourism sustainability approaches

Tourism entrepreneurs belong to a production and consumption system of actors accused of being growth-addicted and having largely ignored the system's environmental and socio-cultural consequences in their search for profit and expansion (Fletcher et al., 2019). Nevertheless, many tourism actors have become aware of the need for sustainable approaches to development. It is not our aim here to conduct a review of the vast literature on sustainable tourism (Buckley, 2012, identified approx. 5000 relevant articles) but to point out the most relevant contemporary approaches to sustainable tourism development. These can be divided into traditional dominating growth-oriented approaches and (more recently) alternative approaches, some of which disassociate development from economic growth (Andriotis, 2018). The approaches are summarised in Table 1 and briefly introduced below.

Sustainable tourism has been defined as economically viable tourism that 'does not destroy the resources on which the future of tourism will depend, notably the physical environment and the social fabric of the host community' (Swarbrooke, 1999 p. 13). According to Flagestad and Hope (2001), sustainable tourism development should result in high-quality experiences while maintaining the environment and improving the destination communities' quality of life. The concepts 'sustainable tourism' and 'sustainable tourism development' are used interchangeably, but the latter has a greater focus on managed change (Liu, 2003).

Definitions of sustainable tourism/tourism development have been criticised for being only partially instrumental because of the concepts' holistic character (Saarinen, 2006). Perhaps, as a result, when put into practice, tourism sustainability approaches have been accused of prioritising economic development over local residents' well-being and nature preservation (Flagestad & Hope, 2001; Hall, 2010; Mihalic, 2020). Such approaches have often been based on green-growth strategies that express the need to delink economic growth and environmental degradation (Panzer-Krause, 2019). Thus, their focus is on increased economic growth while becoming more sustainable (Hall, 2013). However, given tourism's global growth rate (currently halted by

**Table 1**  
Conceptual approaches to sustainable tourism.

Sustainable tourism concept	Key emphasis
Sustainable tourism	Economically viable tourism that does not destroy the resources on which its future depends, including both the physical environment and the host community (Swarbrooke, 1999).
Sustainable tourism development	Development of high-quality experiences while maintaining the environment and improving the quality of life of destination communities (Flagestad & Hope, 2001).
Green growth tourism	De-linking economic growth and environmental degradation (Panzer-Krause, 2019) in the pursuit of increased economic growth while becoming more sustainable (Hall, 2013).
Steady-state tourism	Instead of equating development with economic growth, emphasising qualitative developments, including the quality of life and well-being of local residents and tourists (Fletcher et al., 2019).
De-growth tourism	Basing tourism on principles of commons creation and conviviality, reducing tourism's material and energy flows, and reducing the intensity and impacts of tourists on local populations' lives and environments (Fletcher et al., 2019).
Circular economy tourism	Reducing resource use, emissions and waste without implying a steady state or de-growth of tourism activities or of economic benefits (Sørensen & Bærenholdt, 2020).

Covid19) and its environmental and socio-cultural impacts, proponents of alternative approaches to sustainable tourism developments have come forward.

First, steady-state approaches neither agree that more is always better nor do they equate development with economic growth. Instead, they emphasise qualitative developments, such as the quality of life and well-being of residents and tourists (Fletcher et al., 2019). Second, in practice, degrowth approaches currently receive particular support from many communities who see possibilities of countering over-tourism and reducing the intensity of the impact of tourists on their lived environments (Mihalic, 2020). Degrowth approaches suggest that tourism development should be based on principles of commons creation and of conviviality, encompassing aspects such as community building, participation, solidarity, sharing, caring, collaborating, living well and living simpler (e.g., Cosme et al., 2017; Fletcher et al., 2019). These approaches also emphasise the need to reduce tourism's material and energy flows (Fletcher et al., 2019).

The latter suggests a third approach, a transition towards a (so far little investigated) circular economy of tourism. This approach does not imply the steady-state or degrowth of tourism activities or of economic benefits but a reduction in resource use, emissions and waste (Sørensen et al., 2019; Sørensen & Bærenholdt, 2020). Therefore, partly in light of climate change, it emphasises environmental sustainability and is a more instrumental and solution-oriented approach than the more holistic theories of sustainable tourism (Sørensen & Bærenholdt, 2020). Other similar (and also little investigated) approaches to sustainability in tourism include industrial ecology (Kuo et al., 2005; Lucchetti & Arcese, 2014) and cradle-to cradle (El-Haggag, 2010).

### **Sustainable tourism entrepreneurship**

Entrepreneurship has been associated with the formation of businesses based on innovations with economic profit as the aim (cf. Schumpeter, 1969). However, modern entrepreneurship research emphasises various entrepreneurship motives (Benz, 2009; Parker, 2018; Swedberg, 2000). These include non-economic motives. Also, traditional economic models for small companies do not explain the activities of such entrepreneurs well. To understand different types of entrepreneurship, other approaches are required, including sociological ones (Shaw & Williams, 2013). Entrepreneurship can include, for example, social entrepreneurs who focus on developing innovative solutions to social and environmental issues rather than on economic profit (Jørgensen et al., 2021; Sheldon & Daniele, 2017).

The concept of sustainable entrepreneurship derives from a normative episteme suggesting that ecosystem services, biodiversity and local communities be sustained and reinforced through entrepreneurial practices (Shepherd & Patzelt, 2011). It focuses on actions and mechanisms sustaining life-support systems by re-naturalising values, narratives, practices and materials. According to this episteme, local communities are to be sustained by practices (norms, meaning, history and materiality) that make communities distinctive and build shared identities and visions around their development. Consequently, Shepherd and Patzelt (2011) found that sustainable entrepreneurship aims at sustaining nature, life-support systems and communities while developing non-economic gains (e.g. life expectancy, education, equity and equal opportunities) as well as economic gains for individual actors and for society. They suggested that economic gains are central to the concept of entrepreneurship and must, therefore, also be central to sustainable entrepreneurship.

However, Swanson and DeVereaux (2017) argued that sustainable entrepreneurial tourism development arises from the local context and culture and that tourists should adapt to these aspects as part of the experience rather than being enrolled into yet another grand consumer model. The latter undermines the sustenance of places, and, in many cases, tourism is regarded as a destabilising factor both for communities and for ecosystem services. Furthermore, the inclusion of other modern perceptions of entrepreneurship, driven by motives other than economic profit, may also expand the concept of sustainable entrepreneurship.

Therefore, while sustainable entrepreneurship may in practice share perspectives with growth-oriented approaches to sustainable tourism, non-profit oriented modes of sustainable entrepreneurship may be associated with sustainability approaches that disassociate development from economic growth. Nevertheless, there is a shortage of research linking tourism, sustainability and entrepreneurship (Crnogaj et al., 2014), even though tourism entrepreneurship is central to (sustainable) tourism development in many destinations.

