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The Future of Ski Tourism Impacted by Climate Change – Potentials of Mountain Bike Tourism as a Fostering Element for Sustainable Destination Development in Northern Finland

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Finn.	Finnish
IPCC	Intergovernmental Panel on Climate Change

1. Introduction

Tourism in Finnish Lapland, one of the biggest regions of the study area of this paper, records rising tourist arrivals during winter, in contrast to many destinations known for winter tourism, e.g. the Alps. Especially international arrivals increased to a 40% share of foreign tourists in 2019 compared to a 17% share in 1999 (Falk & Vieru, 2019). In 2017, 2.9 million tourists, of which 1.5 million were foreign, visited Finnish Lapland (Rantala, et al., 2018). An increasing and intensifying demand for nature-based tourism and recreation is expected due to more accessibility, new communication and information technologies, and social media coverage of the outdoors (Monz, et al., 2021). The Covid-19 pandemic especially fuelled outdoor recreation in the previous years, leading to increasing demand (Fredman & Margaryan, 2021; Beery, Olsson, & Vitestam, 2021). This is reasoned by a ban on international travel and renewed interest in domestic tourism (Fredman & Margaryan, 2021). In Finland, the demand to national parks was at a record high with four million visits in 2020 due to the pandemic (Metsähallitus, 2022). Moreover, conducting sports is becoming the main motive to undertake touristic trips but also in the vicinity of urban centres outdoor recreation is increasing (Marković & Petrović, 2013). Therefore, outdoor activities are becoming commercialised and offered as tourism products (Rowell & Maher, 2017; Buning, Cole, & Lamont, 2019).

Tourism and especially nature-based tourism such as skiing is negatively impacted by climate change through a change in precipitation, increased occurrence of extreme events, floods, storms, droughts, and wildfires. Those imposed risks impact the tourism industry in various ways, e.g. changing tourist seasons (Monz, et al., 2021). The threat of climate change on ski tourism is a broadly discussed issue in tourism (Steiger, et al., 2019). Internationally, literature calls for product diversification of ski dependent destinations (Walter & Ruhanen, 2015; Steiger, et al., 2021). Especially in Finland claims for adaption strategies to mitigate the negative impacts caused by climate change on tourism (Sievänen, et al., 2005; Neuvonen, et al., 2015; Tervo-Kankare, 2019) and the need for product development of non-snow-based alternatives for skiing (Tervo-Kankare, 2011), were discovered. "Ski resorts affected thus need to offer winter sports activities that do not require snow" (Falk & Vieru, 2017, p. 398). Climate change is increasing the pressure on destinations to mitigate negative impacts and is provoking actions for sustainable tourism planning (Tervo-Kankare, 2011). In Finland, there are only a few attempts to mitigate or adapt to climate-related issues (Tervo-Kankare, 2019). The ski industry is strongly optimistic in terms of artificial snowmaking and snow farming which implies rather short-term thinking and reactive planning considering the problem of climate change (Haanpää, Juhola, & Landauer, 2015). "The potential of non-snow related tourism activities and relevant tourist segments needs to be evaluated in order to become less dependent on ski tourism demand" (Steiger, et al., 2020, p. 9). The research on long-term planning as well as proactive management is very limited as well is

no priority in management (Steiger, et al., 2019). “There are only a few alternatives to skiing to convince tourists to go to the mountains in winter, and no alternative remotely equivalent to the revenues by skiing tourism” (Steiger, et al., 2019, p. 1369).

Over the last two decades, mountain bike tourism increased rapidly (Buing & Lamount, 2021), especially for tourist segments such as youth and families (Brown, 2016). Chiefly in protected areas such as national parks, mountain biking is increasing (Campelo & Nogueira Mendes, 2016). Due to increasing accessibility, more remote places can be visited with mountain bikes (Newsome, et al., 2016) because of new trends such as fat biking, and e-biking (Pröbstl-Haider, et al., 2018). The electric bike market, for example, is expected to double within the next 15-20 years (Allegra Tourismus & Trails AG; Klue Oy, 2020). Internationally (Hardiman & Burgin, 2013), but also in Finland, investments into cycling infrastructure have been made (Allegra Tourismus & Trails AG; Klue Oy, 2020). Mountain biking is perceived to be a sustainable tourist activity with an experience of untouched landscapes and the interaction of local cultures and traditions (Quevedo, Vinueza Naranjo, & Cejas, 2020). However, increasing demand creates additional pressure on natural areas (Puhakka, 2011; Fredman & Margaryan, 2021) and therefore sustainable development needs to be ensured, especially in areas in the vicinity of population centres (Campelo & Nogueira Mendes, 2016).

These perspectives from literature resulted in the need to develop long-term plans in order to mitigate climate change related risks. This paper attempts to analyse the potential of mountain bike tourism as an adaptation strategy of product diversification in Northern Finland in the context of ski tourism to foster sustainable tourism development. Especially mountain biking can be used for destinations to cope with seasonality in winter sports destinations (Buning, Cole, & Lamont, 2019). Hence, the research questions are a) which impacts has climate change on ski tourism in the future? and b) how can mountain bike tourism foster sustainable development in Northern Finland to mitigate these impacts?

Firstly, the theoretical framework of this paper is comprehended in chapter 2 with the study area of Northern Finland explained in detail as well as definitions of terms that are frequently used. Subsequently, the consequences of climate change on ski tourism are presented. To mitigate negative impacts, the literature offers some adaptation strategies that are evaluated in the following chapter. One of these strategies, product diversification is further explored in the context of outdoor recreation and mountain biking afterwards. Followed by various voices from literature, qualitative research has been conducted to investigate the potential of mountain bike tourism in Finland. Insights of this research have been collected in chapters 7 and 8, with management implications being implemented for sustainable destination management in Northern Finland.

2. Theoretical Framework

This chapter defines the theoretical framework in which this paper's research is carried out.

2.1 Outdoor Recreation

Outdoor recreation is defined as a leisure activity, such as walking, hiking, swimming, cycling, and skiing, where the individual spends time outdoors and in natural areas. In general, accessing nature, collecting natural products, e.g., mushroom and berry picking, sightseeing, or moving in nature are included in the term outdoor recreation (Neuvonen, et al., 2018). The Scandinavian term 'friluftsliv' which can be directly translated to English as 'outdoor life', adds the relationship with nature, as well as the societal value of being outdoors to the definition. In the northern countries, outdoor recreation and nature are a big part of the culture especially pointed out by the common 'Everyman's Right' (Beery, Olsson, & Vitestam, 2021). The Everyman's Right in Finland (Finn. Jokamiehenoikeudet) allows everyone to roam freely on publicly or privately owned land. It is only restricted to a few areas such as strict nature reserves or military areas. The roaming includes walking, cycling, skiing, horseback riding, and moving on water bodies, provided that no damage is caused to nature. Moreover, collecting wild foods such as berries and mushrooms is permitted. Compared to other Nordic countries, the Everyman's Right is most extensive in Finland and part of the national identity, culture, and tourism (Ministry of the Environment, 2016). The Everyman's Right applies to everyone, including international tourists (Allegra Tourismus & Trails AG; Klue Oy, 2020).

Another term that is frequently used in this context is nature-based tourism. It is defined as the touristic activity in natural areas outside of the ordinary neighbourhood of the tourist (Fredman & Margaryan, 2021). The destination image in Finland and especially in northern parts of the country is closely related to nature and nature-based tourism. Due to remote landscapes, wilderness, and distinctive natural conditions, Northern Finland attracts international visitors (Rantala, et al., 2018). In these areas, the dependency on nature-based tourism is high. Hence, changing climate and weather conditions threaten the tourism industry (Tervo, 2007).

2.2 Ski Tourism

Interestingly, no clear definition of skiing or ski tourism in the context of this paper has been found in the literature. Hence, ski tourism is defined as any touristic activity which involves skiing as the main travel motivation. 'Skiing' in this case, includes downhill skiing, cross-country skiing, ski touring, freeriding, but also snowboarding. However, most literature focuses on downhill or alpine skiing (compare Scott, et al., 2019; Steiger, et al., 2020) with a few exceptions such as cross-country skiing (compare Neuvonen, et al., 2015). Ski tourism is perceived to be the most vulnerable outdoor activity jeopardised by climate change (Sievänen, et al., 2005; Tervo-Kankare,

2011; Haanpää, Juhola, & Landauer, 2015; Neuvonen, et al., 2015; Steiger, et al., 2021). Other variations of skiing, e.g., freeriding and ski touring which are depending on natural snow cover are even more endangered. In contrast to downhill skiing, no mitigation with artificial snowmaking and snow farming is possible, as the experience of such activities is mostly based on untouched snow and the surrounding snowy scenery. However, these activities do not have such high economic dependency on the regional economy (Steiger, et al., 2021).

Ski tourism emerged in the 1960s and 1970s out of the general trend toward mass tourism. Already existing ski resorts were expanded, and new resorts were built. Investments in this form of tourism were massive and led to economic growth and accessibility, especially in rural mountain destinations. To satisfy customer expectations, such as comfort and ideal snow conditions, drove competition within ski markets. This increased the dependency of destinations on tourism. In recent years, many ski regions, such as Western Europe and North America, entered the stagnation phase of the destination life cycle model (see Butler, 1980) with stable, but slowly decreasing tourist arrivals. Growing awareness of climate change and the reliability of snow conditions caused a rethinking in the industry (Steiger, et al., 2019). Within tourism research, the risk of climate change on ski tourism is one of the most investigated issues as the dependency on the economic impact of ski tourism is crucial to many destinations. "Climate change will have far-reaching consequences for many ski-tourism-dependent communities, as economic alternatives are limited [...]" (Steiger, et al., 2019, p. 1344).

Within the Finnish ski tourism market, approximately 500,000 people participate actively in downhill skiing. Additionally, there are 1.3 million cross-country skiers. The average number of downhill skiing days per person and season is nine, but most skiers would prefer more (Komppula & Alegria, 2019). The ski tourism season starts around November when the first snow accumulates and continues until Easter and April (Falk & Vieru, 2017). 27% of Finnish skiers are loyal to ski resorts but visit several domestic ski resorts within a season (Komppula & Alegria, 2019). In ten per cent of all touristic trips in Finland, skiing is the main travel motivation (Landauer, Sievänen, & Neuvonen, 2009). The main source market for downhill skiing in Finland is the Capital Area with cities such as Helsinki, Vantaa, Espoo, and Kauniainen. The Capital Area (Finn. Uusima) is located in Southern Finland and is 800-1100 km away from the main domestic skiing destinations, being located in Finnish Lapland (Komppula & Alegria, 2019). There are more than 100 downhill ski areas in Finland. The majority of skiers are domestic, but international arrivals are increasing in Northern Finland. However, not much about international ski tourists in Finland is known (Falk & Vieru, 2017). The number of foreign skiers, especially from the UK and Russia, arriving in Finland is increasing. This number tripled from the year 2000 to 2011 (Konu, Laukkanen, & Komppula, 2011). In Southern Finland, ski tourism is mostly characterised by day-trippers with little to no need for accommodation and low travelling costs as the main market is in

the vicinity of southern ski resorts. In Northern Finland, tourists undertake multiple day trips for skiing and are dependent on accommodation, therefore travelling costs increase (Falk & Vieru, 2017).

2.3 Mountain Bike Tourism

The activity of mountain biking is “the sport of riding durable bikes with special riding gear off-road, usually over rough terrain along narrow trails that wind through forests, mountains, deserts, or fields” (Siderelis, Naber, & Leung, 2010, p. 574). Moularde & Weaver (2016) combined the outdoor activity with tourism and defined mountain bike tourism as “trips of at least 24 hours away from a person’s home environment for which active participation in mountain biking for recreational purposes is the primary motivation and determining factor in destination choice” (p. 287). Cycling tourism, in contrast, contains any kind of tourism where cycling is an essential part of the tourist experience but can also be used as transportation (Moularde & Weaver, 2016). Mountain biking covers a wide range of users including recreational mountain biking, touristic mountain biking, and competitive mountain biking (Newsome, et al., 2016). Different subsegments exist, some being more traditional such as cross-country and more extreme segments such as downhill or freeriding (Hardiman & Burgin, 2013). Managing bike tourism involves trail building, signposting, maintenance of infrastructure, ensuring quality, offering according to demand, needs and trends of tourists and initiating events (Miglbauer, 1995).

2.4 Climate Change

Huddart & Scott (2020, p. 443) refer to climate change as “a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use”. The increasing concentrations of CO² and other atmospheric greenhouse gases, in this case, anthropogenic changes, are expected to augment the changing of climate (Rasmus, Räisänen, & Lehning, 2004). According to the latest IPCC (Intergovernmental Panel on Climate Change) report in 2022, human-induced climate change is causing widespread impacts such as more frequent and intense extreme weather events, leading to damage to nature and people, beyond ‘normal’ climatical variations. Climate change can have positive, due to advantageous positions compared to other regions, as well as negative economic impacts on tourism. Tourism in Southern Europe and destinations depending on snow are at risk and only have limited adaptation possibilities such as artificial snow making. As a result, the dependence and demand for snowmaking will increase (IPCC, 2022). However, product diversification of non-snow-based

activities can help to maintain economic viability in affected regions (Buning, Cole, & Lamont, 2019).

In the context of climate change, the IPCC (2022) defined short-term impacts as being prevalent in the years from 2022 to 2040 and long-term impacts in the years from 2041 to 2100. The same definitions of short- and long-term are used in this paper. The most relevant effects of climate change in this research are the decreasing amount of snow and the snow-cover duration, affecting the ski tourism industry mostly negatively.

2.5 Sustainable Destination Development

Despite the common understanding of sustainability as three intersected and equally distributed fields of economy, ecology, and society, another approach to sustainability is used within this research. Instead of the common 'weak sustainability', the concept of 'strong sustainability' is applied (compare Figure 1).

This measure is taken to avoid prioritising the economic sector of sustainability. It becomes evident, that especially businesses and politics focus more on the economy resulting in 'green washing', mutually threatening society and the environment. Society on the other hand, "embraces the multitude of human actions and interactions that make up human life" (Giddings, Hopwood, & O' Brien, 2002, p. 191). Society is existing and takes place within the environment and thus human actions impact the environment and vice versa. Hence, society is nested within the sector of the environment. As human survival in a society depends on the economy (e.g. trading goods, using materials of the environment), it is placed within the sector of society. This implies, that neither society can exist without an environment and neither an economy without society and environment (Giddings, Hopwood, & O' Brien, 2002).

Sustainable Destination Development in this context is summarised by planning and managing tourism and destinations according to Giddings, Hopwood, & O' Brien's approach to strong sustainability. Consequently, considering this research, first, the sector of environment, followed by the sector of society must be ensured in order to discuss the economic sector.

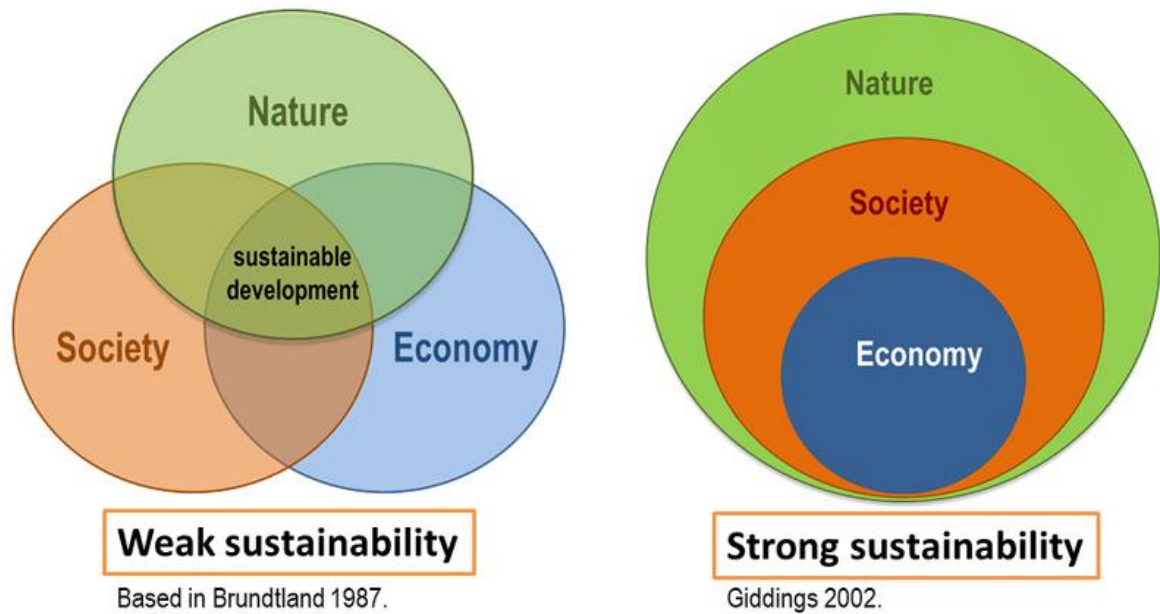


Figure 1: Graphic representations of weak and strong sustainability (Morandín-Ahuerma, Contreras-Hernández, Ariel Ayala-Ortiz, & Pérez-Maqueo, 2019)

2.6 Study Area

The study area of this paper is situated in Northern Finland. An illustrated study area can be found in Figure 2. There are 22 ski resorts with varying sizes located in the districts of Lapland (Finn. Lappi), Northern Ostrobothnia (Finn. Pohjois-Pohjanmaa), and Kainuu (Suomen Hiihtokeskusyhdistys ry, 2022). The biggest ski resorts are Ylläs and Levi in Lapland, and Ruka in Northern Ostrobothnia (Falk & Vieru, 2017; Komppula & Alegria, 2019). Other bigger resort that are relevant for this research are Iso-Syöte, Saariselkä, Ukkohalla, Salla, Pyhä, Ounasvaara, Paljakka, and Vuokatti. Most of these ski resorts are also popular for cross-country skiing due to the wide range of trails (Falk & Vieru, 2019).

Destinations in protected areas for mountain bike tourism that were recommended by Metsähallitus (2015), are the Urho Kekkonen National Park (Finn. Urho Kekkonen kansallispuisto), Pallas-Yllästunturi National Park (Finn. Pallas Pallas-Yllästunturin kansallispuisto), and Syöte National Park (Finn. Syötteen kansallispuisto). All mentioned national parks are in the vicinity of ski resorts (Levi, Ylläs – Pallas-Yllästunturi National Park, Saariselkä – Urho Kekkonen National Park, Iso-Syöte/Pikku-Syöte – Syöte National Park).

Tourism is essential for the economy in Finnish Lapland, where the majority of the ski resorts are located (Puhakka, 2011; Neuvonen, et al., 2015; Rantala, et al., 2018), chiefly in the winter season starting from November to April (Falk & Vieru, 2019) with the high season from the beginning of

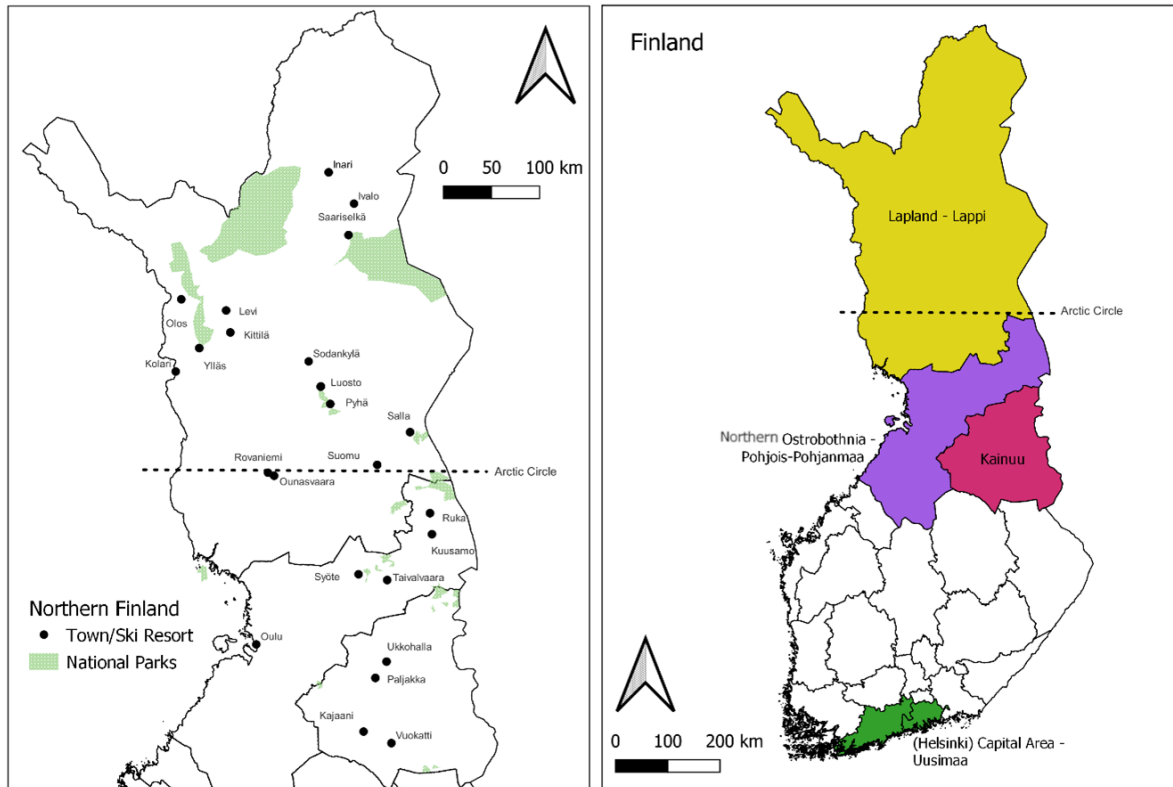


Figure 2: Study Area of Finland (own illustration)

December to the end of April (Rantala & Valkonen, 2011). Many remote destinations in the Nordic countries evolved through nature-based tourism and especially ski tourism into national and partly international tourism destinations, bringing touristic infrastructure to remote areas (Saarinen & Tervo, 2006; Tervo-Kankare, 2011; Nicholls & Ameldung, 2015; Müller, 2019). Local economies and communities are highly dependent on winter tourism in the Nordics (Nicholls & Ameldung, 2015). As unemployment rates declined due to decreased forestry, public and private investments in tourism were made. In destinations such as Levi (Kittilä), Ylläs (Kolari), Saariselkä (Inari), and Rovaniemi, the tourism industry contributes up to 48% to the regional economy. From 1995 to 2014 tourism had an annual growth rate of 9% in Saariselkä, Levi, Ylläs, Olos, and Rovaniemi (Falk & Vieru, 2019).

In Finnish Lapland, nature-based tourism and related sectors provide more employment than any other sector. Most tourism businesses are small enterprises with less than 10 employees (Rantala, et al., 2018). Additionally, one-third of all tourism revenues in Finland can be referred to nature-based activities (Saarinen & Tervo, 2006). Finnish tourists seek touristic activities such as downhill or cross-country skiing and snowmobiling in Northern Finland, foreign visitors like to participate in guided activities such as northern lights hunts or dog sledging. Those guided activities provide accessibility for unskilled visitors to explore arctic surroundings (Rantala, et al., 2018). This implies that for Finnish tourists, skiing is considered a main travel motivation

(Landauer, Sievänen, & Neuvonen, 2009), whereas international tourists seek a variety of winter activities. Considering this, the dependency of tourist arrivals in those destinations is crucial to the regional economy. Furthermore, seasonality, even before the awareness of climate change, was an issue. Most of the destinations in this area relying on ski tourism struggle to overcome the dominant winter season and attract customers in the lower season (Tervo-Kankare, 2011).

Within this research, the study area of Northern Finland is observed as a whole, with the touristic landscapes of Lapland, Northern Ostrobothnia, and Kainuu laying within. Despite the focus of this paper on Northern Finland, within the further progress of this study, the potential of mountain biking in Southern Finland became evident. Due to its importance for the company Allegra, which is involved in this research, it is still considered.

3. Literature Review on Climate Change Related Impacts on Ski Tourism

Impacts of climate change are heterogeneous in the international ski tourism industry, thus varying in different regions and industries, depending on the degree of vulnerability and attitude towards adaptation (IPCC, 2022). In this chapter, general impacts and consequences on ski tourism were collected from the literature. Following, the impacts applicable to Finland and Northern Finland are presented.

3.1 General Impacts and Consequences of Climate Change on Ski Tourism

The increasing average temperature caused by climate change is resulting in changes in snowfall, snow depth, and a shortening of the ski season. Additionally, ski seasons become more variable and the reliability of slopes on natural snow is decreasing. As a result, fewer ski areas have possibilities to operate (Fredman & Chekalina, 2019). Especially small-scale ski areas are expected to close, and some might conglomerate to larger areas in higher elevations and with more financial resources (Hamilton, Rohall, Hayward, & Keim, 2003). Climatically advantageous ski areas, hence, being snow-secure, or having adaptation strategies to climate change, can benefit from snow-scarce winters and the loss of disadvantaged ski areas (Dawson, Scott, & McBoyle, 2009). In general, larger and higher elevated ski resorts are less sensitive to climate change compared to more endangered low-altitude ski areas. The competition in regional as well as supra-regional markets will increase (Fredman & Chekalina, 2019; Steiger, et al. 2021).

The aforementioned factors will induce direct as well as indirect losses to ski areas and the surrounding touristic infrastructure. The most plausible loss is the deficit in ski ticket sales. Fewer tourists might visit ski resorts due to less favourable snow conditions such as wet and corny snow, and fewer powder days, making skiing less enjoyable (Fredman & Chekalina, 2019; Steiger, et al., 2019), whereas increasing ski ticket prices need to cover costs for artificial snowmaking and snow farming investments to provide better snow conditions for tourists (Steiger, et al., 2019).

According to Abbegg (1996), snow reliability is given if skiing is possible for at least 100 days during a season in at least seven of ten years. The number of ski-reliable days is decreasing due to climate change. Variables of precipitation, temperature, snow depth, sunshine duration, and wind speed, indicate the enjoyment of ski tourism perceived by tourists.

The value of the real estate market of ski destinations is likely to decrease (Fredman & Chekalina, 2019) as second homes will be sold in some cases (Dawson & Scott, 2013). Due to the shorter season, employment is less attractive, especially for seasonal workers and destabilises tourism employment (Fredman & Chekalina, 2019).

Besides the described impact of climate change on the supply of ski tourism, the demand of ski tourists will decrease as well. Steiger, et al., (2019), describe the long-term adaption of ski tourists with spatial, temporal, and activity substitution. The change in tourism behaviour is on one hand described as quickly rather than gradually once a critical point has been reached. This critical point could be that skiing conditions have developed in such a negative way that ski trips are not considered anymore from the customers' point of view (Steiger, et al., 2021). On the other hand, assumptions especially in the context of activity substitutions are made, that the adaption of demand will happen rather gradually than quickly (Sievänen, et al., 2005).

The spatial and temporal substitution effects lead to the intensification of ski tourism in destinations with an extraordinary snow-reliable image (spatial) and during periods where snow-reliance is given (temporal). This will even further increase seasonality in ski tourism and result in winning and losing destinations. If the snow-reliable destinations are broadly available, destination loyalty of customers is likely to decrease (Steiger, et al., 2021). Spatial substitution is expected to be the most frequent substitution method, as ski tourism has various opportunities in different ski areas. Furthermore, ski tourists are flexible in their holiday planning, e.g., with cancellations and postponements of ski trips due to poor snow conditions. This flexibility shows in advance or during the ski trip if tourists switch to snow-independent or other substitute activities. The adaption behaviour of ski tourists differs between the level of experience of ski tourists. Beginners for example are more likely to entirely quit skiing or engage in activity substitution while advanced skiers are more likely to conduct spatial substitution (Steiger, et al., 2019).

A survey by König (1998) implied that Australian advanced skiers would undertake long-haul flights for ski trips. The same applies to a study of Norwegian summer ski tourists by Demiroglu, Dannevig & Aall (2018). Unbehaun, Pröbstl, & Haider, 2008 conducted a survey in Austria, investigating the readiness to travel further distances. 36% of the respondents said, they would travel more than 500 kilometres and 14% already travelled further than 500 kilometres for their winter holiday. A ten per cent increase in price is accepted by the respondents but more than 50% price increase or more than three hours more travel time would lead to not choosing a snow

reliable destination. However, they concluded that a shift in ski tourism to other parts of the world is likely to happen. Another Austrian survey conducted by Steiger, et al., 2020, confirmed that ski tourism cannot be compensated with non-snow-based activities as respondents are not willing to give up skiing and rather choose destinations with higher snow reliability. Yet, the flexibility of ski tourists considering long-haul flights or bigger distances for ski holidays was only investigated within regional markets (Unbehaun, Pröbstl, & Haider, 2008; Steiger, et al., 2020), the Australian ski market (König, 1998), and within the Norwegian summer ski market (Demiroglu, Dannevig, & Aall, 2018). Thus, no general assumption can be made. It is still unclear if ski tourists in general or especially from Central Europe are willing to travel further distances, for example to Finland, for ski holidays.

An alternative to choosing a different destination with higher snow reliability for skiing holidays is activity substitution. It implies that demand shifts toward other recreational activities such as Nordic walking (Sievänen, et al., 2005) or any other kind of tourism, e.g., a beach holiday in tropical destinations (Steiger, et al., 2019). Dawson & Scott (2010) researched the activity substitutional behaviour of American skiers due to climate change. Instead of skiing, 44% of the respondents would conduct recreational activities in warm weather such as mountain biking, 21% would spend more time with friends, family, and work; 13% in passive indoor activities such as gaming; 13% in other snow-based activities such as cross-country skiing; and 9% in active indoor activities such as ice skating.

Apart from climate change, also other trends in society such as demographic change, lead to a shortening of the ski season (Steiger, et al., 2019). It is noteworthy that “climate change is not necessarily the end of snow-based winter tourism” (Steiger, et al., 2021, p. 7). However, it brings demonstrably uncertainties, shifts in supply and demand, economical changes, etc.

3.2 Future Perceptions of Climate Change in Finland

As well as other regions, Finland is mutually endangered by the negative consequences of climate change (Haanpää, Juhola, & Landauer, 2015). The climate in the arctic region is waring even higher than anywhere else in the world (Nicholls & Ameldung, 2015). Risks such as temperature increase and the reduction of the snow cover expose the Finnish ski tourism (Demiroglu, et al., 2020). In Northern Sweden, winter activities that are most sensitive to climate change induced risks are downhill and cross-country skiing, as well as snowmobiling (Fredman & Chekalina, 2019).

Simulations revealed that snowpack formation will occur later and melting points earlier, which shortens the ski season in Finland (Rasmus, Räisänen, & Lehning, 2004). Until 2100, the arrival of snow is delayed three to four weeks and spring arrives earlier. The winters are three to nine degrees in Celsius warmer and precipitation, mostly in form of rain, will increase 10 to 40% in

comparison with the period from 1971 to 2000 (Jylhä, et al., 2009). Falk & Vieru (2017) expect winter temperatures to increase twice as high compared to summer temperatures. The first snow will be delayed to three to four weeks and 40-60 days fewer in snow cover availability. The highest reduction of ski days is likely to be during the early season around Christmas and New Year (Moen & Fredman, 2007; and Falk & Vieru, 2019). The frequency of snow-scarce and even snowless Christmas for example in Rovaniemi, the most populated city in Lapland, will increase. During warm winters, the Rovaniemi area has already lost ski tourists to destinations being located further north such as Levi and Saariselkä (Saarinen & Tervo, 2006). The snow cover in Southern Finnish Lapland will be reduced up to 40% whereas only ten per cent in Kittilä and move in general to more northern latitudes of Lapland (Falk & Vieru, 2019). The number of ski days, as well as the number of visitors, is expected to decrease (Sievänen, et al., 2005). Climate change might become a reason for cancellations, instead of the dominant reason for cancellation being frost in the past (Tervo, 2007). Considering the importance of Christmas tourism with the Santa Clause Village in Rovaniemi, climate change will also impact tourist arrivals during that time of the year drastically.

Moreover, the snow depth decreases. The changing climate will also result in more frequent melt-freeze cycles in the snowpack due to higher air temperatures and an increase in the snowpack temperature (Rasmus, Räisänen, & Lehning, 2004). Additionally, the occurrence of extremely mild temperatures will increase (Falk & Vieru, 2019). The snow quality and conditions for activities like downhill and cross-country skiing as well as snowmobiling are decreasing and will thus shorten the winter season. Icy slopes in the morning, the early melting of snow, and slushy snow conditions (Falk & Vieru, 2017) will make skiing less attractive especially for customers with high expectations (Steiger, et al., 2021) also in Finland. Acceptable snow conditions for ski tourism will hence shift north and to higher elevations (Falk & Vieru, 2017). Especially opportunities for cross-country skiing in Southern Finland will decline and people will conduct fewer ski trips because of increasing travelling costs for transportation, accommodation, rental equipment, or timely investments to northern parts of the country. Until the end of the century, snow depth decreases up to 60% in Southern Finland and the temperature is not likely to rise above 0°C. In Lapland in comparison, the period of temperatures below 0°C is reduced only by 1.5 months (Jylhä, et al., 2009). Comparing the snow depth in Sodankylä in Northern Lapland, it will decrease by approximately 48%, whereas in Helsinki the snow depth decrease is calculated to be around 78% (Sievänen, et al., 2005). This supports Rasmus, Räisänen & Lehnings (2004) assumption that southern parts of Finland will suffer more severely under the changing climate considering the snow season. Therefore, winter outdoor tourism is likely to generally decrease in Southern Finland. Also, some cross-country skiers might quit the sports entirely due to negative

consequences (Neuvonen, et al., 2015). Ski resorts being located in the north and higher latitudes are less sensitive to changes in snow depth compared to the south (Falk & Vieru, 2017).

Falk & Vieru (2017) analysed the impact of climate change on the 20 biggest ski resorts in Finland, which are mostly located in Northern Finland. They expect a loss in lift ticket sales of five per cent and a direct revenue loss of 1.5 million Euros during snow-scarce winters. Indirectly aggregated losses in the ski tourism-related industry such as accommodation, ski schools, rental services, and other additional services are expected to be even higher. Ski tourists who travel to Northern Finland expect large amounts of natural snow, snowy scenery, and possibilities for freeriding. Due to climate change, these expectations are not secured which makes ski tourism sensitive to climate change induced consequences (Falk & Vieru, 2017). Although the investigated destinations in Northern Finland are located far away from the source market of tourism (Capital Area), destinations such as Levi, Ylläs, Ruka and Saariselkä are very popular places for a second or holiday home (Finn. mökki). As the density of second home shares is centred around ski resorts, it becomes evident that ski resorts in the vicinity are a motivation to buy second houses in this area. Furthermore, those regions are accessible by air transport with the airports of Kittilä to Levi and Ylläs, Inari to Saariselkä, and Kuusamo to Ruka (Kauppila, 2010). As those ski resorts are endangered, especially in Finland, climate change will have a huge influence on the real estate market in those areas, as well as cause the disposal and abandonment of second homes (Dawson & Scott, 2013). According to Steiger, et al., (2019), second homeowners rather choose temporal substitutes than spatial ones. Thus, those tourists will be more loyal to one ski resort in the short term. Despite, if no suitable adaptation strategies are made in destinations, the impact of climate change will have enormous consequences for the real estate market.

