

Who are legitimate stakeholders? National and local perceptions of environmental change in the Lofoten Islands, Norway.

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ABSTRACT

Debates on future resource policy in northern regions raises the question of who are the legitimate stakeholders to include in policy deliberations? The Lofoten archipelago in Northern Norway is a world-class nature tourism destination, the key spawning ground for North Atlantic cod as well as a reservoir of large unexploited off-shore oil and gas deposits. We surveyed the resident Lofoten population and the larger Norwegian public to ascertain to what extent local and national perceptions of the value of selected environmental attributes and the importance of drivers of environmental change align across geographic scales. Lofoten residents and the national public both assign high value to environmental attributes, but local residents place more emphasis on harvesting marine and agricultural resources than the national public, which is more concerned with the status of individual species and conservation symbols. Neither group place significant importance on either the social or natural drivers of change in terms of effects on future livelihoods and values. Our results show that the national public expresses so much interest in Lofoten that they should be considered a legitimate stakeholder in discussions about its future development paths, and while they relate to the area in a broadly similar way, there may be some specific areas of conflict that need to be considered.

Key words: Lofoten, drivers of change, natural resources, local and national perceptions.

INTRODUCTION

Resource rich regions are often 'hotspots' for socio-political conflicts over the choice of development paths, disagreements over the importance of non-economic versus economic values, and what constitutes sustainable and responsible ways of exploiting natural resources. There are few places where this is more evident than in the Lofoten archipelago in Northern Norway (Figure 1), a region rich in hydrocarbon deposits, but also a world class tourism destination, and the hub of some of the richest and most valuable fisheries in the North Atlantic (Steen Jacobsen & Dann 2003, Kristoffersen & Midtgard 2016). Part of the problem in ascertaining what will be the most beneficial resource policies in Lofoten, including identifying the trade-offs and long-term impacts, is the imperfect understanding between alternatives of the environmental values at stake (Kaltenborn et al. 2017). In addition, stakeholders at different spatial scales often attribute different values to different ecosystem services (Hein et al. 2006, de Groot & Hein 2007, Pomeroy & Douvère 2008, Ruiz-Frau et al. 2011). Add to this the incommensurability of market-mediated values (monetary) and non-market values (non-monetary), as well as the fact that most resource policies have different effects on different policy levels (Sternier & Cornia 2011, Chan et al. 2012, Gomez-Baggethun et al. 2013, Satterfield et al. 2013, Chan et al. 2016.) and policy makers face a gargantuan socio-political challenge to balance competing interests. Lofoten is currently an arena for political struggles involving local, regional, national, and even international policy levels and concerns (Buck & Kristoffersen 2011, Misund & Olsen 2013, Kristoffersen & Dale 2014). The conflicts mirror larger scale challenges in the Arctic and Sub-arctic and involve dimensions of national and international energy security and revenues, the livelihoods and future prospects of a thriving, year round tourism industry and protecting cultural heritage, traditional coastal fisheries and sustainable local livelihoods (Grydehøj & Grydehøj 2012, Arbo et al. 2013). These are all elements in the larger picture of dramatic on-going changes in northern coastal regions, where political, societal and natural drivers of change on different levels act in concert to produce a complex socio-political landscape that can be hard to navigate in order to understand the positions of different stakeholders.

Given its importance for international tourism, fisheries and national energy revenues, the Lofoten region is arguably a national, or even international socio-ecological resource complex. With increasing globalisation, local environmental services and functions are increasingly seen as larger public goods, and benefits from environmental services are potentially claimed by local, national and international actors Farley & Constanza 2010, (Constanza et al. 2014, King et al. 2015). Therefore, links in socio-ecological resource systems are often links between resource users (local communities, commercial companies, interest groups on different levels) on the one hand and regulators and

government agencies on the other (Ananda & Herath 2003, Anderies et al. 2004, Voinov & Bousquet 2010). Consequently, one may contend that not only is the local population a key stakeholder, but also the Norwegian public at large (Reed et al. 2009, Mitchell et al. 1997). Arguably, in an increasingly globalised world with growing awareness of the interconnectedness of all planetary systems, it should increasingly matter how the general public values the environment and perceives change, although the region is not in their immediate proximity (Buanes et al. 2004).

Cross-scale interactions between stakeholders are a feature of most resource management complexes (Adger et al. 2006, Lawhon & Murphy 2011). Here we take a political ecology perspective which assumes that any given resource management system is multi-scale and should be managed at different scales simultaneously (Berkes 2002). Political ecology usually defines the environment (and its attributes) as an arena with where different social actors with asymmetrical political power compete for access and control of natural resources (Bryant and Bailey 1997, cited in Vaccaro et al. 2013, Walker 2005, Fletcher 2010). Cross-scale interactions can both strengthen and undermine trust in resource management, for instance if government regulators use resources from cross-level interactions to reinforce their authority, which may disempower local resource users (Adger et al. 2006, Lawhon & Murphy 2011). Conversely, the public at different levels may join forces to promote wider conservation goals. In this perspective 'level' refers not only to geographic space, but also to systems of social organisation to advance particular interests. Power is then the application of action, knowledge and resources to resolve problems and further interests (Peterson 2000, Adger et al. 2006)