Research on tourism entrepreneurship has emphasised the importance of local (micro) tourism actors and of the family- and lifestyle-oriented characteristics of many destination-based tourism entrepreneurs (Ateljevic & Doorne, 2000; Rowson & Lashley, 2012). In many cases, these entrepreneurs prioritise quality of life over profit (Solvoll et al., 2015) and have limited resources (financial and human) and little experience in operating tourism businesses. Arguably, this limits their growth potential, survival rates and innovativeness (Hjalager, 2010; Lordkipanidze et al., 2005).

However, other interest- or value-oriented tourism entrepreneurs build innovative businesses with innovations sometimes ranging over entire communities (Bærenholdt & Grindsted, 2021). Interests pursued by these entrepreneurs include outdoor activities, and their values relate to the sustainability of local social and cultural environments (Ateljevic & Doorne, 2000; Hjalager, 2010). Thus, sustainability oriented tourism entrepreneurs emphasise different aspect of what to develop and what to sustain. In the following section we elaborate this in a nature tourism context and suggest understanding the different approaches as different sustainability DNAs.

### **Tourism entrepreneurs' sustainability values and DNAs in nature rich areas**

Research on tourism entrepreneurship in nature-rich areas perceives it to be similar to small-scale tourism entrepreneurship in general. It is primarily family-based and/or interest-oriented, not particularly growth-oriented, and it is characterised by poor

entrepreneurial experience (Komppula, 2006; Lordkipanidze et al., 2005; Matilainen & Lähdesmäki, 2014; Nybakk & Hansen, 2008). Some of these tourism businesses are supplementary to, for example, a farm business (Vennesland, 2004).

These characteristics influence the entrepreneurs' values about what to sustain and what to develop. Existing literature emphasises that instead of growth and profit nature-based tourism entrepreneurs often identify with values such as being close to nature, authenticity, sustainability and environmental responsibility. These values are often perceived by the entrepreneurs as being incompatible with profit and growth (Lundberg et al., 2014).

Thus, different values related to sustainability are emphasised; some values are by some entrepreneurs seen as commensurable while others are not, which influence entrepreneurial actions. These values are elements of what we refer to as the entrepreneurs' sustainability DNAs. In business research, the DNA metaphor is applied to identify, theorise and analyse elements of organisations' identities and typologies (Postma et al., 2017). Tourism research lacks theoretical contributions on nature based tourism not least in the context of sustainability (Fredman & Margaryan, 2020). As we will argue and illustrate in the following sections the sustainability DNA can be a brick in building a firmer theoretical understanding of sustainable nature based tourism development.

Nature tourism entrepreneurs do not all share the same sustainability DNA. For some entrepreneurs, the purpose of building a nature tourism enterprise is to maintain a life in the countryside, for example, by turning a family farm into a nature holiday farm (Genovese et al., 2017). In the case of social entrepreneurs in nature tourism, these tend to have broad local perspectives on sustaining local communities or local nature. They are typically private or semi-private companies or foundations (Day & Mody, 2017). Examples include ecological farming collectives, production of locally authentic souvenirs (Day & Mody, 2017) and 'voluntourism' focused on the protection of nature (Fredman & Margaryan, 2020; Sujarittanonta, 2014).

Therefore, nature tourism entrepreneurship is sometimes associated with environmental sustainability and maintaining/building (personal or family) quality of life. Often, the fundamental entrepreneurial drive is to achieve social sustainability for the entrepreneurs and the local community rather than to make a profit. This tends to position such actors in sustainability approaches that disassociate growth from development, such as steady-state development (cf. Table 1) but for different underlying reasons. This position may also be framed by that opportunities for growth and profit can be limited for nature tourism entrepreneurs because natural resources are often owned by other landowners or they are under public administration (Matilainen & Lähdesmäki, 2014; Weiss et al., 2007).

However, entrepreneurs in other nature tourism sectors may provide examples to the contrary (Sørensen & Grindsted, 2020). Ski tourism, for example, often requires substantial investment and heavy infrastructure that remodels the natural environment. Sometimes, ski tourism activities can be based on less environmentally sustainable business approaches (Kuščer & Dwyer, 2019) or on growth-oriented sustainability approaches, promulgating different types of sustainability DNAs. Large scale growth-oriented entrepreneurship, sustainable or not, can supplement/dominate the activities of small nature tourism companies (Lundmark & Müller, 2010; Lundberg & Fredman, 2012).

However, even among smaller entrepreneurs, motivational differences influence, for example, their inclination towards applying eco-certification schemes (Margaryan & Stensland, 2017). This suggests how different nature tourism entrepreneurs might position themselves within or between the different tourism sustainability (and non-sustainability) belief-systems discussed and outlined in Table 1. Identifying the elements of their sustainability DNAs may create more detailed understanding of these entrepreneurial approaches to sustainability.

As indicated, nature tourism entrepreneurs operate in a sector in which a variety of other actors also have interests (Fredman & Tyrväinen, 2010), including businesses and public/semi-public organisations such as destination management organisations and industry organisations, which are, in general, growth-oriented (Flagestad & Hope, 2001; Fletcher et al., 2019; Hall, 2010). They also depend on other interest groups, e.g. local populations, nature protection organisations and landowners (Fredman & Tyrväinen, 2010) and on access to nature, often controlled by landowners (Sørensen & Grindsted, 2020).

Therefore, nature tourism is a field with many stakeholders holding different interests. As indicated, one result of this is a plethora of sustainability interests and approaches by different actors in the same destinations, who may emphasise environmental sustainability (e.g. nature protection organisations), sustainable growth (e.g. destination management organisations), or quality of life (e.g. small entrepreneurs and local population), de-re- or circular growth orientations. In a similar vein, Puhakka (2008), for example, identified different discourses related to tourism in national parks in Finland, contrasting those that focus on the integration of nature-based tourism and conservation with those that emphasise the economic utilisation of nature.

Therefore, the various actors can inscribe themselves within different growth or non-growth-oriented sustainability or non-sustainability approaches. However, the above also indicates the existence of a complex patchwork in which the activities of entrepreneurs and other stakeholders can be associated with different combinations of social and environmental sustainability, economic sustainability and profit. Thus, different mixtures of values about what to sustain and develop result in different sustainability DNAs.