Capturing the analysis of chapter 3.1, demand shifts in spatial and activity substitution might be beneficial in Northern Finland. Ski areas in Central Europe are more sensitive to climate change compared to Finland due to a lower latitude (Saarinen & Tervo, 2006). Additionally, research displays that some tourists are willing to travel far distances for ski trips (compare König, 1998; Demiroglu, Dannevig, & Aall, 2018; Steiger, et al., 2020). Besides, some of the ski resorts in Northern Finland are considered to be relatively snow reliable until at least 2050. Furthermore, events of extreme cold will diminish and not lead to closure days or cancellations (Demiroglu, et al., 2020). In the case of Finland, inhabitants of the source market of ski tourism (Capital Area) are likely to experience only little or even no snow during winter times, whereas the motivation to travel for winter tourism increases (Moen & Fredman, 2007). As spatial substitution seems to be the most likely considering ski tourism in the short term (Steiger, et al., 2019), the ski tourism flow of Southern Finland and Central Europe could shift to Northern Finland. This will lead to increasing demand for snow-based activities including various forms of skiing (Moen & Fredman, 2007) in Northern Finland. However, some researchers are sceptical of the competitive advantages

related to snow-safe destination choices over Central European countries (see Demiroglu, et al., 2020). As already mentioned, research on ski tourists willing to travel further distances is limited. Throughout the research, it became evident that Northern Finland indeed has the potential to attract ski tourist flow from Southern Finland and Central Europe. As a result, the destination of Northern Finland evolves into a challenging position as its being impacted negatively by climate change but demand for snow-based tourism is increasing.

Saarinen & Tervo (2006), admonish that climate change will lead to stagnation in tourism if no appropriate adaptation strategies are implemented. In general, there is a need to develop non-snow-based activities (Falk & Vieru, 2017). Analysing the information on spatial substitution presented in this chapter, assumptions are made that the demand for snow-based tourism in Northern Finland will increase only in short-term relations. Thus, to foster sustainable destination development and mitigate climate change related risks (Steiger, et al., 2019), long-term planning is needed (Tervo-Kankare, 2011). For long-term planning in Northern Finland, the potential of activity substitution in form of mountain bike tourism is investigated in this paper.

4. Adaptation Strategies for Climate Change Related Impacts on Ski Tourism

This chapter explores adaptation strategies for ski tourism that have been collected from the literature. Following, the European Alps, having a massive ski tourism industry are presented as an example of successful product diversification with mountain biking.

4.1 General Adaptation Strategies for Climate Change Related Impacts on Ski Tourism

In the literature, some adaptation strategies mitigating climate change related risks on ski tourism are mentioned. The one most practised method is using technical measures to substitute the lack of natural snow. This includes artificial snowmaking or snow farming (Fredman & Chekalina, 2019). Chiefly the Christmas or New Year's Eve holidays are sensitive as they lay in a snow-scarce period (Moen & Fredman, 2007). Excessive snowmaking is necessary to ensure that tourists enjoy the perks of skiing at the most popular time during the season. Potentially losing those peak season holidays of just two or three weeks, can determine the profit or loss of a ski resort during a season (Steiger, et al., 2019). If only parts of ski areas are open, it might influence the ski resort's image of being snow-reliable (Steiger, et al., 2021). According to Steiger, et al. (2019), the dependency of ski tourism on technical measures is too high and too optimistic about snowmaking and its innovation potential. Snowmaking is connected to huge investments in technology and operation that need to be made. Increasing ski ticket prices is used to supplement the investment costs. Moreover, those measures consume water and energy excessively, and the social acceptance of these methods is disputed. The requirement for water might lead to water shortage and affected regions becoming drier (Morrison & Pickering, 2013; Steiger, et al., 2021).

Additionally, if no natural snow is available, the ski experience is less enjoyable as the scenery does not offer a snow cover (Sievänen, et al., 2005). Although snowmaking is accepted by tourists, it is not perceived as a positive attribute for ski tourists and they rather favour natural snow conditions (Unbehaun, Pröbstl, & Haider, 2008). Yet, artificial snowmaking is the “result of short-term thinking and planning by the tourism industry [...] focused on immediate business survival” (Morrison & Pickering, 2013, p. 188). As destinations depending on ski tourism are exposed to risks of climate change, the demand for snowmaking increases, whereas the opportunities to operate it decline due to decreasing temperature (Scott, et al., 2019). Using short-term technical methods such as artificial snowmaking to tackle climate change related issues is considered unsuitable in the context of sustainable and long-term tourism planning. Nevertheless, it can help to balance uncertainties in ski resorts in the short term (Walter & Ruhanen, 2015).

Another proposed method to bolster the capital loss related to ski ticket sales is dynamic ski ticket pricing. A higher price during the peak season, e.g., Christmas and New Year, and discounts during the low season could help to regulate customer flow and leverage sales according to the demand (Falk & Vieru, 2017). Shifting outdoor facilities to indoors might be beneficial for sports such as ice skating or ice hockey. Despite the effort of construction and high energy demand (Steiger, et al. 2021), ski tourism has a huge dependency on the surroundings of the facilities, e.g., views from mountain tops, and snowy scenery. Indoor facilities such as ski halls or ski tunnels are therefore no appropriate substitute for ski tourism.

Within the industry, efforts to certify ski resorts as climate-neutral or suitable have been made. Ski areas invest in reforestation, use renewable energy, or pay for compensation. This is a relatively new trend, and not yet many ski areas engage with it (Steiger, et al., 2021). Although the attempts in this direction are advantageous, they are not mitigating climate-related risks, but might rather be used solely for marketing reasons to respond to trends towards sustainability. Some might define these activities as greenwashing.

The most promising adaption strategy is product diversification (Unbehaun, Pröbstl, & Haider, 2008; Walter & Ruhanen, 2015; Olefs, et al., 2021; Steiger, et al., 2021). Product diversification is creating a variety of sports or other activities to attract tourists to destinations apart from ski tourism. Cable cars for example are used during summer for hiking and mountain biking. Ski destinations also offer swimming or wellness, climbing, skating, or zoos. Moreover, conference centres are built to develop business tourism, and festivals or events are hosted (Hudson & Cross, 2005). Walter & Ruhanen (2015, p. 533) claim that “ski resorts [...] are going to have little choice but to engage in product diversification as an adaption strategy; developing a broader range of alpine experiences year-round”. Developing year-round tourism and investing in non-snow-based activity products are also considered to be the answer to climate change according to Moen &

Fredman (2007). Morrison & Pickering (2013) on the other hand, do not perceive product diversification as compensation for losses during winter due to significantly lower tourist expenditure in summer and huge investments being made, such as the construction of mountain bike trails. However, as mountain bike tourism is still in its initiating stage, returns of investments might further increase.

4.2 Adaptation Strategies for Climate Change Related Impacts on Ski Tourism in Northern Finland

In Finnish tourism literature, the call for adaptation strategies to tackle climate change related issues is becoming louder (Sievänen, et al., 2005; Neuvonen, et al., 2015; Tervo-Kankare, 2019) as well as urges to develop non-snow-based alternatives in winter tourism are growing (Tervo-Kankare, 2011).

First attempts to mitigate climate change induced risks are techniques in snowmaking and snow farming. In Finland, 96% of the biggest ski resorts are equipped with artificial snow-making methods, 16% use snow farming (Falk & Vieru, 2017) and 80% of all downhill slopes were primed with artificial snow in 2005 (Sievänen, et al., 2005) with increasing intensity. But artificial snowmaking is not favourable as a sustainable adaptation strategy due to high energy, water consumption and exposure to the environment (Falk & Vieru, 2017) and having only a short-term and reactive character instead of long-term and proactive (Haanpää, Juhola, & Landauer, 2015).

In Southern and Central Finland, “operators were less interested in diversifying their activities and were predominantly interested in ensuring that the existing portfolio of services is offered” (Haanpää, Juhola, & Landauer, 2015, p. 974). The mentioned portfolio mainly focuses on snow-based winter activities such as skiing, snowmobiling, reindeer and husky safaris. Climate change is perceived rather as a distant threat to the future and entrepreneurs rather consider short-term adaption in technical measures such as snowmaking or snow farming. Shifts to higher elevations or north faces of hills to limit the occurrence of melting snow are not possible in Finland because the potential is already exhausted (Haanpää, Juhola, & Landauer, 2015).

Concerning sustainability programs and sustainability certifications as discussed in chapter 3.3, Finnish ski tourism is already engaged in this issue. Pyhä and Ruka for example, aim to become the cleanest ski resorts in the world and present a detailed responsibility programme (Visit Pyhä-Luosto ry, n.d.). The ski resort Levi has been awarded the ISO 14001, an international environmental certification, and the Sustainable Travel Finland Label (Oy Levi Ski Resort Ltd, 2020).

As concluded in chapter 4.1, product diversification or activity adaption are perceived as the most promising strategies for climate change related risks in Northern Finland. Hence, developing alternative activities should focus on snow-independent products (Tervo-Kankare, 2011) to

decrease climate sensitivity. One alternative activity that will be investigated in the further progress of this research is mountain biking. This activity attracts visitors around the year and can help to achieve economic diversity (Buning & Lamont, 2021). According to Tervo (2007), ski tourism in Northern Finland will have advantages caused by climate change because of the limited possibilities in Southern Finland and Central Europe. For the short-term planning for Northern Finland, it is proposed to focus the destination image on snow reliability in winter national and international (Sievänen, et al., 2005).

Increasing tourist arrivals during summer due to alternative warm-weather activities and in winter because of snow-reliable ski resorts are even aggravating climate sensitivities as well as ecological problems and disturbing nature (Steiger, et al., 2021). It is crucial to engage in proactive and long-term tourism planning instead of reactive and short-term to minimise risks and implement adaptive measures (Nicholls & Ameldung, 2015). To ensure sustainable destination planning, the goal of this research is to increase touristic travel only according to the already existing capacity limits without further extending tourism infrastructure. Moreover, promoting year-round tourism with mountain biking will be beneficial to counteract seasonality. This goal is perceived to be a huge challenge, as the tourist expenditure, as well as tourist arrivals, are significantly higher in winter than compared to the summer season (Morrison & Pickering, 2013; Steiger, et al., 2019).

4.3 Examples from the European Alps: Product Diversification as an Adaptation Strategy for Climate Change Related Impacts

Although being of crucial importance in the Alps, product diversification as an adaptation strategy in form of mountain biking has not been researched in detail yet. Here, mountain biking is an important role in product diversification and helps to extend the touristic season (Pröbstl-Haider, et al., 2018). Especially, “under conditions of climate change, its importance might further increase, as the skiing season contracts” (Pröbstl-Haider, et al., 2018, p. 578). The Alpine region records approximately 18.6 million mountain bikers currently, with an increasing tendency. Some destinations tailored their touristic offers to specific mountain bikes target groups such as downhill mountain bikers or families. In Austria for example, mountain biking is becoming an essential part of the tourism market but also for the local population used for recreational purposes (Pröbstl-Haider, et al., 2018). The existing infrastructure of winter sports facilities, e.g., lifts, can be used for mountain biking during the summer months. The biggest ski resorts operate at least one lift for mountain biking or hiking purposes during the summer (Marković & Petrović, 2013).

Following, several destinations from the Alpine region being known for ski tourism but engaging in mountain bike tourism are presented. The first example from the Alps is the destination Sölden. The destination is internationally known for ski tourism with excellent services. In 2014, the first investments into the summer tourism niche product ‘mountain biking’ were made. Returns of

investments are 165,000 visitors using bike trails with a daily tourist expenditure of 190.00 Euros. Another example is Graubünden, also famous for its skiing possibilities. Starting in 2009, mountain biking was developed, mainly for touristic purposes. At the moment, Graubünden is one of the most famous mountain bike destinations in the Alps. Moreover, Lenzerheide, which is part of the Graubünden region, is hosting big international mountain bike events. In comparison to Sölden, the destination focuses rather on the mutual sharing of mountain bikers and hikers. The third example is St. Corona am Wechsel in the vicinity of Austria's capital area Vienna. In contrast to Sölden and Graubünden, the destination is rather small and not internationally known for skiing. The ski resort collapsed 10 years ago due to declining winter tourism. However, the destination transformed itself into a mountain bike destination with a clear exclusion of extreme mountain bikers but a focus on families and kids. The mountain bike park that has been established led even to further investments in tourism after the degradation of ski tourism (Allegra Tourismus & Trails AG; Klue Oy, 2020).

Being already very popular in the alpine region, there is potential to reproduce and develop mountain bike tourism in other regions of the world (Pröbstl-Haider, et al., 2018). Since the cycling market is becoming more complex with increasing demand, there is much room for mountain bike strategies and developments in customer segments (Buning & Lamont, 2021). The examples of Sölden, Graubünden, and St. Corona am Wechsel demonstrate that although mountain bike tourism is in its initial phase, popularity is increasing, and tourists accept this substitute for skiing at least during the summer months.

5. Short- and Long-term Assumptions of Outdoor Recreation in Finland

In Finland, outdoor activities are broadly practised. Throughout the year, Finns participate in 11 different outdoor activities. Furthermore, people tend to participate in more different activities compared to the past (Fredman & Chekalina, 2019). 96% of the Finnish population is engaged in recreation, while they yearly conduct eight holiday trips for nature purposes. The most popular activities are walking, swimming, cycling, and spending time in nature such as berry picking or picnicking. Most nature holidays are recorded in Lapland (Lankia, et al., 2015). The demand for recreation and sport, in general, is increasing due to more spare time and rising household income (Marković & Petrović, 2013).

As outlined, climate change will impact outdoor recreation and tourism intensely. In general, outdoor recreation is expected to shift to higher elevations and latitudes because of too high temperatures to conduct activities and the availability of snow coverage needed for snow-based activities (Monz, et al., 2021). Also, heatwaves in Southern and Central Europe will lead to increasing demand for (summer) holidays in northern countries. People escape hot cities into

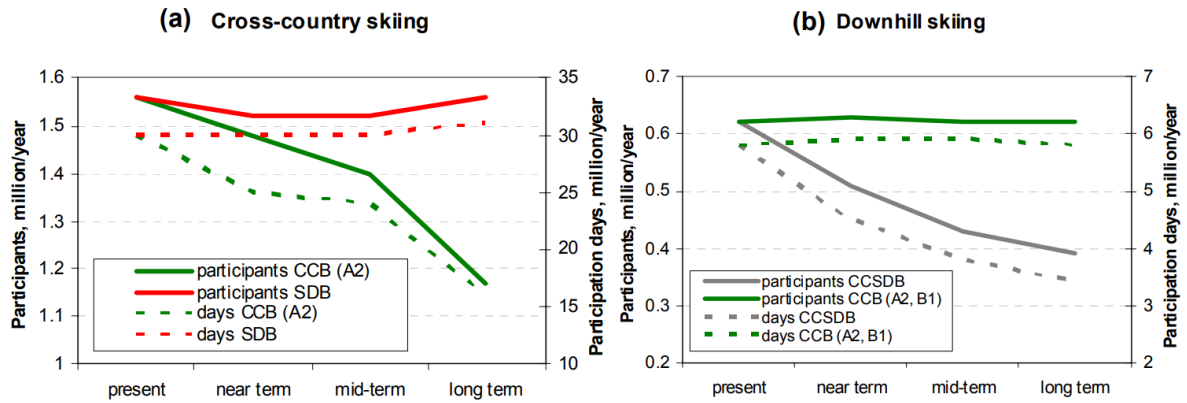


Figure 3: Demand in participation for a) cross-country skiing and b) downhill skiing in Finland (Sievänen, et al., 2005)

more rural surroundings (Pröbstl-Haider, et al., 2021), which will lead to increasing national and international demand for outdoor tourism in Finland.

Considering the popularity of ski tourism in Finland (Konu, Laukkanen, & Komppula, 2011) and declining opportunities in Southern Finland, a demand shift towards more distant locations (in this case Northern Finland) is expected. Additionally, as explained in chapter 3.2, spatial demand adaption, will increase the demand for winter holidays in Northern Finland. Longer travel distances, a longer duration of holidays, or rather overnight than day trips will increase the costs of skiing. Many skiers might give up skiing and therefore look for new activities to replace skiing (Sievänen, et al., 2005). In Figure 3, the popularity of downhill and cross-country skiing among Finnish recreationists is displayed. The results are based on different scenarios depending on different factors such as climate and demographic change. Both figures show a decreasing trend. However, these scenarios are uncertain but can be used as a foundation for discussions.

Especially within driving distances to dense populations and being further increased by urbanisation and population growth, participation in outdoor recreation is likely to increase in general (Lankia, et al., 2015; Monz, et al., 2021). In conclusion, there is a need for alternative outdoor activities in Southern Finland and product diversification in Northern Finland. As Tervo-Kankare (2011, p.4) concludes “tourism destination development in the age of changing climate calls for new and innovative approaches that reduce vulnerability and help to gain from potential advantages”.

Although Lapland is internationally rather known for cross-country skiing, snowmobiling, dog sledging, ski touring, and downhill skiing, new activities such as snowshoeing, Santa Clause visits, ice fishing, safaris, and northern light hunts become more popular among international visitors. This indicates that tourists ask for a mix of snow-based activities (Falk & Vieru, 2019) and are not travelling to Northern Finland to participate in only one winter activity, e.g., downhill skiing. However, the main travel motivation for Finns is skiing, with downhill skiing attributes being a

basic requirement for a destination choice. Nevertheless, the demand for downhill skiing on the Finnish market is decreasing, while the demand for cross-country skiing stays steady (see Figure 3 with different demand scenarios).

Considering ski tourism in Northern Finland, researchers claim to seek new markets (Konu, Laukkanen, & Komppula, 2011) and use international marketing strategies (Falk & Vieru, 2017) to keep tourist arrivals on the same level. Destination images such as the snowy scenery and experiencing 'real winter' can be used for marketing purposes. In the last 20 years, most foreign tourists (UK, France, Germany, Italy, Japan, Spain, and Switzerland) were not sensitive to changes in snow depth, but rather to changes in price during the early season, except guests from neighbouring countries such as Russia and Sweden (Falk & Vieru, 2019). It cannot be assumed that this sensitivity to impacts of climate change applies also in the future, however, it supports the potential of increasing international tourist arrival.

As concluded in the previous research of this paper, increasing demand for winter and ski tourism in Northern Finland is expected in the short term. Destinations in Northern Finland benefit from better snow conditions for ski tourism (Neuvonen, et al., 2018) and increasing international demand to experience snow and winter (Falk & Vieru, 2019). However, due to the exposure to climate change related risks, winter tourism is jeopardised.

Product diversification is considered the most promising adaptation strategy for climate change related issues of ski tourism (Unbehaun, Pröbstl, & Haider, 2008; Olefs, et al., 2021; Steiger, et al., 2021). Yet, demand-side adaptation considering climate change is scarcely investigated in tourism research. Therefore, product diversification is important to sustain the economic and social sustainability of ski resorts with the economy and communities relying on ski tourism (Walter & Ruhanen, 2015). For long-term sustainable planning of the destination in Northern Finland, mountain biking is chosen as an alternative outdoor activity to skiing. Product diversification through mountain bike tourism in winter sports resorts is already occurring (Buning, Cole, & Lamont, 2019). In Whistler for example, already 75% of winter season revenue is represented during summer (Hardiman & Burgin, 2013). Mountain bike tourism is a growing market and becoming more popular within the population.

According to Inkilä & Satokangas (2021), mountain biking during the snow-free periods has potential for both national as well as international tourism. Developments in mountain bike tourism took place in recent years and are therefore considered to be in the initial development stages. Mountain bike tourism is especially centred around ski destinations, assuming that touristic infrastructure and lifts are used in this form of tourism. Lapland is already a popular tourist destination for cyclers, being identified as a mountain bike destination, with people travelling to experience peace, beautiful sceneries, tranquillity, and a wild atmosphere. In Ylläs for example,

one of the most popular mountain bike destinations, 54% of summer visitors participate in mountain biking, 47% in fat biking and 28% see cycling as the main travel motivation to travel to Ylläs (note: survey allowed multiple answers). Interestingly, not only tourists primarily motivated by mountain biking are conducting the activity, but also 'ordinary' tourists participate due to the offered services in the area. In Lapland, mountain biking could help to facilitate year-round tourism and might be of incremental value for tourism in the future.

Another matter is the importance of cross-country skiing in Finland. Approximately 40% of the Finnish adult population participates in cross-country skiing which is a big part of the national identity. Cross-country skiing is exercised on prepared routes, mainly in recreational areas close to population centres. Moreover, it is a popular activity to conduct during holidays (Landauer, Sievänen, & Neuvonen, 2009). Being threatened by climate change, the willingness for adaption is increasing (Neuvonen, et al., 2015) and the engagement in non-snow-based activities rises (Monz, et al., 2021). Cross-country skiers are willing to travel to Northern Finland and pay more for the activity. Additionally, they have positive attitudes towards non-snow-based activity substitutions (Landauer, Sievänen, & Neuvonen, 2009). As conditions for this activity become less favourable, the number of facilities decreases, and skiers quit or look for new, substituting activities. This assumption supports the growing potential of mountain bike tourism in Finland, and even has the potential to become a new 'national sport'. This theory is also supported by Inkilä & Satokangas (2021), describing cycling as becoming a new 'hobby' for the whole nation.

In Southern Finland, the demand for close to home outdoor recreation possibilities and spaces increases (Neuvonen, et al., 2018) and bad conditions for cross country skiing result in decreased participation (Neuvonen, et al., 2015). This implies, that there is a need for new outdoor activities and areas in the vicinity of source markets. In this case, it is assumed, that the potential for mountain biking as a substitute for winter activities in the Capital Area is imminent.

Northern Europe has potential for nature-based tourism because of its extensive natural areas (Uusitalo & Sarala, 2016), in contrast to the densely populated Central Europe. Furthermore, many southern countries are becoming too hot for visits (Unbehaun, Pröbstl, & Haider, 2008; Nicholls & Ameldung, 2015). Moreover, the existing touristic infrastructure for outdoor tourism in Finland can be used for summer tourism (Allegra Tourismus & Trails AG; Klue Oy, 2020). In the past, entrepreneurs captured the potential for winter tourism to develop attractiveness. This achieved destination image can now also be used to promote summer or shoulder seasons (Nicholls & Ameldung, 2015). At the moment, an unequal touristic income is prevalent in Finnish Lapland due to the high seasonality of winter tourism. Summer tourism, including mountain biking, can thus help to establish a distributed income and counteract seasonality (Allegra Tourismus & Trails AG; Klue Oy, 2020).

The following assumptions were collected within the progress of analysing literature and are subsequently investigated in qualitative research:

- Increasing national and international demand for winter tourism in Northern Finland in the short term
- Increasing national demand for mountain bike tourism in Finland in the long term
- Increasing national demand for outdoor recreation facilities in Southern Finland in the long term

The international demand for mountain bike tourism in Northern Finland is unclear as it has not been investigated yet.

6. Methodology

In chapter 5., the potential that mountain biking has in Finland was demonstrated. However, no research has been found considering mountain bike tourism in Finland. Therefore, a qualitative approach with respect to achieving a grounded theory is conducted for this paper. As of this far, no research has been conducted that connects activity substitution as an adaptation strategy for climate change related issues with mountain biking. Hence, grounded theory research seems appropriate for this research area. It is important to collect general assumptions and outlooks to further initiate research, especially quantitative market research in an international context. No expert in the field of the topic of this paper has been found, thus experts from the tourism and outdoor recreation industry and research, as well as destination management have been interviewed. This is to ensure non-biased perspectives. The semi-structured interview was held within a Microsoft Teams webinar due to geographical distances and difficulties resulting from the Covid-19 pandemic. All interviewees have been informed about the public display of acquired data and consented. Five leading questions in the context of demand changes in outdoor recreation and tourism, sustainability, and mountain bike tourism were used for this research. Participants are anonymous and transcriptions of the interviews are added in the attachments. Strauss & Corbin's (1990) approach of theoretical sampling for grounded theories as well as constant comparative analysis were used in this research to generate a grounded theory. Despite the comparatively small amount of conducted interviews, this research comprehends theoretical saturation as in the progress of this research, no additional data has been acquired. Afterwards, open, axial, and selective coding is applied to analyse textual data and grounded theories according to the interpretation are developed. The collected findings are applicable to Finland as all interviewees are engaged with Finnish tourism industry or research. However, due to geographical proximity and similarities in their touristic landscape, results might also be applied to Northern Sweden or Norway.

7. Findings and Discussions

This chapter implements selective or advanced coding. Axial or intermediate coding is presented in Figure 4, and open or initial coding is added to the attachment.

As already stated, the winter and ski tourism industry of Finland is endangered by climate change (see Haanpää, Juhola, & Landauer, 2015). Especially the arctic region is affected harder than other parts of the world as one correspondent described. In the future, more extreme winters will occur more frequently, and snow conditions become unreliable. Furthermore, it is perceived that the winter season is getting shorter. These impacts of climate change lead to negative consequences for the Finnish tourism industry such as constraints in exerting snow- and ice-based outdoor activities. As one interviewee said, there are “less destinations and places where [it’s] possible to ski or do other winter activities”. However, in short term, Northern Finland is relatively snow secure. Hence, the demand for winter tourism is likely to stay high with the potential to increase. This is also intensified by the fact that climate change is impacting the source markets such as Southern Finland, Central Europe, and the Alps quicker. The demand from these areas shifts to more northern destinations with a relatively snow-secure image. In general, “longer travelling is required to reach downhill and cross-country skiing services” as one interviewee responded. This will result in a rising demand to travel to Northern Finland in the next 20 to 30 years. Another interviewee connected this with the expectation that climate change might cause last change tourism in Finland with respect to winter tourism and snow conditions.

The impacts and related consequences of climate change will as well influence the demand for winter tourism in other ways. In the short run, people will purchase gear that allows them to conduct winter sports within the current snow condition (see Sievänen, et al., 2005). Hence, if the snow condition worsens, they are willing to travel further distances to use their equipment, as one participant mentioned. In the case of Finland, tourists from Central and Southern Finland will travel to the northern parts. Another possibility for climate change adaptation is activity substitution. People will engage in different outdoor activities that are not snow-based and more activities will be developed for the snow-scarce winter season as well as other seasons. Hence, some activities will become more popular than others of which mountain biking is an example of the replacement of skiing. However, a small amount might give up the activity entirely and not replace it with a substitute as one correspondent said. The long run of demand adaptation is yet not sure but likely to decrease as two interviewees explained. These afore-mentioned insights are supported by literature as well (see Lankia, et al., 2015; Neuvonen, et al., 2018; Falk & Vieru, 2019) whereas their occurrence is likely. However, this is depending on the development of climate change and if measurements that are taken will help to counteract climate change. In general, when being asked about future developments, many interviewees refer to uncertainty, now especially caused by the pandemic and the Russian-Ukrainian war. This unpredictability leads to increasing travel

costs and the safe image of Finland being questioned, but also a shift to sustainable energy or choosing domestic travel instead of international. Yet, the evidence mentioned here should be taken into consideration.

Most interviewees agreed that the sustainable travel demand is increasing because issues such as biodiversity are more important for younger generations. Moreover, the demand for nature activities is increasing, mostly caused by the pandemic (see Fredman & Margaryan, 2021; Beery, Olsson, & Vitestam, 2021). Looking at the potential of mountain bike tourism, the popularity of mountain biking in Finland is increasing. Chiefly fat biking has been a successful tourism product in Northern Finland during the past years. Fat biking is the usage of bikes with balloon-shaped tires with lower inflation compared to regular mountain bikes, giving them the ability to ride over mud, snow, or sand (Neumann & Mason, 2019). This is since fat bike tourism products are suitable for sustaining year-round tourism as they can be used during summer as well as during winter as one respondent explained (compare Buning, Cole, & Lamont, 2019). Hence, the assumptions of chapter 5 correspond with the results of this qualitative research. Thus, in the short term, the national and international demand for winter tourism in Northern Finland is increasing. In the long term, the national demand for mountain bike tourism in Finland as well as the national demand for outdoor recreation facilities in Finland, will increase.

This implies the grounded theory that mountain bike tourism has the potential to develop year-round tourism in Northern Finland and helps to counteract the negative consequences of ski tourism that are related to climate change. Buning, Cole, & Lamont (2019) for example state, that mountain biking has the power to overcome seasonality as it can be conducted on the 'opposite' side, namely summer, compared to skiing. Hence, speaking in one correspondent's words, we should not "worry about when we start the winter but rather when we end the summer (season)" when looking at the future of winter tourism. According to this statement, mountain bike tourism needs to be developed so it can flexibly be 'adjusted to natural conditions' as another participant said. This means for example, that the season for mountain biking can be easily prolonged if the case of a late season start for snow-based activities occurs.

Yet, after this research, it is still not assured if international mountain bike tourists are attracted. This correlates with statements from the interviewees concerning the development of international mountain bike tourism. Although much work has been done recently, destinations are not yet ready to attract international mountain bikers. Some destinations have done bigger steps in terms of development than others. Hence, the next step would be to join forces and create a brand for mountain biking as one participant argues. It seems that the different stages of development are correlating with uncertainty towards international mountain biking. This indicates that development in mountain bike tourism is still needed in Northern Finland.

Being asked about factors that could attract international mountain bike tourists, many correspondents answer with attributes that are also applicable to any nature-based tourism in Northern Finland. Nature was usually the most important attribute followed by silence, safety, uniqueness, remoteness etc. Moreover, cultural features such as atmosphere, meeting locals, the Sámi culture, and sauna are mentioned. The most important attracting factor with respect to this paper is the infrastructure for mountain biking. Although the development of mountain biking is not yet ready, most of the infrastructure that can be used for the development is already existing. This is due to the tourism centres with a wide range of facilities that host tourists during the winter and the services of Metsähallitus, the forest ministry of Finland, providing management for natural areas such as national parks.

To create year-round tourism in Northern Finland, a tourism transformation is needed. Although the development of mountain bike tourism has already started, the winter season is still of great importance. Being asked, who could initiate and finance this transformation, the interviewees gave diverging answers. Some replied that a share of the responsibility lies on an international EU level. According to them, the EU initiates important tourism development projects and provides financial resources such as the European Regional Development Fund and European Social Funds. Furthermore, many emphasised the importance of public state-level organisations such as Visit Finland, Metsähallitus, and other national ministries. One interviewee argued that legislation forcing sustainability and counteracting climate change would initiate the transformation process. Looking at attributes that were used in describing their role such as 'guiding', 'supporting', managing, 'overseer', and 'creates the spirit of working together', it seems as if the public state entities could guide, support participants with information, and enforce collaboration within this process. Moreover, some responsibility lies on a public and regional level. Usually, local destination management organisations, tourism associations, as well as municipalities are meant here. They provide information, infrastructure, planning, and communication. It is perceived that public organisations provide the touristic framework in which the transformation takes place. The relationship of the acquired data is shown in Figure 4.

Besides public organisations, also private companies are mutually responsible for a tourism transformation in Northern Finland. Whilst public authorities seem to only have the responsibility for guidance and organisation matters, the actual change must come from the companies. One example of this could be a ski rental company investing in mountain or fat bikes that can be rented out to tourists during the summer months. The transformation, in this case, would be an adaptation from products that are solely used for snow-based activities to also non-snow-based activities. According to some of the participants of this research, also individuals play an important role to achieve more sustainability in tourism. Emphasis was especially put on the tourists themselves, creating the demand for sustainable tourism. Yet, two respondents had different

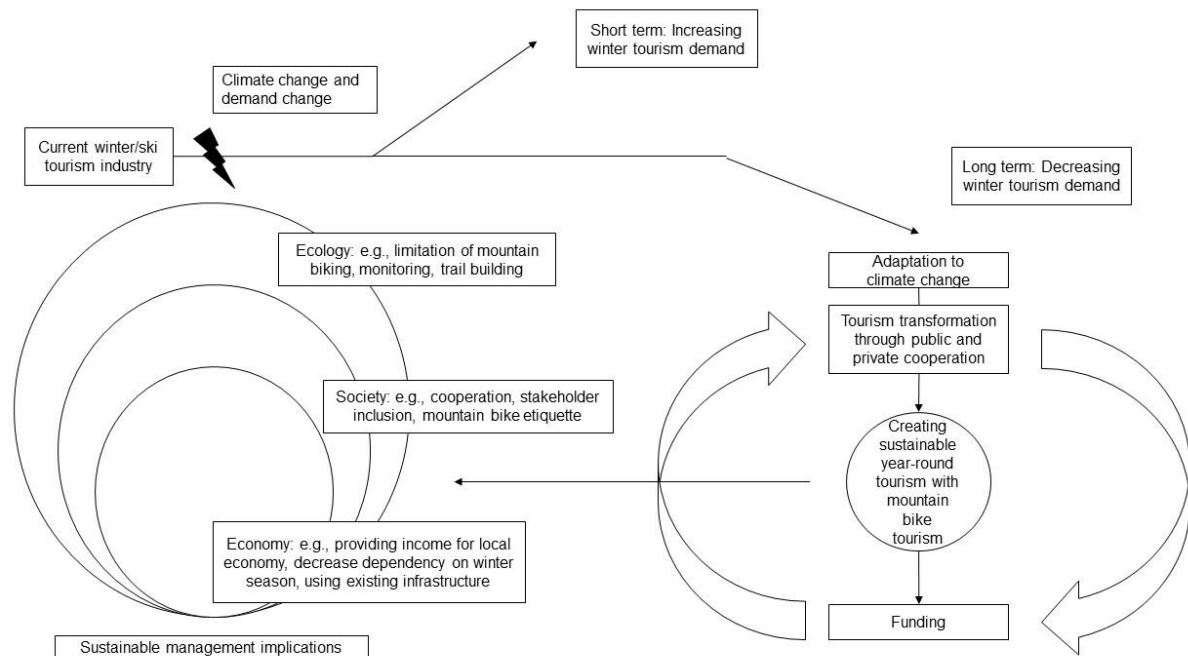


Figure 4: The relationship between ski tourism, climate change, and mountain bike tourism (own illustration)

approaches to who is ruling the demand on the tourism market. As one interviewee said, “it’s actually the offering that rules the demand”. The participant argues that the arctic is “such a foreign environment for people” that it is hard to imagine what can be done within these surroundings. Hence, tourists demand whatever there is. Also, two correspondents mention that marketing is influencing the demand drastically and thus has the power to regulate the demand according to the offer. Yet, if only sustainable products were offered on the market and tourists demanded them, sustainable tourism could be achieved. Concluding, the responsibility for this transformation lies in cooperation between different public and private stakeholders. Public national entities could initiate the transformation by providing information, education, and policies such as ministries or Visit Finland. This could be organised and communicated by public regional organisations such as destination management organisations or municipalities to locals and entrepreneurs. Hence, local businesses then initiate the ‘real’ change as one participant explained.

Despite several climate change related consequences for skiing being described before (see Fredman & Chekalina, 2019; Steiger, et al., 2019), there are also some negative impacts on mountain biking. Although the summer has mostly positive impacts with higher temperatures, warmer water, and sunnier weather in Finland (Saarinen & Tervo, 2006), some dangers increase. The rising temperature and diminishing of permafrost will lead to mass movements and slope instability. This induces mudflows, landslides, rockfalls, and debris endangering all parts of the touristic infrastructure, e.g., buildings, lift operators, biking paths, roads, etc. To adapt to those issues, regular maintenance of infrastructure and providing security to mitigate the instability of biking paths are needed. Furthermore, special signposting for areas being at risk such as erosion will support safety (Pröbstl-Haider, et al., 2021).

Furthermore, climate change is likely to increase mosquito infestation (Monz, et al., 2021). Especially international tourists shun the summer in Northern Finland due to this issue as one participant explained (compare Inkilä & Satokangas, 2021). Hence, mosquito protection and information could be provided. The correspondent further suggested concentrating development and marketing rather on the autumn months instead of summer.

Other challenges are long distances (Inkilä & Satokangas, 2021) and the dilemma of convenience and wilderness (Allegra Tourismus & Trails AG; Klue Oy, 2020). This is described by the convenience for comfort, availability, and accessibility of tourism products or infrastructure while customers expect pure and untouched nature and wilderness. Thus, while planning and developing mountain bike tourism, these contraries need to be balanced appropriately.

8. Management Implications in Consideration of the Sustainable Destination Development of Northern Finland

According to the participants of this research, developing year-round tourism is of great importance in Northern Finland. This goes in line with the Finnish tourism strategy (Ministry of Economic Affairs and Employment, 2020) as well as the tourism strategy of Lapland (House of Lapland, 2019). Sustainable implications derived from the qualitative research as well as literature have been collected in this chapter with an emphasis on mountain bike tourism. As already mentioned in chapter 2.5, Giddings, Hopwood, & O' Brien's (2002) approach to sustainability is applied.

