Regional Environmental Change (2024) 24:43
https://doi.org/10.1007/s10113-024-02205-8

ORIGINAL ARTICLE

Place attachment, storms, and climate change in the Faroe Islands

Rico Kongsager[1] · **Nina Baron**[1]

Received: 27 March 2023 / Accepted: 17 February 2024 / Published online: 13 March 2024

Abstract
Globally, people have always had to deal with climate-related hazards, and in the majority of places, they have adapted gradually. However, these gradual adaptations may not be enough to withstand the expected intensity of climate-related hazards in the future. In this paper, our focus is on the effect of storms in the Faroe Islands. The islands are highly exposed to storms, which are projected to increase in intensity and potentially also in frequency in this region. The islands are characterized by being small, remote, and with a rough terrain, which makes it difficult for external actors to provide assistance. As a result, the civilian population—especially in the outer regions—often have to deal with storms and their consequences themselves. The geographical focus in this paper is the Northern Islands, and in particular the communities of Viðareiði and Hvannasund. The approach applied is qualitative, and the central question this paper tries to answer is how aspects of place attachment (social, physical, functional) affect the way in which the local population handle storms. The findings show communities that are impacted by storms, but also that their previous experiences with storms have led to an improved adaptation level, which today enables them to cope with more severe storms. The attachment they have to where they live will assist them in coping with future storms, although it can also be a hindrance to the implementation of the necessary adaptation and preparedness measures, since they presume that they are already safe.

Keywords Place attachment · Climate change · Storms · Faroe Islands · Hazard

Introduction

Globally, people have always dealt with climate-related hazards, and in most places, they have adapted gradually. However, with the impacts of a changing climate, which is changing faster than previously seen (IPCC 2021), these gradual adaptations may not be enough to withstand the expected intensity of climate-related hazards in the future (IPCC 2022). Major cities, especially in the global north, will in most places be able to adapt due to the economic interests at stake (Dodman et al. 2022), but smaller remote communities will rarely have the same resources and must therefore live with the consequences.

In some places, one option would be to avoid the risk by relocating, but this is only possible if the inhabitants have the economic resources and the willingness to do so. Furthermore, people have lived for centuries in small remote areas and are thereby strongly connected to the functions of the land or the community. They have very strong social ties locally, so they depend on the surroundings, and their identity is connected to the place—in other words, they cannot just leave, since they are attached to the place (Smith 2018; Manzo and Devine-Wright 2020; Raymond et al. 2021a).

The question is therefore how this attachment to a place affects the way in which people handle a hazard—in this case, a climate-related hazard. This paper is an attempt to add to a greater understanding of this and how it influences people's preparedness and response to a hazard. The hazard in focus is severe storms, and the Faroe Islands have been chosen as the case area, since the islands are highly exposed to storms and storms are projected to increase in intensity

Communicated by Kerstin Eriksson and accepted by Topical Collection Chief Editor Christopher Reyer

This article is part of the Topical Collection on *Place Attachment and Climate-related Hazard in Small Remote Communities*

✉ Rico Kongsager
rico@kp.dk

Nina Baron
niba@kp.dk

[1] Emergency and Risk Management, University College Copenhagen, Sigurdsgade 26, DK-2200 Copenhagen N, Denmark

and potentially frequency in this region in the future (Barcikowska et al. 2018; Chang 2018; IPCC 2022). The islands are an exemplary case of the challenges facing remote communities, since they are characterized as being small, remote, and having a rough terrain, which makes assistance difficult. Consequently, the civilian population—especially in the outer regions—often have to deal with the impacts of storms themselves. The specific geographical focus is the Northern Islands (Norðoyar), and mainly the municipalities of Viðareiði and Hvannasund, which consist of communities where place attachment is evident—with families having lived here for centuries. In this paper, we aim to provide a deeper understanding of place in relation to dealing with hazards by exploring the tensions and dynamic connections with previous storms and residents' views on living in a location impacted by storms under a rapidly changing climate.

Theory

Within academic literature, place attachment touches concepts such as "rootedness" (Lewicka 2005), "insideness," and "outsideness" (Relph 1976), as well as "short-term residency" and "long-term residency" (Stedman 2006), which are all integral parts of shaping people's place attachment (cf. Zwiers et al. 2018). Place can be defined as "a meaningful location, spaces that people are attached to in one way or another" (Cresswell 2004:7). However, place is more than its location, since it is also the product of an emotional connection to the landscape and environment (Relph 1976; Cresswell 2004; Trigg 2012). In this paper, we understand place attachment as the affective ties that people have with places, developed in relation to social, physical, and functional aspects (Lewicka 2011). The social aspect concerns networks and relationships, as well as the caring and trust within these, the physical aspect covers the relationships between physical and environmental characteristics such as infrastructure, the built environment, and nature, and the functional aspect relates to the uses or attributes of a place to support individual goals or activities and includes natural resources.

Among scholars investigating place attachment, it has mainly been the everyday life or relatively slow alteration of processes and practices that have received the most scrutiny, while limited attention has been given to unusual events, such as how people respond to a hazard (Bonaiuto et al. 2016). In this paper, we take a qualitative approach that brings local concerns to the center and focuses on their understanding of the climate-related hazard(s) they must deal with. We do this by listening to their stories on how the hazard affects them—in the past, present, and future—and how this is connected to the ties they have to a place in a case-specific context. When studying communities at risk, we apply place attachment as a qualitative concept, where we focus on the individual perceptions of place attachment and the individual connections to a community, as well as local understandings of risk and uncertainty. We understand place attachment as an individual feeling, but one that has consequences at the community level, and although small remote communities are often labeled as homogeneous entities that are built on collectiveness and a close-knit society, the lived reality may be very different (Søholt et al. 2018).

We also consider place attachment as an important ingredient of capacity building in communities, and thus as a foundation for community resilience to risk, and we see place attachment—either individual (Fornara et al. 2020; Hernández et al. 2020) or collective (Mihaylov et al. 2020)—as something that can affect how people deal with hazards (Devine-Wright and Quinn 2020). Other studies have related place attachment to relatively small places with clearly defined geographical boundaries (Amundsen 2014); however, the concept has also been applied to larger areas, such as cities, regions, or even countries (Raymond and Gottwald 2020). In addition, place attachment has been used to explore people's connection to places that no longer exist or from where a person or group has been relocated (Fullilove 2020). In this paper, we examine the emotional connection people have to an existing place where they either live or that they utilize, and attachment at both the individual and collective level is important in this regard.

Case area and methodology

The Faroe Islands is a small archipelago in the middle of the North Atlantic, located 320 km northwest of Scotland, midway between Norway and Iceland. The land area covers 1399 km^2, comprising steep mountains, upland hills, valleys, spectacular cliffs, and narrow fjords (Raymond et al. 2021b). It is an autonomous territory within the Kingdom of Denmark. The Faroe Islands has a population of 54,159 (Nov 2022), who live in 114 villages spread over 16 of the 18 islands, of which 57 have fewer than 100 inhabitants. Fishing has been the main source of income for the Faroe Islands since the late nineteenth century, and this sector accounts for approximately 97% of exports and half of the GDP. The educational level is high, the proportion of the population living in poverty is low, the GDP per capita is high, and unemployment is low (Statistics Faroe Islands 2023). The specific area selected for this case is two municipalities, Viðareiði and Hvannasund, located in the Northern Islands (Fig. 1).