As illustrated in the following, in the nature park context, different sustainability DNAs, including those of the nature park organisations, different nature tourism entrepreneurs, local populations, landowners and destination management organisations, do not fit neatly into the general sustainability approaches outlined earlier and summarised in Table 1. We suggest instead how identifying actors' sustainability DNAs provides a useful path towards analysing different actors' sustainability approaches, understanding their origin, how they can result in conflicts imposing development limitations on nature tourism entrepreneurs, and how this approach can help to address conflicts and development limitations.

## Methodology

The empirical research is based on a qualitative case study of Åmosen in Denmark. The case is representative, primarily of densely populated areas and countries with relatively limited natural resources available for leisure and recreation and in which competition between different sectoral interests for these natural resources is high. This case represents a situation in which different tourism and non-tourism actors and their sustainability approaches coexist within a limited territory. However, the case should not be considered as representative of most nature tourist destinations in other parts of Scandinavia where population density is lower, less land cultivated and where the right of public access is enforced (e.g., Fredman & Haukeland, 2021; Lundberg & Fredman, 2012; Margaryan & Fredman, 2017).

### Case description

The case is spatially delimited to the nature park area (see map in Fig. 1) but also integrates (more arbitrarily) actors operating in the vicinity of the park who (in terms of tourism activities) benefit from or have an effect on tourism in Åmosen. Danish nature parks participate in a certification scheme administered by the Danish Outdoor Council. Certification is given to unique natural areas in which at least 50% of the land is protected. Nature parks must provide access to nature experiences and comply with specific managerial and communicative requirements (Friluftsrådet, 2019). Danish nature parks are set up through local and regional initiatives and do not receive national funding (Danmarks Nationalparker, 2019).

Åmosen covers 45 km<sup>2</sup> of lakes, bogs, moraine landscapes and historical sites (Naturpark Åmosen, 2019), including some of Northern Europe's best archaeological sites from the Hunter, Stone and Viking Ages. The largest bog in the park was mentioned by interviewees (see below) as the only remaining calm and tranquil area on the island of Zealand, and it is valued for its wildlife. Other parts of Åmosen are renowned for their Ice Age morphology, rolling hills, forests and lakes. Noteworthy cultural heritage aspects include water mills, big estates and forests. Ninety-nine per cent of the area is in private hands (Naturpark Åmosen, 2019). Regulations allow individuals to walk and cycle on existing roads and paths on private open and forested land. However, advertised and organised business and non-business activities are prohibited unless they are cleared with the landowners, who can also restrict access in the case of hunting activities.

Free to use (semi-) public amenities in Åmosen include several rest areas, shelters and birdwatching towers. There are some walking paths, but there is no more extensive network of connected trails. The lack of signposted trails means that large parts of Åmosen, and many small gems, are inaccessible to visitors. Possibilities for mountain biking, horse riding, canoeing and fishing exist, but they are limited. Nevertheless, 10,000 to 15,000 tourists visit the nature park each year. The largest event, the Viking festival, has around 4000 visitors (Naturpark Åmosen, 2019).

A few actors – individuals, companies, semi-public and voluntary organisations – provide various services and experiences in Åmosen. An official information centre exhibits archaeological remains and settlements from Åmosen, its nature and its wildlife. A traditional inn dating from 1198 and a small farm holiday establishment are the main accommodation businesses. Other

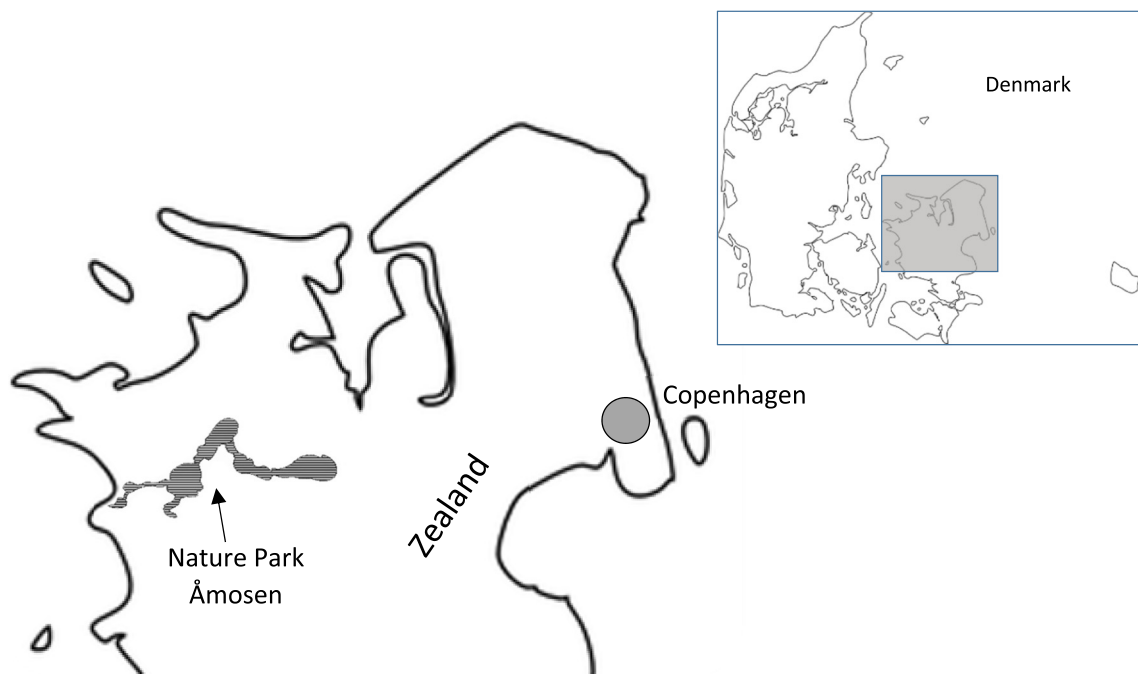


Fig. 1. Location and extent of Nature Park Åmosen in Denmark.

accommodation is limited to a small conference facility, a folk school, a few campsites and holiday homes, all located near the park. A local landowner has opened a café in an old watermill and a small activity centre runs nature-based activities such as horse riding and a shelter camp. From time to time, individual guides, members of Åmosen's voluntary support organisation, and birdwatching, walking and nature protection organisations offer guided tours and small events.

There are a few farm shops and other sellers of local products, and farmers occasionally organise open-door events. Hunting is an economically important leisure- and tourist-oriented activity organised by the larger landowners. Some landowners sell horse-riding permissions for their land. However, landowners mostly confine their activities to farming, forestry and hunting. Therefore, actors offering nature tourism products/services include large landowners, one-person or family businesses and voluntary or semi-public organisations. Other relevant actors include the local destination management organisation, which has development and marketing responsibilities for the destination in which Åmosen is located, and the three municipalities that Åmosen intersects, which administer legislative, financial and planning issues.