8.1 The Sector of Environment

Mountain biking has various negative consequences for the environment where it takes place:

- Small-scale habitat fragmentation, vegetation and soil erosion, water pollution, and clear-cutting (Uusitalo & Sarala, 2016)
- Vegetation and wildlife disturbance, soil erosion, water and air pollution, and noise (Goefit & Alder, 2001; Monz, et al., 2021)
- Stressing the natural environment, nature does not have time to recover (Hanna, et al., 2019)
- Increased erosion, soil compaction, changes in trails surface, vegetation damage, littering, and disturbance for wildlife (Pröbstl-Haider, et al., 2018)
- Disturbing sensitive areas and wildlife (Marković & Petrović, 2013)
- Vegetation trampling, soil compaction, erosion, trail widening, and illegal trail formation (Martin, Butler, & Klier, 2018)
- Rising water runoff, sediment yield, soil exposure, vegetation/species loss, trail widening, especially steep slopes with little vegetation being most severely exposed to negative impacts (Hardiman & Burgin, 2013)

Effects that are mentioned by the interviewees are widening of trails, erosion, crowding, and conflicts with other outdoor recreationists or private land users. However, only 35% of the observed damages are primarily caused by mountain bikers. Other impacts derive from the interaction between the bikers, vegetation, water runoff, rainfall, soil texture, etc. (Goedt & Alder, 2001). Nevertheless, mountain biking is considered to be less harmful to the environment compared to other outdoor activities such as hiking (Pröbstl-Haider, Hödl, Ginner, & Borgwardt, 2021).

Apart from the impacts of mountain biking, tourism in general results in damage to the environment. Tourism contributes to 8.1% of worldwide CO² emissions, especially through air travel (Lenzen, et al., 2018). However, due to its remote location, Finland is depending on air travel from a national and international perspective (Monz, et al., 2021). This is as well an issue that participants of the interview were concerned about. International customers need to fly, and the tourism industry does not have a solution for that, as one said. Especially in regard to public transportation a lot has to be done in order to transfer international tourists. Finnair for example has pledged to become carbon neutral by 2045 and engage in electric aviation possibilities (Finnair, n.d.). Yet, such issues on a general level need to be taken into account as well for producing sustainable mountain bike tourism. Also, the transportation of tourists with cars or the operation of lifts increases pollution and affects the air quality negatively (Goedt & Alder, 2001). Due to rising demand and longer travel distances, negative consequences are likely to increase in the future. According to the interviewees, nature is the main travel motivation for tourists to travel to Northern Finland (see Cornelisse, 2020) as well as for mountain bike tourists (Pröbstl-Haider, et al., 2018; Allegra Tourismus Österreich GmbH; Klue Oy, 2020). Thus, securing the environment must be of the highest priority. Environmental changes are likely but are however not problematic if impacts stay within an acceptable limit (Goedt & Alder, 2001). Therefore, appropriate management implications are needed to ensure sustainable destination planning in Northern Finland. As Goedt & Alder (2001, p. 208) say, “mountain bike riding in natural settings will only be sustainable if trails are located, established and managed in a manner that integrates the environmental sensitivity of the area and rider preferences”.

In protected areas in Northern Finland such as Pallas-Yllästunturi National Park, where most of the current mountain biking takes place, crowding is already becoming a problem and hence some outdoor activities are restricted as one participant said. In other places, crowding is becoming visible, but it is not connected to problems yet. If the number of users is continuing to grow, a limitation in those areas is needed to serve the original idea of conserving natural areas. In many nature-based destinations, the public is in favour of controlling the visitor numbers (Uusitalo & Sarala, 2016; Cornelisse, 2020). Other interviewees say that non-protected or other forestry areas do not have any issues with crowding. According to one participant and Hardiman

& Burgin (2013), forestry areas for commercial harvesting or timber production are most appropriate for recreational use as the impacts are less sensitive to the nature of these areas. Thus, building trails in these areas would contribute to steering parts of the customer flow and dissolving pressure from national parks. In general, mountain bike tourism development could concentrate on developing recreational places apart from protected areas where crowding is becoming a problem. On the other hand, these areas do not provide interesting landscapes or scenery. Metsähallitus (2015) says, rather individual restrictions in endangered areas instead of general bans are favoured and restricting the Finnish Everyman's right is seen as a threat to the culture as it is a big part of the national identity (Neuvonen, et al., 2018). However, indirect management solutions such as limiting the bed capacity of resorts (Uusitalo & Sarala, 2016) could help to solve this issue. Also, when it comes to planning events, for example, only bikes with wider tires could be allowed as narrower tires cause a greater impact on soil and vegetation (Martin, Butler, & Klier, 2018). Yet, if the impact on the environment is too severe, trails need to be closed (Goett & Alder, 2001).

Monitoring effects that are caused by mountain bike tourism is an issue many interviewees emphasised. Uusitalo & Sarala (2016) recommend using land use management programs to detect unacceptable impacts and estimate the scope of acceptable conditions such as sensitivity, vulnerability or carrying capacity. Aspects such as key species of the area, surface erosion, water contamination level, vegetation damage, and width and depth of trail tracks must be monitored (Uusitalo & Sarala, 2016). Here, the building of illegal trails needs to be prevented (Newsome, et al., 2016). Leaving trails must be forbidden with exceptions of permissions for freeriding on ski slopes during summer. Due to immense damage, this permission could only be given if mountain bikers demand it explicitly or do it frequently despite prohibitions. Other possibilities for monitoring are websharing services such as Google which provides information about the amount and movement of mountain bike tourists (Campelo & Nogueira Mendes, 2016), especially regarding detecting 'illegal' and off-trail biking (Pröbstl-Haider, et al., 2018).

According to some correspondents of the research, trail building must be conducted with high sustainability standards, taking into account also the natural features of the area. High-quality trails can benefit from needing little to no maintenance although the penetration might be high (Allegra Tourismus & Trails AG; Klue Oy, 2020). Before building new trails, the area needs to be assessed from an environmental and cultural perspective to avoid negative consequences (Newsome, et al., 2016). Hence, the local population needs to accept the construction (Allegra Tourismus & Trails AG; Klue Oy, 2020). In the case of Northern Finland, this could be the flora and fauna of the taiga or tundra, drinking water sources, and using land resources of the indigenous Sámi people. Furthermore, it could be assessed if the area is inhabited by endangered species and if nature can endure the stress. Suitable terrain could be chosen, and sensitive areas

avoided (Metsähallitus, 2015). Refraining soils prone to erosion, steep slopes, narrow turns, sharp corners, and blind spots are also of great importance for a sustainable design of bike trails (Monz & Kulmatiski, 2016; Pröbstl-Haider, et al., 2018). To avoid steepness, turns could be included. When designing the trails, it could be also considered to make maintenance accessible and avoid spots that are prone to trail widening or erosion. Furthermore, water bars or water runoffs need to be added to prevent erosion, especially in areas of dense soil compaction. Additionally, vegetation cover, partly on or beside the trail, can reduce erosion. For the trail design, it also needs to be considered if the trail is meant for the shared usage of recreationists such as hikers (Goefft & Alder, 2001). To create sustainable plans for the trail construction, close cooperation between experts in mountain bike constructions, e.g., Allegra, entities knowing natural features of the area, e.g., Metsähallitus, as well as other stakeholders, needs to be ensured.

Another important part of sustainable mountain bike management is maintenance (Metsähallitus, 2015). Measurements could be, for example, hardening trail spots where the impact is severe or the area is very sensitive (Goefft & Alder, 2001), and ensuring effective water drainage (Pröbstl-Haider, et al., 2018). Furthermore, trails need to be signposted according to international levels (Allegra Tourismus & Trails AG; Klue Oy, 2020). Here, also the difficulty level needs to be taken into account. Additionally, the digital provision of signposting, and augmented reality solutions could be ensured. To avoid bike accidents, dangerous turns or other dangerous zones must be marked as such (Pröbstl-Haider, et al., 2018). Moreover, routes chiefly suited for mountain biking could be labelled for example in brochures, a detailed route description could be available, and other information such as emergency contacts displayed (Metsähallitus, 2015).

8.2 The Sector of Society

Main resorts in Northern Finland, such as Ylläs and Levi, are reaching the consolidation state in the destination life cycle (see Butler, 1980) as negative impacts on the society increase (Uusitalo & Sarala, 2016). Thus, assuring sustainable mountain biking with respect to social aspects is of great importance. Hence, many research participants mention collaboration and involving all relevant stakeholders in the development and transformation process. This is also recognised by various voices from the literature (compare Jokinen & Sippola, 2007; Tervo-Kankare, 2011; Freeman & Thomlinson, 2014; Kulusjärvi, 2017; Komppula & Alegria, 2019). Here, lobbying with respect to mountain biking could be performed (Hardiman & Burgin, 2013). Representatives in municipalities or school programmes could bring more awareness for the sport. Furthermore, events on a regional level could support the local mountain bike identity, and national or international events to create a positive mountain bike image in Northern Finland (Allegra Tourismus & Trails AG; Klue Oy, 2020). Another important stakeholder in the study area is the indigenous Sámi population. Previously, there have been issues with land usage by tourists and reindeer herding being pivotal for Sámi communities (Jokinen, Sarkki, & Heikkinen, 2016). Before

developing mountain bike routes, the Sámi population must agree to the construction and be included in the planning.

Concerning communication, improving communication and sharing knowledge of climate change issues is in favour of sustainable development (Neuvonen, et al., 2015). As many entrepreneurs and small enterprises in Finland focus on short-term and reactive planning (Tervo-Kankare, 2019), the vision and potential of creating year-round tourism through mountain biking need to be brought to them (Tervo-Kankare, 2011; Allegra Tourismus & Trails AG; Klue Oy, 2020). As resulting from the interview, for many tourism providers, artificial snowmaking is still of great importance although its critical impact on the environment. In 2011, Finnish ski tourism related research found that many participants do not believe in an overall climate change but rather in seasonal fluctuations (Tervo-Kankare, 2011). Also, there is scepticism about climate change within the industry and climate change is rather perceived as a threat in the distance (Steiger, et al., 2019). However, people's attitude toward climate change is not constant but likely to shift over time (Tervo-Kankare, 2011). Providing information through knowledge sharing, training, education, as well as discussions might change their perspective and they can hence proactively act towards climate change. As concluded in the previous chapter, public authorities are in charge of guiding the tourism transformation. Thus, regional entities such as municipalities and destination management organisations, could engage in discussions and develop long-term planning for individual destinations, whereas national entities provide knowledge and information in form of training or workshops.

Another important social aspect of developing sustainable mountain biking is to bring benefits both to residents as well as visitors (Freeman & Thomlinson, 2014). Conducting outdoor activities improves health and well-being (Metsähallitus, 2015; Newsome, et al., 2016) and enhances the quality of life for the local community (Quevedo, Vinueza Naranjo, & Cejas, 2020). Those who experience outdoor activities might as well develop pro-environmental behaviour through a deeper appreciation for nature (Hanna, et al., 2019). Hence, it is important to make outdoor activities accessible for everyone. Chiefly creating a local mountain bike community helps to attract more tourists (Freeman & Thomlinson, 2014). This could be developed by including locals in enhancing, developing, and maintaining trails (Pröbstl-Haider, et al., 2018), sharing a vision, involving locals in sport, or participating in events (Allegra Tourismus & Trails AG; Klue Oy, 2020). Thus, locals, as well as mountain bike tourists are of big importance for accomplishing a sustainable experience while enjoying and preserving mutually (Quevedo, Vinueza Naranjo, & Cejas, 2020).

Within the progress of the interview evaluation, it became evident that a mountain bike etiquette or mountain bike rules need to be promoted. This is especially due to new tourist segments

entering the nature-based tourism market that are not yet experienced in behaving outdoors. Tourists could be encouraged to stick to those rules, e.g., staying on trails, leaving no trace, no littering, and always being in control of their bikes (Marković & Petrović, 2013). Furthermore, inappropriate riding techniques such as skidding, braking, wheel slippage and spinning having negative impacts could be avoided (Hardiman & Burgin, 2013; Martin, Butler, & Klier, 2018). Yet, mountain bikers need to be educated on what proper riding techniques are (Goefft & Alder, 2001). Another aspect which is broadly discussed in the literature is conflicts between bikers and other recreational users of shared trails (Goefft & Alder, 2001; Marković & Petrović, 2013). Conflicts are described as pushing other users from the trail, feeling unsafe through high speeds, taking the right of way and thus a negatively changed nature experience (Goefft & Alder, 2001). However, as Hardiman & Burgin (2013) state, accidents happen quite rarely in comparison to their discussion. There could be clear communication for trails that are open for the usage of multiple outdoor recreationists (Goefft & Alder, 2001). An example could be to encourage hikers to rather leave the trail for bypassing bikers as their impact is lower than vice versa and does not lead to trail widening (Martin, Butler, & Klier, 2018). Yet, mutual acceptance and tolerance of all trail users are necessary (Metsähallitus, 2015). Especially for inexperienced bikers, there could be also recommendations for example not to use more demanding trails.

Apart from locals, tourists are another stakeholder group interested in mountain biking. As detected in research, the needs of tourists must be monitored closely, e.g., with visitor surveys as one interviewee suggests. This is important, especially for the destination to adapt to changes (Pröbstl-Haider, et al., 2018). As mentioned before, the new nature tourists entering the market are needed to be taken into consideration as little is known about them yet. With respect to the development process of mountain bike tourism, some respondents are unsure about the attraction and that Northern Finland is not yet ready to host international mountain bike customers. To encourage this, internationalisation is necessary as one correspondent said, as well as international marketing strategies (Falk & Vieru, 2017). Furthermore, suitable tour operators for these target groups could be acquired (Inkilä & Satokangas, 2021). According to research, the goal is to create a mountain biking image of Lapland or Northern Finland with international visibility. Factors that can be used to create an image are natural (Rowell & Maher, 2017) and cultural factors, as well as infrastructure. Referring to the research, the arctic environment of Northern Finland offers great opportunities for mountain biking such as remoteness, unique landscapes, clean air, wilderness, etc. One participant mentioned the competitive advantage of having arctic hills (Finn. tunturi) that can be accessed more easily than for example steep mountains in the Alps. As one interviewee in Rowell & Maher's (2017, p. 224) research said, "scenery is important; otherwise I can just stay in my own backyard to ride", emphasis could be put on the Northern Finnish scenery considering image creation. Furthermore, the infrastructure

with a broad network of different trails, provided by Metsähallitus, is important. Tourists could as well be encouraged to make use of the Everyman's Right and Metsähallitus services such as wilderness huts, fireplaces, and trails.

As Türk (2019) describes many people that are enthusiastic about snow sports are temporarily attracted to winter sports resorts. They are employed in workplaces with seasonal character, in this case solely the winter season, modest salary, and short-term employment with little perspective. Mountain bike tourism has the potential to avoid seasonal unemployment (Buning, Cole, & Lamont, 2019) and keep tourism workers within the destination year-round (Cornelisse, 2020). Jobs could be, e.g., mountain bike support services such as repair or rentals, guiding, sports shops, accommodation, and food & beverage providers (Newsome, et al., 2016). One participant also mentioned the provision of fair labour contracts for employees for social sustainability.

8.3 The Sector of Economy

As Lapland is in its initiating stage of implementing mountain bike tourism, the competition with other destinations such as the Alps is intense as they started developing mountain biking earlier (Allegra Tourismus & Trails AG; Klue Oy, 2020). Yet, to attract international customers and create a mountain bike image for Northern Finland, development needs to continue. As one interviewee said, some destinations have done bigger steps than others and are more prepared for hosting tourists during summer. Hence, all destinations need to be advanced to the same level. Moreover, to suit the different interests of bikers such as downhill or cross-country, there is a need to establish a range of different trail types and demands (Newsome, et al., 2016). As most of the infrastructure is already existing, emphasis must be rather on equipping trails and destinations with mountain bike infrastructure such as signposting, e-bike charging stations, washing points, or bike hotel classifications (Pröbstl-Haider, et al., 2018), instead of new trail building. However, some special trails, for example for tourists travelling with families or downhill bikers, need to be built. With respect to winter tourism, the infrastructure of ski resorts can be used for developing bike parks. Lifts for example can elevate bikes and bikers up the hill. Any part of new infrastructure such as bikes, as one participant claimed, needs to be produced sustainably. Nevertheless, strategies could be tailored to individual destinations (Tervo-Kankare, 2011). Collaboration between local competitors could be encouraged (Freeman & Thomlinson, 2014) to create an overall image. In this case, different nature resorts could focus on different subsegments of mountain bike tourists such as Ruka focusing on families and Levi on down-hill enthusiasts. As already mentioned, internationalisation and international marketing could be further developed concerning attracting these subsegments. Considering marketing, it could be promoted as a sustainable travel destination, and the visibility of sustainable classifications could be increased

in order to attract environmentally concerned tourists (Puhakka, 2011). An idea of one interviewee was also to develop products where planting trees for travelling is empowered.

Regarding capacities, one correspondent said, "I think the emphasis should be more on how to make better use of what we already have". Considering the short-term rise in winter tourists, long-term planning is of crucial importance. This rise will likely occur around the peak seasons Christmas or Easter. Hence, some destinations might experience crowding or even overtourism during peak times. Therefore, no investments must be made to further extend capacity levels but rather investing in marketing measurements attracting tourists during summer or outside the peak season. Buning, Cole, & Lamont (2019), state that the customer loyalty of ski tourists can be transported to the summer season as well. This could be achieved through marketing mountain biking during the winter and especially peak seasons. Åre, an internationally known Swedish winter sports resort, for example, is utilising the uniqueness and high standard of its bike park for transforming its destination brand from a winter resort to a year-round destination (Fuchs, Cheklina, & Lexhagen, 2012).

The theory being grounded in this data is that mountain biking has the potential to create year-round tourism in Northern Finland. Other aspects besides mountain biking that need to be provided are accessibility and transportation. In a sustainable context, this is a great challenge as most international customers are depending on aviation as mentioned before. Furthermore, a public transportation network needs to be established. As one participant said, developers need to make sure that the entire customer journey is sustainable, because "otherwise we are in danger of losing a lot of customers". Additionally, events can support facilitating year-round tourism and improve the destination image outside of the peak season (Dimitrova, 2018). Northern Finland probably has no capacity for hosting mega-events, but instead small-scale, and perhaps even international mountain bike-themed events could be held. Within research, interviewees stressed the importance of supplying a variety of activities, mostly referring to winter tourism. However, it might be crucial to offer other activities for international tourists to compete with other international mountain bike destinations.

As stated before, tourism is of great importance in the region of Northern Finland (Puhakka, 2011; Neuvonen, et al., 2015; Rantala, et al., 2018). Yet, many nature resorts are depending on tourists (Marković & Petrović, 2013). As one interviewee said, "the tourism industry is so big, that you have to feed it enough to keep it alive". To create a long-lasting tourism destination successfully, mountain bike tourism can bring positive effects to the local economy such as creating jobs and sales (Quevedo, Vinueza Naranjo, & Cejas, 2020). The growth of tourism arrivals in summer can also create new business opportunities and innovations (Uusitalo & Sarala, 2016). Hence, it is important to preserve tourism businesses as well as the quality of life (Cornelisse, 2020)

considering climate change being a threat to winter tourism. Despite mountain biking having various negative effects on the environment, it has positive economic impacts on protected areas (Puhakka, 2008), e.g., tourists buying souvenirs or renting huts.

Despite having demonstrated immense potential for mountain bike tourism in Finland, there seems to be lack of financial sources (Allegra Tourismus & Trails AG; Klue Oy, 2020). Apart from European funds, some participants find that public state-level organisations could provide funding. Additionally, other financial resources such as private loans, market-based solutions, or everybody in the tourism industry paying their own share, are proposed. Due to diverse ideas and limited agreement on a specific topic, the question of funding is not yet clear. However, when it comes to giving out funds, emphasis could be given to initiatives that enforce sustainability. In other international destinations, fees are used for funding mostly in form of tourism taxes for tourism development (Allegra Tourismus & Trails AG; Klue Oy, 2020). Yet, in Finland, using fees for outdoor recreation is perceived as a cultural threat as it would restrict the Everyman's Right (Neuvonen, et al., 2018). Therefore, it does not seem appropriate for Northern Finland. Initially, the purpose of the question about funding was supposed to be about the increasing demand for winter tourism which is likely to expand profits at least in a short-term perspective. Those profits can be as well used for investments in establishing mountain biking and year-round tourism. Nevertheless, no interviewee seemed aware of this opportunity, or none believe in the significance of this development.

9. Conclusions

Climate change has various negative consequences for ski tourism such as shortening of the season, decreasing demand and loss of sales. In Northern Finland, destinations are depending on ski tourism due to its importance to the local economy. Nevertheless, winter tourism, including skiing, is likely to increase in the future as main source markets such as Southern Finland or Central Europe lack snow. In Northern Finland, despite a shortening of the season, snow security can be assured at least in the short term. However, the ski tourism industry is mutually suffering under the long-term consequences of climate change. Yet, with respect to pro-active and long-term destination planning, there is a need to adapt to climate change induced impacts. It became evident that in contrast to technical adaptation, which is popular within the ski industry, product diversification is suitable to foster sustainable destination development. In this case, mountain biking as one form of product diversification was investigated. As a result, mountain biking has the potential to create year-round tourism and counteract negative impacts related to climate change in Northern Finland. As development is only its initiating stage and development levels vary between different destinations, it needs to be further advanced. Management implications are implemented in ecological, social, as well as economic sectors and following sustainable destination planning.

At this time, no research has been detected on combining the negatively influenced ski tourism with mountain biking to contribute to sustainable development. Although it has been visible in some destinations such as the Alps (compare Allegra Tourismus & Trails AG; Klue Oy, 2020 and Pröbstl-Haider, et al., 2018), it has not been assessed yet. Mountain biking can be applied in other ski destinations that struggle with the impacts of climate change. This thesis can support planning toward a year-round and sustainable transformation. Particularly it can be used for enhancing mountain bike tourism development in Finland, especially in Northern Finland.

Being of great importance for the supervising company Allegra, their three values, namely trails, services or infrastructure, and identity were implemented in the management implications. Mountain bike tourism has the potential to evolve in ski destinations of Northern Finland. Hence, Allegra might be consulted for planning its development or for trail building. However, not only in northern but also in other parts of Finland, especially the south, with increasing demand there is a need for spaces for outdoor recreation. Here, the focus lies on everyday or day trip nature recreation instead of commercial and even international tourism. This is of great importance for citizens with a lower income that cannot afford to travel further distances as one interviewee explained. Following the example of St. Corona am Wechsel (Allegra Tourismus & Trails AG; Klue Oy, 2020), ski areas in Southern Finland could be revived by creating a mountain bike park. Yet, small-scale touristic products might be offered. As assessed in research, communication could take place between Allegra and national and regional organisations.

10. Limitations and Further Research Ideas

As stated by many interviewees, the future is quite uncertain and can be interrupted suddenly through circumstances such as pandemics or wars. Therefore, scenarios or theories that were confirmed in this paper, might be influenced or changed in any other way. However, this thesis has a futuristic character and changes in the future cannot be excluded. Hence, assumptions and implications should be taken with precaution.

Yet, there is no quantitative research on either national or international mountain bike tourists. As already stated, new nature tourists are entering the market and their needs need to be investigated for product development and marketing measurements as well as defining customer segments. One example from literature is the assessment of the US mountain bike market by Buning, Cole, & Lamont (2019). Furthermore, the likelihood of increasing demand for winter tourism in Northern Finland could be researched in order to plan tourism development. Mainly people from Central Europe or tourists travelling to the Alps for winter tourism could be asked about their willingness to travel for winter conditions and activities.

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Attachments

A) Transcription of Expert Interviews

Since English is none of the participants mother tongue, some grammatical mistakes occurred throughout the process of the interview. Correcting those, which as well often would have resulted in changing the word order would have distorted statements and even lead to misinterpretations. Hence, errors were kept in the transcription. Furthermore, verbatim quotes were used scarcely.

Interviewer (I)	Luise Biere
Participant (P)	ID 1
Date	10.03.2022, 12 a.m.
Location	Microsoft Teams

(...)

- 0 I: Alright, so, and I guess we can start now. So, we start with the main part which is more about the influence
1 and impact of climate change on the demand of tourism. So, the first question will be, what changes in
2 tourism behaviour concerning the outdoor recreation do you expect in the future?
- 3 P: Okay, thank you. Are we talking about Finland or Lapland, or ...? Is it about Northern Finland, the
4 perspective?
- 5 I: Yes, (uhm) the best is also to include Southern Finland, so ... just from the whole of Finland.
- 6 P: Hmm, okay. I think so, that there is influence and impact, of course. And your question is about outdoor
7 recreation. So we are talking about outdoor recreation, so we are talking also summer and wintertime and
8 other seasons, as well. So (uhm), basically, we don't know the future. So the problem is, that ... everything
9 what we say is uncertain. And of course, if we assume that the amount of snow is decreasing, we cannot
10 ski or we cannot do anything else that much as before. Winters - and the time we have snow are becoming
11 shorter and people are changing their behaviour. So they come to Lapland, they do something else during
12 their visit. So basically, they can fish, or sunbath, or run, or just walking in the forest and all those places
13 where you can see the pure nature in Finland. So, I think so, it will really change, one by one, so the change
14 is not very fast, but it seems to be there and of course, other things might be involved as well, not just
15 climate change. There are also other reasons why people are changing their behaviour.
- 16 I: Yes, so, we also have the demographic change, that I think will have a huge impact. So what you are
17 basically saying, is that (uhm) the demand for non-snow-based activities is increasing?
- 18 P: Yes.
- 19 I: Okay, so, (uhm) we can skip to the next question, which is about the influence of demand for the winter
20 tourism in Finland. So, concerning the demand of winter tourists that especially come to Finland because
21 of the winter, because of the snow, what do you think will change here? Also in respect to Central Europe
22 as well.
- 23 P: I think we do not have so many visitors during wintertime. Of course, they are coming to ski here, this is
24 correct, but when we talk about (uhm) that downhill skiing, when you go to Levi, Ylläs, or Ruka, where you
25 can go downwards, that is not that much people from (uhm) Western or Central Europe. But of course,
26 people are coming to cross-country skiing and (uhm) so basically, of course, the question is what happens
27 to their snow, where you are. Is it going away as well? So, ... the question is that, when are those things
28 happening? In the Alps, (pause) the peaks that are covered with snow, it's gonna go smaller and smaller,
29 and then, in our case, our winter is becoming shorter. So, I think so, the people in the Alps will try to find
30 snow somewhere else. Sweden and Norway have snow as well, but in Finland, we have smoother land. In
31 Sweden there is smooth land, it is not so much and in some parts some types of ups and down parts. This
32 is my understanding. But in Finland, we have much smoother land, it would make those places much easier,
33 especially for elder people to do skiing. So they might come from other parts of the world, older people. I
34 really don't know, but this is one way to put it.

35 I: Okay, so what do you think about not only international customers but also Finnish customers, especially
36 in regard to Southern Finland, (uhm) ... considering maybe also cross-country skiing, because the snow
37 conditions also will not necessarily become better? (Laugh)

38 P: Yes, everywhere it's gonna come worse.

39 I: (Laugh) Yes. So, the demand of Southern Finnish people will also increase in Northern Finland although
40 they have to travel further.

41 P: Yes, also talking about sustainability, of course, you can make snow by yourself. But is it worthwhile or
42 expensive? Energy crisis (*note: prices*) are nowadays quite high, we do not know what crisis we will have
43 in the future.

44 I: Yes, okay perfect. This suits quite well. (Uhm) And what do you think will those people do during their
45 holidays? Do you think they will necessarily go for skiing, or also other things ...? Also, not only in winter
46 but also in summer times?

47 P: Do you mean in Finland, or Northern Finland or where?

48 I: In Northern Finland.

49 P: So people in Northern Finland or other visitors maybe from Europe or where...?

50 I: Just any visitors, so they might be from Europe, but they also might be from Finland or Sweden.

51 P: (Uhm) ... Yes, so there is a lot of possibilities during your vacation. There is cultural attractions, also
52 nature-based tourism is there as well. So (uhm), of course, if it is raining, it is not that nice, or it's very windy,
53 then is not that nice to be outside. But I think so, that people will use their imagination, and of course, there
54 might be companies, that try to provide all sorts of activities.

55 I: Yes, okay, alright, thank you. So we will continue with the next question, (uhm) what do you think what
56 offers Northern Finland in (uhm) regard to international mountain bike tourists. So why would they travel
57 especially to Northern Finland?

58 P: Do you think so, what they provide right now?

59 I: Yes, and what they might provide in the future and what are competitive advantages of mountain biking
60 in Finland?

61 P: I must say, that I haven't done it by myself, never. I don't have a mountain bike - I have a bike but it is
62 not a mountain bike, it is just an ordinary bike with only three speeds. So, I have friends who do it (uhm)
63 and they seem to like it. Of course (uhm) – basically, this is for leisure without snow, basically, you can do
64 it without snow. Perhaps it's also possible to do it if you have snow, but this is mainly for other seasons
65 than the snow season. I think so that there are places in Lapland and Northern Finland where you can do
66 it. This is my understanding, and we have - perhaps you know, some trails where you can walk in the forest,
67 you can also bike there. This is my understanding. You do not have to have a permission to do it. And the
68 roads, basically those trails, which are there for walkers, they are – all of them are also available for
69 mountain bikers. So, this is my understanding. Nobody is going to give some tickets if they are doing it.
70 (Uhm) I think, there are lot of opportunities, so basically we have those trails in many places in Lapland in
71 Northern Finland and also in Southern Finland, where people just walk, so they can also just bike there,
72 also with for example fat bikes. And (uhm) if you look at international tourism, there is just perhaps – that
73 there is the idea – they rent the mountain bike in Finland, of course, they can carry their own bike when
74 they are travelling by car or plane whatever. But I am not really sure if people are (laugh) oriented at bringing
75 their own bikes or if they accept rentals. I think there are places available where you can rent very good
76 quality mountain bikes if you like it. My understanding is that also old people can do it, I myself, I am old.
77 Of course, there is a lot of people who are much younger so they can do it. And either you have a child or
78 a baby you can perhaps bring a baby on your bike if you do mountain biking, I'm not very sure. But if you
79 are very enthusiastic about this you can also have your baby with you (laugh).

80 I: (Laugh) It's alright, don't worry. When it comes to competitive advantages, it's also just like the general
81 advantages of Northern Finland offers, that people visit it, so for example, the wilderness, or the unique
82 landscape and stuff?

83 P: Yes, there is available places. I'm sure that it's possible. Then we have to ask why you should travel very
84 long distances to do it. Is it clean air? Is it the atmosphere? Is it safety (safety)? Is it friendly people?
85 You have to compare your choices to other choices, so is it so, that for example in the Alps or where the
86 people are coming from France, they have to compare different alternatives, they have to find enough
87 attraction. They weigh costs and benefits and (uhm) if people are preparing these kinds of offers, they must
88 know that it's not a very difficult business. It's a very simple business, ... on my mind to just buy those bikes
89 and then market yourself in the internet. It means that everybody else can do the same - so they have to
90 think how much money they can earn if they do this kind of things. But this might be one of the questions,
91 how do you can separate yourself from the other offers, other companies who do the same. So this is a
92 pretty hard question.

93 I: Yes, alright, perfect, (uhm) so we can as well switch (uhm) to the next question which is about the
94 correlation between mountain biking and sustainability. (Uhm) So what do you think, which measurements
95 are needed to be taken into account, when it comes to managing mountain biking sustainability?

96 P: Okay, (uhm) of course, the question is that, (pause) are we talking about companies? Or are we talking
97 about visitors?

98 I: We are talking about it in general, but more from a management perspective, so I could be maybe
99 someone from the destination management organisation that wants, like, to plan it successfully.

100 P: So we are talking about the companies or DMOs perspective in sustainability relation? Of course, the
101 land will suffer in some sense, when a lot of people who do the same, the trails comes bigger and there
102 might become erosion as well, when it's raining there are slopes, it can cause some erosion in the area,
103 that is one point. So, how these things can be to take into account, and how they can be prevented and
104 how much people they accept. Is there anything – you cannot have too big companies or too much bikers
105 on the same day, for example, so, that is one question, that I am thinking. And (uhm) also the question is
106 where the bikes are coming from. Are they done in China without - with child labour? And that sort of things,
107 how are the local bikes manufactured. This is one thing I am interested in, and what kind of labour contracts
108 is the companies doing with their employees, that is one question. And if they are coming to Finland, to
109 Lapland, to North, the nature is pretty untouched. (Uhm) Many places and how they keep track of their track
110 ... is there recycling possibilities, it's a long – it's many details when we talk about DMOs perspective and
111 sustainability, there are a lot of perspectives. Perhaps you get the idea, how I approach this type of
112 question?

113 I: Yes, so you have to (yeah) think about all of the small details, that are connected with sustainability.

114 P: Yes, and it's such a huge concept and so many things are involved, and if the companies are small in
115 size, usually there is not so much requirements, they have to be really strict in this. Also, we have social
116 media, which can do something if things look very bad. Then in social media, the people might complain
117 that 'this is so dirty, I don't like how things are done here' and they are talking about sustainability but in
118 real life, it doesn't look like that.

119 I: Yes, maybe we go back to your point about (uhm) limiting the (yeah) tourist arrivals. (uhm) Can you
120 maybe as well connect that to the Everyman's Right we have in Finland? Do you think that it should be
121 restricted?

122 P: Of course, the question is, how big amount of people we are talking about. I think perhaps I accelerate
123 the problem a bit. But we never really know the future. Maybe this sort of situation will never come, that it
124 is too crowded. Maybe you know it, how much does nature suffer when people are (uhm) mountain biking?
125 How does it affect the trails if we have mountain biking there? I am not a very specialist in this area. But I
126 know, that if people just walk, it can really affect it. And also the question is, are they just doing it in pure
127 untouched nature or is it so that they are doing it only on trails? So, ... basically, (uhm) of course ... they
128 might have asked some permission for the authorities that I can perhaps build much larger trails for certain
129 areas. And then, there is not that sort of problem, that they can – to limit the amount. But you know in

130 Finland, they might even build some kind of trails for snow bikes. And if – I don't know how much you have
131 walked by yourself in Finnish nature, you see, there are a lot of trails here and there and everywhere. There
132 are trails for walkers, there are trails for snow bikes and so on. So there is a lot of all kinds of trails here
133 and there. They help to move people from one place to another but - this is not an answer but rather a
134 discussion.

135 I: Okay, I understand. Thank you. Okay, so we can – I guess, we can move to the last question, which is
136 about stakeholder responsibility. So, what do you think, which entities are responsible for this tourism
137 transformation that we have in respond to the climate change and how are the financial resources for that
138 processes allocated?

139 P: Okay, so, this is a long question. And I am not very sure if we can talk about responsibility, who is
140 responsible for tourism transformation. (uhm) My understanding is that there is authorities, the ministry of
141 employment and businesses or something like that (uhm) (*note: työ- ja elinkeinoministeriö*), I'm not really
142 sure what is it in English. (Uhm) Under their control is following and developing tourism in Finland. (Uhm)
143 So basically, I think they are responsible in some sense because actually, I am doing at my colleges just
144 right now a report, how tourism business have developed in Finland and during (uhm) the last five years
145 and at the end, there are requiring some suggestions what we suggest and the ministry of (uhm)
146 employment and business – Mr. Linitilä is coming to listen our presentation next week, so (uhm) in our
147 presentation, we talk something about climate change of course, but we also talk about anything else
148 related to business and employment in tourism in Finland and (uhm), I think so that they are asking opinions
149 and guidelines from universities. They (uhm) take these into account when they provide projects and
150 money, and they developed these kind of things. So also in the area, we (uhm) have nowadays, Maakunta,
151 that word I don't remember, regional authorities, which are also doing their job and they also have money,
152 and they start projects and I think so that it comes from there. This is my understanding, but I am not very
153 sure, but (uhm) that this is the question, what we mean with responsibility, and we know the actions. We
154 know what things are happening but usually, the term responsibility is not used, it is just doing things and
155 providing money. And but perhaps that affects what kind of activities and how the transformation is
156 happening.