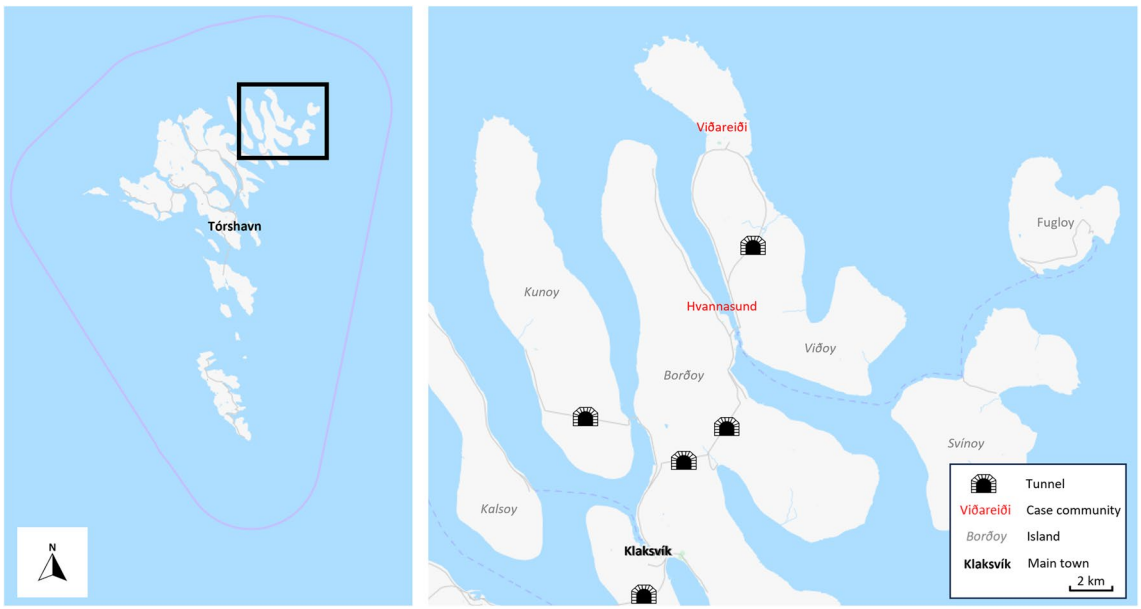

Fig. 1 The Faroe Islands (left) and the case area (right) (source: OpenStreetMap)

Storminess and climate change

The climate in the Faroe Islands is greatly influenced by the North Atlantic Ocean and is classified as hyper-oceanic (Beil et al. 2015), which is a climate that has a very small difference between the mean temperatures of the warmest and coldest months of the year. It is also influenced by the warm Gulf Stream and by the passage of frequent cyclones (the term cyclone applies to numerous types of low-pressure systems, which are labeled as storms in this paper). Being close to the common cyclone tracks in the North Atlantic region, the islands have a windy climate, and a typical year has between 20 and 40 gale days per winter, which usually blow from the west/southwest. The vigorous development of cyclones is typically an autumn and winter phenomenon, with wind speeds sometimes of more than 40 m/s and gusts above 70 m/s (Cappelen and Laursen 1998; Dawson et al. 2010).

Studies have found a northward and eastward shift in the Atlantic cyclone activity over the last 60 years, with both more frequent and more intense wintertime cyclones in the high-latitude Atlantic (Hartmann et al. 2013); however, storm activity around the Faroe Islands has fluctuated over the last 150 years (Hanna et al. 2008). In a more recent study, Krueger et al. (2019) found a multidecadal increasing trend in storm activity starting in the mid-1960s and lasting until the 1990s, whose high storminess levels are comparable to those found in the late nineteenth century, which initiated a debate over whether this already was a sign of climate change. One study of special interest concerning the effect of climate change on storminess in the Faroe Islands investigated the Euro-Atlantic winter storminess and precipitation extremes under the 1.5 °C and 2 °C IPCC warming scenarios. The study projected that regions impacted by the strengthening of the midlatitude jet, such as the northwestern coasts of the British Isles, Scandinavia, and the Norwegian Sea, and over the North Atlantic east of Newfoundland, will experience an increase in the frequency of storm occurrences with exceptionally high intensities in these regions in response to climate change (Barcikowska et al. 2018).

Viðareiði and Hvannasund

Viðareiði is a municipality with 346 inhabitants and has had positive population growth since the 1960s when a direct road connection to Klaksvík was established. Between the 1910s and 1960s, depopulation occurred due to major changes in the fishing industry in Klaksvík. The municipality is in the northern part of Viðoy (Fig. 1) and is the northernmost settlement in the Faroe Islands. It is in a 1.5-km-wide valley depression with high mountains to the north and south, and with views to the neighboring islands. The Viðareiði valley is wide and fertile and has therefore been labeled the queen of the Faroese *bygdir* (Eng. small settlement) (Schei and Moberg 1991). For smaller boats, there are small rudimentary landing sites west and east of the village that can be utilized if the weather conditions allow, and, in spite of the uncertain landing conditions, Viðareiði was for a long time the center of the Northern Islands until Klaksvík took over this position around the 1950s (Schei and Moberg 1991). The settlement has a road connection with

the regional center and fishing capital Klaksvík (the country's second-largest town, with 10% of the Faroese population and approximately 30% of the Faroese export) via a dam and a tunnel system. Since the opening of the Viðareiði tunnel in 2016, Viðareiði can be reached from Hvannasund without the risk of landslides, which could previously lead to the village being cut off for weeks. There is a hotel with a restaurant, a school, a kindergarten, and a salmon farm. Several times a day, there is a bus connection to Klaksvík. The village is considered one of the oldest *bygdir* (Schei and Moberg 1991; Rólantsson 2000).

Hvannasund municipality has 415 inhabitants and has had positive population growth since 2015; however, the growth was greater between the 1950s and late 1980s—especially after the tunnel to Klaksvík was built. In between these periods, a depopulation occurred two times due to a collapse in the fishing industry in the 1990s and the financial crisis in 2007–2008. The municipality consists of two villages: Hvannasund, located on the west side of Viðoy, and Norðdepil, on the east side of Borðoy (Fig. 1). Hvannasund and Norðdepil have together formed a single town since the construction of the causeway between them in 1974. Hvannasund/Norðdepil has, like most old settlements in the Faroe Islands, developed from a farming community to a modern fishing and industrial community. While previously being dependent on whaling and traditional agriculture, economic life here today is entirely dependent on two large fish farms and a fish factory (started in 1974), which has prevented depopulation. The harbor was Norðdepil's lifeblood, whereas more climatically favored Hvannasund was able to exploit the flat land around the sound for agriculture (Schei and Moberg 1991; Rólantsson 2000; Proctor 2019). In Hvannasund municipality, there is a grocery store, kindergarten, and primary school. Previously, the only land route to Klaksvík was a difficult and arduous climb across two steep mountains (Schei and Moberg 1991). However, times have changed, and since 1967 two tunnels connect Hvannasund with Klaksvík, which is 10 km by road. Hvannasund/Norðdepil is very exposed and subject to strong winds that blow up the sound due to the high mountains lying south-north, which have a channeling effect—especially when the wind is coming from the south (Jackson 1991).