#### Data collection and analysis

The main data collection consisted of 15 qualitative interviews (Table 2) and 12 individual development meetings with local entrepreneurs (Table 3). Actors interviewed included those with a direct relation to and an impact on tourism development in Åmosen, e.g. private tourism and non-tourism entrepreneurs, as well as relevant public, semi-public and voluntary organisations. Most of the participants were located outside but in close vicinity to Åmosen. Interviewees were selected based on a preliminary mapping of relevant actors based on inputs from the nature park organisation, business directories and internet searches. The initial mapping was followed by a snowball selection of additional actors mentioned as relevant by interviewees (Table 2 lists all interviewees).

The development meetings were held with local entrepreneurs who responded to a public call from the research project for collaboration with entrepreneurs having relevant innovation ideas in the nature park context. At the meetings, which were held at the entrepreneurs' businesses/home addresses, and in which three researchers and an assistant participated, the entrepreneurs' activities and their innovation ideas were discussed. The composition of the group of interviewees allowed for insights from the different types of actors deemed most relevant given the specific topic of the research. The selection allowed the researchers to capture the individual actors' self-perceptions as well as their perceptions of the other actors. However, because of the interviewee selection method, the entrepreneurs included may be skewed towards the more 'visible' and progressive actors. This could mean that the interviewees may not be representative of all the nature tourism entrepreneurs in the area.

The meetings and the interviews offered insights into how processes both materialise in and are constituted by the narratives through which the stakeholders engage in developing experiences and services in the nature park. This, we argue, enables us to examine more effectively what to sustain and what to develop according to the different stakeholders. From this perspective, we understand the nature park as an entrepreneurial node that responds to but also produces specific processes and outcomes.

The interview themes and the discussions at the development meetings unfolded around the entrepreneurs' perceptions of Åmosen as an entrepreneurial node, the development potential surrounding it, their development focus, entrepreneurial values, and the potential for and barriers to reaching their goals, including those imposed by the strategies of other actors. Other themes included the entrepreneurs' participation in different relevant networks affecting their interests and the possibilities of and approaches to participation in tourism developments. The questions and themes did not depart from the sustainability approaches listed in Table 1. Instead, there was an open discussion of what the interviewees regarded as needing to be sustained (e.g. nature or socio-cultural conditions) and what needed to be developed, and how the actors saw their own interests being realised in relation to this context. In this way the interviews were not framed beforehand by established sustainability concepts and approaches but sought to explore the actors' personal perspectives and approaches.

**Table 2**  
Interviewees in the case study (interviews are referred to as I1-I15 in the analysis).

Interviewee	Profession
1	Municipal project leader in tourism development
2	Public/private partnership project leader in nature-based tourism
3	Manager of small-scale private accommodation
4	Representative from Danish Nature Association
5	Manager of a group of volunteers at the nature park
6	Board member of Åmosen and of the Danish Outdoor Council
7	Manager of a local visit organisation
8	Manager of a one-person nature activities tourism business
9	Manager of a small family-run farm accommodation and activities centre
10	Manager of a one-person B&B business
11	Landlord, private farmer (agriculture and forestry)
12	Manager of a sports NGO
13	Municipal project leader in tourism development
14	Museum manager
15	Foreman of a local business association

**Table 3**  
Development meetings (meetings are referred to as M1-M12 in the analysis).

Actor	Profession
1	Foreman of local council developing a Nature Park Gateway/playground
2	Private actor developing a small piece of land to a nature rest area/small attraction
3	Owners of closed farm developing a sensory garden
4	Veteran train organisation developing track and new station
5	Part time florist developing a full time business
6	Manager of Viking re-enactment group developing Viking events
7	Local foreman of hiking organisation developing hiking tours
8	Owner of a one-person nature activities business developing new activities
9	Manager of a family-run farm accommodation opening new hostel-like accommodation
10	Owner of a family and business conflict solving therapist centre integrating nature experiences in the therapy
11	Owner of selling point for local handicraft developing networked offers with actors in and around the park
12	Chef at mansion developing offers for tourists visiting the park

The interview style was semi-structured but open to the inclusion of new topics in an unstructured manner. The result was that the interviews often assumed the character of informal conversations. Discussions in the development meetings did not follow a set interview style. The starting points were entrepreneurs' presentations of their businesses and/or innovation ideas, the underlying reasons behind their businesses, and the potential outcomes and barriers. Thus, their perspectives on what to develop and what to sustain were expressed, as were the roles of other actors. Each interview lasted between one and 2 h and was transcribed in full. Notes were taken from the development meetings, which lasted 2 h on average.

The analytical approach was hermeneutical and abductive, involving a recursive process between data collection, data analysis and the existing literature. Interviews and observation notes were subject to thematic analysis (Silverman, 2006). Using this process, we applied implicit and explicit meaning condensation and meaning categorisation to the data, thereby identifying the sustainability perspectives of entrepreneurs and other actors, the sustainability DNA concept (see below), possible (in)commensurability between DNAs and the resulting impacts on tourism development.

Similar to Postma et al. (2017) we apply the DNA concept to illustrate actors' sustainability identities and typologies. The suggested concept and model of sustainability DNA include nine elements related to different aspects of sustainability. These elements were inferred from data in the above-described analysis. The DNAs of the different representative types of actors in the case were outlined by assigning values to each element: no importance, some importance or of central importance. The model is interpretative, and, in this research, it is not applied to identify the DNAs of individual actors. It is used to illustrate the characteristics of the DNAs of different and more general types of actors as they emerged from the data, e.g. nature-based tourism entrepreneurs and landowners. The interpretation of the importance of individual DNA elements for different types of actors resulted from the analysis of the interviewees' interpretations of themselves and of other actors. In the analysis, we provide specific examples of this.

## Results

### *Entrepreneurial sustainability traits*

Small private actors in Åmosen resemble other small entrepreneurs identified in nature tourism research (e.g., Komppula, 2006; Lundberg et al., 2014; Lundberg & Fredman, 2012; Matilainen & Lähdesmäki, 2014; Nybakk & Hansen, 2008; Weiss et al., 2007). They often lack a professional approach to the tourism business and have limited tourism knowledge and, in many cases, limited general business knowledge (as expressed in the majority of development meetings). Traditional business-oriented activities, including proper market analysis and marketing, are seldom in focus: 'You didn't necessarily create your business because you are a very good salesman' (17). In the farm holiday centre, for example, the development and combination of facilities and activities have been a process of trial-and-error: 'We had to try it out and needed to figure out if it was something for us ... We had no idea how many things we could use this place for' (19).