157 I: Yes, so you (uhm) think that this initiating process should more or less come from the public authorities?
158 And they ... //

159 P: Yes, of course. They are guiding. Businesses develop by themselves but of course they try to take
160 everything into account, so business - we have private money, and we have public money and (uhm)
161 companies are developing their businesses, they are asking permission, can they expand? And so on. But
162 basically, they usually need more land to open new trails (uhm) and open new slopes and opening new
163 hotels and so on. So basically the permission has to come from the public side.

164 I: Yes, okay, and about the financial resources ... (uhm) especially as you said in the beginning, when we
165 talked about the demand of tourism in the future, you said that it's very likely that it will increase because
166 people will try to chase (chuckle) the snow and maybe come even from Central Europe to Finland. Do you
167 think – (uhm) this increasing will have an economic impact, which is rather positive, so this increasing of
168 sales and stuff, this could be also used (yeah) for this process as a financial resource? Do you think so?

169 P: Yeah, I am not very sure. You might help me, what do you think in your country for example, how many
170 people would like to do trips to Northern Finland? It is a really hard question because I don't know the
171 position, their perspective. I really don't know, what kind of ideas they have, and - but basically, in northern
172 part of Finland we have still some quite nice amounts of (uhm) wilderness, silence, pure nature, nice aurora
173 borealis and (uhm) good food and (uhm) fresh water and so on. So, of course, we have to be careful that
174 they are not spoiled.

175 I: Yes, that is true.

176 P: What is your opinion? How much people would like to come to the north?

177 I: It's very difficult to foresee that because there is also not ... that much research about it. And it's really
178 not clear (uhm) if people are willing to travel those distances just to see snow. But I think, I'm from Germany,
179 from a small mountain range, during my childhood we always had snow. But like the last ten to fifteen years,

180 there was just nothing anymore. So there will be maybe in the next 20 years no snow at all, in Germany,
181 only really high altitude. So, I think, people want to really experience snow and I think Northern Finland and
182 Lapland is therefore really good.

183 P: Yes, this is absolutely correct, ... because there are all kinds of activities (uhm) which are available and
184 also a question of marketing, also about cultural phenomenon, what kind of things people like to do. Or is
185 it so, do they want to like to be in big cities, with lots of nice things available there? And personally, I am
186 just thinking, I have talked with my wife, my interest to travel somewhere, I have been to quite many places
187 already and we talked about 'Am I interested in travelling abroad?'. Or is it so - and in Finland, we have so
188 much nice options available. I think so, Finland can provide lot of interesting things and places and a nice
189 way to visit. (Uhm) But I must say, I have become interested to go to Cornwall, this is in Great Britain, the
190 western part (uhm) of Great Britain. The Cornwall looks very nice, we have just in Finland a television
191 series, where there is a cooker who makes nice food, and the place looks very nice at least from my
192 perspective. So, there ... (laugh) is still international travelling interest although the world looks quite messy
193 right now.

194 I: Yes, that is true.

195 (...)

Interviewer (I) Luise Biere
Participant (P) ID 2
Date 16.03.2022, 8 a.m.
Location Microsoft Teams

196 (...)

197 I: So, (uhm) let's start with the first question which is (uhm) more or less about the influence and impact of
198 climate change on the demand, so (uhm) my first question is (uhm), what changes in the tourism behaviour,
199 so how tourists react concerning the outdoor recreation, do you expect in the future?

200 P: Oh, that was really a hard question and also a really good start – starting question. (Uhm) I'd like to start
201 with a more like, general level. (Pause) In Finland, Finns we know, especially in the younger age groups,
202 they are worried more about the environmental issues, climate change, biodiversity loss. So, (uhm) I think
203 that the change in opinions, they are leading (uhm) for more sustainable tourism demand in the future.
204 (Uhm) Then there are two other huge issues. We have had two years of pandemic (pause) and that has
205 increased in Finland the domestic demand of nature-based tourism trips. So, more people have now
206 engaged and made trips to natural environment, we can also see that from the figures that are looking for
207 the visits to for example our national parks. There was an increase of 23% of visits to national parks due to
208 the pandemic. And (uhm) then we have the (uhm) – now the (uhm) – situation in Europe, that we have a
209 war in Europe. So that makes lot of uncertainty in the future. And some of the work, the scenario work we
210 have done, (uhm) I think no one ever came up with these two issues that there will be pandemia and there
211 will be a war. So, many scenarios work we have done, when we have looked in the future is now, kind of
212 (uhm) – so what we have been talking about – because these were the black swans. And they came. I think
213 (sigh) there will be uncertainty, there will be increase in costs of travelling, and in Finland (uhm) what comes
214 to the economy, they are expecting a lower growth, maybe economical more down, and it also might happen
215 an impact on at least on public investments in Finland. So, (uhm), I don't know, and I don't – there might
216 be experts, that can look what all these aspects are now affecting on the EU or global level demand of
217 tourism. Because (uhm) we have had the image in Finland that we are a secure country, but now due to
218 the war and the long border line with Russia, that also may have some impact on the images in Finland.
219 So, these are the issues we have to think when looking at the future as Finland, as a secure and sustainable
220 tourism destination. (Uhm) This is the large picture and these events that dramatically may influence tourism
221 demand. But (uhm) the other issues (uhm) – I think the tourists from abroad and also in Finland, they are
222 looking for like real experience, real nature experiences, that's one of our strengths. And especially looking
223 in Lapland and Kainuu area and I think our citizens, tourists, they are looking for more sustainable (uhm)
224 destinations and that of course (uhm) influence the tourism in the future. Will that mean something like
225 reducing the travelling? Or more like choosing domestic destinations instead of travel far away? That might
226 be one (uhm) aspect of that of the sustainability. And like real nature experiences, they have been
227 important, and they are more important in the future.

228 I: Okay, thank you so much for your insights. (Uhm) The next questions would be, in what sense do you
229 think will climate change influence demand for winter tourism in (uhm) Finland, not only in Northern Finland
230 but maybe also in Southern, yeah like, tourism that is based on winter activities more or less, skiing, cross-
231 country skiing and so on.

232 P: Yeah, it definitely will affect in many levels. And (uhm) I'd like to have an example here. In 2020 when
233 the pandemia came, (uhm) in Southern Finland, we didn't have winter. There were no days of (uhm) – only
234 a level of snow cover was less than one 1 cm in Helsinki, in Turku region which is on the coast, southwestern
235 coast. And (uhm), there were only like 9 days, only 9 days between March 2019 – no sorry – November
236 2019 and March 2020 where there were minus degrees. So, that was exceptional. But in the future, these
237 kind of years and winters will come, more and more frequently. Okay, this year we were lucky to have real
238 winter also in Helsinki, so we can see that people rushed to the shops to like, to update their equipment for
239 skiing or (uhm) all these freshly made skis tracks, they were kind of crowded. I was happy to see that people
240 were still quickly able to adapt to also real winter conditions. And (uhm) the climate change will also have
241 an impact on the uses of other natural environments like in winter we have used to tour skating, skating on
242 the natural ice, ice fishing, walking, skiing on the ice and I think we lose also this kind of opportunities (uhm)
243 in the future, in the winters, where there are no safe ice to do that. And (uhm) what comes to the research,
244 we have had – we can state that there has been (uhm) adaptation especially in Southern Finland, where

245 citizens, they have experienced these winters and (uhm) they experienced the decreasing in natural snow
246 conditions and short winters. So (uhm) people are more like willing to travel of the natural snow conditions
247 or (uhm) people are more like (uhm) willing to update their techniques or equipment to (uhm) to kind of
248 adapt to this situations. But of course (uhm) this is more easier for citizens with higher income which are
249 (uhm) – which have these kind of opportunities to travel to Lapland for example from Helsinki to ski or do
250 something else. But (uhm) when we are looking for kind of on these equity issues, with a group of people
251 with lower income, that might not be the case. So they need to rely on the close to home conditions for
252 example to learn ski. So it's very important that we can support whenever there is possible to ski, those
253 people are with skiing tracks close to them where they are located and where they are living. So the kind
254 of natural environment we can provide and the services we can provide for them, that does not require lots
255 of travelling is also an issue (uhm) in regard to sustainability. (Uhm) So, there will be adaptation at the
256 technical level (uhm) and that means for example investing new equipment or learning new techniques or
257 it can mean also to change the skiing to cross-country biking, mountain biking in some cases. So there we
258 come to this substitute, so (uhm) – and they are part of – some of the people might also give up on this
259 activities, so they won't continue skiing anymore after many – if there are like many years (pause) that there
260 will not be these natural snow conditions (laugh) in Southern Finland. So they might not ski anymore, they
261 probably change the activity, or they won't (uhm) take part in that activity at all. But that is a very small
262 portion of people. So we still think maybe that that's something in our tradition, so also the kids need to
263 learn how to ski. But (uhm) I think (uhm) this is also an example that comes – I have kids in the schools, so
264 I think every year, more and more of the kids, they don't have their own equipment anymore and they rely
265 in the skis provided by school and (laugh) they are in a quite poor condition. They won't – that also effects
266 on kids' willingness to take part on that activity that if they are no equipment at all and if the equipment at
267 school are not very well kept and that (uhm) – they are kind of losing this kind of connection to ski, I think.

268 I: Okay, thank you. (Uhm) Otherwise, what do you think when it comes to the international? So (uhm) you
269 now said a lot about nationwide in Finland, do you have any idea or suggestions how it might be on the
270 international side?

271 P: (Uhm) (pause) Well, of course (uhm) when it comes to Finland, compared to south of Finland for example
272 Northern and Eastern Finland are still very snow secured areas, so (uhm) I think, there is a lot of potential
273 that these areas will also in the future attract many tourists, and it's because they have very fascinating
274 landscapes, there are also lot of infra (infrastructure) provided, especially surrounding the tourism centres.
275 And I think there are quite many of sustainable destinations compared to many other destinations in the
276 world. So (uhm) (pause) I see, lot of positive (uhm) decisions they have made in the previous years, so to
277 – by choosing the sustainability as one of their goals. So (uhm) yes, so, people might want to come to
278 Finland of course because of the (uhm) landscape and the services there, but also to feel an experience:
279 the winter conditions. So (uhm), it's kind of unique and as far as I know, the climate change prognosis – we
280 have – they also stay as a snow secured areas in the future. But (uhm) what comes to the discussion I
281 think, there have been more like (uhm) the year-around – all-year-around services. So that they could also
282 strengthen the summer season outside the winter season, so there I see a lot of possibilities for cross
283 country or mountain biking (uhm) demand in these areas. As – It's important to (uhm) lengthen the season
284 outside the winter. We used to have it (laugh) to Easter and the Midwinter and also the Christmas season
285 but outside these seasons, it's important that – I think it's also, of course - it's providing the income and the
286 shops for the locals but also it's a sustainable thing that not all the people are coming at the same time, so
287 there is more like flexibility on that also. So (uhm) these were some of the things that came into my mind
288 (uhm) (pause) but of course there is also demand on other kind of activities like – I think the genuine nature
289 experiences like meeting the locals and trying to see what the local economies are looking like, so (uhm)
290 outside the skiing and biking there should be kind of a set of other activities of course, because people are
291 coming with their families, so not everyone wants to do (uhm) – only one or two activities. So, if there's a
292 variety of possibilities, it's always (uhm) a good thing, I think.

293 I: Yes, I totally agree with you. So (uhm) let's move to the next questions which is more about mountain
294 biking. So (uhm) what do you think – you already said a few things about the international image, but (uhm)
295 – what do you think, what does Northern Finland offer, when it comes to international mountain bike tourist?

296 P: Hmm, yeah. That was the hard question for me, and we discussed (laugh) that already, that there are
297 not many experts especially looking the international mountain biking in Finland (uhm). I think, I might have

298 put something under this – yeah, (pause) I think in Northern Finland, state is already offering a lot land
299 resources for the tourism to develop. There are lots of state protected lands, but also the forests that are
300 used for timber production, but can also be used for recreation of course to the Everyman's Right. But
301 (uhm) so, there is this infra and (uhm) especially surrounding the big tourism centres that can be offered
302 (uhm) or some of the routes can be dedicated to mountain biking especially. And (uhm) like I already
303 mentioned, the landscape is very attractive (uhm), of course we do not have the mountains like you do
304 (laugh) in Austria or in German. We only have (uhm) ... hills (laugh) but of course, it's very unique and we
305 have the four seasons, we have autumn, winter, spring and summer. So that's also something that we still
306 have them. And it's a difficult question (uhm) how to define the sustainability in here, if you come far away
307 from Europe to Finland for mountain biking, you need to travel far, but the destinations themselves, they (uhm)
308 I think the goals are sustainable – sustainability goals, so in that sense, it's sustainable destinations and of
309 course for the Europeans it's closer to travel to Sweden, Finland than to travel to (uhm) like Asia or USA or
310 Canada, of course, it's closer to them. It's sustainable. (Uhm) So, I would state – I would repeat that the
311 landscape and the infra in the tourism centres is available.

312 I: Yes.

313 P: That was the hardest question for me, I think for me. Because this is so specific issue.

314 I: Yeah, don't worry it's fine. You answered very well, thank you. So (uhm) we can also move to the next
315 question, so (uhm) when it comes to especially sustainability, as you already said, what do you think which
316 measurements are needed to be taken into account when it comes to managing mountain biking
317 sustainably?

318 P: Hmm, yes (uhm) (pause). Well, sustainability in a sense of social sustainability is one issue. We do have
319 the Everyman's Right in Finland and (uhm) it's – it offers the open access also to privately owned land, but
320 it also has this other side. We need to act responsibly (uhm) and respect the nature of the people and also
321 the property. So (uhm), it's important that (uhm) mountain bikers are using the routes and areas (uhm) that
322 allow these activities. And (uhm) I'm sure there are lots of possibilities for doing that but when it comes to
323 Finland, it is so that in northern but also in Kainuu area, there are a lot of state-owned land. But when we
324 come down to Southern Finland, more and more of the land are privately owned. So (uhm) due to this
325 division and (uhm) the landowner structure, there have been – I know – some conflicts in regard of the use
326 of private lands and because this is an increasing activity, it is increasing – we can show by figures – that
327 there are more cross-country cyclers than we used to have ten years ago or 20 years ago. So they also
328 might be a risk for conflicts in the future. So that's the kind of social sustainability issue. Then when it comes
329 to the ecological sustainability, and what comes to mountain bike tourism. One of the key destinations that
330 are also marketed in Europe are national parks in Finland, but they are mainly established – the first
331 purpose of them – is the nature protection. And then after that, comes recreation and health and wellbeing
332 benefits they can provide for people who are visiting these areas. So (uhm), but there are lots of other
333 places where (uhm) ... this can be (uhm) – these opportunities can be offered sustainably. So, (uhm), and
334 what comes to – now, I change a bit more towards climate change – if we have like these wet winters, we
335 do not have snow and the land is soft due to the lot of raining ... (uhm) (*technical difficulties, interruptions*)
336 ... (*repetition*) First, I talked about the social sustainability and the Everyman's Right and the use of also
337 the privately owned land for recreation and I mentioned that it's important to act responsibly and respect
338 the nature and the local people and the property when you see the trails. And then I switched to talk about
339 more about the ecological impacts and I mentioned firstly the national parks, that they are established
340 mainly as the first purpose of them is the nature protection and after that comes the recreation and the
341 health and wellbeing benefits people are gaining from visiting these areas. But then I mentioned that there
342 are also a lot of other possibilities for providing the opportunities for bikers and then I switched in my (uhm)
343 in my response to look more like to issues that are related to climate change. And I raised that (uhm) – the
344 issue if we have more of these wet and moist winters coming in the future, so there will be also maybe a
345 higher impact on the crowd that comes and it's – it damages trees but also the side paths that might come
346 if people are not able to use the main path. They can cross the place by using another paths, so that's –
347 yeah but that's an issue that is not only related to bikers but also hikers. So whenever we have more people
348 coming on a smaller (uhm) destination, if there is this crowding also, so there – the impacts to the
349 environment are also heavier – the impact is higher – so these are the issues that are related to mountain
350 bike tourism. And (uhm) also we have to remember that (uhm) tourists will – they bring income to this

351 region, so they are also really important for the locals, because the prices provide (uhm) work for many
352 peoples and the local economy will benefit on that also. And that's the other side.

353 I: Yes, okay, thank you very much. (Uhm) so, I guess we can now move on to the last questions (uhm). So,
354 due to the climate change we need some kind of transformation process when it comes to (uhm) yeah,
355 tourism but also other recreation, so what do you think, which entities are responsible are responsible for
356 this transformation and how is this transformation process (uhm) financed?

357 P: Hmm, that's really a good question. And at the same time (uhm) it's also a very difficult question (laugh).
358 (Uhm) We have to remember that (uhm) tourism has this very high importance in Lapland, Kainuu and also
359 Northern Ostrobothnia and also the other rural areas in Finland. Because there are not many other
360 industries except mining companies or forest industries. But the local economies are relying on these
361 tourism sector and it's also had – still has a lot of potential in the future. (Uhm) Like I mentioned earlier,
362 state Finland is already offering a lot of land resources (uhm), state owned land and these forests. And they
363 are – provide kind of a infrastructure – provides a basement for tourism in these areas. And state is one of
364 the actors by supporting these opportunities and by saying that they provide this basement for tourism to
365 develop, it can also affect (uhm) how sustainable the tourism will be. And (uhm) by saying that, it's important
366 ministries in Finland are supporting this sustainable development and – so that they also involve all the
367 actors in this area to the discussions and to the development of this area. I'd like to mention here for
368 example the Sámi people and their rights and their lands, that are used also for (uhm) tourism in some
369 areas and that's an important aspect, that we respect the rights of them. And (uhm) ministries and the
370 sectors they are supervising, it's important that they act together (uhm) towards the sustainable solutions.
371 (Uhm) Then I'd like to mention the EU level support. We have this political goals, green deal, where we are
372 heading to reduce carbon emission in all Europe. But I also think when EU has this big goals, they also
373 need to support financially the development and I think they have a tool here to do to, to guide different
374 countries to take the sustainable parts. (Uhm) Then I'd like to mention here the municipalities and the local
375 entrepreneurs, that are offering an infra but also the tourism services. I think it's important that local
376 businesses (uhm) together with (uhm) the municipalities there – they are working together. The cooperation
377 is important, an example would be, how to provide the transportation to these areas, people, I mean the
378 municipalities can cooperate there with companies and I think the discussions and taking the joint goals to
379 be sustainable also in the future, they are working together is a key tool there. And I think (uhm) ... working
380 together (uhm) gets the best solutions (uhm) taking into account. So (uhm) I think the wisest decisions will
381 come from this cooperation and by listening the other's aspects also. So (uhm) I think, that has a key role
382 and what comes to the municipalities ... in whole Finland I think they offer also lots of other potential for
383 citizens health and wellbeing because they manage, they provide (uhm) forests and recreation areas (uhm)
384 for Finns and also for tourists. And (uhm) these areas are often located the closest to people in the cities,
385 so they have also important role by proving this health benefits of nature for our citizens. (Uhm) And finally,
386 I'd like to raise up the responsibilities or the key (uhm) group in this – I think that tourists and visitors
387 themselves – how do they choose the most sustainable destinations and can they by themselves reduce the
388 carbon emissions by choosing the travel mode or by travelling to closer destinations? Do they compensate?
389 Are they willing to compensate their emissions in some way? So (uhm), I think they are also a key group in
390 that sense. And (uhm) yes, of course, guiding, giving instructions, is also (uhm) an important thing here and
391 provide the information that it's based on reliable figures and (uhm) kind of open information about the
392 (uhm) costs and benefits of choosing different things.

393 I: Yes, that's totally true (laugh).

394 P: Yes (laugh), was that something that you were looking at that point? That was hard questions for me.

395 I: (Uhm) Yeah. The thing that I wanted to also look because you also said (uhm), when it comes to the
396 financial resources, that this transformation process is most likely to yeah, coming from the public side
397 (uhm). I also wanted to look at the private part, because especially when we have an increase in tourist
398 arrivals in the next few years – because of like climate change because Finland has an advantage because
399 it's on like a higher latitude – we have snow – so we might have an competitive advantage when it comes
400 to the alps. So if we have this increase, we are yeah, - we also have increase in sales, so this transformation
401 could also be carried out with this yeah, you know surplus (laugh) because of the increasing demand.

402 P: Yes, yes, exactly.

403 I: Okay, perfect.

404 (...)

Interviewer (I) Luise Biere
Participant (P) ID 3
Date 21.03.2022, 8 a.m.
Location Microsoft Teams

405 (...)

406 I: Okay, and (uhm) I guess we can start with the first question and so the first part is more about the
407 influence and impact of climate change on tourism, so (uhm) my first question would be, what changes in
408 tourism behaviour concerning the outdoor recreation do you expect in the future?

409 P: Hmm, well, of course, winter tourism is the most important in Lapland, so I think it's the hardest for winter
410 tourism and especially early winter, because the high season is (uhm) in December. So people come visit
411 Santa Clause, but they also need snow, and they want to have snow-based activities. Mostly because time,
412 because if there is no snow, so has been like this, that it's 'Crapland' in British media. If there is no snow,
413 so, there are lot of attempts to make snow, so artificial snow and that type. But maybe it's not so related to
414 skiing but more like safari activities, reindeer safaris, or husky safaris, they need some tracks, they don't
415 have to be so long but still they need them. So I think that is the biggest or the most difficult time and
416 (uhm)... Well, all the expectations say that there will be snow in Lapland, even more snow in Lapland in
417 20-30 years' time, because there will be more precipitation and in Lapland it mainly comes in amount of
418 snow. So in that sense, climate change if you think of kind short time span, it's not so big problem. But it
419 depends on the parts of Lapland. There are parts where there is wet ... (inaudible 02:13) it's good to have
420 snow, but in Southern Lapland or near the coastline for example there we have to think about what kind of
421 products they can sell. If they are snow-based or some other and (uhm) ... in any case I think it would be
422 really beneficial to think about summer products because it has been for a long time, the idea of evening
423 the seasons, and (uhm) it hasn't come true that summer is good and that it could be as important as winter.
424 (Uhm) But that's something that product changes has to be done also in regard to climate change and lack
425 of snow and difficulties with knowing about snow. So ... yeah.

426 I: Alright, (uhm) now you talked a lot about tourism and when we look just at outdoor recreation also not
427 necessarily just the winter tourism, but also ... like the summer, especially now in the pandemic we had
428 record high recreation, people flocked (uhm) towards national parks (uhm) yeah. Just maybe state how you
429 think this will develop in the future.

430 P: Yeah, what we have seen is really a huge amount of also Finnish people and locals and everybody goes
431 to national parks and other outdoor recreation places. I think what will happen is, that there will be new
432 kinds of activities and (uhm) much more activities than earlier. We can see that all the time, they (uhm) do
433 different kinds of activities and of course there are also some problems in the most popular national parks,
434 there is some crowding, but not yet so much. But in that sense, I think it will be more important also to use
435 the other forest areas that we really have lots of, not only national parks, because national parks might be
436 a bit crowded and also (uhm) the basic purpose of national parks is the nature conservation, and they might
437 suffer from the crowds.

438 I: Yes, that's totally true, okay (uhm) let's move to the next questions (uhm). So, the other question you
439 more or less yeah, already exaggerated because it was just about the demand for winter tourism. Maybe,
440 could you tell me a bit more, in your opinion, what you think about the international side of winter tourism?
441 What is the development of winter tourism in the future due to climate change?

442 P: Internationally? You mean in different countries? Or...?

443 I: Yeah, not necessarily in different countries but maybe the international demand to Finland.

444 P: Ah, international demand, okay yes. Because if I have been thinking about other countries and what is
445 the kind of competitive status of Finland, I think we are now competing with the Alps because the lack of
446 snow is bigger there. And it might be in quite good position in the short term if we think of that. But of course
447 then again, China, Alaska, what do we think of that? But also the safety issues here (inaudible 06:09), if I
448 think of global tourism, we might have an advantage for Scandinavian, other Scandinavian countries. And
449 basically of course, people don't think that they come to Finnish Lapland they can as well go to Swedish
450 Lapland or Northern Norway, which have similar kind of products. So all of those Northern Scandinavia or

451 Fenno-Scandinavia ... But yeah I think it has been – winter tourism in Lapland it has grown because of
452 many tourists coming in December that is the highest season or peak season. And (uhm) and also, they
453 have been counting a lot to (pause) only – a lot has been built only because of international tourists and
454 domestic tourists which were really important in the 60s or 50s even, so they have been totally forgotten
455 before this pandemic. I've said this changed a lot because then the tourist operators realised that they have
456 really bad (inaudible 07:19) domestic customers and (uhm) .. when you see for example the overnight
457 numbers it's often like only the registered numbers and they register only those places with more than ten
458 beds. So, there are lot of private cottages which are used by the owners but also rent these, so this means
459 that the numbers, you can triple them. And those beds are coming from the domestic tourists, so they are
460 kind of the backbone for the winter tourism (pause). And they come later, so it's not only the December
461 time which is so vulnerable because of climate change, so it's not only that. But they use it like once every
462 when it's nice to ski, when the international tourists don't come anymore. So, (uhm) I don't know what you
463 are looking with this international side.

464 I: Yes, that was totally alright. That was actually a really interesting insight, thank you for that. (Uhm) So,
465 we can now already move to the next part, which is more about mountain biking or mountain bike tourism.
466 So, what do you think, (uhm) Finland and especially Northern Finland offers to international mountain bike
467 tourists?

468 P: I am not so very familiar with mountain biking, I was in (uhm) Switzerland, I think, it was about 15 years
469 ago, when there was a lot of talking about mountain biking and about problems or conflicts between hikers
470 and walkers and mountain bikers and that was pretty strange for me at that time, because we didn't have
471 any mountain biking. At least not at that time, but maybe some, but it was that kind of product at all. Well,
472 now I know what they were talking about, so it's more – it has become of course of more important product,
473 and I think they develop this really well here. I am actually myself – I have a project where we try to make
474 these kind of long-distance biking routes along the roads and all the time I hear about "no it's all about
475 mountain biking in Lapland, you can't do anything with road biking or tour biking" and (uhm) ... yeah. I think
476 the terrain is quite nice in that sense and it's kind of easy to make nice routes as they have done already
477 in many resorts, Ylläs and Levi, Saariselkä, I have tried it myself. And in Rovaniemi as well, so, it's hilly but
478 it's not too steep or difficult, so (uhm). And winter mountain biking, that is also with fat bikes that it's – it
479 might be quite interesting if I understood right, in Rovaniemi. It has been a really good product also for
480 international tourists, so ... it's growing (laugh) for the domestic and international tourists. So I think the
481 domestic tourists are more interested in summertime of course, it's a good summer product and that's what
482 we need, it's kind of year-around product, so in that sense it's really good. I don't know if it really attracts
483 international tourists in summertime, I think it's more like (inaudible 11:10).

484 I: Okay, perfect, thank you so much. Otherwise, when it comes to now sustainability (uhm) – So, we have
485 (uhm) this kind of tourism transformation when we look at climate change, ski tourism will not continue as
486 it was before, so we need some kind of transformation, (uhm) what do you think which measurements are
487 needed to be taken into account, when it comes to managing mountain biking sustainably?

488 P: (Pause) Yeah, there has been a lot of discussion, if it's that good for the ground, the terrain and (uhm)
489 they are always complaining where it's strongly the mountain bikers, that it doesn't – it's not even as bad
490 as hiking. And (uhm) – but still I think it's the problem is that especially in national parks which are –
491 mountain biking is allowed in national parks, and even electric bikes. And there has been discussion with
492 Norwegians, in Norway that they say that they don't allow e-bikes in national parks and here there is no
493 restrictions, and that it's not needed even in the protected areas. But of course the national parks have their
494 own rules, and they have rules, specific rules for mountain bikes, and they are not everywhere. But I think
495 if it continues to grow, (uhm) there are lots of different kinds of trails and there will be like a conservation
496 idea which is not so clear anymore. I would be happy to see but that's only my opinion, that they would
497 restrict it a bit in national parks. But of course that is also the idea of some others, not only me, and well,
498 there are forestry areas, I think it's not a problem in that sense. We have a lot of forests and lots of areas
499 which are not protected, so it's more like in protected areas. So, planning good rules in forests is quite okay,
500 and well you asked about managing, I think it really needs a lot of managing, of course. All the areas are
501 managed by Metsähallitus here in the north especially, because in some municipalities even more than 90
502 percent is owned by the state and Metsähallitus is the one who manages it so... So, they are doing quite a
503 lot in that regard (pause). But for example in urban areas, well (laugh) not so urban, but there the companies

504 themselves are keeping up tracks nearby recreational areas and some are companies also paying for that
505 so. And there has been lots of discussion in regard to Ounasvaara, and this hill nearby the town centre
506 (Rovaniemi), that it's used so much for different activities and there are in summertime you can especially
507 see the trails and in winter they don't disturb, but in summer it's like totally different kinds of trails all around.
508 So (pause) it's a lot of managing I would say, and also this protected area is, but because of course with e-
509 bikes it's possible to go everywhere. It's not only in national parks, but we also have these large wilderness
510 areas which are not so strictly protected than national parks. So there it's quite free to go everywhere when
511 you think about reindeer herding which is a problematic activity sometimes of the year and then they can
512 disturb, these bikes. And when it's easy to reach different places, not only the ones that has been used
513 earlier. So, I think that should be more managed.

514 I: Yes, true. Do you have anything to add?

515 P: To anything? These topics ... (pause) no, well of course there is this skiing issues, it's not only the
516 question of the snow conditions here in the north, but in some parts of Finland, they don't know anything
517 about skiing in other parts of the world. So they won't come skiing, but still I think, this kind of snow and
518 (pause) exoticness, and remains for some days of the years. But let's see up to 50 years or so and of
519 course we have seen that this climate change is kind of moving forward quicker than the recent years. It
520 has been quite fast in 2000, so as we know without the things as (inaudible 16:47) in war times can be
521 difficult to forecast, what will happen, but of course climate change of course is kind of (uhm) better forecast
522 (laugh) and easier to forecast. And that's also interesting that people don't really take into account, these
523 activities like making this artificial snow is not really sustainable way to adapt and that's what they are still
524 doing. Trying to get wintertime when there is no winter, so activities should be more adjusted to natural
525 conditions.

526 I: Yes, that is totally true. We can already move to the last question, which is (uhm) more, also about the
527 transformation what I already mentioned, so your opinion, which entities are responsible for this
528 transformation process in response to climate change and how are the resources for that, allocated?

529 P: About adaptation to climate change?

530 I: Yes.

531 P: Yeah, okay. Of course, that means quite a lot about strategies and strategical thinking. And these
532 adaptation strategies have been made in national level in Finland. I think in Finland was the first one to
533 make that kind of adaptation strategies for the country, but it needs all the time like updating, and needs to
534 go a little to and (uhm) of course, like the companies, everyone should react and as I already said, it's
535 looked at very reacting. We did some five years ago, small inquiry about – for tourism actors, different kind
536 of tourism actors in Lapland, and it was like that the most important issues for them – we asked, “what is
537 the like – in future your most important issue” and it was marketing. And (uhm) business things and then –
538 but when we asked “what is the most important in 20 years' time span?” they said that climate change. So
539 climate change came the first (*second*), but I think if we do it now, they again say marketing and surviving.
540 So the companies in tourism are so small, that they look like one year ahead and can't really think about
541 how to survive about climate change, just I'm trying to survive this break or pandemic, trying to survive year
542 by year. So, I think that's why it really needs to be like strategy level, national level, and regional level.
543 Regional level strategies are extremely important because these issues have regional and local (level), and
544 also there has been a demand in municipalities to do their own adaptation, so tourism should be a part of
545 that. They do it because – here also for many Finnish municipalities, tourism is the most important and the
546 only growing industries which has been growing.

547 I: Yeah, so you think (uhm) it's more like the public side, so the municipalities, that are responsible in this
548 regard.

549 P: (Uhm) Yeah, I think they should have the big picture. And they should make the big picture but of course
550 everybody should do their ones, although it doesn't seem like that (laugh). But I think in tourism – because
551 it is so difficult these climate change issues, they have kind of realised that something has to be done and
552 this mountain biking here, has been one new kind of product. Still (uhm), so much depends on snow
553 conditions and well also reindeer herding has been an industry which has really suffered from climate
554 change already, so these kind of activities or industries have kind of reacted because it is difficult and in

555 tourism for example they have to take people like 50 kilometres away from the town, around the town. But
556 not all tourism activities can react like that, only this specific type of activity and program services can do
557 that. But maybe like – of course not hotels (laugh), so it has to be mandatory for them. And that's kind of
558 cooperation between companies and municipalities and this on private levels planning.

559 I: Yes, I agree totally. (Uhm) So, you now talked about the responsibility and what about the financial
560 resources?

561 P: (Pause) Well, of course that kind of subsidies and public funding should take into account a forecast and
562 what will happen. So that would be a good example but not really creative. In tourism, it's this planning and
563 they are still keeping kind of (uhm) building permits to the areas where (inaudible 22:43). So, that shouldn't
564 be done, so of course planning is important in that sense that – but funding – I don't know, (pause) ... I
565 don't know (laugh). What do you mean by financial issues?

566 I: Yeah, so the thing is (uhm) that someone has to take responsibility for this transformation, and it doesn't
567 come out of nowhere, it has to be financed and especially now within the pandemic, we had tourism like a
568 really – quite big loss. And yeah (uhm) I was thinking you can somehow connect (uhm) the probably the
569 increasing arrivals in winter with the funding. That was my idea, you know what I mean?

570 P: (Laugh) I'm not sure. Because I think of course private companies have to think about their own business
571 and about the province is what they do of course. But then the public sector should also – if they give and
572 as they give, they give funding to private companies, then they should then, direct it so that it's kind of
573 sustainable and these building permits is also one example which is not really sustainable for the private
574 sectors part of course. So, that applies also the funding, private or public funding that it should be done, it
575 needs to be – things that are more like sustainable and more climate – taking more into account climate
576 change. But I don't really know the world of course. Well, they don't really keep funding more activities but
577 for building more hotels, so I don't know really, how they could take into account climate change in that
578 sense. But well of course one planning and funding issue is these resorts, which has been already done
579 like Levi, Ylläs and some other (inaudible 25:03-25:08). Especially it's more of a mitigation issue, but they
580 don't need cars when they go there, so that's kind of a planning issue and then also directing funding into
581 that kind of things. And also maybe this need of artificial snow and so on. So trying to talk about public
582 funding especially taking into account climate change adaptation and so on.

583 I: Yes, okay, thank you so much for your insights. I can somehow summarise what you said so. You think
584 in national parks, restrictions are needed and that the funding comes rather from the public side and that
585 the municipalities have a quite big role in this transformation process and (uhm) ... Yeah, otherwise, you
586 see that the Christmas period is very endangered because of the climate change because mainly
587 international tourists come and that mountain biking for example is a really good way of coping against
588 climate change because it's an all-year-around product.

589 P: Quite good, yes. I think that it's the best option. When I compare mountain biking to some other activities,
590 I find it the best option. I prefer hiking and activities which don't need some much trails and which are more
591 favourable for me and the nature. I don't really see why people have to go to nature, to wilderness with e-
592 bikes for example, but it's not possible otherwise for the long distances you have to overcome. But still, I
593 don't find it, the best options but it's in some cases, like in urban areas for example, it's quite good product
594 and near resorts, and non-protected areas.

595 I: Okay, thank you so much.

596 (...)

Interviewer (I) Luise Biere
Participant (P) ID 4
Date 24.03.2022, 11 a.m.
Location Microsoft Teams

597 (...)

598 I: Okay, so if you don't have any further questions, we can start with the interview

599 P: Yes.

600 I: Okay, perfect. So the first question or thematic block will be more or less about the influence and impact
601 of climate change on the tourism demand. So, my first question will be about the changes in tourism
602 behaviour concerning the outdoor recreation, so what activities they do, (uhm) what do you expect for that,
603 in the future?