Methodology

Qualitative data were collected in 2021–2022, mainly during four field trips to the Faroe Islands, which consisted of three steps. The first step was to engage with key informants, the second was to organize a workshop with villagers, and the third was to interview villagers.

In total, 18 key informants were interviewed, who were an emergency management coordinator, the director of a local assistance organization, scholars from the University of the Faroe Islands, Danish and Faroese meteorologists, a local weatherman, fire chiefs, firefighters, mayors, volunteers in a local emergency agency, and local historians. The questions in these interviews encompassed the overall theme of the paper (i.e., storms and place attachment in the Faroe Islands), but the various informants were only asked questions regarding their field of expertise.

The information from the key informants was utilized to create an explorative workshop with participants from the case communities. Nine in total (seven from Hvannasund and two from Viðareiði) participated and had a variety of different backgrounds, interests, and experiences: fisherman, professional diver, volunteer in the local emergency and fire authority, teacher, city council member, journalist, religious society member, nurse, carpenter, and sailor/artist/rowing-enthusiast. The topic of the workshop was "Experiences with storms and hurricanes in Hvannasund and Viðareiði." We invited citizens to the workshop on climate and storms in the Faroe Islands, where we wanted to hear their views on the challenges that they see in relation to current and future climate change, especially with a focus on storms. An open invitation was posted on the municipalities' social media and a flyer was delivered to every home in the two communities; those who showed up were those who found it relevant and interesting. The purpose of the workshop was to gather knowledge about the challenges of storms based on the participants' experiences. At the workshop, they were therefore asked to talk about their personal experiences, such as what happened in connection with a previous storm, how they were affected, and what they subsequently did or have done in relation to preventing similar incidents.

This was followed by 18 interviews with villagers, who were selected based on four criteria: (1) people from both case communities, (2) people who have been living a long and short time in the area, (3) people with different types of connection to the land/community based on ownership of a home and/or land, dependency on the local nature for their livelihood, and distance to work (i.e., dairy farmers, sheep farmers, bird-catchers, egg-gatherers, seaman, fishermen, and nature enthusiasts), and (4) people with different exposure to the hazard in question (i.e., storms). In addition, the interviews included considerations about diversity regarding age, gender, profession, education, etc.

The questions focused on five themes: (1) place attachment individually/household (e.g., *what is the best thing about living here,* and *are there any other places you find important for you and your household?*), (2) place attachment collectively (e.g., *describe the use of the places people do collectively here on a "normal day/week/year"* and *tell a story about one of the places you mentioned here*), (3) how storms have affected the place and how they dealt with it (e.g., *can you talk about an experience you had with a storm,* and *who helped/supported/did not act?*), (4) place

attachment and storms (e.g., *are storms a challenge in regard to living in this place,* and *would moving somewhere else be an option?*), and (5) storms and climate change (e.g., *what do you think will happen with future storms affected by climate change,* and *what can be done about the storms in the future?*). To gain insights into people's process of making sense of past events, parts of the interview included room for longer stories, which is a particularly well-suited approach for addressing complex problems (Mourik et al. 2021), such as how they explain, understand, and logically connect different events and experiences at a particular moment in time (Riessman 2007).

Maps of the area were used during the interviews so that the interviewee could point to places of interest, infrastructure, damage caused by previous storms, and to discuss certain wind directions. The interviewer drew points, lines, and polygons on the regional and local maps during the interviews. The interviews lasted 45–90 min. All interviews were conducted in Danish, with some words in Faroese, and were recorded and then fully or thematically translated and transcribed in English and uploaded into the qualitative analysis software NVivo. All participants have been anonymized.

Thematic analysis—using a coding scheme with overall themes and subthemes—was applied to provide a rich, detailed, and complex account of the collected data (Braun and Clarke 2006; Clarke and Braun 2013, 2016). The main coding themes were the aspects of place attachment, stories about storms, adaptive responses in relation to storms, and climate change. Across these, we also coded temporal (year) and spatial (location) information. Beyond the interviews and the workshop—including the created maps—the data also included photographs/observations from the fieldwork or provided by interviewees (Joffe 2011), which were then treated in unity (Liebenberg et al. 2012), since visual representations separated from qualitative data contain no inherent meaning of their own (van Leeuwen and Jewitt 2013; Roos and Redelinghuys 2016). Further contextual data were gathered through academic literature and books that were available online, from the library in Klaksvík, or in private collections. This was conducted in order to ensure the researcher's interpretation of the interviews (Devine-Wright and Wiersma 2021).

There were a small number of limitations in the sampled data. In the individual interviews, it was not possible to fulfill criterion 2, since very few people in the case communities have lived in the area there for a short time. Furthermore, the interviews were not gender-balanced (5 female, 13 male) and the same applied to the workshop (2 female, 7 male), which may be a result of the topic—when women were approached with the overall theme, they called upon their husband to answer. It should also be mentioned that two of the interviewees also participated in the workshop. Nevertheless, these limitations are not expected to have a significant impact on the overall findings, since these have been triangulated with the other parts of the collected data and literature.

Results

This section will highlight the main perspectives related to place and storms in the case area. The section starts with findings related to aspects of place attachment in the case area, since it is of importance for insights into life here. This is followed by selected stories about storms, which will provide an understanding of living in the case area during a storm. The section ends with findings on adaptive responses in relation to storms and climate change, which provides vital knowledge on how the local people handle storms and how they understand their own situation.

Families and relationship to the settlement

In almost all the households in the case communities, one person has a relationship with their settlement. It is also very common that the family has been living there for generations. People are able to talk about all the different places and the history of the community, which has often been passed on orally over generations. They are people who have lived in the area all their lives and have never considered moving away. However, some have been away for a period to study (mainly in Denmark). The quote below is from a woman who grew up in Viðareiði and still lives there, but went to Copenhagen to study nursing for 4 years and worked as a nurse for 2 years. However, she returned because:

> [I] always knew I had to come back here, as I wanted my children to grow up here. I think it is healthy that they can play freely outside, and in the summer, we have daylight long into the night, and there is no crime, so you are not afraid, which makes you free.

The families are few but large, and they live in the vicinity of each other. This can be exemplified by a statement from a man in Viðareiði: "All five of my siblings still live in Viðareiði, and my wife was also born in the village over in the white house." Out of the window, he points to the white house, as well as the four houses that his siblings live in. The importance of being close to family is what stops many from moving away, but it is also the importance of the community that means something to the people living here. Several formal and informal types of social gathering are not solely family-based, such as school/kindergarten, sports, and religious societies, which shapes the social aspect in these communities. The houses that this family live in have been inherited over generations and have been in the families since they were built, which is common for most families

here. Consequently, people's identity is tied to the house and/or the location of the house, since their ancestors lived in the exact same place. This circumstance has, according to the interviewees, the negative outcome that people are very reluctant to sell their house, even if they have moved away or the relative who owned the house has passed away. This is mainly an issue in Viðareiði, where 30 of the 100 houses are empty most of the year.

Village identity

Village identity is in general fundamental: "you are not just from the Northern Islands—you are from Hvannasund or Viðareiði, and you are proud of it," as an outside scholar states. This aspect is dominant when it comes to the discussion on merging the many small municipalities in the Faroe Islands. There was a referendum on creating seven large municipalities, but the proposal was outvoted by a large number. A number of locals say that there was a lack of good arguments for doing so and that people are afraid that local development will stop if there is a merger. For example, it is unlikely that there would have been a kindergarten in Viðareiði if it had merged with Klaksvík, as a city council member puts it.