The larger landowners do not lack business knowledge but have limited knowledge about tourism activities and possibilities (other than hunting). Nevertheless, individual entrepreneurs, landowners and organisations possess unique expert insights and knowledge about local natural and cultural resources and attractions, hidden paths and tracks, local stories and local history.

Entrepreneurship motives among the small private entrepreneurs include achieving an interest-based, stress-free lifestyle. They are not profit-driven but see themselves as providers of access to nature for everyone: 'They don't need to earn a lot. Just enough to live off ... They could raise the prices but do not want to because people have to feel the price is right' (9). For example, one small entrepreneur described an approach in which ordinary people with lower incomes would also be able to enjoy and to learn about nature: 'I wish more children would become familiar with nature ... Many of the guests come with take-away from the supermarket, but I would prefer them to collect dandelions and prepare a juice at the shelter' (18).

Therefore, part of the entrepreneurial focus compares with a social sustainability approach that emphasises the entrepreneurs' own and other people's social well-being in relation to the provision of nature experiences. Similarly, public and semi-public organisations see making nature accessible, adding knowledge and value to peoples' lives as their goals. Additionally, the small-scale nature-based actors and organisations do not usually own or control land; if they do, it is only small lots, and access to other



people's land is restricted (as discussed below). For some, the limited access to natural resources means that it is difficult to establish economic sustainability.

The small actors have entrepreneurial approaches that seek environmental sustainability and protection for local natural resources. Some entrepreneurs sustain the rewilding of nature, for example, the farm holiday centre, whose owner planted a forest to provide better access to nature experiences for visitors. Other small private entrepreneurs and voluntary organisations accept some modifications and impacts on nature arising from visitor activities while arguing for limits to the flow of people in order to protect certain pristine areas.

For the Nature Protection Organisation, nature is a resource for education and enlightenment that should be looked at and learned about but left untouched. For others, nature should be enjoyed by as many people as possible in a manner consistent with only leaving a small footprint. However, other actors consider nature as infrastructure for sports-oriented activities such as mountain biking or horse riding. For these actors, nature is a resource that can bring value to people's lives and sustain social sustainability.

The large landowners mainly see nature as an economic resource to be exploited for primary activities (i.e. agriculture and forestry). For tourism-oriented activities, nature is considered a hunting resource and public access to privately owned nature is not to be taken for granted: 'I think it is a wrong mindset ... that every time we have some nature we want to lead people out there, because then it is not interesting anymore because it is destroyed' (I11). For landowners, visitors on their land are problematic because they disturb wildlife, negatively impacting hunting resources. Therefore, natural resources should be preserved from tourists and hunting sustained without including tourists. The landowners are concerned about the political ecology of environmental sustainability. Their focus is on sustaining resources that are important for their economic activities (e.g. forestry and hunting).

Tourist-oriented activities other than hunting are not considered economically sustainable: 'The hunters are the only users of nature that pay ... If money is involved then everything is possible' (I11). Therefore, the landowners argue that opening up nature for the common good is not their responsibility and, from a tourist perspective, social sustainability is not an evident strategic concern. Tourism would interfere with the environmental and economic sustainability of the landowners' core activities. Opening up nature to more visitors should be on a commercial basis. The business activities of others on their land require economic compensation. There are exceptions to this approach in the park, including a mansion's unused dwellings of former workers turned into a small conference venue.

#### *Sustainability DNAs*

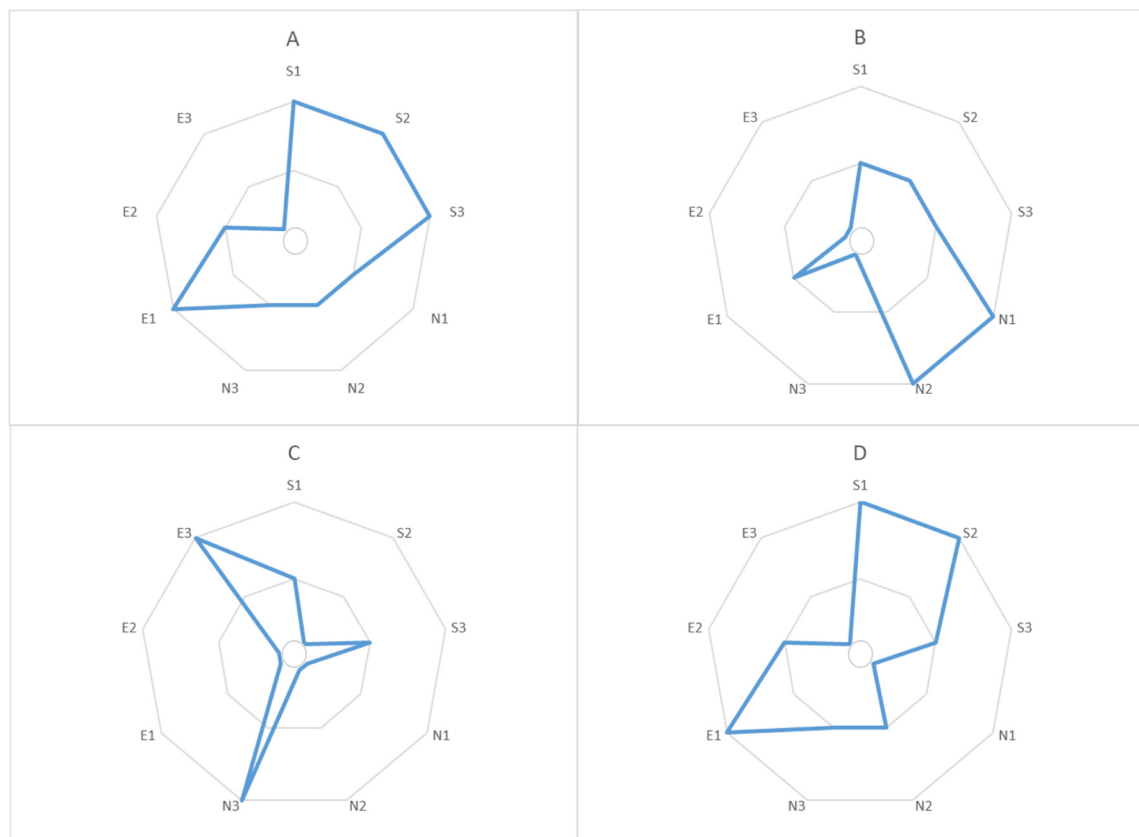
As indicated above, different actors in Åmosen represent various approaches to sustainability. For the small tourism entrepreneurs (voluntary organisations, semi-public organisations and business entrepreneurs), economic sustainability is important, but their activities are not associated with profit and growth. Instead, social sustainability, particularly in terms of providing people with (equal) access to nature, is often a central concern. This applies to the entrepreneurs themselves and their aspirations to live a stress-free life close to nature. Environmental sustainability is paramount for all actors, even if they disagree about the degree of environmental impact from tourist activities that is acceptable.