604 P: Yeah, (uhm). About the statistics, we don't have so much about this in (company), or we haven't done
605 that much research about this. (Uhm) But regarding the signals and what we are hearing and so, we are
606 still happy here in the north that (uhm) especially in Lapland, we have the snow guarantee. It is (uhm) – of
607 course we don't know for how long and what will happen (pause), how fast of the climate change goes
608 forward and so, but still (uhm) we expect that, it will continue a bit longer than for example in the Alps or in
609 Central Europe for example, that we have snow. It means that we will have year-around outdoor activities
610 in the – I'd say – at least in the next future, at least next ten years still, but that is very short time when we
611 think about the (pause) future overall. So, we cannot kind of stay in that feeling that okay were gonna have
612 snow forever and let's continue like that. But in general, I'd see that year-around – the companies are more
613 dependent on year – creating year-around activities. Even though they have been (uhm) strong now for
614 winter and maybe relaxing or having holidays or having holidays or doing some developments on
615 constructions during the summer, now it's more shifting that you have to have some business, also a lot of
616 business also in summer. So creating new things. In your questions, sorry, now I already missed (uhm) –
617 forgot the part, was it about the winter activities especially or ... any outdoor?

618 I: Just any outdoor recreation, of course more in a tourism relation.

619 P: Yes, yeah, okay. But yeah (uhm), I'd say that (pause) well of course the nature is the playground for
620 everything, so it will be something not too constructed, I'd think especially in Finland, it is going into towards
621 – is it by hiking, by biking, or walking, or fishing, or whatever – it is anyway to this environment that we
622 already have. Of course, some bike parks or some trails, or things like that, need to be constructed, but
623 still, basically I would say that it is (uhm) kind of like outdoor activities that are kind of easy to (uhm) build
624 and maintain and also sell. I don't know if this answers your questions ...?

625 I: Yes, of course it does (laugh). The next question would have been more about the demand for winter
626 tourism, but that (uhm) you already stated. So (uhm), maybe you can, not really repeat, but maybe put it
627 more in a sense about just Finland and especially Northern Finland.

628 P: About the winter tourism?

629 I: Winter tourism, yes.

630 P: (Uhm) ... So, well, talking about the winter tourism it automatically comes to my mind, also when I think
631 in many tourism people mind, also here that it is from Central Finland to north. So, it is like, the most secure
632 area where to have real winter. And (uhm), I think everybody wants to go a more sustainable way and I
633 hope this is the case (uhm). So, I would think that when it comes to, for example snowmobiling, what has
634 been quite strong, quite popular activity in Finland for foreigners who have visited – who have come to
635 Finland to do snowmobiling tours, and maybe that is not that hot topic anymore. (Uhm) Not even now, but
636 what we think about the future and (uhm) at least if you are just going around, you know, there is no kind
637 of purpose, that you are moving from one place to another, so it would be like a vehicle to use but like two
638 hours 'brum brum' (laugh) in the (uhm) fells. So, this is not any actual fact that (laugh) I have, but it's this
639 kind of thing that we can a little bit see, or of course at the moment the petrol (uhm) expenses are so high,
640 so it's not that cost effective for the companies either. But anyway, then there is of course the potential of
641 electric vehicles, electric snow mobiles. That is actually something that there is a demand from some

642 markets, for example from the US market (uhm), when they are interested in our winter products and if they
643 hear that somebody has electric snowmobiles, it is something like, quite good selling point. But anyway, I
644 think that is a bit decreasing, kind of this – you know a little bit – (uhm) – I don't say it will disappear, but it
645 will turn more sustainable ways, you know. And yeah, people are looking for peace and quietness and
646 places with not too much light pollution, and yeah, I think this is something we have good – some kind of
647 advantage, here in the northern part. But (uhm) on the other hand, the services should be quite available,
648 so, when we are talking about masses, they don't look for that extreme adventure, but more like, nice
649 outdoor (uhm) experiences. And then (uhm) eating well, sleeping well, in that environment and yeah.... But
650 on the other hand, I don't know, if there is (uhm) – when it comes to for example Adventure Travel Trade
651 Association, this ATTA, researchers (pause) – now I don't remember any facts from there like figures
652 exactly, but anyway it's kind of that women are more eager to some adventures like with friends or with
653 other women or alone even. So, I think this is something that has been noticed in their research but also in
654 our product offering and demand from the customers. So, that is ... (uhm) maybe something like we can
655 do this ourselves as well and it's not just for men (laugh) this kind of adventures, experiences.

656 I: Yes, okay, thank you so much for that interesting insight. So, now we can more or less move towards just
657 mountain biking. So the next question would be what does especially Northern Finland offer, regarding
658 international mountain bike tourism.

659 P: Yeah, yeah, at the moment, I'd say it is (uhm) gathered around these ski resorts which are like in Finnish
660 they say Matkailukeskus, so travel destinations (laugh) like Levi, Ruka, Ylläs, Saariselkä, Salla, Pyhä-
661 Luosto and so on. So, because there of course they have the infrastructure, they have the (uhm) places,
662 they have the lifts, they have like everything already there. So, I'd say, almost all of these destinations see,
663 that mountain biking is potential summer product, that they want to develop, that they want to bring out
664 more and (uhm) some places have already taken bigger steps than the others. But like our (uhm) research,
665 this benchmark research that we did last year, it (uhm) shows that there is great interest to do (uhm) – to
666 bring Lapland as a bigger destination or area to the world map as a mountain biking destination. So, it –
667 they all now realise that they cannot survive on their own, it doesn't help when Ylläs is doing a really good
668 job on their own, but not Levi, not Rovaniemi, not Ruka, not anybody else. So, it doesn't attract that much
669 – the international travellers and bikers. But when there is a bigger picture and bigger image that okay
670 "Lapland is a cool place to go and experience there and these and these and these destinations where I
671 can try it or move during one trip, you can move from place to place" that attracts more, that raises more
672 interest also abroad. So we are now I'd say, at the stage where development is done in separate
673 destination, it is done for some places, very far, some places taking the first step. But then hopefully the
674 next will be that, they join their forces and create the brand for mountain biking in Lapland. Sorry, was your
675 question only about concerning mountain biking – not only about Lapland mountain biking or whole Finland?

676 I: (Uhm) So, Northern Finland, so I also include (uhm) Northern Ostrobothnia, because Ruka is there and
677 also Kainuu, but you can also talk just about Lapland it's more or less the same.

678 P: Yeah, we consider it now – we have these major regions, so Lapland also include Ruka-Kuusamo and
679 also Iso-Syöte they can come, but also Iso-Syöte is also in the Lakeland major region, so they are kind of
680 the border, so they belong to both, depending on which is the topic. But good thing that you anyway include
681 them and for example Iso-Syöte and Ylläs they are doing this ski lift cooperation in – was it now in
682 summertime? – that when people are coming to mountain biking or to bike parks destinations – they can
683 use the same lifts and tickets.

684 I: Ahh, okay interesting.

685 P: Yeah, I think – I hope I'm talking about the mountain biking (laugh), not skiing, but anyway they had this
686 lift cooperation, the same ticket system.

687 I: Ah, okay interesting. Do you know since when they have this cooperation?

688 P: I think they had it before Covid, I think I heard about it, so 2019, I don't know if it goes every season, but
689 they at least tried it.

690 I: Ahh, because when I was in Finland, I had a project with Iso-Syöte and I did a lot about the STF
691 (Sustainable Travel Finland Program) and (uhm) that was interesting, because I didn't know that this
692 cooperation exists.

693 P: I'm sure, I'm not lying (laugh) but I don't know if it's still going on, so yeah, but I think it was about the
694 bike parks things, anyway .. maybe googling finds some things.

695 I: Yes (laugh), okay thank you. Then we can now also move onto as you already mentioned sustainability,
696 so what do you think which measurements are needed to be taken into account when it comes to managing
697 the mountain biking sustainably?

698 P: Okay, sorry now, you have to repeat the question because I was googling this thing and I found you a
699 link (laugh) so can you (laugh) please repeat the question?

700 I: Okay (laugh), so, which measurements are needed to (uhm) be taken into account when it comes to
701 managing mountain biking sustainably, so what is needed to be done that mountain biking will be
702 sustainable.

703 P: Hmm, good question. (Uhm) The exact measuring tools (uhm), I don't know if I can answer that correctly,
704 anyway, of course the trail building, so all the (uhm) planning is done excellently, so it has to be like,
705 considering all the facts that it causes – what it causes for the nature, but also the cultural – social aspects,
706 I would say, because there are so many landowners and also (uhm) reindeer herding and ... (technical
707 differences) ... yeah, so then when it comes to yeah, also the need to consider the local communities (uhm),
708 the landowners and also the, like I said, reindeer herders. But also these (uhm) – that the local people feel
709 that they are not built only for tourists, for example the mountain biking trails. But it is something that should
710 be also included in local people life's, and the feel that they are also welcome to join and it is not just like
711 when you pay a lot of money and so on. So, these things, so environmental and social aspects are very
712 important. But how to measure these for example, I think are, customer services and also (uhm) these
713 local, how do you say – surveys (uhm) from the locals – Asukaskysely in Finnish, but anyway – which are
714 also part of STF program, so the Sustainable Travel Finland program. (Uhm) When it comes to destination
715 indicators, what we are now about to release in the near future, (uhm) – so it means that they – the
716 destinations need to (uhm) perform these questions frequently to the locals also that, how they feel about
717 tourists that come to the area, how is it in the balance? But yeah those things, but then yeah, of course,
718 when it comes to sustainability and the mountain biking also considering all the infrastructure for that. Where
719 to wash, how to wash, where the – what kind of (uhm) products ... (pause) how do you say – any oil or
720 soap or whatever you need for the (uhm) maintaining the bikes (laugh), that they are environmentally
721 friendly for example. And yeah, am I on the right track?

722 I: Yes, you definitely are, of course (laugh), very good thank you. So, (uhm) the last question will be about
723 the stakeholder responsibility. So, (uhm) yeah, we have this tourism transformation that will come because
724 at the moment, especially with all the winter tourism and skiing, with climate change we cannot really
725 continue as it was, so we need this kind of transformation as you said also for year-around tourism. So,
726 what do you think (uhm) who is responsible or like which entities are responsible for this tourism
727 transformation and how are the financial resources for this allocated?

728 P: Excellent questions, (uhm) and not easy one. But I would say that of course, the transformation often
729 (uhm) – well it might be so that it is because there is no other choice, that you have to do some changes,
730 but I would say that mostly it comes from the companies. They start to innovate (uhm), they start to think
731 new solutions, they are business-oriented, and they know that they cannot survive if they don't do the
732 change themselves. And of course they cannot do it alone. Financing is really important, well for example
733 (company) is funding companies – Finnish companies for new innovation and for example sustainability is
734 one of the main criteria that we require and (uhm) ... for example for the northern part companies (uhm)
735 one part of sustainability is this developing of the year-around business and the year-around tourism. So
736 (uhm) I would say that it is (uhm) – they are quite strong – they would – the companies can have funding
737 when they have good innovation, when they have good new ideas which they (uhm) are also willing to take
738 to international market. So, of course, when internationalisation is also one of our main tasks, they have to
739 include that aspect as well. But when the company is not that into international tourism, of course there are
740 other places where to get funding for example, this Elykeskus, those funds (uhm). Then of course getting

741 some loans and so, but not everybody wants to take too high risks with big investment. Of course they wish
742 to get, how do you say, cheap loan, (uhm) yeah. But anyway, there are – yeah I would say that it – the first
743 step comes from the companies themselves, but they need the support from the public side. And (uhm) all
744 the financial instructions, I don't even know, I just know (company)'s side and this Elykeskus and, (uhm)
745 one is of course the project, like EU projects, that is one possibility. For example, if they gather a group of
746 companies, that apply some projects or the destination, if they take some project in their area and involve
747 the local companies, they can benefit. But this is my feeling about this.

748 I: Okay, perfect, thank you so much. (Uhm) That was already it, more or less. So, I can try to summarise a
749 bit (uhm) what you have said. So (uhm) you said we – like Finland will have a competitive advantage,
750 especially Northern Finland when it comes to the winter tourism, because we have more snow secure
751 image, especially in comparison with the Alps and Central Europe. And then, we have the importance of
752 nature products in tourism, that we yeah need to develop further and not really construct more, but rather
753 use the resources we already have. (Uhm) Then we have a shift from Central Finland to Northern, when it
754 comes to like, winter outdoor activities and (uhm) that mountain biking is centred around the tourism centres
755 that are already there so ... that are more into skiing, so all these ski resorts, Ylläs, Levi, Ruka and so on.
756 We have an importance of the social part of sustainability with the reindeer herding and the local
757 communities, but also environmental, that it's really important to build the trail on a really high like
758 sustainable level, let's say. Then (uhm) about the funding, that (uhm) the first initiative should come from
759 the companies themselves but then like public organisations are responsible for like generate the force
760 more or less. Was that all right?

761 P: Yeah, very good (uhm), picking from all the long answer. Very excellent, but I mean and of course when
762 it comes to the first question maybe regarding the snow guarantee, Finland – yes, it is the fact at the
763 moment. But like, we know the climate change is affecting to the arctic regions harder than other parts of
764 the globe of course – or faster. So even though we have snow, because we have such a deep winter here,
765 so it kind of takes more time before we lose our snow – or our snow border goes more and more north. But
766 once it is starting to happen, it unfortunately happens very quickly. But I don't know – very quickly is like
767 ten or 100 years but still ... we should think that still in 100 years that we still have snow here, we have still
768 winter activities, but I think we can only see like ten years ahead or rather imagine in this (inaudible 27:35)
769 ... very hard to think. Otherwise, but yeah...

770 I: Okay, thank you so much.

771 (...)

Interviewer (I) Luise Biere
Participant (P) ID 5
Date 24.03.2022, 1 p.m.
Location Microsoft Teams

772 (...)

773 I: Okay, perfect. So (uhm) the first questions will be more about the influence and demand on – of how
774 climate change changes the outdoor recreation, so what changes in the tourism behaviour in concern to
775 outdoor recreation, so which activities they do, do you expect in the future, like just in general?

776 P: (Uhm) I did write actually, I was just going through these questions, and I wrote something under all of
777 them, I don't know if – did I actually understood the question correctly? But (uhm) I will kinda read it to you
778 what I thought. So, I was thinking that health, recreation combined with the fun element of the activities and
779 accomplishing something you didn't necessarily think, was your cup of tea, will be important also in the
780 future. So (uhm), I think that in that way, you still want to do things that enhance your health or believe are
781 good for you when you are on a holiday, that's becoming a bigger and bigger trend and (uhm) then when
782 you're doing activities, you want to try something that you didn't necessarily think is something that you are
783 kinda capable or you think that you want to do – but once you actually give yourself the chance to try it, it's
784 something that really takes you into the experience. That makes the difference. I think that's possible with
785 that and I think that people are kinda learning a bit more into that. And also, I think that people have within
786 themselves this urge of travelling far, even if it's not sustainably and ecologically the wisest thing to do,
787 especially if you're flying, if you want to do it fast. But I think that urge will still be there, but of course the
788 trend of travelling (uhm) and kinda exploring nature and activities close by to you will increase, but those
789 will be more of like, short visits, like short adventures and stuff like that. But with like Covid, we saw that
790 people from Berlin would go bike packing very close by for a few days, I think that that will grow, and people
791 will explore the nearby even if you live in the city, there is always something green on the other side of the
792 border. So I think that that will have an increase and I think that's healthy but when – if you go further, then
793 you want to experience a bit more and stay longer, I hope that that will – if you go further that you will stay
794 longer. And I think that that will be a trend, too.

795 I: Okay, thank you so much, (uhm) what do you think maybe also about the spatial part of that, so you said
796 (uhm) people will rather travel further – like they still want to travel further although it's not sustainable, but
797 also (uhm) like these short trips will likely increase, right?

798 P: Yeah

799 I: So we have like just in general an increase in outdoor recreation. Doesn't matter if it's far away or if it's
800 close to home?

801 P: Yeah, I think so. What we have been seeing during Covid – like I think it's also probably but especially
802 in Finland, people have started buying all these outdoor gears and like going to courses where you can
803 learn the skills, if you don't have them already or if you were not a girl or boys scout. And if it has been
804 nothing your family did, and kind of the connection to nature is going to mean more. And you're kinda going
805 more back to the roots, which I think is a really healthy development. It's becoming trendy and if trendy can
806 be sometimes good, I especially think that the outdoor trend is a good one.

807 I: (Laugh) Yes, I totally agree. So (uhm) ... //

808 P: It might be bias, but I think it's a good thing.

809 I: So, let's move to the next questions which will be more about the demand for winter tourism and this
810 especially in Finland or Northern Finland, so in what sense do you think will climate change (uhm) influence
811 the demand for winter tourism in Finland?

812 P: I talk more about Lapland, because I think that Finland is actually a very small country (laugh) it is
813 different to talk about Helsinki, Turku, Tampere, even Oulu than Lapland, so ...

814 I: So, just to mention, I defined Northern Finland as Lapland, Northern Ostrobothnia, and Kainuu.

815 P: Okay, alright, that makes sense. These are mostly the areas where we have good snow still (laugh). But
816 yeah I think that (uhm) the winters will probably change even in here, like gradually. We are already seeing
817 some signs of it, but we still have the true arctic winter. Even if we get few days of plus degrees in February
818 doesn't mean that the game is over now. For everybody else that's like "Wow, amazing". But I think that
819 (uhm) we can expect the arctic winter to be like this and the experience at least for the next 20 years or so,
820 I hope so, I really hope so. But if I see what happened within my time on this planet, and where I'm from
821 and how the winters are there now. I'm a bit more of the middle part of Finland and (uhm) I think for the
822 next 20 years we will be fine if nothing really drastic happens but that's a different thing. Then we do not
823 need this research anyways but (uhm) (laugh). But things are going now, for the next 20 years, there is
824 going to be more demand for Lapland for the wintertime. And that's (uhm) – one of the reasons is that –
825 because we live in the age of pictures and images and (uhm) Lapland looks very good, the Lapland winter
826 looks very good on pictures, like the auroras, huskies, snowy trees, all these well-maintained trails that we
827 have, the ski trails and the bike trails actually in the wintertime now and also the fell landscapes because
828 they are kinda calming and soothing in a way. But they also offer an adventure, an easy one and a more
829 demanding one if you like. I think the ones – the people who come here and when they experience silence,
830 that's like – that's something – for some people actually scary because they are not used to it. But in
831 general, that's something that people really value, and before they start going back home, they're like "Oh
832 my god I'm gonna be in all that" – like the different tempo of life. But I think that there is a good chance for
833 us, to stay very high up on the winter demand for the future.

834 I: Yeah, that's – I will totally agree with you as of my research so far. Yeah, so next questions will be more
835 about mountain bike tourism, so (uhm) what do you think, what does Northern Finland, Lapland, Northern
836 Ostrobothnia, and Kainuu offer regarding to international mountain bike tourists?

837 P: I wrote a lot (laugh). But it's kinda my work, I think that I should be able to put it into little less words, but
838 I wasn't capable of doing that. //

839 I: It's actually perfect, if you have a lot because like the other people I interviewed so far, this was always
840 the most difficult question for them, so ...

841 P: I don't know if you can see the text, can you? "For mountain biking, we have something even better than
842 mountains – our open fells". And with that, we mean that it's – this landscape is very easy to come to, it's
843 very easy for you to rent for example an e-bike and go on top of the fell. And have like the white big
844 sceneries around you and nothing is hostile, everything is kinda smooth and (uhm) – in a way – I'd like to
845 say that (uhm) the Alps and more pointy mountains they're masculine, and the fells are the feminine form
846 of mountains, they are easy to approach. And (uhm) I'd say that because to us, nature is like – you step
847 outside and it's there. So you are there, you are always surrounded by possibly wild nature, or it is kind of
848 unspoiled nature compared to other places. And also, like for mountain biking, the national parks in Lapland
849 and in Northern Finland, they actually have a very good trail network that have some kind of signage already
850 for mountain biking and (uhm) there are good maps available, and also the offer – the online information is
851 getting better and better. So, we are kind of in the process of developing this mountain biking product into
852 something that is very easy for tourists to understand what we have to offer. But we are working, it's not
853 ready yet. But (uhm) we have this winter like (uhm) winter resorts like Ylläs, Levi, and Syöte and (uhm)
854 Ruka, Saariselkä, different places that are used to catering for tourists. And in the winter times it works like
855 magic (laugh), but in the summer we don't trust ourselves that this is something special. And it really is. So,
856 having all these services available makes it possible to make it kind of change – the tourism also to have
857 those two big peak seasons. For example autumn time is already something that is becoming like one of
858 the big seasons and I think that we can also spread it to the summer. And for example in Ylläs, I don't know
859 maybe you have talked with people in Ylläs already, or you know the place very well, but they have been
860 able to kinda make summer already very good business for many entrepreneurs in the area. I, for myself,
861 have an Airbnb in Ylläs, and I have been renting it out for many years and for the last two years, (uhm) the
862 summertime has been actually selling quite nicely. So, there is definitely the moment – it is already
863 happening. But also – of course the next leap for international tourism is not happening at all. And we kinda
864 have to make it happen, because there is nothing that prevents it. But of course, the competition for summer
865 is so much bigger. So, then we really have to rely on the big advantages that we have here and that's really
866 the nature as it is, it's very wild, and untamed in many ways, but also secure and safe at the same time.
867 And then of course all the igloos and all the little funky hut accommodations and the old cabins, log (uhm)

868 taverns in things. Everything is available in the summertime, too. And of course, the culture (uhm) – the
869 Finnish culture is pretty unique, too. We have our own ways of being humans that's for sure and of course
870 the Sámi people as indigenous, and still living from land in so much more many ways than we are. Of
871 course, they're becoming more modern too, but they have the connections still, very pure. And (uhm) sauna
872 and the cold-water dips in the winter and summertime, and (pause) of course all the services that
873 Metsähallitus provides, along the trails. So, you have the huts, you can go from hut to hut if you like, that's
874 very cool. And there are also those campfire places where you can take care of your gear or your hunger
875 (augh) or whatever is needed. And (uhm) what else did I have here? I was actually not looking what I had
876 written. Actually, yes, I wanted to say – we have the perfect weather year around, but that's kind of a joke
877 – but it's actually, because we have the mentality 'it doesn't matter what kind of weather it is, it is the perfect
878 weather to be outside' you just put your clothes according to what's happening outside. The winter trails is
879 really something unique, (uhm) like Ylläs has hundreds of kilometres, Saariselkä has 70, I think Syöte had
880 100 at some point, they might have 80 now. But, the winter biking trails are really something else, we have
881 already seen that tourists from France and Alps and Spain or – they have probably come here for cross-
882 country or for the huskies or of the course the Aurora or something like that. But when they tried the fun
883 trails we have in the wintertime, they come for the second day and for the third day and say that – so it's
884 really something that people even don't know that they will love, once they try they will really like it. And
885 (uhm) then of course the long-distance trail network and the forest and dirt roads that we have, there is like
886 – it's full of them – everywhere. There is a very good project at the moment 'arctic bike packing trail' which
887 is kinda doing little loops to Saariselkä, Inari area, to Ylläs, to Muonio, to different places but then also
888 creating like – I don't remember how many – few thousand kilometres long trail. So it's for the – like – I think
889 there's a big trend of like this long trail (pause) (uhm) tours or like – you can do them individually or guided,
890 and you can do a small part of it or the whole thing and I think it's amazing that Lapland is now answering
891 to that market. So I think there's a lot of things happening for us in the biking scene. And I seriously believe
892 that Lapland will be known as a very good biking destination in the future.

893 I: Okay, that sounds ... //

894 P: There was actually more, but I think it was enough (laugh).

895 I: Yes (laugh), it was already quite a lot, thank you so much for that. Okay, now still for the mountain biking,
896 what do you think, which measurements are needed to be taken into account when it comes to managing
897 the mountain bike tourism sustainably? What has to be done that mountain bike tourism is sustainable?

898 P: Of course, the trail way, because there's gonna be more and more people and we have already had like
899 lots and lots and it's not just mountain bikers, it's also the walkers and everyone, so once we are in nature,
900 we are using the same trails given the amount we are doing it now, of course it does have an effect, it has
901 an impact. And (uhm) especially in Lapland the arctic nature is very, how do you say? ... //

902 I: Fragile? Sensitive?

903 P: Yes, it's really kinda – we have to keep in mind that we want to restore these places, as they are so we
904 kind of have to have an understanding – what is happening? And actually Metsähallitus and the national
905 parks for example, they do some measurements on the trails. Here in Saariselkä, they have like – they put
906 some sticks and they have like – they're measuring what's happening with the trails. Of course, you can
907 (uhm) and you should to certain places, build the trails in a more sustainable way. And fix certain places
908 and build some bridges, and take the trail to a little bit different places, because it's a more solid ground.
909 And (uhm) do all that kind of maintenance and kinda understanding how people behave and how to keep
910 nature as it is – better. But (uhm), then of course the growing number of people who are not used to being
911 in nature, and who are more used to (uhm) being like in the cities and everything. One they get here "Oh,
912 this is all for us" and think they can behave as they like. So, kinda to bring the etiquette and the
913 understanding – well MTB (*note: mountain biking*) trail code or whatever you want to call it. But kinda to
914 understand, that everybody belongs on these trails, and nobody has the right of passage over the other.
915 And (uhm), (pause) yeah I think that this is a big demand for Metsähallitus as the national park overseer
916 and in general like a big landowner in Lapland to find a way to be able to kinda fit the needs of nature, and
917 people in the right perspective. So yeah, I think that's important. But for us it's been more of allowing things,
918 so I think that in nearby future, we might come to the point where we have to make more rules and kinda
919 also follow the rules, so people take them seriously. I think we're going towards that. Hmm, what else?

920 (Laugh) And also like (uhm) – we’re seeing already that people who come here, and like – I live in the
921 middle of the forest okay, I don’t get it yet but – there are people who come to people’s windows, and they
922 look inside (laugh). They kind of forget that there are actually local people living here, who have been living
923 here for all of their life and they have privacy. So even if we have this Everyman’s Right, and you’re pretty
924 much able to camp everywhere or pass peoples yards, or anything. But kinda – to be mindful and be
925 respectful to people who already live here. And yeah, that’s pretty much it.

926 I: Yes, thank you so much. I totally agree with (pause) basically everything you said. Okay, so the last
927 question will be more about this tourism progress or process. So, we said – we have this winter tourism in
928 Northern Finland and through climate change, it cannot continue as it was. Of course, it can, a few years,
929 and it will change but we have this process that needs – like that tourism process that needs to change
930 something. So, what do you think, which entities are responsible for this transformation process and (uhm)
931 how like, are the financial resources for that allocated?

932 P: Of course, since we are part of EU, I’m kinda talking from that perspective. So, of course, the big funding
933 organisations are in big (uhm) charge or in big responsibility of how they allocate the money, what kind of
934 projects they fund. So, like the ERDF (*note: European Regional Development Fund*), the ESF (*note:*
935 *European Social Funds*), all these programs, and I think it is going more and more towards sustainable
936 development in the funding. And (uhm) because they rate like every project that you apply for, they rate
937 them, and I think that sustainability is one of the high-ranking things on those. It doesn’t matter if it’s
938 mountain biking or whatever it is, it kinda is high on the points. (Uhm) Of course, the tourism associations
939 like globally, and like coming down from global to national and to local level, of course those play a big role,
940 what kind of information they give to the businesses and also to the politicians. And also how to kinda
941 influence the politicians to make laws and standards, that kind of enhance the sustainable development of
942 economy including tourism. And (uhm) like Visit Finland, I think is doing good job at the moment with
943 sustainable tourism, like the branding and building this umbrella under which Finnish companies can find
944 some education and start developing their services and products towards more sustainable tourism. So, I
945 think, that’s actually a good thing (pause). It’s, yeah, I would like to say that it should have happened a long
946 time ago, but (uhm) we knew this from the 90s what is happening, but of course, that’s - that doesn’t make
947 any difference to say that.

948 I: It takes some time (laugh).

949 P: It does! Everything takes some time and I’m really kinda glad, what they are doing with it now. It is going
950 to the right direction for sure. And (uhm) of course, people, by civil action, we can demand for more
951 sustainable travel options, kinda make it trendy. And show it in social media and kinda like be yeah (pause)
952 have our voices heard and of course choosing the service providers who are actually doing it the right way.
953 And then all the software developers and whoever creating tools to make funding and counselling
954 sustainable products and services more convenient for the people. And also like (uhm), having tourism
955 products where you build a tree or for putting a tree down, you plant a tree. You plant a tree (uhm) for
956 something like, if you’ve done a long-distance hike, or you’ve done whatever – rolled on snow and been on
957 the icy water for five times you can plant a tree or whatever. But kinda like, it’s part of making an impact
958 locally which is actually meaningful. So you can produce these kinds of products, but yeah.

959 I: Okay, anything to add?

960 P: No. (laugh), I think that was a lot.

961 I: Okay, that was a lot of information. A lot of very good information, thank you so much. (Uhm) I can, yeah,
962 somehow repeat what you said, what I understood at least. So (uhm) you said, (uhm) that domestic and
963 short trips in tourism will likely increase to the nature but also these trips to more remote places or far away
964 places and that outdoor recreation in general will increase close to the city but also during the holidays.
965 And otherwise (uhm) Lapland seems to have a really good position at the moment with the snow safe image
966 and (uhm) considering mountain bike tourism, fells are even better than mountains. That I will definitely
967 remember, this quote, it’s very good (laugh).

968 P: We are so modest (laugh), no but yeah, they will use this approach, that’s for sure.

969 I: Yes, and then we have this accessibility (uhm), a lot of trails networks with Metsähallitus as a big
970 corporation, that kind of can overlook everything quite easily and provide really good trail networks. And
971 the signposting and maps and so on. And otherwise we – in Finland it's very good that we have these ski
972 centres for the winter tourism because all the infrastructure is there but it's like – only used during winter
973 and not during summer so we have this quite big potential that we can (uhm) do more product development
974 here.

975 P: That's kind of a sustainable way, because for example in Ylläs – so, they now have plans, they have
976 24,000 bed spaces and they are having these plans for 50,000 doubling it up. And to me, that's crazy –
977 like, why? There is high demand on certain times of the year, but if you have to sell 6 or 8 weeks of, sorry,
978 no room, is that really a reason to double up the capacity? Or even just 30% plus? I think the emphasis
979 should be more on, how to make better use of what we already have. But I mean of course, those are –
980 that's a masterplan, kind of an idea, that we want to double that up, we want the biggest and the most
981 handsome or beautiful whatever, but of course reality is something else. But still having those kind of plans,
982 I think the target is in a wrong place, but I don't work there, so I can say whatever I like (laugh).

983 I: Yeah, okay, so otherwise, yeah, you said that we have a lot of maintenance already in the national parks
984 and that Metsähallitus has most of the responsibilities for creating those, yeah, sustainable mountain biking.

985 P: Yes, and of course it's Metsähallitus but Metsähallitus locally also works with the municipality and with
986 the tourism.

987 I: So, you say (uhm), that it's about the cooperation between Metsähallitus and the locals?

988 P: Yes, I'd say. I didn't actually say, when I was speaking but (uhm) of course you can put all the – I mean
989 it can't be just Metsähallitus – it's the one that contains the whole country and of course in Lapland they
990 have a very big role but as local tourism providers we have to be part of it.

991 I: Yes, otherwise about the last question, we have the funding, and the responsibilities is more or less (uhm)
992 on the public side, so we have some EU projects, but also the local municipalities and also Visit Finland
993 but (uhm) it's also very important that the community here is involved in all this – in this transformation
994 process.

995 P: It's all our – we all are responsible of what is happening.

996 I: Okay, perfect. That was already it.

997 (...)

Interviewer (I) Luise Biere
Participant (P) ID 6
Date 28.03.2022, 1 p.m.
Location Microsoft Teams

998 (...)

999 I: Okay, so, we can start with the first thematic block which will be about the influence and impact of climate
1000 change on tourism in general. So, my first question will be about the changes in tourism behaviour, so,
1001 what we can expect concerning the outdoor recreation in the future?

1002 P: Yes, this is a very interesting question because we can always (pause) ask our potential customers that
1003 how would they – what do they prefer, how would they act, what kind of choices do they make, do they
1004 make accommodation, activity, travel, what transfer choices, on the basis of sustainability. We can ask that,
1005 or we can follow their – like how do they act. Because there is usually a quite big gap here. We have some
1006 customers who are definitely focusing more on sustainable side of all aspects of travel. Meaning transfer,
1007 accommodation and activities. But then – this is a lot smaller that what we would actually get if we would
1008 ask the question. What different things you prefer. And as I'm telling this (uhm) – it's very difficult to see
1009 into the future and how things will actually change. We are talking now about the differences – like (uhm)
1010 the conflict in Ukraine which has probably, which is of course a tragedy, but it will have much more impact
1011 on the future than – I think – that we can imagine right now. Because we want – shift sustainable energy,
1012 sustainable use of sustainable energy will be dramatically faster than it would've been before. So (uhm),
1013 like – there is no easy answer. But I think that there – we will all need to sort of pitch in, to make the whole
1014 customer journey more sustainable. Otherwise we are in danger of losing a lot of customers. And then
1015 (uhm), if we talk about two different customer groups we could talk about like the national – like Finns in
1016 here or the international clients. I think there will be a large – a bit difference between those two. Because
1017 the international customers always need to fly and that would be something that we won't have short-term
1018 solution for. So, it will be very difficult for – if we really want to make sustainable tourism in the future, we
1019 have to find solutions for big (uhm) questions in the society: are we allowed to fly in the future? How long
1020 are we – if we can't take a (uhm) sustainable way of flying within the next, let's say 20 years, how are we
1021 going to move from one continent from one to another, how are we gonna move from Spain to Finland or
1022 from Finland to Spain? So, these big questions that we alone as tourism industry – we can't solve this. But,
1023 if we talk about domestic tourism, then it will be much different. Because then we can say – there is a
1024 railway here, it's much more reasonable here to say that okay, take a train from Helsinki to Ylläs, than to
1025 say okay, take a train from Barcelona to Ylläs, it would take like three or four days to come from here to
1026 Spain. So it won't be an option except for a very small number of people who have the time and who are
1027 sort of committed to sustainable development. But it's a very small percentage of people. So, (uhm) if you
1028 look at the whole picture, then we need to (uhm) find a solution for the transfer, transportation of people
1029 first which will be much bigger than just the tourism industry. So that, was a really long answer but it's a
1030 complex question .. (uhm) yeah.

1031 I: Okay, thank you. (Uhm) So, what do you think regarding the outdoor activities, so you said there would
1032 be probably difference between the international customers and the Finnish customers, so what do you
1033 think would they rather do during their holidays, will the ski or snowmobiling, what are they doing? Like also
1034 winter and summer.