The people living here know and support each other. At funerals, for instance, several hundred people attend. There was a man who worked for the municipality with the water supply, and therefore visited virtually everyone's home in Viðareiði. He was the type of person who could talk to everyone and linked the settlement together. However, he died very tragically in a work accident in 2020, and, in spite of a ban on gatherings due to COVID-19 restrictions, 700 people attended the funeral. Thus, it is a place where people meet and talk to each other and can tell empathetically and in detail about each other. One villager puts it as follows:

> If I go for a walk—the round I usually go takes 25 minutes if I do not talk to anyone, but if I talk to everyone I meet it takes 1½ hours. You always meet someone regardless of which way you go and the time of the day. And everyone talks to everyone. It is probably also difficult to be here if you do not talk to people. There is a form of social control here because everyone knows what I do, and I know what they do.

These strong ties between the villagers can be hard to break for newcomers. A person with an extrovert personality who would like to engage in local practices and interests, such as *grindadráp* (pilot whaling), bird catching, and sheepherding, or who got a position where she/he gets in contact with people will possibly be assimilated. If this is not the case, a newcomer can easily find themselves isolated and will normally only live in the village for a few years. To be included, they must be like them, and as one of the interviewees explained:

> it is often because they are interested in something else. For example, someone who comes from Tórshavn has just different interests than us—we have our birds, sheep, and cows. But if someone comes who has these interests, then it becomes easier to include them in the community.

Thus, the settlements already have a strong concept of what binds them together, and they socialize with those who share a common identity. In both case communities, the common identity is connected to religion, school/kindergarten, sport, nature, and various activities related to the harbor in Hvannasund, such as the ferry and fishing.

Utilization of nature

The villagers' connection with the local area is very strong, and nature is especially paramount here. As one of the villagers states: "I love living here—it's so extremely beautiful—I will always live here." And similar comments were put forward by most interviewees living in the case communities when asked what they like about living in the area. However, it is also the utilization of nature that is important. Viðareiði is a classic old Faroese agricultural settlement with a relatively large agricultural area, while Hvannasund is a settlement that has grown together with fishing. In both places, there are distinct seasons related to sheep, birds, hares, pilot whales, and fish. Most families are involved in sheep farming, with only a few families being involved in the other activities. The produce is sold or consumed as a delicacy locally, and in most households these will be served with pride and stories to guests.

Previously, this utilization of nature was essential for survival, but today it is a hobby for most. The statistics show a clear decrease in fishermen but an increase in people working in aquaculture and fish processing over the last 40 years. In the same period, the number of people employed in public administration and the service sector has doubled, which is by far the largest sector in the Northern Islands (Statistics Faroe Islands 2023). Nevertheless, the traditions regarding sheep, birds, pilot whales, etc. mean something to the identity of the communities, since they are connected with nature through some of the historic practices. As one man (around 30 years old) puts it:

> Yes, it has a lot to do with identity, and many of those who go to the mountains with sheep and other things do it because they like it, because it is not worth it at all—it would be much cheaper just to buy the meat yourself even though it is very expensive. It is a different lifestyle that you want to be a part of—and which

attracts many people to the Faroe Islands because it is close to nature.

An important aspect with regard to sheep is land ownership, since it is only possible to have sheep when owning or having access to land. Land has a different value depending on its proximity to the village, location, and birding (with the land in the mountains for grazing, the owner also has the sole rights to the areas with birds nesting there). Until the 1930s, the church owned the land in the villages, giving immense power to the priests. Due to this, the villagers in Viðareiði today own three-quarters of Viðoy as the vicarage was in Viðareiði, while the villagers in Hvannasund only own one-quarter. Later on, land was distributed to the villagers working for the priest. This is especially evident in Viðareiði, with buildings that are scattered and further away from the church. So, when villagers married, they received a piece of land to grow potatoes and build a house on, as well as to have sheep and potentially a cow, which was a good combination when working as a fisherman for part of the year as they thereby became self-sufficient. This land used to be passed on to the children, which has resulted in many small plots. Consequently, the land owned by the families today represents the identity and a sense of belonging to specific places in and around the village, but also a connection to previous generations and their practices.

Storms are a part of life in this place

It is important to state that storms are one of the main hazards (together with land- and rockslides) that the interviewees mention they must deal with. And people connected with emergency response explain that assistance related to storms now occurs more often than assistance to fire, and the main equipment available at the local fire stations in Viðareiði and Hvannasund is related to providing assistance during storms, such as harnesses and fishing nets to secure roofs and rafters, and wooden boards and screws to cover smashed windows. Thus, storms, which occur several times a year, are a part of living in the case communities—and in the Faroe Islands in general—and are therefore often not perceived as something extreme. All the interviewees living in the area have a number of stories of personal experiences with storms, which are very detailed with specific years, dates, wind directions, warnings, and impacts. Regarding the latter, the details can include who was affected, which houses were destroyed/damaged, and information concerning people who assisted and what they did. Certain storms are deeply rooted in the minds of the interviewees, such as the storms in 1988 and 2016.

The 1988 Christmas Storm is the one that was mentioned in most interviews when interviewees were asked to give a personal experience related to a storm. A woman in Hvannasund, together with her husband, gave the following story:

> It was very stormy. He [her husband] should have been sailing on a boat that day, but they were sent home due to the weather. He was driving home and could feel that the car was wobbling due to the wind. Closer to the home he saw insulation material flying in the air, and he knew that our house had a lot of this in the attic, so he was afraid that it was coming from our house. But it was one of the other houses, where the rooftop and trusses were gone. He got home to me and our youngest son, and led us to the basement of the house, as he was afraid that the roof of our house would fly away as well. He could see that the gutters on the house next door were bent down—and suddenly the upper floor of that house was lifted, and with the next strong gust, the whole house blew away. The electricity poles, 20–30 cm wooden poles, along the road were breaking one by one. Five houses close to us were damaged, of which two were destroyed. In one of the destroyed houses, a man had found shelter in the boiler room in the basement. A car was standing in a driveway when it was lifted—a man had to lay down on the hood to hold on to the car. He [her husband] had some stones in the driveway and one stone [her husband is showing with his hands that it is around 30 cm in diameter] was found 30 meters from where it was laying [he has saved the stone which he weighed to be 50.8 kilograms]. The houses that were damaged or destroyed were Norwegian standard houses, which are used in the fjords in Norway.

A retired fisherman in Viðareiði provided another story of the same event:

> We were exposed to a colossal storm on December 22, 1988. I was sitting on the sofa and looked up at the barometer. It dropped very forcefully in just 1–2 seconds—I have never seen that before. And in a few minutes, the storm came. The wind hit the mountain, and then there was a violent gust. My wife was standing there by the sink [he points towards the kitchen]—and suddenly it felt like my brain was being sucked out of my head. […] Five windows in the house were sucked into the house at once. And we had an 8-month-old son who was in the most exposed place, but we could not get into the room he was in, as the pressure made us unable to open the door to that room. But it turned out to be the only room in the house where nothing had happened. Then he [the storm] turned and now came from the west and it was quiet again. An hour goes by in which it was quiet. There was no emergency service you could call at that time, so we had to

> put something in front of the windows ourselves—you always had boards that fitted the windows, which you attached with nails. But then he [the storm] returned from the west-northwest, as the depression had moved towards the east of us—and then it happened again. I have never experienced such a storm—no—it was absolutely, absolutely colossal. An insurance man from Tórshavn came [after the storm] and said: "What the hell has happened?" Before this storm, we were not aware of storms at all, but after this we were—there is a time before and after this storm.