Some of these actors may best be perceived as subscribing to a steady-state- sustainability approach. Their basic entrepreneurial motives revolve around ensuring social well-being and integrating nature as an intrinsic part of human life, preserving and rewilding nature, and sustaining biodiversity. They do not regard profit as the main driver of their economic activities but have other motivations. However, the private entrepreneurs also show the traits of a green-growth sustainability approach. They wish to increase the number of people with access to the nature park and a criterion for success is having more people out in nature.

For the large landowners, sustainability is directly related to economic profit but also to the sustainability of the economic resource, that is, the aspects of nature that support forestry and hunting. Therefore, for these actors, environmental sustainability is also important. However, they do not consider increased access to nature to be environmentally or economically sustainable, nor do they see a relevant social sustainability approach in tourism. For them, nature is a positive externality, a resource to harness and consume as an aspect of business growth. Different natural settings (landscapes) are assumed to serve different aspects of their business. However, if economic activities are to be preserved, nature must be nurtured and sustained.

Therefore, the landowners' approach may be seen as a green-growth sustainability approach. However, they do not accept that providing access to nature is their social responsibility. On the contrary, they see the use of nature for the leisure and social well-being of people in general as a threat to the sustainability of the natural resource. From a tourism perspective, these actors generally adopt a degrowth approach. They view existing and increased tourism as a threat to their current activities, way of life, culture and business activities. For the destination management organisation, tourism is embedded in a growth-oriented perspective. However, it has few, if any, like-minded entities in the nature park because of the actors' limited growth potential. Thus, its attention is generally focused elsewhere in its geographical area of influence.

None of the actors rely on sustainable entrepreneurship in the sense advocated by [Shepherd and Patzelt \(2011\)](#) because none of them pursue the symbiosis of economic gain with social and environmental sustainability. However, all the actors pursue sustainability in different ways, and, when observed individually, none can be said to pursue specifically unsustainable development trajectories. Nevertheless, as indicated above, none of the actors can be clearly assigned any specific sustainability approach as outlined in [Table 1](#). They comply with aspects of different approaches (green growth, steady-state and degrowth) depending on perspective. For example, a green-growth approach can be attributed to landowners in relation to forestry and hunting, but they have a degrowth approach in relation to general nature tourism development.



**Fig. 2.** Archetypical sustainability DNAs of actors operating in Åmosen. Letters refer to socio-cultural (S), natural (N) and economic (E) sustainability. Letter-number combinations refer to actors' emphasis on socio-cultural well-being of visitors (S1); of local population (S2); and of the entrepreneurs themselves (S3); rewilding of nature (N1); general preservation of natural resources (N2); protection of natural resources needed for (economic) activities (N3); economically accessible nature experiences for everyone (E1); local economic development (E2); and personal economic profits (E3). Diagram A represents a typical small-scale nature tourism entrepreneur in Åmosen, B a typical large landowner, C a nature protection organisation, and D a voluntary sports organisation.

We suggest, instead, that different actors express different focuses on the various parameters of sustainability that form their overall sustainability DNA. From the analysis, we can deduce 9 parameters related to different aspects of socio-cultural, natural and economic sustainability. These are summarised in Fig. 2 which also illustrates how the parameters are distributed for four archetypical entrepreneurs in Åmosen. In reality, all the actors' DNAs present smaller or larger variations of the archetypes presented in Fig. 2. However, the diagrams illustrate how specific sustainability parameters differ significantly between different sustainability approaches.

Thus, the DNAs do not represent specific actors but are interpretations of generalised types of sustainability approaches of actors in the park. The interpretations are based on the above analysis and on direct interview quotes, and on described actions and opinions expressed by the interviewees. For example, quotes from tourism entrepreneurs such as 'I wish more children would become familiar with nature' indicate the entrepreneur's social commitment. In contrast, a landowner's opinion that 'I think it is a wrong mindset ... that ... we want to lead people out [into nature]' suggests the opposite. Desires expressed by tourism entrepreneurs to enjoy stress-free life themselves indicate an emphasis on the actors' own personal well-being.

Actions, such as planting a forest, suggest that rewilding nature is important. The opinion of nature protection organisations that access to nature should be limited to avoid impacts on nature suggests an emphasis on preserving nature in general while the opinions of outdoor interest groups that nature should be used as infrastructure for leisure time activities, for example for mountain biking, indicate how nature should be protected for specific purposes.

Statements such as '[entrepreneurs] could raise the prices but ... people have to feel the price is right' indicate an entrepreneurial focus on making nature economically accessible to everyone. The desire to build local linkages with other entrepreneurs to create mutual benefits indicates an emphasis on local economic development, whereas a statement from a landowner that 'if money is involved, then everything is possible' in the specific interview context indicates the central relevance of individual economic profit. The opposite is indicated by the view that '[the tourism entrepreneurs] don't need to earn a lot. Just enough to live off'.

### *Development implications of different sustainability approaches*

Different perspectives on access to land resulting from different sustainability DNAs are a cause of conflict. When initiatives are taken to develop paths or other infrastructural features, the landowners concerned tend to oppose them. Furthermore, various interesting features are located on private land and cannot be communicated/advertised without the consent of the landowners, who oppose these initiatives: 'There are lots of places to get out to in the park. But nobody knows where they are' (I6). For some smaller tourism-oriented entrepreneurs, this results in economically unsustainable businesses and a lack of tourism development in the nature park.

Different sustainability approaches raise questions about how to match the access of the public and entrepreneurs to privately-owned natural features (e.g. to provide guided tours) as part of one sustainability approach (e.g. Diagram A in Fig. 2), with securing the natural resources needed for economic activities (e.g. hunting), in another sustainability approach (e.g. Diagram B in Fig. 2). Similar issues concern whether public access to nature should be restricted to education and enlightenment, or should it include leisure activities that moderate and use nature as a resource for sport and entertainment.

Even actors who share similar sustainability visions perceive the sustainability of their own activities as limited by the activities of other actors. Like the landowners, the birdwatching and nature protection organisations, take the view that the value of nature is degraded if used too intensively by visitors (albeit from an ecological rather than monetary point of view). Nature is best preserved through degrowth and little or no human intervention, and access should be restricted to sustain natural stocks. Other examples include the walking association's perception of reduced value when sharing paths with mountain-bikers and horse riders. Even sharing paths with disabled people (who require broad, solidly paved paths) affects the value of nature for the walking association: 'The more disabled-friendly it is, the less attractive it is for us' (I12).