Stakeholder positions on future resource options contingent upon any number of factors such as vested interests, personal backgrounds, cultural backgrounds, knowledge, place attachment, and any number of other factors, many of which are difficult, if not impossible to identify and deal with in policy and management processes. In a case like Lofoten where political decisions inevitably will have effects on different policy levels, a key question is; which stakeholders should be given attention by policy makers and managers ? (Mikalsen & Jentoft 2001). Stakeholders can be classified in a number of ways. Mitchell et al. (1979) suggests that 'legitimacy', 'power', and 'urgency' can define whether an actor has a legal, moral or presumed claim, and that one must consider whether actors are in a position to influence decisions. It follows from this reasoning that in order to be considered a stakeholder, an actor/interest group should demonstrate a legitimate, and possibly urgent claim on the issue, and/or be able to exert some level of power on decision making (Vaccaro et al. 2013). This is a fairly narrow distinction of stakeholders that lends itself well to situations with a well-defined scope and functions such as a corporation which knows it's own 'territory'. However, the

socio-political landscape of Lofoten is not well defined, and it is challenging to define legitimate claims, power mechanisms and urgency. Furthermore, it is debatable whether legitimate claims to environmental services and benefits by the public can be assessed by measures of power and urgency alone. Environmental management and biodiversity conservation arguably have legitimate stakeholders beyond the immediate area in the sense that the greater public is affected by and benefit from a healthy environment, without necessarily possessing the power to influence proximate or ultimate decisions about resource use (in contrast to how consumers can support or boycott a corporation). At any rate, it merits the question of exploring who are definitive, expectant, and latent stakeholders (Mikalsen & Jentoft 2001) in the discussions about future resource management in Lofoten? Most people would agree that the local population should be considered legitimate stakeholders, but it is far from universally accepted that the national public should have a say in such matters. In the struggle for stakeholder influence in the future of resource management in Lofoten, there are clearly a range of expectant and latent stakeholders outside the region (various private and public interest groups), or what Holzer (2008) terms 'stakeseekers' trying to exert power and claiming to have a legitimate role in the policy processes. Whether or not outside interests are co-opted into the specific resource debates can have major influence on the outcome of decision-making.

Another key question is how to account for the different perceptions of change and valuation of environmental attributes in question at different policy levels when it comes to difficult political decisions about future resource exploitation. In theory, knowledge about perceptions of environmental values and drivers of change, are always important. However, these factors are often ignored or side-lined for the benefit of narrow economic and commodity-oriented assessments (Chan et al. 2016). Moreover, if such assessments are carried out, they are often confined to the local perspective and case study area.

Increasingly, the ecosystem services framework is attempting to make both market- and non-market mediated values more commensurable for applied purposes (e.g. de Groot et al. 2010, TEEB 2010, Gomez-Baggethun et al. 2011) and to map and compare provisioning and cultural ecosystem services. The Lofoten islands are a classic case of a complex environmental value systems, where different cultural and provisioning services are intertwined (Magnussen 2012). However, alternative resource policy decisions can have profound effects on this relationship, and how trade-offs between different types of ecosystem services are handled.

In this paper, we probe the alignment of national and local perceptions of the importance of a selection of environmental attributes and drivers of change. The question is important since it may help clarify to what extent the implications of political decisions regarding the future of Lofoten will

affect people outside the region. Essentially, the question must focus on how local perceptions are reflected in the national perspectives on salient, even iconic places and regions, which can be said to be imbued with meaning by populations far beyond the local scale. We explore this through three research questions:

1. How does the general public rank Lofoten compared to other destinations they know in Norway?
2. How do the general public and the local population in Lofoten view the potential demise of a range of environmental attributes in Lofoten?
3. How does the general public and the Lofoten population perceive the effects of a range of societal and natural drivers on the future of the local communities in Lofoten?

Study area

Resource based conflicts arise in many shapes and forms. They can be latent or manifest, and range from the interpersonal to the global, they can be constructive or destructive, and vary in geographic scope from highly localised to international. Environmentally oriented conflicts typically involve disagreements over conservation objectives and resilience of ecosystems and cultures, and often reflect distinct dichotomies (e.g. Homer-Dixon & Percival 1966, Maser & Pollio 2012, Redpath 2013). The current Lofoten situation matches several of these indicators. The political and media debates are polarised and present the stakes as a black and white choice between oil and gas development vs fishing and tourism (Hjermann et al. 2007, Gautier et al. 2014, Kristoffersen & Dale 2014), and involve interest groups spanning from local communities and organisations up to the national level. Fishing and tourism largely act as allies and compatible partners, rather than adversaries, and the two industries benefit from each other economically since fishing is part of the tourism product and experience, and fishing tourism adds to the seasonal commercial fishing cycle. A main line in the popular discourse on alternative development paths for Lofoten assumes that hydrocarbon exploitation runs a high risk of spills and pollution that would be detrimental to tourism and coastal fisheries (e.g. Aftenposten 2010, Lofotposten 2017). Considerable research has gone into evaluating environmental risk in the greater Barents Sea area (e.g. Hjermann et al. 2007, Hasle et al. 2009, Ottersen et al. 2011, Hauge et al. 2014, Noring et al. 2014, Hasselström et al. 2017), but there is no clear consensus on what the consequences might be, which is hardly surprising given the current uncertainty around the scope and complexity of a potential off-shore hydro carbon industry.