The 2016 storm is worth mentioning, since it had the strongest wind speed ever recorded in the Faroe Islands, with gusts of 78.7 m/s and an average windspeed of 52 m/s for long periods. It resulted in a lot of damage—in 1 week, there were around 650 damage reports, while the norm is 800 per year (Kristensen 2016). However, even though this event was more recent than the 1988 event and more powerful than previous storms the interviewees could remember, it was not an event many interviewees brought up. Asked about this, the interviewees gave answers that converged with the "there is a time before and after this storm" statement from the retired fisherman's story about the 1988 Christmas Storm, because what was mentioned in the interviews was that the 1988 storm had changed concerns regarding storms tremendously—even for the people who did not experience it but had only heard about it from relatives. The consequence was, and is today, that people living here have a more proactive adaptive response strategy towards storms after the 1988 storm, which will be elaborated on in the next section.

Adaptive response

When a storm is announced—as well as before the storm season in general—the villagers clear up in the villages and around the houses, since any material not removed or fastened can fly through the windows, which can trigger a change of pressure inside the house and potentially lead to the roof being lifted off. This practice of clearing up has been carried out since the 1988 Christmas Storm, because loose material caused a lot of severe damage during the storm. People also ask others, mostly neighbors, to remove or fasten things, or to demolish or restore decaying buildings. Within local legislation, there is a provision that allows the municipality to demolish buildings that pose a danger, but this is rarely enforced. Another preparedness practice put in place following the Christmas Storm was to have rails at the side of windows to make it easy to slide prearranged plexiglass plate in front of it or to have precut wooden boards that fit the window frames. A few residents still use this today before a storm arrives, but this practice is mainly for smaller objects. The stories also hold information about larger objects (e.g., caravans, trailers, boats, cars, larger stones, roofs, a 40-foot container) that have been moved during a storm, which gives an indication of the forces at work. The preparedness measure practiced regarding these larger objects is to fasten them with harnesses, ropes, and old fishing nets.

However, putting these practices into operation is not uniform across the communities, who can have a highly individualistic approach to adaptive measures. Some locals have a laidback attitude to storms (e.g., natives, fishermen/sailors, and people living in a strong house in a safe location), while others fear storms so much that they are very frightened (e.g., newcomers and people with a house in an exposed location that is not well maintained). Those who are laidback watch Premier League football or Netflix until the storm has passed, while those who are frightened find shelter in the basement—often with relatives. Several of the women interviewed explain how they get together with relatives when a storm is approaching, since their husbands are away and they do not feel safe alone with the children in case the house is damaged. However, there are differences within the households; for instance, regarding when to secure things, block the windows, or take shelter. A man in Hvannasund told that:

> when I bought my house 30 years ago it came with wooden boards to be placed in front of the windows, and one day I came home I told my wife that I would put them up [a storm was coming]. But she said that I was crazy—she is from here. Then we had coffee and I saw a traditional wooded Faroese rowboat rolling and it ended up against one of the houses. And then my wife said: now I think it is time that you go out to help the other men. But did not, as I did not dare.

Staying inside, as this man did, is exactly what people are told to do and what most do. The villagers know that it is highly dangerous to be outside. Several of the stories told by the villagers are about specific people who have been lifted or knocked over by a gust and have suffered severe injuries as a consequence, which people use as a reminder to stay inside. Thus, people stay inside and are prepared to sit the storm out, and all have items related to such situations, such as flashlights, candles, batteries, food, and a gas heater (power cuts are normal during storms, which affects the heating in the houses). However, not everyone stays inside. There is a group of people consisting mainly of the local firefighters who are waiting by the phone to be called to assist, and many interviewees clearly state that there are many locals who feel a responsibility in helping those in need. They say it is because of the old sense of community, which they believe is stronger in the villages than in Klaksvík and Tórshavn. There is a strong connection to their community in both case communities, where people

offer to help one another both on a daily basis as well as during storms and in other hazardous situations. And this connection is not limited to the village. For instance, there is an agreement with the two large contractors in Klaksvík that their equipment can be borrowed if it is needed during storms, land/rockslides, etc., and as one of the firefighters from Viðareiði puts it:

> We are not that big in this area. We all know each other—it is a big happy family of 5000 people [approximately the population of the Northern Islands], where everyone knows everyone. In that way, there is a nice sense of security.

The climate is changing

Climate change is not something people here talk about much, and almost everyone feels safe because they think that the houses today are constructed to withstand these conditions. This is despite climate change being in the news as well as weather forecasters talking about it, and interviewees from the local emergency teams can already now see a change, as they provide more assistance for climate-related events than previously. However, many villagers mention a clear increase in the local temperature (which, for instance, affects the conditions for drying mutton) and obvious changes in the wind and precipitation patterns (e.g., storms are now mainly a problem with wind from the south, while the previous generation talked about north and northwesterly storms). Nevertheless, few make a connection between these events and a changing climate. When asked about this, some interviewees respond that they are concerned about future storms and their intensity and/or frequency. A young woman in Viðareiði comments: "I fear it—the storms are violent enough already," while others do not think that much has or will change. Related to this, several interviewees mentioned that there is some climate change skepticism in the population. For example, the local weather forecaster said that he disables the option to comment on climate-related weather posts at the local newspaper's website, since there would otherwise be many comments arguing against climate change. He does not see this as being related to science but more as a highly politicized debate between the right and left sides of the national political parties.

The climate change issues highlighted in the above paragraph are captured neatly in this story from a man, approximately 30 years old, living in Viðareiði:

> You cannot do much about the weather. I am not afraid. This house has been standing for 100 years, so I am not afraid of that. But we are considering building something down the road, and there we just have to build really strong—bearing in mind that it will get worse and worse—because it does. And it is important to maintain the house here in the meantime so that it is strong. … It [climate change] is something that is talked about—especially during winter. That it is stronger storms now than it was before, which is true. But it is also a small settlement, so there are a lot of skeptics who say that the climate is rubbish. For example, my father says it does not happen, and three minutes later he says that "now it's really bad weather compared to how the weather was earlier." And then I say that you just said there was no climate change, and then he says, "Ok, it is there, but humans are not to blame for it," and for that, I am not smart enough to say whether it is that or something else, but the storms just get worse and worse, and the winters get warmer and wetter, and with less snow—that's what I am experiencing.

Discussion

Revisiting the three place attachment aspects (i.e., social, physical, functional) reveals important insights regarding the connection between place attachment and storms, as well as people's adaptive response to a changing climate in general.