Therefore, individual actors aim to sustain their activity by limiting development for others. For these reasons, and because the actors emphasise different degrees of nature protection as part of their sustainability approaches, development disagreements exist between, for example, the Nature Protection Organisation, which opposes legalising sailing on lakes, and the outdoor council, which favours this activity. The outdoor council also favours the development of mountain-bike trails, unlike the Nature Protection Organisation. Diagrams C and D in Fig. 2 illustrate these different perspectives.

Given the sustainability approaches of many small local entrepreneurs who emphasise nature and social issues rather than economic gain, there is limited interest and development support from the more growth-oriented tourism system. For the local destination management organisation, Åmosen is a mere appendage to the other attractions in the destination and Åmosen's local entrepreneurs are of little relevance to the organisation's development strategy. Hunting is aimed at a closed circle of people, and it has a limited economic impact from a destination perspective. Regarding the private and voluntary actors, their small scale and lack of focus on growth and profits also result in limited interest from the destination management organisation: '... our responsibility is to ask: how can we generate some business ... there are no places [in Åmosen] where you can have large meetings or conferences' (I7).

In the ways explained above, the different sustainability DNAs are incommensurable in the promotion of tourism development. Proponents and opponents of tourism growth are often found in the same tourist destinations, and tensions may arise between egocentric and altruistic actors and between expansion- and consolidation- or downsizing-oriented actors (Panzer-Krause, 2019). In Åmosen, these tensions become complex, given that many different (tourism and non-tourism) interests are at play. The result is a lack of tourism development by local entrepreneurs.

It has been suggested that cross-sectoral networks including forestry, tourism and other economic sectors can help to resolve land-use and other conflicts (Weiss et al., 2007) and facilitate collaboration between actors with different sustainability and growth orientations (Panzer-Krause, 2019). In Åmosen, the sustainability approaches make such networking important but difficult to establish. Collaboration to resolve land-use conflicts and coordinate different sustainability approaches and their parameters is lacking and difficult to establish: 'It is difficult that everything has to be done in collaboration with the landowners and for good reasons. They do not agree on what has to be done' (I6). According to some actors, this lack of collaboration is related to misperceptions about the impacts of tourism: 'You think that tourists will come and destroy everything. But they don't' (I7).

### *A root-cause model of sustainable nature tourism development*

Sustainability DNAs illustrate how the sustainability approaches of actors emphasise different social, environmental and economic concerns to various degrees, which results in incommensurable sustainability approaches. From the empirical data and the analysis, we can identify how this result from what can be considered 'ontological sustainability foundations'. We understand these as actors' basic understanding and perception of the notions, positions and purposes of sustainability in relation to their business and/or non-business activities.

For some actors (including some private entrepreneurs), environmental and social sustainability is an inherent foundational value of their activities and a basic entrepreneurial driver. This can lead to sustainability DNAs similar to Diagram A in Fig. 2. For other actors, including landowners, (environmental) sustainability is primarily an economic asset to be secured. This is, for example, the underlying ontology that results in the configuration of Diagram B in Fig. 2. For other actors, such as nature protection organisations, environmental sustainability is indisputable, and it guides all action which results in a configuration similar to Diagram C in Fig. 2. Finally, for actors represented by Diagram D in Fig. 2, such as voluntary outdoor activity organisations, nature is a resource that should be utilised to create well-being for everyone, and it should be exploited and secured for that purpose.

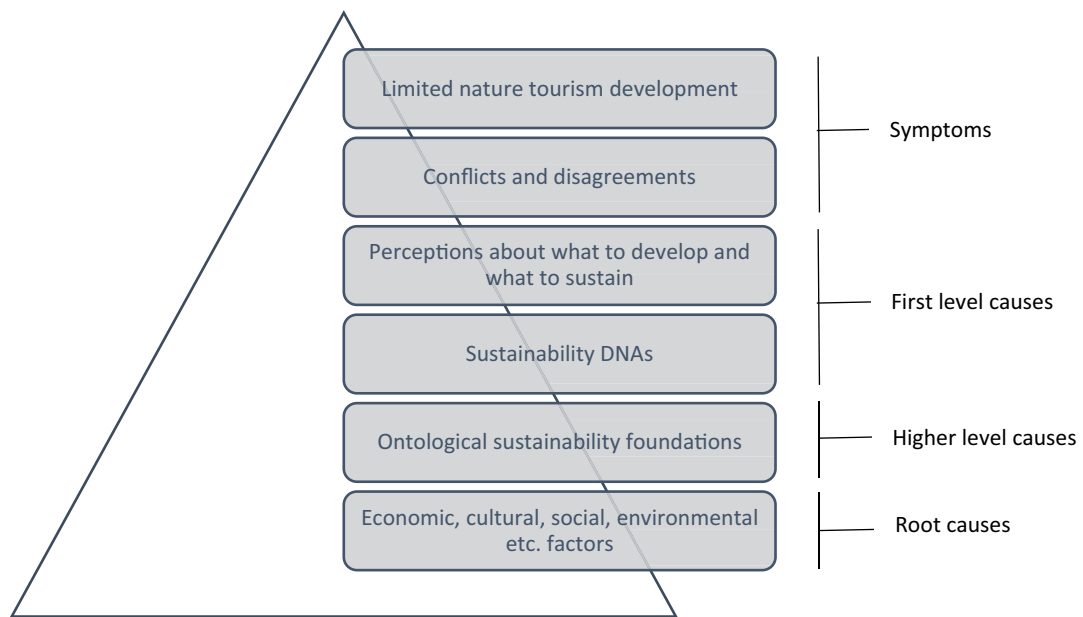


Fig. 3. Basic root-cause analysis inspired model of sustainable nature tourism development.

We suggest that an understanding of the ontological foundations of the DNAs and of how they are expressed in the actors' strategies, in conflicts and in limited tourism development is crucial in solving conflicts and sustaining tourism development. Therefore, we suggest a root-cause inspired model (Fig. 3). Root-cause analysis is an (on the surface, simple) approach to identifying the true causes of a problem and eliminating them by, for example, dividing symptoms into first-level causes, higher-level causes and root causes (e.g., Andersen & Fagerhaug, 2006).

In the model, we define the observable symptoms as limited nature tourism development which is related to the expressed conflicts among actors, for example, regarding approaches to nature protection. First-level causes include the actors' expressed preferences and perceptions of what to develop and what to sustain, and these are connected to their sustainability DNAs. Higher-level causes consist of the actors' ontological sustainability foundations, as described above. Finally, various root causes can be identified under the general categories stated in the model, such as land-ownership models, nature protection regulations, history, personal values and knowledge.