1035 P: Very good questions. I mean (uhm) in terms of skiing, I think it shouldn't like – to have a – like carbon
1036 neutral ski resort, that's not very difficult task. It's basically – I mean – sorry – it's the most difficult task in
1037 the world because it's money (laugh). But I mean you can do it nowadays, like you can just buy renewable
1038 energy and use the ski lifts which is the most energy intensive of all the activities in the ski resort. You can
1039 just use renewable energy and that's it, of course that will affect the sales of ticket prices but it's just money
1040 which makes it easy, but also makes it very difficult. (Uhm) But there is a really easy solution for that – a
1041 lot of the ski resorts in Finland are moving towards that direction. (Uhm) Then of course when you think
1042 about ski resorts, also the other things like the lifts are one thing but then the heating which is a very big
1043 thing here in the arctic, heating of everything. (Uhm) Now, when the ski resort in Ylläs is building new
1044 buildings, they're always planning to use geothermal heating which saves a lot of electricity. I mean, we are
1045 already moving there, and it will be happening. (Uhm) But then, Lapland as a destination, we only have a
1046 few (uhm) – no sorry – we have so many options to choose to do outdoor activities which are by itself

1047 sustainable. Cross-country skiing, mountain biking, snow shoeing, even hiking, because we have made
1048 winter hiking trails as well. So, you don't need to cross-country ski to enjoy nature. But then, you have few
1049 activities which are a little bit of concerning, that are snowmobiling and the animal activities – dogs and
1050 reindeer. They are sort of (uhm) using a lot of energy in a sense, even the dogs, if you think like an animal,
1051 “how is animal not sustainable?”. Well if the animal – you need to feed the animal, you need to transport
1052 the animal, you have to make sure that it – like has a place to stay. You need a lot of resources to keep it
1053 up running. And then snow mobiles have similar problem than the airplanes. It's that they use a lot of energy
1054 and that means that they are transferring snow mobiles from internal compression engines to electric ones.
1055 It's not very easy. They have been trying it for years now, but they still can't get enough range and sort of
1056 (uhm) – they don't work very well if it's very cold. So that's definitely a challenge. But then we also have
1057 new things like electric (uhm) fat bikes which is (uhm) really something for the future (uhm) and it's really
1058 popular and I could definitely see the electric fat bikes safaris instead of snow mobile safaris. I know, it's
1059 not the same thing and it's not for everyone definitely, because even on electric fat bikes you need to be
1060 able to ride the bike. It's a little more like an outdoor activity than riding a snow mobile which is basically
1061 anyone can do it, if you just know how to press the gas. It's much easier. But I think, we will definitely see
1062 a change towards electrification of all these activities, like, I said, when it's cold and when you're dealing
1063 with very power intensive things like snowmobiling, it's not easy.

1064 I: Yes, so you now talked a lot about this (uhm) supply side, so, what does the tourism industry offer, but
1065 (uhm) what do you maybe think about more of the demand side? So what are the people actually looking
1066 forward to do?

1067 P: Yeah, very good question. I think there is (uhm) (pause) yeah. This is difficult question, because, I, in a
1068 way I think, that it's actually the offering that dictates the demand. Because (uh) we – the arctic environment
1069 it's so different from anything else, that it's usually hard for people to imagine what do you actually do here.
1070 So we can just say that okay you're supposed to do this – in a way. If you think about huskies for example,
1071 husky safaris. Huskies are not – they don't sort of belong here, because you don't have huskies in Lapland
1072 naturally. The dogs are very different. And huskies actually came from Canada to Lapland, where they have
1073 been used for a long time, part of the culture. Same thing in Northern Russia. But in Finland they didn't
1074 exist before, they were being used as a sort of like activity in tourism industry. So in a way – and when they
1075 start seeing that this has potential they start marketing it and it was really easy thing to market because
1076 everyone loves the dogs with blue eyes and they are you know, such as like – very beautiful animal and
1077 easy for us to say that okay, go to the arctic region and try that. So, in a way, if you just switch that around,
1078 and do something else which would be more sustainable, I think the demand for it would be there, if you
1079 just offer whatever it is. Same things with fat bikes, it didn't – I think the first trails that we did in Ylläs was
1080 probably like 2015, so less than 7 years ago, we did the first tracks. And no one understood, just one
1081 company actually understood, okay they've seen it somewhere, this is nice, this is something that we want
1082 to do. Because it's much better – the fat bikes are the only activities with one investment – you can get a
1083 year-around product. So it's a really good product in a way, no one could've imagined how, but it would
1084 actually grow. We have something like I think, 600 rental bikes, (uhm) today, only in Ylläs. So, I – this is
1085 something I'm not really sure about, but my gut feeling is that, we can really – because this is such a foreign
1086 environment for many people. Like if I go to Dubai, to the desert, I don't really understand what I'm supposed
1087 to do in the desert. Like in a way, if you know what I mean, like it's a – if there's some activity – yeah you're
1088 supposed to do this in the desert, is it like sliding down the sand on a snowboard or using a four-wheel or
1089 forward drive or motocross, whatever they say you're supposed to do here, I would probably be like okay,
1090 this is something you're supposed to do here. So I think, (uhm) in general, I could say that maybe the
1091 demand is for more in a way – the demand will of course impact the offering if you say that okay we demand
1092 more sustainable choices, that would be the thing, but for people to say, I wanna do this in the arctic, it's
1093 maybe like ... it's the way I see. We actually have the power to control what we want people to do here,
1094 especially when I look outside the window, there's a lake there and on the other side of the lake is the
1095 national park. Most of our trails go into the national park and the forest ministry of Finland (*note:*
1096 *Metsähallitus*), they dictate what you can do in the national park. So anyway, we're limiting the amount of
1097 possible activities that you can do here, so in that sense, I'm optimistic. If the people want more sustainable
1098 activities, we can make as sustainable choices as we want and then the people will buy those products.

1099 I: Okay, but you're – like it seems to me now, that you are very sure that these people will also buy the
1100 products you offer. How – or what gives you that certainty, that you know that they will consume whatever
1101 you provide?

1102 P: (Uhm) The reason is – what I've sort of said – that the people, like the demand for what we have is,
1103 which is clean air, clean nature, silence, it's so attractive that (uhm). These are just sort of like the overall
1104 things that we have here and then we have the northern lights, and you have snow. Which is in general like
1105 – it's almost like (uhm), I hope I'm wrong but in 20 or 30 years, snow will be much more rare in – where you
1106 are now, than it is today, unfortunately. So, in a way, this is a really bad way of saying this, but if you look
1107 at it purely from a business perspective, we are fairly safe here for a while. We are much safer here than
1108 countries further south, so we don't have that – of course, we see the change like very dramatic change. A
1109 lot of the entrepreneurs who are working here right now, the started maybe like 20 to 30 years ago and you
1110 couldn't be sure that (uhm) you could start the snow mobile safaris in beginning of October. Now,
1111 sometimes we are worried if we can even start it in the beginning of December. So in a few decades, the
1112 start of the season has been late for maybe two months. Of course we can see the change but still we have
1113 five to six months of winter here, and even if the winter is four months, I think were still fairly safe in that
1114 sense. But this is me only saying it from a purely business perspective. And sort of – what gives me the
1115 confidence to say, that people will come? It's that we've had very steady growth from let's say 2015
1116 onwards, and Covid of course changed that for a year and a half maybe but right after people were able to
1117 travel, we have record sales again. Even if this year was really – weren't sure at all, if we could get in
1118 international customers, but the last record-breaking year was 2019 and were breaking records again this
1119 year. And I'm not saying – and this is me using fairly using an old school language, like a business language
1120 in a way, I'm saying were breaking records which is definitely not our goal in the long term. Our long-term
1121 goal is to break maybe (uhm) record sales, but not record number of people. I think there's a huge difference
1122 here. But yeah, I think it's a combination of things that, what the position of Lapland in general is, which is
1123 really positive, we're safe, clean, easy (uhm), yeah, easy access. So I think we have a lot of things going
1124 on for us, so that's why I think we are (uhm), we have a choice. That is where my confidence comes from.
1125 We have a choice. We can – we have so many choices actually, how were gonna develop tourism in
1126 Lapland, but I think that's why I think that whatever we do, we will find – we have multiple options, and I
1127 think we will find enough customers for those options if we want to take those options.

1128 I: Okay, that's a very interesting viewpoint. Actually, one of the first that I've heard (uhm) looking at the
1129 other interviewees. But thank you so much. Now we can move on (uhm) to more of a focus of mountain
1130 biking. So, what do you think, what does Northern Finland, so Lapland, Northern Ostrobothnia and also,
1131 maybe also Kainuu, what do they offer (uhm) regarding international mountain bike customers? So what
1132 does Northern Finland make special?

1133 P: I think, the most, if you start from the general things, is the nature, the way it is. That we are – I am now
1134 in an arctic destination, and I think that even though some say that “okay, the arctic starts from the arctic
1135 circle”, I think the same goes for the whole of Northern Finland. I mean, basically the polar night in the
1136 wintertime and (uhm) and then again the nightless night in the summer is really unique. They are unique to
1137 the arctic region so these national phenomena we have are the basic of the offering of what we have. And
1138 then (uhm) if you can come down from the general, to the more specific, I think I can quote something –
1139 one Belgian tour operator and he said, “come to Brussels, and see what we have and offer something else”.
1140 And he meant that if you come to a big city, everything is like – you know how big cities are – usually they're
1141 all the same, we have a lot of people, the air quality is what it is, we have lots of cars and lots of noise and
1142 this is exactly the opposite. Trees, lot of forest, very clean air, silence (uhm) and I think that sort of the basic
1143 thing in my mind, if I look at myself as a tourist. I always wish to seek something new, and I think we are
1144 something (uhm) in Europe that's really unique and now I'm talking about – if I use the term unique then I
1145 have to include Sweden and Norway as well, because it's the same up north. But in regard to north and
1146 south, I think we all have our unique features and what we have right now in Northern Scandinavia, it's
1147 really attractive to a lot of people. (Uhm) And these are just the basic things that we have, and this makes
1148 us very attractive as an outdoor destination in general. Then, when it comes to mountain biking, those are
1149 really attractive qualities, but we need to develop – we don't have like the ... again if I talk about Northern
1150 Finland, we don't have the infrastructure, we don't have – we're definitely not ready for international
1151 mountain bike tourism. Ylläs (uhm) has been in the forefront in the development, and we've been doing this
1152 activity for about five years. And I think sort of (uhm) (pause) – no, I don't think even we are ready in terms

1153 of trails and infrastructure. But we are sort of very close to it, I think in a few years – in a few years' time
1154 when we get the trail development going, we can sort of a good offering, for all mountain bikers. Right now,
1155 for the sort of more adventurous riders we offer really nice trails, but they are definitely not for everyone.
1156 You need to be a hardcore adventure mountain bike to enjoy. For example the national park is really nice,
1157 but there, you have some long stretches where it's really challenging riding and you don't have any services
1158 there, so – but for that kind of people, we already have a good offering. But when I'm talking about this sort
1159 of industry scale, mountain biking destination, that we don't have yet. But everyone is really working on that
1160 at the moment. So I think maybe in five years everything will be set up for that. But then again 'who is our
1161 client?' that's a different question. I think, that we have a lot of people really close by, the Swedes,
1162 Norwegians, and we can offer them a lot better infrastructure than they have, so I think, Central European
1163 countries – in my mind – they are way off, maybe in ten years or so. But I hope I'm wrong. I don't know if I
1164 answered your question.

1165 I: Yes, you did. (Uhm) So, you said now, that you are not yet ready for mountain bike tourism or like on the
1166 brink of getting ready. So, what do you think, still needs to be done, when we have also the sustainability
1167 in mind, so what measurements are needed to be taken into account when it comes to managing it
1168 sustainably?

1169 P: Yeah, exactly. Your right there on the spot. I mean that's exactly the thing. What I mentioned before like
1170 most of our trails, existing trails now, are in the national park, so we need to be really sure, that we can
1171 develop the mountain biking sustainably and we have possibility to (uhm) sort of monitor the amount of –
1172 number of mountain bikers going into the trails and how does it affect the trails and then we really need to
1173 closely monitor that number and then maybe think about should we limit the number of people going into
1174 the national park or not. We don't have a problem yet, but the number of visitors has almost doubled in the
1175 past five years – like during Covid-19, the number of visitors in the national park has almost doubled. So
1176 the infrastructure there is really taking a hit in terms of that, but it's not just mountain bikers, because it's
1177 actually the hikers ... There is actually no hard data on this, but a lot of stakeholders suspect that it's actually
1178 the hikers who cause more harm on the trails than mountain bikers. Mainly because if you have a wet spot
1179 on the trail, the (uhm) mountain bikers usually – they don't care, they just ride through, they don't care about
1180 mud or getting their feet wet or stuff like that. So, the trails go on the same spot, if just bikers bike a trail it
1181 would be going on the same spot. But if you're hikers, and if the muddy spot is a bit bigger, then they will
1182 try to go around it, which means that they will make a new trail and that means that trails can sometimes
1183 be – like if you just have a meter wide trail, it can at some point be a two meters wide trail, if you have a
1184 wet spot and people going around. But this is just one example, so (uhm), I think the main thing for us is to
1185 monitor the trails, if we build more trails we need to make sure that we take all the measures into account,
1186 how to make trails, how to make them durable, how to sort of respect the nature in such a way that we can
1187 still enjoy it. And then of course when you're talking about target groups, then of course one thing is that
1188 (uhm), is it sustainable for us to think that we should (uhm) market Finland or Ylläs or Lapland as a mountain
1189 biking destination for Austrians or for Germans? Should we just try to attract the people from Sweden or
1190 Norway, who are much closer? They maybe don't need to drive – oh sorry – they don't need to fly, they
1191 come here by car and in a few years or like 2030, most of the cars will be electric, so then again, the overall
1192 sustainable development in society will help us make tourism more sustainable as well. We just need to
1193 make sure that we have the infrastructure for charging the electric vehicles and so forth. But yeah (uhm),
1194 what needs to be done is trail building, infrastructure, services and making sure that we keep the number
1195 – that the growth isn't like exponential, but growth is slow but steady and we make sure that we monitor the
1196 effects of the tourism in the area, I think those are the key things that we need to like – in order to have –
1197 what I mean is that because we already have the infrastructure for winter tourism (uhm) it's if you look at it
1198 from economical or social standpoint, our main goal right now, is to make tourism year-around and in Ylläs
1199 and in Lapland all together and Kainuu and basically everywhere in Northern Finland. But then, if you are
1200 able to make tourism all-year-around, then you need to worry about, what clients do you attract and where
1201 do they come from and how do they arrive. So I think, those are they key issues, because we don't need
1202 to build that much infrastructure, like, I mean from a service standpoint. We just need to build the trails,
1203 make sure the trails are nice, make sure the trails are sustainable and then everything else is already here.

1204 I: Yes, I totally agree, thank you. So, now we can move to the last question which is now about, yeah, this
1205 change that you already mentioned. So, we have this kind of tourism transformation process, that we don't
1206 have the winter tourism anymore in Northern Finland or just the winter tourism, but we want to have this

1207 year-around tourism as well. There, we need some kind of change. (uhm) And what do you think, who is
1208 responsible for this change in tourism in regard, also to climate change, and how are the financial resources
1209 for that allocated?

1210 P: (Uhm) Do you mean (uhm), who is responsible for the change, do you mean that who should drive the
1211 change, or do you mean that, who has done (uhm) right things so far, that we have been able to get year-
1212 around tourism?

1213 I: (Uhm) Who should drive it in the future.

1214 P: Okay, yeah, well, we've seen a drastic change in the Covid time. Like 2020 (uhm), we have been very
1215 successful in the summertime. So, I think, (uhm) if you look at the destinations in Lapland you can see that
1216 some destinations have been more successful, and some haven't. So, you can't just say that (uhm) (pause)
1217 – let me go to another example. (Uhm) If you had a bad summer, let's say you work – you have a café by
1218 the beach, wherever in the world. Usually, you have warm summers and then it's a rainy summer. After the
1219 summer you can analyse what went wrong and most of the people at least most of the people I know, would
1220 say, okay, we had a rainy summer, so it's – and were by the beach, people come to the beach when it's
1221 sunny, so it's okay we had a low season. Like a bad summer in terms of sales. But then, you have few
1222 entrepreneurs, who are able to make profit and able to make good business, no matter if it's raining or
1223 shining. So, (uhm) the same thing in here during the Covid times happened. Some destinations were ready
1224 for summer tourists, they already have done the work before Covid-19. They, like – we in Ylläs, we did a
1225 rebranding of the whole place from winter destination to an all-year-around destination already in 2017. In
1226 2020, when all the Finns were looking for place to go in the summer instead of flying to Spain or somewhere
1227 warm, they said “okay, we already heard for many years for three or four years, we already heard about
1228 the summer in Ylläs, maybe we should really go there”. And that's why we made even a better result for
1229 Ylläs than some other places who weren't ready for it. And of course then there's another thing. When the
1230 other places, even though they are packed, like a lot of people went there, the customer satisfaction was
1231 really high (*low*) because they were not ready. The places weren't open, (uhm) and this is something that,
1232 like I told you about in the beginning, the difference between small and big companies, is that we need the
1233 small companies, we need the encourage the small companies to keep their services open, even though
1234 it's a little bit low season right now. Because if we want to create a high season for the summer, you need
1235 to start somewhere. And it will be a low season, it means you will, hopefully not lose money, but you will
1236 not make that much money. And that's something that we need to do together, and you can definitely see
1237 that during the past few years, that some like I said, some destinations were ready, some weren't. And I
1238 think those who were ready, got more clients and they got better feedback and much better customer
1239 experience, and those destinations will be more successful in the future as well. So I think it's a cooperation
1240 between different sizes, like cooperation of companies with different sizes. But then, who should drive the
1241 change? I think (uhm) the change – I used to work for a DMO, (company), my view is that, of course it's
1242 really important for the destination marketing organisation to do the job. (Uhm) And actually, I worked in a
1243 study last year where we tried to figure out what's the best way to do a destination management or
1244 marketing or whatever organisation in the future. And, so, I really believe that we need those organisations
1245 because they have an overall view, and they can sort of try to figure out the trends in the future and what
1246 not. But then the real change, in a way, has to come from the companies. Because you can't have – it's not
1247 one or the other – it needs to be both. And to go back to my favourite thing, is that we need to have both,
1248 small and big companies together. Because the small companies don't have the money for marketing and
1249 the big companies are too – sort of – they are not flexible enough, to do big changes in their offering. Like,
1250 if you have a bike rental company with just one person, the owner running the company, it's much easier
1251 for him or her to say that “okay, I'll be open for another two weeks, because I can do the work”. But for a
1252 big hotel chain, they need to plan at least a year ahead, so it's really hard for them to say “okay, we have
1253 lots of bookings coming in for May this year, but we don't have any people, we made all the contracts like
1254 fix term contracts by the end of April, we don't have cleaning staff, we don't have cooks, we don't have
1255 receptionists, we don't have anything”. And it's too late right now in March to say that, okay, we will stay
1256 open for a few weeks longer in May than we did last year. That's why we need both, big and small
1257 companies working together. And the destination marketing organisation is the organisation who drives that
1258 sort of – to create that spirit of working together and then, choosing the right markets and doing the right
1259 marketing to whatever area the companies want their clients to come from. And of course then, in Lapland
1260 it's really crucial (uhm) – like it's not – if you work in Austria if you think about Sölden, you don't need to

1261 worry about any transportation at all, because you're right there in the middle of Europe, you might have to
1262 think about okay, we need to have a bus coming from that train station and one hotel might have to worry
1263 about, okay, how does the bus come from the train station all the way to my front door. But I mean, we
1264 have to figure out – we need to talk to airlines, we need to talk to railway companies, to everyone that you
1265 can even get here. I mean, within a thousand kilometres of us. It's a really different game we play. We need
1266 to figure out, that who do we want here and how are they able to get here. So, that's why the role of the
1267 destination marketing organisations is a little bit different than to a destination in the Alps. I usually compare
1268 us to an island, like Iceland, Madagascar, Tahiti, it's the same kind – we deal with the same kind of
1269 problems. And that's why I think it's – for a sustainable development it's really important for us to really
1270 have the conversation 'who is our customer in the future'. Not in 50 years, then we can you know find a
1271 solution but for let's say 10 years, 'who is the customer'. Are we allowed to fly? How much does flying cost?'
1272 Which the hub like teams, meetings replacing the need to see face-to-face. Most of the airlines are going
1273 to suffer, because lot of the business travel will disappear, it has disappeared. And I don't think it will – we
1274 will ever go back to the same as we were before Covid. And that affects us as well, because the airlines
1275 are relying on business travel, that's where they make all the money. So it's a really complex question. I
1276 don't know if I answered your question. DMO! I think it's the DMO companies small and large who are the
1277 key players (uhm) in driving the change. Because (pause) yeah, in my mind, (pause) like my view of how
1278 the customer affects the change, especially in here, I'm not really, like I'm not optimistic about that. Because
1279 if – we can always find clients who are not really concerned about sustainability, for example if you for
1280 example go to Asia, there's no discussion about sustainable travel at all. If you look at who's going on a big
1281 cruise ships to the Antarctic or the Arctic regions, it's the Chinese mainly, and I'm not blaming anyone, I
1282 just say it's the way it is. That mainly, to my knowledge, that the conscious travellers they are in Europe
1283 and in Germany in particular. But – so, if you don't wanna be sustainable, you can always find people in
1284 the world, who don't really value it, that much. So that's why I think, that the change comes from the
1285 companies themselves.

1286 I: Okay, and (uhm) these companies also carry, like, this (uhm) yeah financial burden I would say, with
1287 them, by themselves?

1288 P: Yeah (sigh), that's true and like I said that (pause), – I might be a pessimist, but if you look at the – why
1289 people behave on their holidays, it's really different of the way they behave at home. And you know, what
1290 could be a good example? If you're really strict on recycling at home, like you put your metals here, your
1291 glass there, your paper there, and what not. And then when you come to (uhm) a travel destination, it
1292 doesn't work like that, it works like this in a big city, that you have all the place for different things, but you
1293 still wanna recycle – you say "okay, you have to do it on your own, you need to drive – you need to take
1294 your trash to another place". You need to transfer it for yourself, no one's gonna come and pick it up from
1295 a cabin or from the hotel. Then, it's a huge gap there, is that people say "okay, I do recycle at home but
1296 then it's so difficult to do it here. And it's also just a week here and then I go back home and for 51 weeks
1297 a year, I'm really good on recycling". And it's good for them maybe, but for us who are living here, is that
1298 were left to deal with the problem and all the trash after the leave and if you think about how tourism works,
1299 you have different people here every week. Like every week of the year, so the problem is really
1300 concentrated here. And you can really see that people don't feel it. They say "okay, it's like, if you're on a
1301 diet – I'm on a holiday, I can eat as much chocolate as I like" – it's the same thing. "It's Monday and I will
1302 have a glass of wine on lunch, I'm on a holiday, of course I can do that". So it's really – that's why I think
1303 that we need to be the ones that drives the change (uhm). (Uhm) Because I don't – I think there's lot of
1304 discussion in the tourism research at least here in University of Lapland, how people like the change, you
1305 are tourist, you identify yourself as a tourist. It sort of gives you a little bit more freedom and you know, and
1306 especially right now I would say, we're starting to recycle things, but we will recycle things for how many
1307 years? But then for some people still they think about recycling like "Okay, it's so hard that I have to worry
1308 about my trash, and I don't want to worry when I'm on a holiday". So I think it's (uhm) (pause), I don't know
1309 if that makes any sense.

1310 I: Yes! It does. I totally agree with your points, I mean I also work at the moment in the tourism industry and
1311 it's always like interesting to see how the people change and what they do or what they're not doing (laugh).

1312 P: Yeah, exactly. I think that's the key point, what they're not doing. But then again, of course this will be a
1313 transitional period. Because when the next generation comes, there is a very different kind of attitude

1314 towards everything. So, I mean, so that will naturally drive the change. But the change is really slow, and if
1315 – like I mean – if we just rely on the consumer, then the change will be really slow. And that's especially
1316 when it comes to flying, you can't like – flying is such a – especially cheap flying is such a young
1317 phenomenon, you can't really – it's hard to blame people for flying, because it gives you a lot of freedom
1318 and like yeah. And then again if flying is super expensive, what are you gonna do? I think about you, if you
1319 come to Finland as an exchange student, if the cost of flying would be like the real cost from an
1320 environmental standpoint, then it would be very rare per portions of people who could actually afford flying.
1321 But then again, travel and (uhm) travelling for work, travelling for studies, travelling for holiday, gives you
1322 such an immense, like, richness to your life that it's so hard to say that you can't fly at all. In a way, I haven't
1323 flown since 2016 on my holidays, it's how many years? Six years? And I don't really think I missed out
1324 anything. But then again I used to fly a lot in the past, so I've sort done my share. I do have to fly sometimes
1325 for work, but that's something that I can't – you don't have good choices. But then again (uhm), I totally
1326 understand the people who are flying because it's such a – like I mean – I don't think we can get far if we
1327 blame each other for our choices. I think we just need to make some choices easier and some choices little
1328 bit more difficult and that's the way of going forward.

1329 I: Okay, perfect thank you so much, especially for your new insights that I've gained. So, especially just to
1330 see it from another perspective. Because I've always looked at it from a demand side of tourists, so how
1331 can we best please the tourists, but rather that they – that we provide (uhm) like as tourism enterprises,
1332 that we provide whatever the customer wants to do, and they will actually also do it. Yes, otherwise for the
1333 development, (uhm) infrastructure is already there, that was a really good point and especially the
1334 monitoring is also very important and to do the cooperation together and that the real change doesn't come,
1335 yeah, from one person or whatever, we need to have this kind of cooperation between different entities and
1336 then we can make the best out of it.

1337 P: I think, (uhm) Allegra has really good – we got a booklet from different kinds of stories from different kind
1338 of mountain biking destinations and the development of the different destinations. So you have like, few
1339 different kinds of approaches in developing mountain biking destination. In many of those cases you could
1340 see that there was always one person who sort of started it all. And they were really passionate about
1341 mountain biking they were pushing, pushing, pushing. And I can definitely relate to that, because I've been
1342 that sort of person here in Ylläs. But then again, I think it's – I don't believe in hero stories in these, I think
1343 it's always a joint effort and usually if you say that okay, this is the man or woman who did the whole thing,
1344 who lifted up the Sölden mountain biking or whatever. You're always forgetting really important people who
1345 are on the way helping, because if everyone is against it and no one helps, then not one person can do
1346 like, the destination – to wake up the destination. Even if one person can wake up the destination, you need
1347 the whole destination to be with the whole thing. So yeah, I think it's always a combination of luck, people
1348 and then, the time. Because we've done it in Ylläs before (uhm) – one hotel owner who I talked to, probably
1349 when I started at (company) and he said that, because I was all about mountain biking, this is something
1350 really interesting. Maybe we should start developing, because then it was a bad year in terms of winter, it
1351 was late, and I said, "shouldn't we in terms of winter, if we worry about when do we start the winter, why
1352 wouldn't we worry about, when do we end the summer?" Because we have fat bikes, we can bike all year
1353 around, then we can have the biking season going longer and longer, so we do not want to artificially push
1354 the winter towards the summer, when we can just sort of, adapt to the change. Because I think, we were
1355 talking about artificial cross-country ski tracks here and stuff like that which is super expensive and really
1356 energy expensive, so we would be using massive amounts of energy to make – push the winter back
1357 towards summer, when we could just as a destination, as a business to accept what's going on and just to
1358 adapt and bring new more sustainable things of doing things. But he said, "I don't really believe in this
1359 mountain biking" and I was like "why?" "well, I already did it and it didn't work". He said, that he brought in
1360 1995, he already bought, he brought (uhm) journalists from UK, and Germany and France to Ylläs in the
1361 summertime and took them mountain biking. Because he was a really enthusiast mountain biking at that
1362 time. But he said "Oh, it didn't work out, we couldn't get the flights, we couldn't arrange the whole things,
1363 and tour operators were not interested, you can't do it". But I said "Okay, we can later talk about your
1364 experiences and maybe we can sort of try to develop something different this time?" But he said, "No, you
1365 can't do it" and I said "Okay, let's see". And it only took a few years, and we got the ball running and
1366 everything went fine. So, it's not about being right, it's not about doing the right products, but it's much more
1367 about – you're on the right time. So, you need to find the momentum of things that – it's the same thing with
1368 northern lights and huskies, you need to find the right time to push the product and when people are ready

1369 to buy. If people are not ready to buy, then you can't sell, I think it's that simple in a way. And the same
1370 thing goes for this whole theme, is that, if you see – if you think about potential of sustainable tourism, you
1371 need to have the people how want to buy sustainable products, if they are – even if they are a little bit more
1372 inconvenient, more expensive, and even if you have to search a little bit more for them. But then you already
1373 have sort of like three steps, that the consumer needs to take and unfortunately I don't have a lot of faith in
1374 (uhm) – I mean in consumers as a big group. Because when I was working for (company), I had to worry
1375 about that we get like 250,000 to 300,000 people here. Same thing with Sölden, you really need to worry
1376 about – you have so much companies, the tourism industry is so big, that you have to feed it enough to
1377 keep it alive, as it is for the time being. But then, in that way you cannot concentrate on the niche markets
1378 to much, but you can try to grow them a little bit on the side, but you need to worry about, okay, how do I
1379 get 200,000 – 300,000 people here every year, what do they want. If I say “okay, we're all sustainable,
1380 (uhm) a wind power destination but it would cost you ten times more to come here”, I think lot of the
1381 companies would go bankrupt. So the change has to be gradual, even if though if I want the change to be
1382 really much more faster, it just doesn't happen that way, because people are not prepared to take dramatic
1383 steps, one way or the other way. But I hope something like I said in the beginning, I hope the Ukrainian
1384 crisis, in a way, as it's a huge tragedy and all, but I hope it will have a fundamental change in peoples
1385 thinking of our dependency on fossil fuels.

1386 I: Yes, that's very interesting and let's see what the future brings.

1387 P: And always hope for the best, you always have to hope for the best.

1388 I: Of course, okay, otherwise, I don't have any questions anymore, do you have anything to add?

1389 P: Hmm, no. I wish you all the luck, and I really thank you for the opportunity. I hope I made some sense,
1390 because the whole sustainability issue and the tourism and the outdoor industry, they are really – it's a
1391 really complex thing because the outdoor industry is so (pause) deeply rooted in consumerism. We have
1392 the, like clothing manufactures, the bike manufactures, people who make the helmets. For mountain biking
1393 it's so – sort of – you're not a mountain biker if you don't have five mountain bikes in your garage. You're
1394 not a mountain biker if you don't fly to the Alps every year to go mountain biking. Same thing if you're a
1395 skier, if you don't fly somewhere for a ski holiday. That's such a strong connection between consuming, not
1396 just sort of the holiday itself, but the whole lifestyle, that's sort of – it's a good and a bad thing. Also the
1397 strong connection with the tribes, “I am a mountain biker, what does it mean?” it's such a strong connection.
1398 And then on the other hand, you need tribal, like sort of – you need to have the tribal outfit to belong to the
1399 tribe. And you have to buy it, it's something – by buying we sort of express ourselves that we belong to this
1400 tribe, and he belongs to that tribe, and she belongs to that tribe. You know, so it's (uhm) really complex
1401 thing in a way, trying to fit in the sustainable aspect. Like if you think of sustainability, like a true
1402 sustainability. (Uhm) One of the Finnish companies has a really brilliant (uhm) sort of like mindset, they call
1403 their sustainability report, their unsustainability report. Because it tells consumers how much they sold,
1404 different stuff, and the owners said, that, as long as we sell stuff, we are unsustainable. So, we can't call our
1405 sustainable report our sustainability report, it has to be our unsustainability report. And at some point, I
1406 hope I can call it the sustainability report. But until I sort of stopped selling stuff that someone manufactures
1407 somewhere, and which were flown here and then I will fly it somewhere else. Yeah, it's a difficult time.

1408 I: Interesting viewpoint (laugh).

1409 P: It is. Yeah. I hope I wasn't too philosophical or too cryptic about things. But yeah, I don't like easy
1410 answers, because easy answers go – I think they push us to the wrong directions.

1411 I: Yes, I mean it's perfect, because now I got some different insights, it's perfect, don't worry.

1412 P. Very good.

1413 (...)

Interviewer (I) Luise Biere
Participant (P) ID 7
Date 01.04.2022, 1 p.m.
Location Microsoft Teams

1414 (...)

1415 I: (Uhm) Okay, perfect. So, we can already start (uhm) with the first theme, which is about the influence
1416 and impact of climate change on tourism demand. So, (uhm) what changes in tourism behaviour concerning
1417 the outdoor recreation, do you expect in the future?

1418 P: Well, yeah, so what was it – can you repeat the question, please?

1419 I: Yes, don't worry. (Uhm) So, the question is (uhm), what changes in tourism behaviour concerning the
1420 outdoor recreation do you expect in the future? So, (uhm) what do you think, what will tourists do in the
1421 future (uhm) looking at the outdoor activities, so, are they skiing? Are they mountain biking? Are they
1422 snowmobiling, swimming, hiking, whatever? Just in general, what you think where it will develop in the
1423 future.

1424 P: Yeah, I think that in the rather new picture as we've already seen the – partly because of Covid, people
1425 have become more active in staying outdoors and spending time in nature and I think that it's very possible
1426 that this kind of development will continue. So, the people feel the need of getting more into the nature in
1427 the future and (pause), not just because of Covid, but we are now living in a global environmental crisis,
1428 and very many people have more knowledge about climate change but also biodiversity issues and this
1429 kind of awareness might also affect the behaviour. So, they maybe want to go to the nature more but
1430 maybe, I kind of hope, there is no guarantee that this will happen, but that more people will develop
1431 tendency towards using more (uhm) non-motorised activities. So, instead of snowmobiling for example,
1432 they go (pause) skiing or do mountain biking for example, this kinda changes. But this is something we
1433 don't really know, if it will happen. Because now that more people have kind of gained also the state where
1434 they want to spend more time in the nature. It means that new groups of people which haven't been
1435 previously in the forests or in the nature, have entered the nature now, and their preferences are very much
1436 different from the previous one preference, than the ones that were more nature oriented in the beginning.
1437 But now, we have this new group, so I think currently it's rather difficult to estimate what we will actually
1438 happen in the future. There are different kind of tendencies, but you don't know where they will develop.
1439 This is maybe something that – then the tourism stakeholders, operators and tourism development
1440 responsibilities should consider, that different kind of scenarios, that what will happen in our nature in our
1441 forests and what kind of activities do we want to emphasise and market already. Because this is the way
1442 to influence the people's behaviour that you can somehow create demand by the things you offer for them.

1443 I: Yes, I (uhm) totally agree with you. That was actually also the thing, that the interviewee before said, that
1444 it's really important, yeah, rather steer the demand through the actions that the tourism industry does, so
1445 it's more the supply that rules the demand. Okay, so, we can move on to the next question, and the next
1446 question will be, in what sense do you think will climate change influence the demand for winter tourism in
1447 Finland? So only looking about, (uhm) winter tourism to Finland, but also especially Northern Finland,
1448 coming from a national or also international perspective.

1449 P: Okay, I will go back to the previous question still, to say that (uhm) – I'm not sure if you are aware of that
1450 Finnish study that is conducted every ten years 'Luonnon virkistyskäytön' and it's a study about how Finnish
1451 people go to the nature and what they do there, and the results of the newest study will be published I think
1452 in April, so rather soon. So, this is maybe something you should follow up if you haven't kind of notices
1453 before.

1454 I: Yes, I already read about it, but I didn't really find a date where it will be published and the last one was
1455 already quite a while ago, so I was not sure if I can use it, (uhm) but if you say it will be published in April,
1456 then I can definitely take a look at it. It's published by Luke right?