The social aspect, which is highly present, is an important part of the adaptative response in regard to storms, since the villagers utilize their relationships with others to handle the impacts of storms but also to cope mentally with them by gathering together. In other studies, community attachment has been shown to give rise to social capital, where people participate in collective efforts to preserve and protect their community (Manzo and Perkins 2006; Mihaylov and Perkins 2014; Mihaylov et al. 2020), which is why this aspect is important when investigating exposed communities. Furthermore, there is a sense of community in the case communities, where the core elements are a feeling of physical rootedness and a sense of bondedness with one's neighborhood (Pretty et al. 2003). This sense encompasses trust in each other and feelings of belongingness to a group, including an emotional connection based on shared history, values, interests, or concerns (Perkins and Long 2002), which motivates people to participate in collective protection efforts (Mihaylov et al. 2020).

The physical aspect is also highly important. People have clear personal memories or local knowledge about the impact of previous storms, including specific details about locations, which is why specific physical places are labeled as safe or dangerous during storms. However, the infrastructure and the built environment have changed considerably—especially since the devastating 1988 Christmas Storm. Hence, the buildings today are stronger, the tunnels provide

greater access to main towns and assistance, and preparedness measures to protect buildings and infrastructure in the villages are taken when storms are expected. Consequently, almost all the villagers feel safe, since they believe that the houses are constructed to withstand these conditions in the future. Many are aware of the physical impact that climate change will have as the intensity and frequency of storms change, but only a few are sincerely concerned. Nonetheless, even though climate change is not currently a primary concern, attachment to the structures and buildings in the community is an important driver of engagement in place-related adaptation, preparedness, and recovery, and is a motivator for individual and collective actions to ensure continued well-being of the community (Kaltenborn and Bjerke 2002; Bihari and Ryan 2012; Amundsen 2014; Hovelsrud et al. 2018; Moore 2021).

On the other hand, attachment to the physical parts of the community can potentially also feature willful blindness (Nicolosi and Corbett 2017), spatial optimistic bias (Bonaiuto et al. 2016), and underestimation of risk (de Dominicis et al. 2015). This can negatively affect people's willingness to adapt even under great exposure to risk, since place attachment subtly weakens the perception of risk (Bonaiuto et al. 2016). This can subsequently entail an unwillingness to accept evacuation/relocation when these are necessary (Kaltenborn and Bjerke 2002; Donovan et al. 2012), and strong place attachment may reinforce preferences to stay in hazardous locations, which could potentially lead to vulnerability in the long term. Some studies have even shown how experiencing climate-related hazards has strengthened people's attachment to their location, and at the same time increased their risk aversion (Steimanis et al. 2021). Importantly, adaptation in many coastal areas, including the case communities in this paper, is not limited technologically (Hinkel et al. 2018) but is rather a matter of societal priorities and economic viability. However, the fact that people continue to build new houses in locations prone to storms raises important questions, since it may be a mistake to believe that in situ adaptation is sufficient when facing more severe storms in the future. Thus, the fact that residents generally prefer in situ adaptation strategies to relocation (Adams 2016; Jamero et al. 2017; Esteban et al. 2019; Steimanis et al. 2021) may potentially lead to long-term vulnerabilities. However, humans have an innate and often underestimated capacity to adapt to changes in their environment (Esteban et al. 2019).

The functional aspect is where immense change is happening. A transformation is occurring in which there is a move away from the exploitation of nature for survival and subsistence and towards recreational purposes and hobby activities where traditional practices are kept alive. Lifestyles in the case area are changing—a process that has been occurring for decades (see also Wylie and Margolin 1981; Gaffin 1996; Gaini 2011). The change occurring now, and in the future, is a significant move away from nature dependency and towards a modern way of life (see also Faber et al. 2015). The nature dependency here was previously for subsistence and later for monetary income, while today sheep are a hobby for many, birds/eggs are a hobby for the few, and fishing is highly industrialized and technologized with large vessels with fewer employees. Thus, the functional aspect of the place is changing, and other aspects of place are gradually becoming important; however, these may be less tangible than in the previous times. Fears of cultural loss (incl. local knowledge), deterioration of vital ecosystem services, and dislocation from ancestral lands, among others, are also some of the findings in the case communities, which is a part of the complexities of noneconomic loss and damage related to climate change (McNamara et al. 2021a, 2021b).

The case area, and the Faroe Islands in general, is thereby an exemplary case of the challenges that small remote communities face and how they are changing, which is also an effect of new forms of infrastructure such as roads, sea tunnels, and bridges, resulting in residents no longer being bound to their home villages out of necessity. Residents have a choice to stay or leave, which leads to changes in village demographics and social ties (Hovgaard and Kristiansen 2008). Consequently, a transformation is occurring, and culture and values are changing in many ways, such as the fact that people living in these communities now have occupations that are more or less detached from nature. This may affect how they deal with natural hazards in these places, since a lesser understanding of the changes that are occurring will deteriorate the villagers' ways of handling the forces of nature and has for some led to the belief that they can cope with storms even in a future affected by climate change. For instance, in the case area, some of the new houses are built in locations that are severely prone to high winds, which is why these locations were not used for houses in the past, or the installment of large windows on the most exposed side of the houses (in the past, there were no or only very small windows on this side).

Finally, storms are a part of life in this place, and, in this context, some scholars see place attachment from a weathering perspective, which shows that weather strengthens the ties people have to a place and to others in the community and that an uncertain climate does not necessarily destabilize these ties. They argue that in some locations there is a *contract* with the weather, which makes people more likely to respond positively to challenging weather, and that this dimension of attachment influences their willingness to adapt and can differ for those who have cognitively chosen this way of life versus those who have a more rooted form of attachment (Butts and Adams 2020). Research on social vulnerability and adaptation to climate change assumes that increasing amounts of adaptive

capacity increases the likelihood of actions to adapt to climate change. Nevertheless, it is not that straightforward. For instance, Mortreux et al. (2020) showed a weak relationship between adaptive capacity and adaptation, where high adaptive capacity does not clearly result in a correspondingly high level of adaptation. The same study found three factors that appear to mediate the relationship between household adaptive capacity and adaptation, which were people's attitude to risk, their experience of risk, and their expectations of authorities. Related to the case communities, we found that attitude to risk makes people act with adaptative behavior, if they were attentive to the forces of the storms, and that they knew how to act if they had experienced severe storms. But also, that they had limited expectations of the authorities—not as a criticism, but because they knew that the emergency services were very busy during a storm and also that there is not much that they could do.

Conclusion

This paper provides insights into the existence of different aspects of place attachment and how these can relate to people's coping with storms in two small remote communities in the northern Faroe Islands. The paper intends to provide a better understanding of the concerns and priorities within these communities regarding how they interpret and deal with the presence of a natural hazard that is influenced by a changing climate. The knowledge gained provides a basis for a more locally informed strategy towards adaptation targeted at climate-induced natural hazards, which in this case are storms. The investigated communities have been impacted by storms in the past and have coped with these. Furthermore, they have recovered to an improved position today, since they have made the necessary modifications to their behavior (practices and habits) and physical features (infrastructure and buildings). The attachment they have to this place will assist them in coping with future storms, but it can also be a hindrance to the implementation of the necessary adaptation and preparedness measures if they presume that they are already protected.

Acknowledgements We would like to extend our gratitude to all the individuals who took part in the research.

Funding Open access funding provided by University College Copenhagen (KP) The research is a part of the Climate Change Resilience in Small Communities in the Nordic Countries (CliCNord) research project that has received funding from the NordForsk Nordic Societal Security Programme under Grant Agreement No. 97229.