Root-cause analysis normally seeks actions to eliminate root causes (e.g. Andersen & Fagerhaug, 2006) and in our case, some solutions could be linked to changed regulations or changes in land-ownership models. However, the analysis indicates how root causes are numerous and complex, and not simply confined to land-ownership structures. Furthermore, most of these root causes cannot easily be eliminated.

Nevertheless, Fig. 3 suggests analysing the complex situation by separating the problem into empirical and interpretive steps. These steps help build a fuller understanding of how different actor positions (e.g. land ownership, personal values and knowledge) shape ontological sustainability foundations and incommensurable sustainability DNAs, that may pose barriers to tourism development. Moving from the expressive symptom levels to the more analytical and explanatory levels of causes and root causes, and, thus, from the empirically observable to the more interpretive, can help build understandings of the contents and connections between the levels of the model in Fig. 3.

While root causes may not be eliminated in this and similar cases, such an analysis can help to improve the understanding of different actors' needs and approaches. Detailing and understanding how the levels in the model are linked can illuminate detailed differences and reasons for disagreements. This process can facilitate communication and understanding that can help the actors to find consensus and solutions to disagreements through collaboration, and it can help to break down distrust and misperceptions. For example, while disagreements seem to dominate in our case, the analysis has shown that there is also much agreement about the need for sustainable development. Therefore, for example, developing paths and increased tourism access might be a good idea: 'If we [landowners] can help decide where new trails are located, and activities allowed, it is a good way to control it' (I11). As an example of this, a tourism entrepreneur has negotiated access to a landowner's property by managing tourism flow.

## Conclusion

This article discussed how the emphases of different actors on different sustainable development trajectories can limit tourism development in a nature park context. Small-scale nature tourism entrepreneurs and other actors operating within the park all have sustainability as a core interest in their organisational activities. However, they have different priorities regarding what to develop and what to

sustain. Therefore, they place different emphases on various social, economic and natural aspects of sustainability, and they can be positioned within different tourism development orientations, including (green) growth, steady-state and degrowth approaches.

However, this positioning can be arbitrary and individual actors often confine to different sustainability approaches depending on perspective. Instead, we suggest that entrepreneurs and their activities possess different sustainability DNAs. The incommensurability of these results in disagreements between tourism entrepreneurs and other actors about the directions of tourism and non-tourism development. The incommensurability arises from the different actors' underlying ontological sustainability foundations, including why sustainability is part of an organisational strategy. This prevents small tourism entrepreneurs from fulfilling their motivations to develop sustainable nature-based experiences. We suggest a solution-oriented root-cause inspired model, indicating how various root causes result in different ontological sustainability foundations, incommensurable sustainability DNAs and conflicts imposing limitations on tourism development.

Other studies have identified the entrepreneurial traits and limitations of nature tourism entrepreneurs (e.g., [Lundberg et al., 2014](#); [Lundberg & Fredman, 2012](#)), discussed their approach to sustainability ([Margaryan & Stensland, 2017](#)), and emphasised issues for nature tourism development, including land-ownership models ([Fossgard & Stensland, 2020](#); [Matilainen & Lähdesmäki, 2014](#)). In addition, a vast amount of research literature has dealt with sustainable tourism ([Buckley, 2012](#)) from growth, steady-state and degrowth perspectives ([Andriotis, 2018](#)). This article has contributed to these branches of the research literature by highlighting the complex nature of the sustainability approaches of entrepreneurs and other actors in nature tourism. We have identified how these approaches can explain conflicts among actors, and we have suggested their composite origins. Many of their root causes cannot be eliminated, but the analytical approach suggested in this article can help to develop understanding and consensus among actors.

Access to nature remains a central barrier for nature tourism entrepreneurs. As actors seek to become indispensable and distinct, they produce constrained processes of interest in the ways in which they lock other actors into specific roles (e.g. as different land-use practices become manifest in sustainability claims). Sustainable entrepreneurship in nature-based tourism development needs to find resonance in entrepreneurial thinking and multi-collaborative experiences if it is to sustain shared visions of tourism development between landowners and micro-actors. Collaboration and development models with landowners remain a key to developing sustainable entrepreneurship among nature-based tourism providers in the case under study.

The findings suggest that, for example, destination management organisations must recognize development limitations arising from incommensurable sustainability approaches. Scrutinizing actors' DNAs can produce detailed understandings of different sustainability approaches and their (root) causes. These insights can be used in communication and networked activities to limit distrust and misperceptions, develop solutions to disagreements, build mutual understandings among destination actors and remedy conflicts about what to develop/sustain.

The study is based on a single representative qualitative case in a country where competition for limited nature and landscape resources is high. While the case provides information on the studied phenomenon and its mechanisms, it does not permit generalisations in a positivist sense. Nevertheless, in a qualitative sense, the findings can be transferred to other contexts to suggest underlying reasons for difficulties in developing nature-based tourism associated with the ontological foundations of incommensurable sustainability approaches.

However, findings should be transferred with care to contexts that differ in terms of, for example, rules and regulations for access to nature, land ownership structures, traditions of sustainable production, consumption patterns, types of nature tourism, population density and extent of the nature areas. The findings for this case may, for example, be more relevant in the north-western and central European context rather than in the contexts of the other Scandinavian countries. In the latter countries, the right of public access to nature, among other things, influences (both positively and negatively) how nature can and is used commercially ([Fossgard & Stensland, 2020](#); [Fredman & Haukeland, 2021](#); [Fredman et al., 2012](#); [Lundberg & Fredman, 2012](#)).

Another limitation of the study concerns its relatively exploratory character and the qualitative and interpretive approach to identifying sustainability DNAs. These may be biased by interviewee self-representations and by researcher interpretations of these self-representations. However, in its hermeneutic approach, the qualitative and interpretive research has helped to establish an understanding and a knowledge-base on which further research may be built.

We suggest that this future research should include mixed-methods and a pragmatic approach (e.g., [Morgan, 2007](#)), that it should quantitatively seek to establish more firmly different sustainability archetypes in different contexts and qualitatively and quantitatively further explore how these emerge from ontological sustainability foundations as well as from different root causes. It should examine how this leads to potentials and limitations for nature tourism development and how development conflicts may be resolved by understanding the entire root-cause-effect chain. In this way, sustainable nature tourism development that complies with the needs and wishes of providers, consumers and other stakeholders can be encouraged.

### **Declaration of competing interest**

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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