1457 P: Luke, yeah. I heard that they, some days ago, but I cannot remember what date – it's rather soon anyway
1458 and there will be some information from the Luke website. So, if it happens to be so that it is published
1459 before you finalise – because you have been doing your work already for some time already I think, cos

1460 our interview was so delayed, but yeah. (Uhm) So that would kind of give you the idea of what has changed
1461 since the last ten years because it's quite old ... But then the winter tourism demand, well, both nationally
1462 and internationally if you think of the – what kind of winter tourism we have currently in Northern Finland
1463 especially and who are they tourists there, so – of course there are some markets in nearby areas like us
1464 from Oulu, we got to several skiing destination in – to Kuusamo and also to Ylläs, and Levi. But (uhm) since
1465 most of the population of Finland lives in Southern Finland, they (uhm) kind of the biggest groups during
1466 certain periods – during certain seasons and (uhm) ... There has been this kind of thought that in some
1467 sense it's possible that the demand to (uhm) both increase and decrease. Because (uhm) the activities that
1468 we currently offer in winter tourism, skiing, skating, snowmobiling and especially the skiing is maybe
1469 something that requires a bit amount of snow that you want to even try it. So, it's possible that people in
1470 Southern Finland and also in Central Europe where our most tourists currently come from, if they don't – in
1471 the future get any idea of snow, like they don't ever get to ski or skate in their home areas, it's possible that
1472 these kind of activities built on something that they are not so willing to even try when they travel to north
1473 when there is plenty of snow and you can have those kind of activities. So, it is possible that the demand
1474 will decrease. But I think this will happen only in the long run. Like, if you consider what is the current
1475 situation, so I think in Finland we are now living in the time, when for example, when the wintertime, snow
1476 amounts are increasing, this year we had a lot of snow again and this is something that follows the climate
1477 scenarios. So, when the (pause) precipitation increases, because of climate change, it first shows us
1478 increasing amount of snow if the precipitation happens in wintertime. But then – and this in the short run,
1479 it's possible that we have these kind of winters when we have plenty of snow, so everybody is buying those
1480 skies and skates because “wow, we can now do a lot of these (uhm) winter activities” and then if in the
1481 following year, they don't have the snow, then they have their gear already and they want to travel to the
1482 north and try it and kind of get use of them. So, it's possible that in the short run, the demand will somehow
1483 increase for this kind of traditional activities but in the long run, I think it's (inaudible 10:20) important again
1484 for the tourism stakeholders that they start to prepare, what kind of activities they are offering in the future
1485 and who are the kind of people. But then (uhm) there is also the viewpoint that affects the demand and also
1486 the supply that, how climate change awareness and then climate change policies start to influence. And
1487 (uhm) how this will affect travelling, the cost of travelling, and peoples willingness to travel, to fly, (uhm)
1488 from Central Europe for example, fly to Finland (uhm) to play in the snow and then we can also at some
1489 point start to talk about last chance tourism, that (uhm) people are causing – increasing climate change,
1490 enhancing it, when they are flying and coming to play in the snow and doing all those activities that you
1491 cannot do in the future anymore. So, they go snowmobiling, they – when I talk about skiing I mean downhill
1492 skiing. They go to ski, they go to this kind of different activities that are also very consuming concerning
1493 nature. So, yeah, I think there are different scenarios for the long-term future and then for the near future.
1494 It is also something you can kind of influence, if you consider for example, like, I quite often use the
1495 Rovaniemi or Santa Clause tourism as an example, they have created this kind of (uhm) image as a Santa
1496 Clause centre and then from nothing. Like, Santa Clause doesn't exist (laugh), it's a story, it's something
1497 that has been just make up and how popular it is nowadays. So, it is possible in tourism to create these
1498 kind of (pause) huge (uhm) tourism activities and images and perceptions that people start “Oh, we need
1499 to visit Santa clause, it's so important” even though everybody knows that it's like you don't really have to
1500 visit him. But (uhm) like marketing and these kind of things there is plenty of potential to also influence the
1501 future demand concerning the winter tourism. But it needs to be dealt, that it also considers the other side
1502 of the coin, so that what kind of tourism we can produce, so it doesn't harm the environment. This is
1503 something that I believe that will be even more important in the future, that we have to consider that we
1504 don't (uhm) contribute to climate change and biodiversity loss. So, it's kind of to ... (inaudible 13:55) where
1505 all our lives are dependent in the end.

1506 I: Yes, of course, I also agree with you and if you like – Finland has done like in the past few years a lot of
1507 this rebranding going really into solely the sustainable tourism direction and I think that's actually quite
1508 unique when it comes to – like when you compare it to Central Europe for example and I think that's a really
1509 good sign that we have here. Okay, (uhm), do you have anything to add about the tourism demand?

1510 P: Not really I think.

1511 I: Okay, perfect. So, we can move to the next question, which will be more about (uhm) solely mountain
1512 biking, so, what do you think what does Northern Finland offer, regarding international mountain bike
1513 tourism. So, why do you think, might international tourists travel to Finland to do mountain biking?

1514 P: That's a good question, I have to admit that I'm not – well I mentioned it already – I'm not so good in
1515 mountain biking issues.

1516 I: Yes, I know but it's alright, you can just state your general feelings.

1517 P: Yeah, in general I think this trend that we have in our current nature-based tourism, like the kind of
1518 tourism we have now, the same things apply. So, we have beautiful landscapes, clean nature, the cleanest
1519 nature in Europe as some of our areas have been marketed, and then we have very – the basics of tourism,
1520 it's safe to travel here, to be here. And it seems that the network of this biking trails is growing considerably
1521 and continuously. And (uhm), yeah, I think also we have rather – a different landscape in Northern Finland,
1522 if you compare the coast side of Lapland and then go towards the Russian border, you can experience
1523 different kind of landscapes (uhm). But then, I'm not myself – (uhm) I don't see the mountain biking only as
1524 a positive thing. Because (uhm) if you look at the trails for example, that are created for the biking tourists
1525 or trails that are created by bikers, they are quite heavily used and like sort of the marks that they leave to
1526 the nature, they are rather severe. And of course, if you are biking, the bikes especially, the electric ones,
1527 they are quite heavy and your own weight on top of that, and then the speed how they go. And (uhm) it has
1528 to be done in a really considerate way, that we don't (uhm) harm our environment too much with these
1529 trails. And (uhm) then if you still consider Northern Finland where we know, the distances are long and
1530 services are far away and there are not much services available always, so, it's possible that (uhm) there
1531 will be some issues with them, some accidents happen and then it's possible to get help and how accessible
1532 are the trails in Northern Finland in the end? Cos there is not often public transportation, so this kind of
1533 issues. My kind of (inaudible 18:40) decrease the attractiveness of Finland as a biking destination.

1534 I: Yes, okay, and what do you think are maybe – what needs to be done (uhm) when we want to manage
1535 mountain biking tourism sustainably?

1536 P: (Uhm) Well, of course, we have to ensure that people stay on trails, and on the don't go beyond them.
1537 And also there has to be – it seems to be not so easy to put hikers and then the bikers on the same trails
1538 and I think – I don't think this will be even possible because of the speeding issues. So, I think, when biking,
1539 mountain biking is increasing in popularity, (uhm) there needs to be kind of rules and regulations that
1540 emphasise more that, if you want to do mountain biking here, you have to follow these rules and you have
1541 to follow these guidelines. And then of course also, when the trails – the length of the trip that you can make
1542 with the mountain bike – it's much longer if as you go by walking and it needs to be considered that, how
1543 much of the nature we want to put under those trails. Because if they leave marks in the nature, as too,
1544 hiking, so if you just go by walking, it's also a heavy influence to the environment. So, it's a bit tricky
1545 question, that ... how can we manage it and how should we manage it and how much do we want to
1546 manage it. Because I think currently the mountain biking is something that we are (inaudible 20:50) feeling
1547 a bit but it's a really a great thing because it's maybe sometimes subsidarised in some motorised activities
1548 and it that sense its better. But there are those dark things in mountain biking as well. And we are not
1549 maybe yet fully aware of them because it's such a new phenomena still.

1550 I: Yes, I agree with you. But I feel like any kind of activity, especially tourist activity, has negative sides, and
1551 yeah, it's really important to balance the negative and positive. And that's of course not always easy. Okay,
1552 (uhm) yes, now we can already move to the last question, which will be about the stakeholder responsibility.
1553 So, what do you think, as I said before (uhm), winter tourism, at least in the long term cannot continue as it
1554 was. Therefore we need some kind of change or transformation in the tourism industry. So, what do you
1555 think, who is responsible for this transformation that we have in response to climate change and how (uhm)
1556 is this transformation financed?

1557 P: Yeah, this is also very good and difficult question (laugh). (Uhm) Well, you can of course always say,
1558 that it's the international legislation that should kind of guide us and then there is the finance that should
1559 come from these kind of sources as well. But I think this is actually something we all need – it's all of us.
1560 Every single people should do their part and (uhm) when I have been, well you know I have done my master
1561 and PhD thesis and also plenty of other research among tourism entrepreneurs and about this climate
1562 change topics and especially in the beginning, when I was talking with tourism entrepreneurs, and also with
1563 tourists about the issue of climate change. There, I very often got the response that “well we will starting
1564 doing things when China and the USA will do their part”, and well it's not really – it's pointless to do anything
1565 if China and USA don't do anything. And (uhm), I think it's quite dangerous to think like this, because there

1566 is still something that we can do, and I see that it's – kind of our example and showing good examples can
1567 also help in the long run to get also China. And it was quite often Trump actually who was also referred to,
1568 to get into this business. I'm not sure about otherwise. But (uhm), currently we have (uhm) a national
1569 legislation coming – well, the climate law is in preparation, and I think this is something that will hugely
1570 influence this transformation that if there are more guidelines, more strict rules on how much you can end
1571 it, what kind of things you can do. Then, the backbone for all the activities can come from all these laws
1572 and legislation and (uhm) Paris contract and these kind of issues. They are the background and they kind
1573 of start the transformation. I think that this is something that also the tourism entrepreneurs are welcoming.
1574 Because those entrepreneurs who have been all operating sustainable they often said that it's not always
1575 easy to act in a sustainable way when you see that your neighbour is not doing anything. And like the
1576 neighbouring enterprise is not doing things in a sustainable way and there are no laws to force them. So
1577 now, if we have stricter laws and everybody has to take it more considerate, take these kind of things under
1578 more consideration, then it's possible that this transformation actually starts. And then of course, the – if
1579 you now imagine that how tourism is very often developed, it's very much based on funding on the EU, so
1580 we have these structural funds and regional development funds and these kind of things. And they have a
1581 very important role to grow as well, because they kind of – they say that the big (inaudible 26:13), they say
1582 that within which funding can be given out, and how – for what purposes. So these development projects
1583 for tourism for example they also have to follow these guidelines and these frame, and they have to stick
1584 within that. So, it kind of helps to force everybody's heads into the same direction, that okay, now, if we
1585 want to give out those activities then we have to follow these funders rules and take into consideration that
1586 its climate friendly and also biodiversity friendly that we are doing. And, yeah, I don't really see that there
1587 is a specific financial resource available that for example the municipalities could give something out, they
1588 normally don't have money to give out. So, it has to come from these kind of funds and different kind of
1589 funders from the state or the EU, that are the ones that can help if financial resources are needed for this
1590 transformation.

1591 I: Okay, and so, what do you think when we only look at Finland? You said, that everyone should be
1592 responsible towards acting more sustainably, (uhm) but if we now just look at Finland and the Finnish
1593 tourism industry, who do you think, yeah, should enable this transformation?

1594 P: I think it's the tourism enterprises. They are the ones who can do it and Visit Finland is an organisation,
1595 if you were talking earlier about this sustainability transformation, that has been happening in Finland in the
1596 last years, and the Sustainable Travel Finland program that Visit Finland has started, has something to do
1597 with that. But then (uhm), there are also, especially in certain locations in Finland, there is quite strong
1598 movement among the local enterprises, that they want to do things in a different way. And when we – most
1599 of the (uhm) enterprises we have in Finland currently in tourism, they are these micro enterprises, they
1600 (uhm) – well, they don't have much power in their hands, but they develop these kind of networks and within
1601 these networks they can have more power and be more influential. It was quite interesting, I was once in a
1602 meeting with Visit Finland representative and then, tourism entrepreneurs from Lapland and it was about
1603 responsible tourism. And then they actually gave criticism to Visit Finland, that Visit Finland should not
1604 always aim to do this Asian market and try to increase the international tourism in Finland, but we should
1605 also look at our neighbouring countries and these kind of areas, and from where the emissions from travel
1606 would be high. And so, like, at the grassroot level you can also influence, and you should use the power
1607 because the entrepreneurs shouldn't be just sitting on their hands and waiting for somebody, because there
1608 is no somebody that will kind of tell them, now you should start doing things in a different way. I think that
1609 the initiative should also come from the grassroot level.

1610 I: Yes, I totally agree with you. It's sometimes a bit difficult as I said, because the entrepreneurs are rather
1611 small and they don't have these long-term vision, they only think maybe a year or two ahead, so how do I
1612 survive this winter, how do I survive the next five, but not really in a long-term perspective. So, I think it's
1613 really important to bring those visions or perspectives first to the entrepreneurs that we can built up this
1614 (uhm) yeah movement or influence.

1615 P: Yeah, and that is really a problem, because also when we have these micro enterprises, so if they are
1616 only employing one or two persons, they can quite often also then think that – okay if it's not possible
1617 anymore, then I just quit and leave the market, and I'm not part of tourism anymore. And this is also a
1618 problem, that we are having long-term plans but also they are rather volatile in that sense, that they may

1619 move into a different direction very fast. This is not the case for these bigger companies and chains, cos
1620 they are in a completely different situation.

1621 I: Yes, okay, I totally agree. (Uhm) Alright, otherwise I don't have any questions anymore for you, do you
1622 have anything to add?

1623 P: I most probably would have, but not currently, no. It's a difficult topic.

1624 I: Yes, it is. And really difficult to foresee and to make scenarios.

1625 (...)

Interviewer (I) Luise Biere
Participant (P) ID 8
Date 20.04.2022, 14:07
Location E-mail correspondence

1626 I: What changes in tourism behaviour concerning outdoor recreation do you expect in the future?

1627 P: I believe that the demand on outdoor recreation will remain high and can also increase in future. Covid
1628 pandemic increased the already existing growth trend. This has led to the situation in which new visitors
1629 and visitor groups are emerging. This means that there are and will be a wider range of different needs for
1630 outdoor visitors. Some of them are well experienced (able to experience nature also alone) and some
1631 beginners needing guidance. Hence, there will be more demand also for diverse guided tours and activities
1632 that teach 'the basics of outdoor life'. Also the range of activities that are done in natural settings is wider,
1633 including trips of 20 days hike to disc golfing. The amount of nature visits is also likely to increase as people
1634 are getting used to good equipment's that enable visits no matter what the weather is like. Technology and
1635 diverse applications can also increase nature visits for some people, e.g. enabled tracking, measurement
1636 of activity and adding AR/VR experiences to the nature visits.

1637 I: In what sense do you think will climate change influence the demand for winter tourism in Finland?

1638 P: It will have a huge impact as the places for winter and ice based activities can change even early basis.
1639 There will be less destinations and places where are possible to ski or do other winter activities. On the
1640 other hand in some areas certain winter activities can become more popular when there is less snow but
1641 temperature is still below zero (e.g. trip skating in southern Finland). I believe that in short term the demand
1642 for winter activities will be at the same level as people are still used to do them. In the long run there might
1643 be need for professionals who teach the winter activities as it might be possible that they are not taught at
1644 school (in Finland) anymore if there were no conditions for that. Naturally there will also be new activities
1645 invented for and adapted to the less snowy winters. Some places will also invest to facilities that enable the
1646 provision of winter activities also when there are not much snow (e.g. Biathlon stadion in Kontiolahti –
1647 "jäähdytetty latu" skiing track that makes the base of the track cold and helps to maintain the snow cover
1648 above).

1649 I: What does Northern Finland offer regarding international mountain bike tourists?

1650 P: The mountain bike tourists can visit the diverse destinations in Northern Finland. The existing facilities
1651 enable downhill biking in many destinations and there are more and more tracks developed especially for
1652 mountain biking. The Finnish tracks and landscapes can be both challenging and also there are suitable
1653 tracks for beginners. There are also possibilities for longer distance mountain biking and accommodate
1654 close to the route. Naturally the landscapes are versatile. I believe there will be much more routes to be
1655 developed in future and there might also be new thematic routes.

1656 I: Which measurements should be needed to be taken into account when it comes to managing mountain
1657 bike tourism sustainably?

1658 P: The main issue is the sustainable management and development of the routes. The routes can go
1659 through to many areas that also have diverse landowners. All the relevant stakeholders should be involved
1660 to the development process and the management issues and responsibilities should be agreed in
1661 collaboration. The routes should also be designed in a way that they cause as little harm as possible to the
1662 nature and biodiversity (e.g. thinking carefully the location of the route, guiding route users to right paths to
1663 minimize erosion). The tracks should be also evaluated in a way that how much people can use the path
1664 in diverse seasons as there might be different kind of pressure towards nature depending on the season.
1665 The mountain bike activity should be also integrated into the other development plans of the destination. It
1666 can also provide income for service providers renting bikes or organizing guided tours and hence bring
1667 economical benefits (and increase economic sustainability) at the destination level. The diverse
1668 organizations should have collaboration (e.g. in Finland Metsähallitus, municipalities, DMOs) in
1669 management and marketing of the activity.

1670 I: Which entities are responsible for a tourism transformation in response to climate change and how are
1671 financial resources [for this process] allocated?

1672 P: I think that tourism sector should take more active role in general to tackle the issues related to climate
1673 change and biodiversity loss. This should be part of the normal business activities as part of the corporate
1674 social responsibility actions. There are already lot that has been done at business level in terms of activities
1675 that have a direct impact on the profitability (e.g. energy savings), but the businesses have not yet taken
1676 an active role in maintaining their operational environment – at least not in wider scale. We have tried to
1677 develop new kind of initiatives that would be market-based solutions to finance the ecosystem services that
1678 are important for the tourism sector. E.g. Landscape and recreation value trade in Ruka-Kuusamo area and
1679 now also we are developing tourism-related local carbon offsetting models in north-eastern Finland. These
1680 can be one solution how to get funding for the activities that can tackle the challenges of climate changes
1681 and biodiversity loss by collecting contributors from end-users but also for other tourism organizations that
1682 benefit the maintenance of the natural resources.

1683 Naturally also the government and municipalities are responsible for the transformation and they can direct
1684 the development based on the provided funding for diverse projects and activities. The strategies also guide
1685 the distribution of funding and it seems that there will be more and more funds targeted especially to the
1686 sustainable development activities. The national programs in tourism also direct de development of tourism
1687 activities to right direction (e.g. Sustainable Travel Finland). The funding of green growth and recovery plan
1688 for Europe also emphasize the green transition and digitalization and these themes are now also imbedded
1689 in tourism funding.

1690 Finally, the tourist themselves also have a role in making tourism more sustainable. They can influence the
1691 supply by demanding certain kind of products and services. Additionally, they can have a difference based
1692 on also other consumption decisions. Naturally, the “interaction” with these issues work both ways as
1693 tourism firms also have responsibility to teach or guide their customers towards sustainable actions.

Interviewer (I) Luise Biere
Participant (P) ID 9
Date 22.04.2022, 1 p.m.
Location Microsoft Teams

1694 (...)

1695 I: Okay, perfect. So, we can start with the first question which is about, yeah, the change in tourism
1696 behaviour. So, what change (uhm) do you expect in the future when it comes to the outdoor recreation?

1697 P: I'm positive and I'm almost sure that it will keep growing all the time. Because (uhm), of course Covid
1698 has done something to us as well, so I think even Finns found nature again. So, I think we have (uhm)
1699 totally new clients coming after we really get through this pandemic. Because those families who live in city
1700 centres, those big cities all over the world, they are interested in nature and nature activities. But they are
1701 afraid, how to go to the nature by themselves and what to do there and how they can make their picnic,
1702 lunches and things like that. So I think we have totally new group coming, like client group, so they need
1703 also those soft adventures. So, they need to know how to make fire and how to make coffee in the open
1704 fire and they don't want to go by themselves to the nature. And the other hand, people like me, who have
1705 been on the nature all the time, we are doing it every week and all the time, we are doing it even more after
1706 the pandemic has going away. So, I think (uhm) and even biking there's many researches also in Finland
1707 that mountain biking is growing, huge grow, but also in Germany, I have read researches, so biking is
1708 growing very fast in the future.

1709 I: Yes, okay perfect. So, now we can maybe take a look just about winter tourism and not only biking. So
1710 in what sense do you think will climate change influence the demand for just winter-based activities or
1711 winter tourism?

1712 P: (Sigh) We have different winters of course, this winter we did have lots of snow. So we have perfect
1713 winter conditions still. And those plus ten or has been over – the whole week has been plus fifteen but still
1714 we have lots of snow. But last year we didn't have that much snow. I think our season is getting shorter
1715 every year. So, I think we need to focus those months which we know that there is snow and like maybe
1716 December, January, February, and March and so maybe the November and April are those months that
1717 we don't know what to do. And now the May, it's always in the north of part of Finland, depends how the
1718 snow situation is. So, if it's too much snow you can't go biking or hiking or doing whatever, so we need to
1719 wait until June maybe to get to the paths. But I'm sure we still have proper winters in northern part of
1720 Finland, but the time will be shorter every year. That's my opinion.

1721 I: Yes, and what do you think will change in the demand for winter tourism, so when we maybe look at
1722 national, so like Finnish people, Finnish customers and also maybe from an international viewpoint. What
1723 do you think will they (uhm) demand more of winter? Or less due to the climate change? What do you think?

1724 P: If the climate change (uhm) grows that fast that it has done, so, there is no snow in Germany, Austria,
1725 Switzerland, Netherlands, France, those countries where we get customers. So I'm sure they want to enjoy
1726 the winter, so they want to come to Finland and the northern part of Finland. But yes of course, there is
1727 now war in Ukraine, so, we in Finland we always need to think about Russia being our neighbour country.
1728 But I think the most important thing in the war is that everything – all the prices keep growing. So, how
1729 much like, a normal family can spend on tourism in the future? So, I think that's the main thing we need to
1730 focus on. So this year our international client has been here one week, so seven days. But what about in
1731 the future? Because they don't have much money. Do they come for four to five days? So then the demand
1732 is changing of course. We have researched that our customers in wintertime they are here in one week,
1733 but our summer clients are only here one to three nights because they want to take a round trip in Finland.
1734 But winter customers has been here one week. So, we have different kind of demand changes coming I
1735 think.

1736 I: Yes, okay perfect. (Uhm) So we can already move on to the next question which will be more about
1737 mountain biking itself, so what do you think does Northern Finland especially offer for international mountain
1738 bike tourists?

1739 P: Of course the nature. Nature is pure and clean and fresh. We have different kind of nature. We have the
1740 fells, we have the hills, we have (uhm) swamps, different kind of forests, so I think our like – nature is so
1741 rich, so that's why it's interesting also for the foreigners. But still, people are afraid about mosquitos, so I
1742 have heard every conversation, I'm talking with foreigner about Finnish summer, the mosquitoes is always
1743 there. So maybe we need to launch more the autumn time, when they are not here, so the 'ruskea', the
1744 Indian colour season in September and of course berry picking and mushroom picking, and I think it's
1745 perfect time also spent in the nature doing mountain biking or hiking or whatever. So, yeah, but still (uhm)
1746 our competitors are the Alps, (laugh) ... (uhm) Central Europe. We don't have those high mountains, but I
1747 think our nature is much more richer. So, that's maybe also our like, goal thing.

1748 I: Yes, okay. And what do you think when it comes to sustainability, how is it (uhm) done or how could it be
1749 done in Northern Finland that mountain biking is managed sustainably?

1750 P: Yes, that's a good question. Of course you need to think about those routes and trails and paths, so if
1751 you will see some – that some route is like – there's too many bikers, you need to also think about the
1752 landscape and the nature, so we need to make new routes, new paths, and new trails. That one route isn't
1753 that – like high demand. Because then, you will get different kind of problems, but also – if we are not talking
1754 about only mountain biking but also bike park biking, so downhill biking – I think it's a sustainable way.
1755 Because those ski resorts has those (laugh) property as well and now they can have something in the
1756 summer time, so I think it's also a win-win situation here. There is lifts, and you can take the bikes up to the
1757 hill, so, those expensive machines are not only there just standing there the whole summer. So I think it's
1758 also a sustainable way for the ski resorts to make because they have now new clients coming who want to
1759 bike down the ski slopes.

1760 I: Yes, it's a very good point. (Uhm) Yes, that would've already answered my questions. I still have one
1761 open question. (Uhm) So, as you said like, (uhm) of course we have winter tourism in Finland at the moment
1762 (uhm) but due to climate change it doesn't have a really bright future, so something needs to happen so we
1763 // (technical differences)

1764 P: I can't hear you ... now I can hear you.

1765 I: So, as I said, we need this kind of transformation from just the main season of winter tourism to more like
1766 a year-around tourism to spread all the tourists to different seasons. So, (uhm) what do you think which
1767 entities are responsible for initiating this process and how is it financed?

1768 P: Yeah I think we all are responsible. Of course Finland first, all transportation companies, all tourism
1769 companies, municipalities, but of course those (uhm) accommodation providers, ski resorts, but of course
1770 also clients (pause). I think everybody has a responsibility. So we can do of course, I know you can (uhm)
1771 compensate your trips, you can pay it, or you can – I know that people are planting trees or things like that.
1772 But I think everybody on this planet we are responsible also for tourism. And then we can come to some
1773 destinations. So maybe we use more like of course busses and trains. Of course in Finland we need to
1774 have airports so we can get international clients here. But private jets no, but use like regular routes or
1775 charter flights and then, (uhm) like joint busses or joint cars. We need to do that kind of things, because we
1776 have like social media. You can put there that I'm at Kuusamo airport on January 15th, is there someone
1777 else who needs a taxi, can we get the same taxi? So everybody needs to think about these things. But of
1778 course municipalities are like important role. And of course Metsähallitus who owns our national parks, but
1779 they are owned by government, so they are doing a lot about it.

1780 I: Yes, so you think it's coming like of course everybody has to do their share, but it rather comes from the
1781 public side?

1782 P: Yeah, on public side but then of course from the entrepreneurs, they need to do their share. And I think
1783 EU needs to think about it as well. There are EU projects everywhere. Can we do something, that we can
1784 really do some like proper things for the climate change? Do we get enough money from EU to make like
1785 big things?

1786 I: Okay, so and also concerning the financial resources for that. So, you say that (uhm) everybody has their
1787 own roles, or do think that there is rather one (pause) big actor that can initiate this process with their
1788 financial power?

1789 P: But who would that be? That's the question because everyone is lacking money (laugh). So who is it?
1790 That's the main thing. I think we need to get like everybody in this planet doing their own part. If you have
1791 one Euro then put one Euro, and if you have thousand put thousand. So, then your own like – what you are
1792 capable of doing, then do it. And also Metsähallitus in Syöte National Park they are thinking about how they
1793 – what kind of products they will make, so the clients participate. So there is one thing, the planting, the
1794 trees and something like that. I told them, that if you have that kind of product that I can come and build
1795 duckboards – I'm in (laugh)! Because I think it's so interesting to do, so that kind of thing. Maybe we need
1796 to change our product development also in that direction, that we are doing things which helps us for the
1797 climate change.

1798 I: Okay, perfect. Do you maybe like I said (uhm) this big actor who could like support everyone with money?
1799 Do you have any wishes who this could be?

1800 P: Wishes maybe, but money no (laugh). Of course the Finnish government needs to be in a big role, but I
1801 think Visit Finland isn't the right one because they are doing marketing. Like Finland marketing, so they are
1802 not probably the – the municipalities I think and the regional associations. Because they will get the EU
1803 money. So here in Pohjois Pohjanmaa Maakunta, so Northern Ostrobothnia region, so I think they are like
1804 very big shoes I think. And they are working for the government as well, because if I'm thinking about small
1805 tourist company. We are so small, and we are not communicating to the government, but we are
1806 communicating to the regional offices. Yeah, I think government and those regional offices need to take a
1807 big role, that's my hope and wish.

1808 I: Okay, thank you so much, do you have anything else to add?

1809 P: No, I don't think so.

1810 (...)

Interviewer (I) Luise Biere
Participant (P) ID 10
Date 02.05.2022, 14:03
Location E-mail correspondence

- 1811 I: What changes in tourism behaviour concerning outdoor recreation do you expect in the future?
- 1812 P: The season for snow-related will become considerably shorter in all regions in Finland. While in northern
1813 Finland the snow season length, though shorter, will remain sufficiently long to maintain a strong level of
1814 snow-related outdoor activities (both from tourists and outdoor recreationists near their homes). Snow
1815 conditions will become unreliable in southern Finland, with the consequence that longer travelling is
1816 required to reach downhill and cross-country skiing services. I would expect that the number of people
1817 involved in these activities could decline in the future and the demand for outdoor activities shift to non-
1818 snow activities and to other seasons.
- 1819 I: In what sense do you think will climate change influence the demand for winter tourism in Finland?
- 1820 P: I think it is quite possible that skiing centres in northern Finland, that will retain a reliable skiing season,
1821 will see an increase in winter tourism demand by tourists who previously went skiing in the European Alps.
1822 The services provided probably differ and include activities like cross-country skiing, husky tours and
1823 activities with reindeer in addition to downhill skiing, as the downhill slopes in Finland are shorter and maybe
1824 offer less of mountainous scenery than the Alps.
- 1825 I: What does Northern Finland offer regarding international mountain bike tourists?
- 1826 P: Most of all the pristine landscape, but also the indigenous Sámi culture is a unique selling point for
1827 international tourism in Lapland.
- 1828 I: Which measurements should be needed to be taken into account when it comes to managing mountain
1829 bike tourism sustainably?
- 1830 P: A sufficiently large network of mountain bike routes that is well developed (e.g. with signs that are easy
1831 to follow), that is separated from hiking or skiing routes to avoid conflicts with other nature tourists, and that
1832 limits the wear of a route (e.g. destruction of plants) to a small area.
- 1833 I: Which entities are responsible for a tourism transformation in response to climate change and how are
1834 financial resources [for this process] allocated?
- 1835 P: Tourism entrepreneurs, Visit Finland, municipalities (I don't know about financial resources and hence
1836 cannot comment on it)

B) Open Coding

Table 1: Open or initial coding of expert interviews

Textual Data	Open Categories	Themes
<p>We don't know the future, everything is uncertain (ID 1, 8f) We don't know what crisis we will have in the future (ID 1, 42f) "But we never really know the future" (ID 1, 123) Covid and the pandemic cause a lot of uncertainty in the future (ID 2, 208f) Things are difficult to forecast now in war times (ID 3, 520f) We don't know for how long and what will happen (ID 4, 607) We can only see like ten years ahead (ID 4, 768) "It's very difficult to see into the future and how things will actually change" (ID 6, 1008f) It's rather difficult to estimate what will actually happen in the future (ID 7, 1437f)</p>	<p>Uncertainty towards future, especially caused by pandemic and Russian-Ukrainian conflict</p>	<p>Future prognosis resulting from climate change</p>
<p>Uncertainty brings increasing cost of travel and negative economic growth (ID 2, 213ff) Secure image of Finland in question due to proximity of Russia (ID 2, 217f) Travel might be reduced, or domestic destinations chosen over long distance travelling (ID 2, 225) The conflict in the Ukraine will have an impact, a shift towards sustainable energy (ID 6, 1010ff) Increasing travelling costs (through war) (ID 9, 1728ff) Changing amount of holiday days due to increasing travelling costs will influence demand as well (ID 9, 1731f)</p>	<p>Impacts of uncertainty</p>	
<p>Winter is becoming shorter (ID 1, 10f) Amount of snow decreasing (ID 1, 9) In the future, more extreme winters will come more frequently (ID 2, 236f) Climate change is moving forward quicker than recent years (ID 3, 519) Climate change is affecting the arctic region harder than other parts of the world (ID 4, 763f) Precipitation increases because of climate change, and it shows us increasing amount of snow (ID 7, 1477f) At the moment we have proper winter, but it will become shorter by time (ID 9, 1719f) "Snow conditions will become unreliable in southern Finland" (ID 10, 1815)</p>	<p>Climate change impacts</p>	
<p>We cannot ski etc. as much as before (ID 1, 10) Climate change will also affect other natural areas, not only skiing such as ice skating, ice fishing, ice walking (ID 2, 240ff) Probably more wet and moist winters in the future which will increase impacts on trails (ID 2, 344f) Climate change big threat for winter tourism, especially early winter as the high season is in December for Santa Clause and snow-based activities (ID 3, 410f) Changes in Northern Finland are already visible such as a later season start (ID 6, 1110ff) "Huge impact as the places for winter and ice-based activities can change even early basis" (ID 8, 1638) "Less destinations and places where are possible to ski or do other winter activities" (ID 8, 1639) "Our season is getting shorter every year" (ID 9, 1714f) We should focus more on months where we have snow security (December-March) (ID 9, 1715ff)</p>	<p>Consequences of climate change impacts on tourism</p>	

<p>“The season for snow-related activities will become considerably shorter in all regions in Finland” (ID 10, 1812)</p> <p>Northern and Eastern Finland is still very snow secure with a lot of potential to attract many tourists in the future (ID 2, 273f)</p> <p>Finland is staying a snow secure area in the future (ID 2, 279f)</p> <p>There will be snow in Lapland, maybe even more in 20-30 years’ time (ID 3, 416f)</p> <p>“Climate change if you think of a short time span, is not a big problem” (ID 3, 418)</p> <p>“It might be in quite a good position in a short term” (ID 3, 446)</p> <p>The snow and winter status in Finland will remain for some days of the year (ID 3, 517f)</p> <p>We have snow guarantee, especially in Lapland (ID 4, 606)</p> <p>Finland will have year-around outdoor activities in future, at least in the next 10 years (ID 4, 609f)</p> <p>It takes more time before we lose our snow, our snowborder goes more and more north (ID 4, 764f)</p> <p>Lapland, Northern Ostrobothnia and Kainuu are they areas where we have good snow still (ID 5, 815)</p> <p>We already see some signs of it, but we still have a true arctic winter (ID 5, 817)</p> <p>Even if we get a few days of plus degrees in February doesn’t mean the game is over now (ID 5, 817f)</p> <p>“We can expect the arctic winter to be like this at least for the next 20 years or so” (ID 5, 819)</p> <p>“For the next 20 years, there is going to be more demand for Lapland for the wintertime” (ID 5, 823f)</p> <p>“There is a good chance for us to stay very high up on the winter demand for the future” (ID 5, 832f)</p> <p>We are fairly safe here for a while (ID 6, 1107)</p> <p>We still have six months of winter here (ID 6, 1113)</p> <p>But still we have perfect winter conditions (ID 9, 1712f)</p> <p>“In Northern Finland the snow season length, though shorter, will remain sufficiently long to maintain a strong level of snow-related outdoor activities” (ID 10, 1812ff)</p>	<p>Finland being snow secure in the short term with potential of increasing demand for winter tourism</p>	
<p>Winter is becoming shorter in the Alps (ID 1, 28f)</p> <p>“The people in the Alps will try to find snow somewhere else” (ID 1, 29f)</p> <p>Finland is now competing with the Alps because the lack of snow is bigger there (ID 3, 445)</p> <p>We expect winter to continue longer than for example in the Alps or Central Europe (ID 4; 608f)</p> <p>In 20 to 30 years, snow will be much rarer in Central Europe or the Alps than today (ID 6, 1105)</p> <p>No snow in Central Europe means that people demand to experience winter (ID 9, 1725f)</p> <p>Alps are competitors, Finland does not offer mountains but richer nature (ID 9, 1746f)</p> <p>‘Skiing centres in Northern Finland, that will retain a reliable skiing season, will see an increase in winter tourism demand by tourists who previously went skiing in the European Alps’ (ID 10, 1820f)</p>	<p>Finland having competitive advantages compared to Alps or Central Europe</p>	
<p>People change their behaviour (ID 1, 11)</p> <p>Adaptation easier for citizens with higher income (ID 2, 248)</p> <p>Women are more eager to some adventure with friends, other women or alone (ID 4, 652f)</p> <p>More short visits (ID 5, 789)</p>	<p>General demand change</p>	<p>Change in demand</p>