Declarations

Conflict of interest The authors declare no competing interests.

References

Adams H (2016) Why populations persist: mobility, place attachment and climate change. Popul Environ 37:429–448. https://doi.org/10.1007/S11111-015-0246-3/TABLES/5

Amundsen H (2014) Place attachment as a driver of adaptation in coastal communities in Northern Norway. Local Environ 20:257–276. https://doi.org/10.1080/13549839.2013.838751

Barcikowska MJ, Weaver SJ, Feser F, Russo S, Schenk F et al (2018) Euro-Atlantic winter storminess and precipitation extremes under 1.5°C vs. 2°C warming scenarios. Earth Syst Dyn 9:679–699. https://doi.org/10.5194/esd-9-679-2018

Beil I, Buras A, Hallinger M, Smiljanić M, Wilmking M (2015) Shrubs tracing sea surface temperature—Calluna vulgaris on the Faroe Islands. Int J Biometeorol 59:1567–1575. https://doi.org/10.1007/s00484-015-0963-4

Bihari M, Ryan R (2012) Influence of social capital on community preparedness for wildfires. Landsc Urban Plan 106:253–261. https://doi.org/10.1016/J.LANDURBPLAN.2012.03.011

Bonaiuto M, Alves S, De Dominicis S, Petruccelli I (2016) Place attachment and natural hazard risk: research review and agenda. J Environ Psychol 48:33–53. https://doi.org/10.1016/J.JENVP.2016.07.007

Braun V, Clarke V (2006) Using thematic analysis in psychology. Qual Res Psychol 3:77–101. https://doi.org/10.1191/1478088706QP063OA

Butts D, Adams H (2020) Weather contracts: capturing a sense of weather for place-based adaptation to climate change. Glob Environ Change 63:102052. https://doi.org/10.1016/J.GLOENVCHA.2020.102052

Cappelen J, Laursen EV (1998) The climate of the Faroe Islands-with climatological standard normals, 1961-1990. Copenhagen, Denmark

Chang EKM (2018) CMIP5 projected change in Northern Hemisphere winter cyclones with associated extreme winds. J Clim 31:6527–6542. https://doi.org/10.1175/JCLI-D-17-0899.1

Clarke V, Braun V (2013) Successful qualitative research: a practical guide for beginners. SAGE Publications, London

Clarke V, Braun V (2016) Thematic analysis. J Posit Psychol 12:297–298. https://doi.org/10.1080/17439760.2016.1262613

Cresswell T (2004) Place: A Short Introduction. Blackwell, Oxford, UK

Dawson AG, McIlveny J, Warren J (2010) Winter gale day frequency in shetland and faeroes, AD 1866–1905: Links to sea ice history

and the North Atlantic Oscillation. Scott Geogr J 126:141–152. https://doi.org/10.1080/14702541.2010.527857
de Dominicis S, Fornara F, Ganucci Cancellieri U, Twigger-Ross C, Bonaiuto M (2015) We are at risk, and so what? Place attachment, environmental risk perceptions and preventive coping behaviours. J Environ Psychol 43:66–78. https://doi.org/10.1016/J.JENVP.2015.05.010
Devine-Wright P, Quinn T (2020) Dynamics of place attachment in a climate changed world. In: Manzo L, Devine-Wright P (eds) Place attachment: advances in theory, methods and applications, 2nd edn. Routledge, pp 226–242
Devine-Wright P, Wiersma B (2021) Auto-photography, senses of place and public support for marine renewable energy. In: Raymond CM, Manzo LC, Williams DR et al (eds) Changing senses of place: navigating global challenges. Cambridge University Press, pp 144–155
Dodman D, Hayward B, Pelling M, Castan Broto V, Chow W et al (2022) Cities, settlements and key infrastructure. In: Pörtner H-O, Roberts DC, Tignor M et al (eds) Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp 907–1040
Donovan K, Suryanto A, Utami P (2012) Mapping cultural vulnerability in volcanic regions: the practical application of social volcanology at Mt Merapi, Indonesia. Environ Hazards 11:303–323. https://doi.org/10.1080/17477891.2012.689252
Esteban M, Jamero ML, Nurse L, Yamamoto L, Takagi H et al (2019) Adaptation to sea level rise on low coral islands: lessons from recent events. Ocean Coast Manag 168:35–40. https://doi.org/10.1016/J.OCECOAMAN.2018.10.031
Faber ST, Nielsen HP, Bennike KB (2015) Sted, (u)lighed og kønen kortlægning af udfordringer og best practices i relation til køn, uddannelse og befolkningsstrømme i Nordens yderområder [Place, (in)equality and gender mapping of challenges and best practices in relation to gender, education and population flows in the outer regions of the Nordic region]. Nordic Council of Ministers, Copenhagen
Fornara F, Scopelliti M, Carrus G, Bonnes M, Bonaiuto M (2020) Place attachment and environment-related behavior. In: Manzo LC, Devine-Wright P (eds) Place attachment: advances in theory, methods and applications, 2nd edn. Routledge, pp 193–207
Fullilove MT (2020) Revisiting "The Frayed Knot": what happens to place attachment in the context of serial forced displacement? In: Manzo L, Devine-Wright P (eds) Place attachment: advances in theory, methods and applications, 2nd edn. Routledge, pp 177–192
Gaffin D (1996) In place: spatial and social order in a Faeroe Islands community. Waveland Press
Gaini F (2011) Among the islanders of the north: an anthropology of the Faroe Islands. Faroe University Press
Hanna E, Cappelen J, Allan R, Jónsson T, Le Blancq FL et al (2008) New insights into North European and North Atlantic surface pressure variability, storminess, and related climatic change since 1830. J Clim 21:6739–6766. https://doi.org/10.1175/2008JCLI2296.1
Hartmann DL, Klein Tank AMG, Rusticucci M, Alexander LV, Brönnimann S et al (2013) Observations: atmosphere and surface. In: Stocker TF, Qin D, Plattner GK, Tignor M, Allen SK, Boschung J, Nauels A, Xia Y, Bex V, Midgley PM (eds) Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, pp 15-24
Hernández B, Hidalgo MC, Ruiz C (2020) Theoretical and methodological aspects of research on place attachment. In: Manzo LC, Devine-Wright P (eds) Place attachment: advances in theory, methods and applications, 2nd edn. Routledge, pp 94–110
Hinkel J, Aerts JCJH, Brown S, Jiménez JA, Lincke D et al (2018) The ability of societies to adapt to twenty-first-century sea-level rise. Nat Clim Chang 8:570–578. https://doi.org/10.1038/s41558-018-0176-z
Hovelsrud GK, Karlsson M, Olsen J (2018) Prepared and flexible: local adaptation strategies for avalanche risk. Cogent Soc Sci 4. https://doi.org/10.1080/23311886.2018.1460899
Hovgaard G, Kristiansen S (2008) Villages on the move: from places of necessity to places of choice. In: Bærenholdt JO, Granås B (eds) Mobility and place: enacting Northern European peripheries. Routledge, pp 61–74
IPCC (2021) Summary for policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA
IPCC (2022) Climate change 2022: impacts, adaptation, and vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA
Jackson A (1991) The Faroes: the faraway islands. Robert Hale
Jamero ML, Onuki M, Esteban M, Billones-Sensano XK, Tan N et al (2017) Small-island communities in the Philippines prefer local measures to relocation in response to sea-level rise. Nat Clim Chang 7:581–586. https://doi.org/10.1038/nclimate3344
Joffe H (2011) Thematic analysis. In: Harper D, Thompson AR (eds) Qualitative research methods in mental health and psychotherapy: a guide for students and practitioners. John Wiley & Sons, Ltd, Chichester, pp 209–223
Kaltenborn BP, Bjerke T (2002) Associations between environmental value orientations and landscape preferences. Landsc Urban Plan 59:1–11. https://doi.org/10.1016/S0169-2046(01)00243-2
Kristensen KØ (2016) Efter den værste storm nogensinde: Tage er blæst af og vinduer er blæst ind [After the worst storm ever: Roofs are blown off and windows are blown in]. In: Jyllands-Posten. https://jyllands-posten.dk/international/ECE9256750/efter-den-vaerste-storm-nogensinde-tage-er-blaest-af-og-vinduer-er-blaest-ind/. Accessed 27 Mar 2023
Krueger O, Feser F, Weisse R (2019) Northeast Atlantic storm activity and its uncertainty from the late nineteenth to the twenty-first century. J Clim 32:1919–1931. https://doi.org/10.1175/JCLI-D-18-0505.1
Lewicka M (2005) Ways to make people active: the role of place attachment, cultural capital, and neighborhood ties. J Environ Psychol 25:381–395. https://doi.org/10.1016/J.JENVP.2005.10.004
Lewicka M (2011) Place attachment: how far have we come in the last 40 years? J Environ Psychol 31:207–230. https://doi.org/10.1016/J.JENVP.2010.10.001
Liebenberg L, Didkowsky N, Ungar M (2012) Analysing image-based data using grounded theory: the Negotiating Resilience Project. Vis Stud 27:59–74. https://doi.org/10.1080/1472586X.2012.642958
Manzo L, Devine-Wright P (2020) Place attachment: advances in theory, methods and applications, 2nd edn. Routledge
Manzo LC, Perkins DD (2006) Finding common ground: the importance of place attachment to community participation and planning. J Plan Lit 20:335–350. https://doi.org/10.1177/0885412205286160
McNamara KE, Westoby R, Chandra A (2021a) Exploring climate-driven non-economic loss and damage in the Pacific Islands. Curr Opin Environ Sustain 50:1–11. https://doi.org/10.1016/J.COSUST.2020.07.004