<p>Demand of winter tourism both increase and decrease (ID 7, 1467) If people from source markets don't get any idea of snow they are not willing to try snow-based activities (ID 7, 1471ff) So it's possible that the demand will decrease, but this will only happen in the long run (ID 7, 1473f) In the short run demand is increasing and in the long run decreasing (ID 7, 1483) "There are different scenarios for the long-term future and then for the near future" (ID 7, 1493)</p> <p>"In the short term the demand for winter activities will be at the same level as people are still used to do them" (ID 8, 1642)</p> <p>"Long run there might be need for professionals who teach the winter activities as it might be possible that they are not taught at school" (ID 8, 1643)</p>		
<p>People adapt quickly to improving snow conditions (update ski equipment, rushing to the shops) (ID 2, 238ff)</p> <p>People have started buying all these outdoor gears (ID 5, 802)</p> <p>In the short run, people buy equipment to engage in snow-based activities such as skiing (ID 7, 1479f)</p>	Technical adaptation	
<p>Change in behaviour, for example change skiing to mountain biking (ID 2, 255ff)</p> <p>Some people might also give up on this activities' but however it's a small amount of people (ID 2, 258-261)</p> <p>"I think [...] there will be new kinds of activities and much more activities than earlier" (ID 3, 431f)</p> <p>"Range of activities that are done in natural settings is wider" (ID 8, 1632)</p> <p>"In some areas certain winter activities can become more popular when there is less snow but temperature is still below zero (e.g. trip skating in southern Finland)" (ID 8, 1640f)</p> <p>"New activities [will be] invented [...] and adapted to the less snowy winters" (ID 8, 1644f)</p> <p>"I would expect that the number of people involved in these activities could decline in the future and the demand for outdoor activities shift to non-snow activities and to other seasons" (ID 10, 1816ff)</p>	Activity substitution	
<p>People in Southern Finland are more willing to travel for natural snow conditions (ID 2, 246f)</p> <p>The shift is from Central Finland to Northern (ID 4, 631)</p> <p>Biggest groups that travel to Northern Finland come from Southern Finland where most of the population lives (ID 7, 1465)</p> <p>In snow scarce winters they need to travel to the north to use the equipment (ID 7, 1481f)</p> <p>"Longer travelling is required to reach downhill and cross-country skiing services" (ID 10, 1815f)</p>	Spatial adaptation	
<p>Finns, especially in younger age are worried more about environmental issues, climate change and biodiversity loss (ID 2, 201f)</p> <p>More sustainable tourism demand in the future (ID 2, 203)</p> <p>Citizens and tourists are looking for more sustainable destinations (ID 2, 226f)</p> <p>Sustainability and real nature experiences become more important in the future (ID 2, 221f)</p> <p>The urge of travelling far although it's not environmentally friendly will still be there (ID 5, 785f)</p> <p>The next generation will have different attitudes which will naturally drive the change (ID 6, 1313f)</p> <p>"Very many people have more knowledge about climate change but also biodiversity issues and this kind of awareness might also affect the behaviour" (ID 7, 1428f)</p> <p>Climate change awareness and climate change policies influence peoples demand (ID 7, 1485f)</p> <p>Climate change might cause last chance tourism in Finland (ID 7, 1489ff)</p>	Increasing sustainable travel demand	

<p>Pandemic has increased domestic demand of nature-based tourism (ID 2, 204f) Increase in 23% of visits to national parks due to pandemic (ID 2, 207f) A huge amount of Finnish people and locals goes to national parks and other outdoor recreation places (ID 3, 430f) Combining health, recreation and fun as an activity and something you not necessarily think was your cup of tea will be important in the future (ID 5, 778ff) Activity holidays are becoming a bigger and bigger trend (ID 5, 781) "The trend of travelling and exploring nature and activities close by you will increase" (ID 5, 787f) People will explore the nearby even if you live in the city (ID 5, 790f) "The connection to nature is going to mean more" (ID 5, 804) National park visitor numbers almost doubled during Covid-19 (ID 6, 1174f) We've seen drastic change in the Covid time (ID 6, 1214) "Partly because of Covid, people have become more active in staying outdoors and spending time in nature" (ID 7, 1424ff) "Demand on outdoor recreation will remain high and can also increase in future. Covid pandemic increased the already existing growth trend" (ID 8, 1627f) "The amount of nature visits is also likely to increase as people are getting used to good equipment's" (ID 8, 1633f) "Technology and diverse applications can also increase nature visits for some people" (ID 8, 1634ff) Outdoor recreation will keep growing in the future, Covid has influenced that (ID 9, 1697f)</p>	<p>Increased demand of nature activities</p>	
<p>It will change one by one, not very fast (ID 1, 14) (demand) Once climate change happens, it happens very quickly (ID 4, 765) (climate) The winters will probably even change here gradually (ID 5, 816) (climate) This shift happens faster than we could've imagined (ID 6, 1012) (energy) "If we just rely on the consumer, then the change will be really slow" (ID 6, 1315) (demand) The change must be gradual even though you want to change faster (ID 6, 1381f) (demand) People are not prepared to take dramatic steps (ID 6, 1382) (demand)</p>	<p>Speed of change</p>	
<p>There are possibilities for cross-country mountain biking demand (ID 2, 282f) There are more cross-country cyclers than we used to have 10 or 20 years ago (ID 2, 327) Mountain biking has become a more important product and development here (ID 3, 472f) Mountain biking is growing for domestic and international tourists (ID 3, 480) All destinations see that mountain biking is potential as a summer product and they want to develop (ID 4, 663) "There is great interest to bring Lapland as a destination to the world map as a mountain biking destination" (ID 4, 665f) "There's a lot of things happening for us in the biking scene, and I believe that Lapland will be known as a very good biking destination in the future" (ID 5, 891) What gives me confidence is that we had a very steady growth from 2015 onwards. Covid changed that, but we have record sales again this year (ID 6, 1114-1116)</p>	<p>Increasing popularity of mountain biking</p>	<p>Potentials of mountain bike tourism</p>

<p>Going mountain biking instead of snowmobiling for example (preferring non-motorised activities) (ID 7, 1431f) “The network of this biking trails is growing considerably and continuously” (ID 7, 1520f) “Mountain biking is increasing in popularity” (ID 7, 1539) “Possibilities for longer distance mountain biking and accommodate close to the route” (ID 8, 1653f) “I believe there will be much more routes to be developed in future and there might also be new thematic routes” (ID 8, 1654f) “Biking is growing very fast in the future” (ID 9, 1707f)</p>		
<p>“I don’t know if it really attracts international tourists during the summertime” (ID 3, 483) So it doesn’t attract much international bikers (ID 4, 668f) If there would be a bigger picture (mountain bike image), it does attract more international tourists (ID 4, 669ff)</p>	<p>Critical perspectives towards the international mountain bike tourism situation</p>	
<p>Other destinations have done bigger steps than others (ID 4, 664) Now we are at a stage where development is done in separate destinations, some places taking their first step (ID 4, 672f) The next step hopefully is that they join their forces and create the brand for mountain biking in Lapland (ID 4, 674) “We are in the process of developing mountain biking products into something that is very easy for tourists to understand” (ID 5, 851f) We are working on it, but we are not ready yet (ID 5, 852f) We don’t have the infrastructure, we are definitely not ready for international mountain bike tourism (ID 6, 1150) Ylläs in the forefront of this development (ID 6, 1151) “In a few years’ time when we get the trail development going, we can sort of a good offering, for <u>all</u> mountain bikers” (ID 6, 1153f) We don’t have a mountain bike destination yet, but we are working on it (ID 6, 1159) Targeted customer groups are Swedes and Norwegians in five years because we can offer them a better infrastructure than they have now, and Central European countries in ten years because they are way off (ID 6, 1160-1163) “Some destinations were ready for summer tourists, they already have done the work before Covid-19” (ID 6, 1216)</p>	<p>Different levels of development in mountain bike tourism</p>	
<p>Mountain biking mainly for other seasons than snow seasons (ID 1, 64f) Development of long-distance biking routes along the roads is a very important project (ID 3, 474) But criticism that Lapland is only for mountain biking and not for road cycling (ID 3, 474f) E-bikes make it possible to go everywhere (ID 3, 509) Now, that e-bikes can reach other places as before, it needs to be more managed (ID 3, 512f) E-bikes can be used to overcome far distances (ID 3, 592) “For mountain biking, we have something even better than mountains – our open fells” (ID 5, 841f) The landscape is very easy to come to, it’s easy to rent an e-bike and go on top of the fell (ID 5, 842f)</p>	<p>Opportunities of mountain biking</p>	

<p>The Alps have more pointy mountains, they are masculine, and the fells are the feminine form of mountains, easy to approach (ID 5, 845f)</p>		
<p>In Finland they build trails just for snow bikes (ID 1, 130) Winter mountain biking has been a really good product in Rovaniemi so far especially for international tourists (ID 3, 478f) Winter trails are really something unique (ID 5, 878f) Tourists from France or Spain have come probably for something else, such as cross-country skiing or huskies or aurora but when they tried the fun trails in winter, they came back (ID 5, 880-883) "It's really something that people even don't know that they will love, once they try, they will really like it" (ID 5, 883f) Electric fat bikes are something for the future (ID 6, 1057) Vision of fat bike safaris instead of snow mobile safaris (ID 6, 1058) Fat bikes are the only investment where you get a year-around product (ID 6, 1082)</p>	<p>Fat biking</p>	
<p>Smooth land makes places easier, especially for elderlies (ID 1, 32f) Nature-based tourism (ID 1, 52) Clean air, safety (ID 1, 84) Untouched (ID 1, 109) Fascinating landscape (ID 2, 273f) Landscape, real winter conditions (ID 2, 278f) Genuine nature experience (ID 2, 288f) Landscape, unique hills, four seasons (ID 2, 303ff) Wilderness, silence, pure nature, aurora borealis, fresh water (ID 1, 172ff) Nature is the playground for everything, not too constructed (ID 4, 619) Peace, quiet, places with little light pollution (ID 4, 645f) Auroras, snowy trees, well-maintained trails, fell landscapes (ID 5, 825ff) Silence (ID 5, 829) Different tempo in life (ID 5, 832) Being surrounded by wild nature, unspoiled nature compared to other places (ID 5, 847f) Nature, wild, untamed, secure, safe (ID 5, 866) Clean air, clean nature, silence, northern lights, snow (ID 6, 1103f) Nature, polar night in winter and nightless night in summer, unique arctic region, trees, forest, clean air, silence (ID 6, 1133-1142) Something new, unique in Europe (ID 6, 1143f) Same things apply for mountain biking as well as for all nature-based activities (ID 7, 1517f) Beautiful landscapes, clean nature, cleanest nature in Europe (ID 7, 1518ff) Unique landscape (ID 7, 1521ff) Versatile landscape (ID 8, 1654)</p>	<p>Natural features</p>	<p>Features attracting international (mountain bike) tourists</p>

<p>Nature, pure, clean, fresh, fells, hills, swamps, forests (ID 9, 1739f) Pristine landscape (ID 10, 1826)</p>		
<p>Mountain bike routes are available for everyone without permissions (ID 1, 67f) We have some trails where you can walk in the forest, you can also bike there (ID 1, 70f) Broad range of trails, make nature accessible for people (ID 1, 130f) Forests that are used for timber production can be used for recreation as of the Everyman's Right (ID 2, 300) Infrastructure surrounding big tourism centres offer routes especially for mountain biking (ID 2, 301f) Infrastructure in the tourism centres (ID 2, 274f) "State is already offering a lot land resources for the tourism to develop" (ID 2, 298f) The state of Finland is already offering land resources as a basement for tourism in these areas (ID 2, 361f) Also important to use other forest areas for recreation, not only national parks (ID 3, 443f) In forestry areas crowding is not a problem (ID 3, 498) In urban areas, near resorts, and non-protected areas mountain biking is a good product (ID 3, 593f) Tourism uses the environment we already have (ID 4, 621f) Mountain biking centred around tourism centres (ID 4, 659f) Infrastructure is already there, such as lifts (ID 4, 661f) Well-maintained trails (ID 5, 825ff) National parks in Northern Finland have a very good trail network with signage, good maps and online information becoming better and better (ID 5, 848ff) We have winter resorts like Ylläs, Levi, Syöte, Ruka, and Saariselkä used to catering tourists (ID 5, 853f) Unique accommodations, cabins, and they are all available in the summertime (ID 5, 867f) All the services Metsähallitus provides, the trails, huts, campfire places (ID 5, 873ff) Long-distance trail network, forest and dirt roads (ID 5, 885f) "The network of this biking trails is growing considerably and continuously" (ID 7, 1520f) "Some places will also invest to facilities that enable the provision of winter activities" (ID 8, 1645f) "Existing facilities enable downhill biking in many destinations and there are more and more tracks developed especially for mountain biking" (ID 8, 1650f) Ski resorts have infrastructure that can be used for bike parks during summer (ID 9, 1754ff)</p>	<p>Infrastructure for mountain bike tourism</p>	
<p>Atmosphere, friendliness (ID 1, 84f) Cultural attractions (ID 1, 51) Meeting locals and getting to know local economy (ID 2, 189) The culture is very unique (ID 5, 686f) Sámi people as indigenous living from land in so much more ways than we are (ID 5, 870) Sauna and cold-water dips in winter and summer (ID 5, 871f) "Indigenous Sámi culture is a unique selling point" (ID 10, 1826)</p>	<p>Cultural features</p>	

<p>Land will suffer in some sense, trails become bigger, and erosion might occur (ID 1, 101f) "There have been [...] some conflicts in regard of the use of private lands' due to increased activity" (ID 2, 325f) There might be also some risks in the future (ID 2, 328) Damage to trees, side paths, if people are not able to use the main path (ID 2, 345ff) Crowding will impact environment heavier (ID 2, 345) There are problems in the most popular national parks, crowding, but yet not too much (ID 3, 443f) There has been discussion about sustainability of mountain biking for the ground, terrain, and complaints (ID 3, 491ff) In wilderness areas roaming freely by bike can disturb e.g. reindeer herding (ID 3, 511f) Outdoor activities have an effect, and impact on nature (ID 5, 900f) In Lapland the arctic nature is very sensitive (ID 5, 901) Infrastructure is taking hits (ID 6, 1176) Trails are used quite heavily and leave rather severe marks to nature (ID 7, 1525f) Distances are long and if accidents happen some trails might not be accessible (ID 7, 1529ff) It's not easy to put hikers and bikers on the same trails (ID 7, 1537) "We are not maybe yet fully aware of them (mountain biking issues) because it's such a new phenomena still" (ID 7, 1548f)</p>	<p>Impacts of mountain biking (ecologic sustainability)</p>	<p>Sustainable management of mountain bike tourism</p>
<p>"You cannot have [...] too [many] bikers on the same day" (ID 1, 104f) But larger trails won't cause problems and there is no need to limit the amount (ID 1, 128f) If it continues to grow, the conservation idea will not be so clear anymore and they need to restrict it in national parks (ID 3, 495f) In Finland, they have no restrictions and it's an argument that it's not needed (ID 3, 492f) "I would be happy to see [...] that they would restrict it a bit in the national parks" (ID 3, 496) The problem of crowding is not so big in non-protected areas (ID 3, 499) We are limiting the number of activities that you can do in the national park (ID 6, 1096) We don't have a problem yet with crowding but might need to limit the number of people going in the future (ID 6, 1173ff) It needs to be considered 'how much of the nature we want to put under those trails' (ID 7, 1543) Through crowding there's a need to develop new opportunities, other trails or routes (ID 9, 1750ff)</p>	<p>Limitation of bike tourism (ecologic sustainability)</p>	
<p>Nature parks have nature protection as a main purpose (ID 2, 330f) The basic purpose of national parks is the nature conservation (ID 3, 436f) "We have to keep in mind that we want to restore these places" (ID 5, 903)</p>	<p>Importance of natural conservation (ecologic sustainability)</p>	
<p>Trail building needs to be done excellently (ID 4, 703f) You should go to certain places and build the trails in a more sustainable way and fix certain places and build bridges, take trails to a bit different place with more solid ground (ID 5, 907f)</p>	<p>Trail building (ecologic sustainability)</p>	

<p>Take all measurements into account, how to make trails, how to make them durable, how to respect the nature (ID 6, 1185f)</p> <p>“Routes should also be designed in a way that they cause as little harm as possible to the nature and biodiversity” (ID 8, 1661f)</p> <p>“Tracks should be also evaluated in a way that how much people can use the path in diverse seasons as there might be different kind of pressure towards nature depending on the season” (ID 8, 1663)</p>		
<p>How much does nature suffer with mountain biking? How does it affect the trails? Depending on mountain biking conducted in pure nature or on trails? (ID 1, 124ff)</p> <p>“[...] And we have to be careful that attributes are not spoiled” (ID 1, 172ff)</p> <p>Customer surveys and surveys from the locals are important, perform them frequently (ID 4, 712f)</p> <p>They are measuring what’s happening with the trails (ID 5, 906)</p> <p>We can always ask our potential customers what they would like to do (what they prefer, how they would act, what choices they make, which accommodation, activity, transfer choices...) (ID 6, 1002-1005)</p> <p>Maintenance and behaviour of trail users better monitored (ID 5, 909f)</p> <p>Monitor the number of mountain bikers going on the trails and how it affects the trails (ID 6, 1171ff)</p> <p>“Monitor the effects of the tourism in the area” (ID 6, 1195f)</p> <p>Need to monitor their preferences of new target groups, nature and forests, as well as people’s behaviour (ID 7, 1438-1441)</p>	<p>Monitoring effects to nature as well as expectations of customers (ecological-social sustainability)</p>	
<p>Fair labour contracts for employees (ID 1, 106f)</p> <p>Manufacturing of bikes need to be sustainable (ID 1, 109)</p> <p>Important to respect Sámi’s rights (ID 2, 367f)</p> <p>Guiding, information providing, open information is important (ID 2, 390f)</p> <p>It’s important that they all act together (ID 2, 370)</p> <p>It’s important that local entrepreneurs and municipalities work together (ID 2, 375f)</p> <p>Joint sustainable goals (ID 2, 378f)</p> <p>“I think working together gets the best solutions taking into account” (ID 2, 380)</p> <p>They realise that they cannot survive on their own, it doesn’t help when Ylläs is doing a good job (ID 4, 667)</p> <p>Iso-Syöte and Ylläs are doing this ski lift cooperation in summertime, that when people are coming to mountain bike or to bike parks, they can use the same lift tickets (ID 4, 681f)</p> <p>Consider all factors about nature and social aspects such as landowners and reindeer herders, local communities (ID 4, 705ff)</p> <p>But it is something that should be also included in local people’s life’s, feel that they are welcome to join (ID 4, 708f)</p> <p>Consider mountain bike infrastructure, where and how to wash, soap and oil to maintain the bikes, being environmentally friendly (ID 4, 718ff)</p> <p>“And that’s something that we need to do together” (transformation) (ID 6, 1236)</p> <p>It’s about cooperation between different sizes of companies (ID 6, 1239f) e.g., small companies don’t have the money for marketing and big companies are not flexible enough (ID 6, 1248)</p> <p>“It’s always a joint effort” (ID 6, 1342f)</p>	<p>Social sustainability</p>	

<p>“Relevant stakeholders should be involved to the development process and the management issues and responsibilities should be agreed in collaboration” (ID 8, 1659ff)</p>		
<p>Planning of good rules in forests is needed (ID 3, 499f) There’s a growing number of people that don’t know how to behave in nature (ID 5, 910f) Bring etiquette and understand and MTB trail code to them (ID 5, 912f) Understand that everybody belongs on these trails, and nobody has the right of passage over the other (ID 5, 914) In the nearby future, we might come to the point where we have to make more rules (ID 5, 918f) Tourists forget that people actually live here and look inside the windows, but they have privacy (ID 5, 921ff) You need to be mindful and respectful to people who live here (ID 5, 923ff) New target groups that have not been in nature entered the market and little is known about them (ID 7, 1434ff) “We have to ensure that people stay on trails, and on the don’t go beyond them” (ID 7, 1536) “Mountain biking is increasing in popularity, (uhm) there needs to be kind of rules and regulations that emphasise more that, if you want to do mountain biking here, you have to follow these rules and you have to follow these guidelines” (ID 7, 1539ff) “Situation in which new visitors and visitor groups are emerging” (ID 8, 1628f) “There are and will be a wider range of different needs for outdoor visitors. Some beginners needing guidance” (ID 8, 1629ff) “More demand also for diverse guided tours and activities that teach ‘the basics of outdoor life’”(ID 8, 1631f) After pandemic there are new clients with different needs (ID 9, 1699ff) People being unfamiliar with nature need guidance (ID 9, 1701)</p>	<p>Mountain bike etiquette (social sustainability)</p>	
<p>Tourists bring income for locals, benefits for the local economy (ID 2, 350ff) Tourism has very high importance in Lapland, Kainuu and Northern Ostrobothnia, and other rural areas in Finland because there are not many other industries except mining or forest industries (ID 2, 357-360) Local economies are relying on tourism sector (ID 2, 360f) Winter tourism very important in Lapland (ID 3, 409) Tourism industry is the most important and the only growing industry (ID 3, 545f) “It can provide income for service providers renting bikes or organizing guided tours and hence bring economical benefits (and increase economic sustainability) at the destination level” (ID 8, 1666f)</p>	<p>Economic sustainability</p>	
<p>The Ministry of Employment and Businesses managing and developing tourism in Finland, guidelines from universities (ID 1, 140-150) Public authorities are guiding (ID 1, 159) Permissions have to come from the public (ID 1, 163) Ministries are supporting development (ID 2, 366) State as one actor can affect sustainability of tourism (ID 2, 365) Metsähallitus is the one who manages it (ID 3, 502) Adaption strategies have been made on a national level in Finland (ID 3, 532)</p>	<p>Public (Finland level)</p>	<p>Responsibility for tourism transformation</p>

<p>Metsähallitus is the overseer and fits the needs of nature and of people in the right perspective (ID 5, 915ff) Visit Finland is doing a lot for sustainable development like branding, building umbrella, education, support services (ID 5, 942ff) “The destination marketing organisation is the organisation who [...] creates the spirit of working together” (ID 6, 1257f) National climate legislation will hugely influence the transformation (ID 7, 1568ff) More guidelines, stricter rules guide you what kind of things you can do (ID 7, 1570f) Backbone for activities are legislations and laws starting the transformation (also European level) (ID 7, 1571f) Having stricter laws might actually start this transformation (ID 7, 1577f) Visit Finland started tourism transformation towards sustainability (ID 7, 1596f) “Tourism sector should take more active role in general to tackle the issues related to climate change and biodiversity loss” (ID 8, 1672f) Finnish government plays a big role (ID 9, 1800)</p>		
<p>EU level support with political goals, green deals, reducing carbon emission (ID 2, 371) EU projects is also one possibility. If they gather a group of companies, apply for some projects or destination, take part and involve companies, they can benefit (ID 4, 745ff) Backbone for activities are legislations and laws starting the transformation (ID 7, 1571f) International legislation should guide us (ID 7, 1558)</p>	Public (EU level)	
<p>Municipalities provide infrastructure (ID 2, 374) Regional authorities providing money and starting projects (ID 1, 151f) Destinations themselves are committed to sustainability (ID 2, 307f) Tourism associations are surpassing information to companies and influencing politicians to make laws and standards (ID 5, 938-941) It's the DMO's responsibility to do the job (ID 6, 1242) We need DMOs because they have an overall view, and they can try to figure out trends in the future (ID 6, 1245) “Mountain bike activity should be also integrated into the other development plans of the destination” (ID 8, 1665) Municipalities and regional associations provide funding because here communication takes place (ID 9, 1802ff)</p>	Public (regional level)	
<p>Businesses develop themselves (ID 1, 159) Local entrepreneurs provide infrastructure (ID 2, 374f) Changes mostly come from companies (ID 4, 728ff) They start innovating, start to think about new solutions, are being business-oriented, they know they can't survive if they don't change themselves (ID 4, 730ff) But then the real change has to come from the companies (ID 6, 1246) “That's why I think the change comes from the company themselves” (ID 6, 1284f) Tourism enterprises should enable transformation (ID 7, 1594) Micro enterprises don't have much power, but they create networks and have more power and influence (ID 7, 1599ff) The grassroots level can influence and entrepreneurs shouldn't sit on their hands and wait for someone (ID 7, 1606ff)</p>	Entrepreneurs' responsibility	

<p>“I think that the initiative should also come from the grassroots level” (ID 7, 1609) The problem is that some have no perspective and then leave the market (ID 7, 1616f) “Tourism firms also have the responsibility to teach or guide their customers towards sustainable actions” (ID 8, 1693)</p>		
<p>Tourists and visitors themselves are responsible (ID 2, 386f) People can demand more sustainable travel options, make it trendy (ID 5, 950f) Quite big gap, some customers focus on sustainability in all matters, but only few act as they would reply on answers (ID 5, 1005f) “The overall sustainable development in society will help us make tourism more sustainable as well” (ID 6, 1191f) Every single person should do their part (ID 7, 1559f) “Tourist themselves also have a role in making tourism more sustainable” (ID 8, 1690) “Influence the supply by demanding certain kind of products and services” (ID 8, 1690f) “I think we are all responsible” (ID 9, 1768)</p>	<p>Individuals’ responsibility</p>	
<p>Need for national and regional level strategies (ID 3, 543) Public actors should have the big picture and everyone else doing their own smaller part (ID 3, 549f) Need for cooperation between companies and municipalities for planning (ID 3, 558) “The first step comes from the companies themselves, but they need support from the public side” (ID 4, 742f) Cooperation between Metsähallitus and locals (ID 5, 985f) “I think it’s the DMO companies, small and large who are the key players in driving the change” (ID 6, 1276f) “Diverse organizations should have collaboration (e.g. in Finland Metsähallitus, municipalities, DMOs) in management and marketing” (ID 8, 1667ff) “Also the government and municipalities are responsible for the transformation, and they can direct the development based on the provided funding for diverse projects and activities” (ID 8, 1683f) Finnish tourism responsible with transportation, tourism companies, municipalities, accommodation, ski resorts, clients (ID 9, 1768ff) Municipalities play an important role and Metsähallitus (ID 9, 1778f) Transformation comes from public side (EU) and the entrepreneurs (ID 9, 1782ff) “I think government and those regional offices need to take a big role” (ID 9, 1806f) “Tourism entrepreneurs, Visit Finland, municipalities” (ID 10, 1835)</p>	<p>Cooperation between different public and private entities</p>	
<p>Funding to places where sustainability is taken into account (building permits or artificial snowmaking to enlarge the tourism infrastructure as a negative example) (ID 3, 571-582) Sustainability and developing year-round businesses are important for giving out funds in Northern Finland (ID 4, 733ff) Sustainability is a factor to rank higher for funding (ID 5, 937) Giving out funds follows climate friendly guidelines (ID 7, 1585) “More and more funds targeted especially to the sustainable development activities” (ID 8, 1685f)</p>	<p>Public funding with a focus on sustainability</p>	<p>Financial resources</p>

“National programs in tourism also direct de development of tourism activities to right direction (e.g. Sustainable Travel Finland)” (ID 8, 1686)		
Ministries provide money and projects (ID 1, 140-150) Subsidies and public funding (ID 3, 561)	Public funding national level	
EU needs to support financially (ID 2, 372f) Big EU funding organisations, the European Regional Development Fund and European Social Funds (ID 5, 932-935) Finance should come from international side too (ID 7, 1558) Tourism is funded by EU structural funds and regional development funds (ID 7, 1579f)	Public funding on EU level	
But there are other places where to get funding, loans (privately) (ID 4, 740f) Funding through market-based solutions to finance ecosystem services and tourism related local carbon offsetting models (ID 8, 1677ff) Everybody needs to pay their own share (ID 9, 1790) Visit Finland not the right one for funding because they are doing marketing (ID 9, 1801)	Other funding sources	

Demand depending on marketing and about culture what things people will do in Finland (ID 1, 184) “It’s actually the offering that dictates the demand” (ID 6, 1068) The arctic environment is so different from anything else, so it’s hard for people to imagine what you can actually do here (ID 6, 1069f) “because it’s such a foreign environment for people” (ID 6, 1085) The demand for it would be there if you just offer whatever it is (ID 6, 1078f) “Whatever they say you’re supposed to do here [...] this is something you’re supposed to do here” (ID 6, 1089f) “We actually have the power to control what we want people to do here” (ID 6, 1093) “I’m optimistic. If the people want more sustainable activities, we can make as sustainable choices as we want and then the people will buy those products” (ID 6, 1097f) “We have multiple options, and I think we will find enough customers for those options” (ID 6, 1124-1127) I’m not optimistic how customers affect the change (ID 6, 1277f) “This is the way to influence the people’s behaviour that you can somehow create demand by the things you offer for them” (ID 7, 1442) “Like marketing and these kind of things there is plenty of potential to also influence the future demand concerning the winter tourism” (ID 7, 1500f)	Tourism demand ruled by offer	Sustainable destination development
It’s important to lengthen the season across Easter, Midwinter and Christmas to provide income for the local shops (ID 2, 283f) “It’s sustainable that not all the people are coming at the same time” (ID 2, 286) Summer products are beneficial in any case, evening the seasons (ID 3, 422f) Domestic tourists are more interested in the summertime and really good for developing year-around tourism (ID 3, 481f) “Activities should be more adjusted to natural conditions” (ID 3, 524f)	Sustainable destination management to develop year-round tourism	

<p>With climate change issues, they “realised that something has to be done” and mountain biking is one new product for this (ID 3, 551f)</p> <p>More dependencies on year around tourism (ID 4, 612f)</p> <p>Even though winter is strong, many businesses start shifting more towards summer (ID 4, 613ff)</p> <p>Autumn is already becoming one of the big seasons and I think we can also spread it to summer (ID 5, 857f)</p> <p>In Ylläs, they have been able to make summer already a good business for many entrepreneurs in the area (ID 5, 858ff)</p> <p>Main goal is to make year-around tourism in Northern Finland (ID 6, 1198)</p> <p>No need to build more infrastructure but rather attract customers (ID 6, 1200f)</p> <p>“Shouldn’t we not worry about when we start the winter but rather when we end the summer?” (ID 6, 1351f)</p> <p>“Because we have fat bikes, we can bike all-year-around, then we can have the biking season going longer and longer, so we do not want to artificially push the winter towards the summer, when we can just sort of, adapt to the change” (ID 6, 1352ff)</p> <p>As a destination we need to accept what is going on and just adapt and bring new more sustainable things to do (ID 6, 1357f)</p> <p>Mountain biking a sustainable solution for year-around tourism (ID 9, 1758f)</p>		
<p>In Finland there are many sustainable destinations compared to the other world (ID 2, 275)</p> <p>“I think the emphasis should be more on, how to make better use of what we already have” (in respect to capacities) (ID 5, 978f)</p> <p>But ski resorts in Finland are already moving towards that direction (carbon neutral ski resorts) (ID 6, 1041)</p> <p>Lapland offers so many activities that are itself sustainable such as cross-country skiing, mountain biking, snow shoeing, hiking (ID 6, 1046ff)</p> <p>“Our long-term goal is to break record sales and not record numbers” (ID 6, 1121)</p> <p>There’s discussion to rather attract Swedes and Norwegians as they don’t have to fly over for example Germans or Austrians that need to fly (ID 6, 1189-1192)</p>	Other sustainable destination management implications	
<p>Provide outdoor recreation possibilities also for citizens with lower income and close to their home (ID 2, 251ff)</p> <p>Some bike parks or trails need to be constructed (ID 4, 622)</p> <p>Internationalisation is one our main tasks (ID 4, 738)</p> <p>Software developers, creating tools to make funding and products more convenient to people (ID 5, 953f)</p> <p>We need to pitch in to make the whole customer journey more sustainable, “otherwise we are in danger of losing a lot of customers” (ID 6, 1013f)</p> <p>“What needs to be done is trail building, infrastructure, services, and making sure that [...] the growth is slow but steady” (ID 6, 1194f)</p> <p>We need to make sure we have the infrastructure for charging electric vehicles (ID 6, 1193)</p> <p>“We need the encourage the small companies to keep their services open, even though it’s a little bit low season right now” (ID 6, 1233)</p> <p>We need to produce tourism that doesn’t harm the environment (ID 7, 1502)</p> <p>Product development needs to go in the sustainable direction (ID 9, 1796f)</p>	Tasks in sustainable mountain bike tourism development	

<p>“Large network of mountain bike routes that is well developed (e.g. with signs that are easy to follow), that is separated from hiking or skiing routes to avoid conflicts with other nature tourists, and that limits the wear of a route (e.g. destruction of plants)” (ID 10, 1830ff)</p>		
<p>Restrict giving out building permits (ID 3, 563f) Tourism products where you can build a tree for one putting down or planting a tree after an accomplishment (ID 5, 955ff) In terms of skiing we should have carbon neutral ski resorts (ID 6, 1035) Plan to build buildings with geothermal heating to save electricity (ID 6, 1044) Compensation of tourism trips with planting trees (ID 9, 1771) Focus more on joint solutions like car or cab sharing (ID 9, 1773ff) Making products more attractive for customers with planting trees (ID 9, 1793f)</p>	<p>Other development tasks</p>	
<p>The next leap for international tourism is not happening at all (ID 5, 863) International customers need to fly, and we don't have a solution for that (ID 6, 1017) If we look at the whole picture, we need to find a solution for the transfer and the transportation of people first (ID 6, 1028f) “The tourism industry is so big, that you have to feed it enough to keep it alive” (ID 6, 1376) No public transport available in many parts (ID 7, 1523) “People are afraid of mosquitoes” hence the potential of autumn with colourful nature and mushroom and berry picking needs to be pushed (ID 9, 1741-1745)</p>	<p>Challenges for international tourism</p>	

<p>Not so many people are coming for skiing from Western and Central European countries (ID 1, 25) There should be a set of other activities, not everyone wants to do the same activities (ID 2, 291f) They don't look for extreme adventure, but more nice outdoor experiences (soft adventure) (ID 4, 648) They also offer an adventure, easy ones and more demanding ones (ID 5, 828f) Right now, we only have an offer for more adventurous riders and challenging trails (ID 6, 1155ff) “Finnish tracks and landscapes can be both challenging and also there are suitable tracks for beginners” (ID 8, 1652f) “I think we have totally new group coming, like client group, so they need also those soft adventures” (ID 9, 1702f) “Services provided probably differ and include activities like cross-country skiing, husky tours and activities with reindeer in addition to downhill skiing, as the downhill slopes in Finland are shorter and maybe offer less of mountainous scenery than the Alps” (ID 10, 1822ff)</p>	<p>Importance of variety of activities in Northern Finland</p>	<p>Other themes</p>
<p>Artificial snow rather related to skiing and no other snow-based activities such as safaris, reindeer or husky (ID 3, 413ff)</p>	<p>Non-ski related activities more endangered</p>	
<p>Question of artificial snow being worthwhile or expensive (ID 1, 41f) People don't realise that artificial snowmaking is not sustainable but keep doing it anyway (ID 3, 523)</p>	<p>Criticism towards artificial snow</p>	

Massive amount of energy and money invested to push winter towards summer with artificial snow making (ID 6, 1355f)		
Most important issue for tourism actors in Lapland five years ago was marketing and in the next 20 years it was climate change (ID 3, 536-539) Companies are small and only look one year ahead and they can't really think about climate change (ID 3, 540f) But not all tourism activities can react like that, only the specific type of activity and program services, not hotels (ID 3, 556f)	Short-term thinking	
It's good to have snow in Northern Finland, but in southern parts of Northern Finland we have to think about what kind of products they can sell (ID 3, 420f)	Need for adaptation in Southern Finland	
Skiing is still something in our tradition (ID 2, 262)	Importance of cross-country skiing	
As of so far, summer tourism is not that good yet, and not as important as winter (ID 3, 423) In winter times it works magic but in summer we don't trust ourselves yet (ID 5, 854f)	Importance of winter season	
A lot has been built for international tourists and domestic tourist they have been forgotten before the pandemic (ID 3, 453f) Domestic tourists are the backbone of winter tourism (ID 3, 459f) Domestic tourists don't come during the peak season, so tourism is not only vulnerable during the peak season (ID 3, 461ff)	Domestic tourism for developing year-round tourism	

Sworn declaration

I hereby declare that I wrote this paper independently and on my own. I clearly marked any parts from other sources as not my own and documented their references. The thesis does not contain any work that I have handed in or have had graded as earlier on.

However, due to my participation in the Double Degree Program in collaboration with Heilbronn University of Applied Sciences and Kajaani University Applied Sciences, this thesis will be graded by both universities.

I am aware that any failure to do so constitutes plagiarism. I am aware of the consequences and sanctions plagiarism entails. Among others, consequences may include nullification of the thesis, exclusion from the study program without a degree, as well as legal consequences for lying under oath.

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Title: The Future of Ski Tourism Impacted by Climate Change –
Potentials of Mountain Bike Tourism as a Fostering Element
for Sustainable Destination Development in Northern Finland

Date: Gemünden am Main, 13th of May 2022

Signature: _____