McNamara KE, Westoby R, Clissold R, Chandra A (2021b) Understanding and responding to climate-driven non-economic loss and damage in the Pacific Islands. Clim Risk Manag 33:100336. https://doi.org/10.1016/J.CRM.2021.100336

Mihaylov N, Perkins DD (2014) Community place attachment and its role in social capital development. In: Manzo LC, Devine-Wright P (eds) Place attachment: advances in theory, methods and applications. Routledge, London, pp 61–74

Mihaylov NL, Perkins DD, Stedman RC (2020) Community responses to environmental threat: place cognition, attachment, and social action. In: Manzo LC, Devine-Wright P (eds) Place attachment: advances in theory, methods and applications, 2nd edn. Routledge, pp 160–176

Moore T (2021) Planning for place: place attachment and the founding of rural community land trusts. J Rural Stud 83:21–29. https://doi.org/10.1016/j.jrurstud.2021.02.007

Mortreux C, O'Neill S, Barnett J (2020) Between adaptive capacity and action: new insights into climate change adaptation at the household scale. Environ Res Lett 15:074035. https://doi.org/10.1088/1748-9326/AB7834

Mourik RM, Sonetti G, Robison RAV (2021) The same old story – or not? How storytelling can support inclusive local energy policy. Energy Res Soc Sci 73:101940. https://doi.org/10.1016/J.ERSS.2021.101940

Nicolosi E, Corbett JB (2017) Engagement with climate change and the environment: a review of the role of relationships to place. Local Environment 23:77–99. https://doi.org/10.1080/13549839.2017.1385002

Perkins DD, Long DA (2002) Neighborhood sense of community and social capital: a multi-level analysis. In: Fisher A, Sonn C, Bishop B (eds) Psychological sense of community: research, applications, and implications. Plenum, New York, pp 291–318

Pretty GH, Chipuer HM, Bramston P (2003) Sense of place amongst adolescents and adults in two rural Australian towns: the discriminating features of place attachment, sense of community and place dependence in relation to place identity. J Environ Psychol 23:273–287. https://doi.org/10.1016/S0272-4944(02)00079-8

Proctor J (2019) Faroe Islands, 5th edn. Bradt Travel Guide

Raymond C, Gottwald S (2020) Beyond the "local": methods for examining place attachment across geographic scales. In: Manzo LC, Devine-Wright P (eds) Place attachment: advances in theory, methods and applications, 2nd edn. Routledge, pp 143–158

Raymond CM, Manzo LC, Williams DR, Di Masso A, von Wirth T (2021a) Changing senses of place: navigating global challenges. Cambridge University Press

Raymond CM, Verbrugge LNH, Fagerholm N, Olafsson AS, Magnussen E et al (2021b) Exploring senses of place through narratives of tourism growth and place change: the case of the Faroe Islands. In: Raymond CM, Manzo LC, Williams DR et al (eds) Changing senses of place - navigating global challenges. Cambridge University Press, pp 79–91

Relph E (1976) Place and placelessness. Pion, London

Riessman CK (2007) Narrative methods for human sciences. SAGE Publications, Inc

Rólantsson OJ (2000) The Faroe Islands. The New Millennium Series

Roos V, Redelinghuys A (2016) Analyzing visual data with text from the Mmogo-method: experience of meaning during the third trimester of pregnancy. In: Roos V (ed) Understanding relational and group experiences through the mmogo-method. Springer International Publishing, pp 119–138

Schei LK, Moberg G (1991) The Faroe Islands. John Murray

Smith JS (2018) Explorations in place attachment. Routledge

Søholt S, Stenbacka S, Nørgaard H (2018) Conditioned receptiveness: nordic rural elite perceptions of immigrant contributions to local resilience. J Rural Stud 64:220–229. https://doi.org/10.1016/J.JRURSTUD.2018.05.004

Statistics Faroe Islands (2023) Statistics Faroe Islands (Hagstova Føroya). https://hagstova.fo/en. Accessed 27 Feb 2023

Stedman RC (2006) Understanding place attachment among second home owners. American Behavioral Scientist 50

Steimanis I, Mayer M, Vollan B (2021) Why do people persist in sea-level rise threatened coastal regions? Empirical evidence on risk aversion and place attachment. Clim Risk Manag 34:100377. https://doi.org/10.1016/J.CRM.2021.100377

Trigg D (2012) The memory of place: a phenomenology of the uncanny. Ohio University Press, Athens, OH

van Leeuwen T, Jewitt C (2013) The handbook of visual analysis. SAGE Publications, London

Wylie J, Margolin D (1981) The ring of dancers: images of Faroese culture. University of Pennsylvania Press Anniversary Collection

Zwiers S, Markantoni M, Strijker D (2018) The role of change-and stability-oriented place attachment in rural community resilience: a case study in south-west Scotland. Community Dev J 53:281–300