What is certain is that resource exploitation in Lofoten, whether it be consumptive or non-consumptive use, represents large economic sectors. The annual commercial value of fisheries in the Lofoten region (including aquaculture) is close to 2 billion euros (Directorate of Fisheries 2014). Fishing tourism amounts to at least 60 million euros a year (Borch et al. 2011). Recreational fisheries

by residents represents on the order of 35 – 100 million euros annually (Magnussen 2012). A suite of cultural ecosystem services and benefits associated with cultural heritage, whale and seabird watching, inspiration, identity, attachment and spirituality lack good economic estimates, but clearly add salient contributions in direct and indirect ways to the economy.

Nature based tourism also generates large earnings for the wider Lofoten and Vesterålen region. Approximately 180 tourism companies employ in the order of 800 staff, and the numbers seem to be increasing. The local annual value generation has been estimated to be around 40 million euros, and the external value generation for companies based outside Lofoten, but operating in the region is no doubt significant. Lofoten has rapidly developed from primarily being a summer destination to an almost year-round attraction for visitors in a relatively short time. Exact statistics are not available, but accounts based on a combination of the most important lodging facilities, guest records, and pieces of travel data from ferries, airports, and cruise ships, suggest approximately half a million visitors per year. This is probably a conservative estimate since many visitors stay in private homes, and/or camp in locations without any registration system (Kristoffersen & Midtgard 2016)

Earlier studies demonstrate that Lofoten represents a rich and diverse nature tourism destination in terms of multifaceted attractions and activity and experience opportunities (Mehmetoglu et al. 2001, Steen Jakobsen & Dann 2003, Fyhri et al. 2009, Steen Jakobsen & Tømmervik 2016). The relatively pristine and rugged nature dominates most parts of the archipelago and its viewscapes. Lofoten lends itself to many types of recreational activity such as fishing, hiking, climbing, skiing, surfing, kiting, photography and contemplation of nature, sea bird watching and whale safaris, often intertwined with elements of cultural heritage.

The magnitude of tourism and rapid growth in visitor numbers during recent years has brought both benefits and problems to the region. While tourism revenues are increasing, traffic congestion is mounting in the summer months, campsites are overcrowded, and littering is rampant in certain popular locations (VG 2017). Tensions are building in some communities and increasingly reflected in media debates (Lofotposten 2017.). While Lofoten is struggling with some of the negative effects of excessive tourism popularity, the region also faces drivers of change that are familiar to many rural regions in Norway. Lofoten residents worry about the depopulation outside regional centres, centralization of public services and governance systems, bureaucratic obstacles in the local fishing industry, the decline of small-scale agriculture and the decay of the traditional cultural landscape (Kaltenborn et al. 2017). And hanging over all these is the spectre of rapid development as the opening for exploration and exploitation of hydrocarbons has been an ongoing political debate in Norwegian politics for more than a decade.

DATA COLLECTION AND ANALYSIS

This study is based on two sets of comparable survey data addressing a) the Lofoten population and b) the general population of Norway. We first surveyed a representative sample of the local population in six municipalities in Lofoten. Røst (population 540), the westernmost and smallest municipality in Lofoten was not included in the sample to avoid disturbance and research-fatigue due to other on-going research projects in the area. Data were collected by a polling agency (Norstat, www.norstat.no) using telephone interviews during May and June 2015. The sample of 403 persons was stratified and weighted to be representative of the population in the six municipalities. In addition to mapping background characteristics of the respondents, and the respondent's level of interest in Lofoten related management issues, the survey contained a set of questions probing how people would react to the loss of 18 environmental attributes by asking: "How would it affect your sense of well-being if the following happens in the near future?" along a five-point scale ranging from very negative to very positive. (see Table 1). This focus on potential loss was intended to try and make people more carefully reflect on the implicit value of environmental attributes that they might take for granted. The survey then continued with a set of questions addressing the effects of 18 drivers of social and natural change by asking: "To what extent do you think the following conditions can affect the development of Lofoten during the next ten years in positive or negative directions?", also along a five-point scale from very negative to very positive (Table 2). The items for these questions were based on our experience from previous field work in the Lofoten region consisting of observation, workshops, interviews and surveys (Kaltenborn et al. 2017 a,b).

We subsequently implemented a new survey in 2017 among a representative sample of the Norwegian public (N=1000). This data set was also collected by the same polling agency and phone-based interview format. The survey opened with the same question about interest in management issues in Lofoten and whether or not the respondents had visited Lofoten one or more times. It also asked respondents to rank Lofoten relative to other areas in Norway that the respondents found attractive (i.e. more interesting, less interesting, difficult to compare). The remainder of the survey focused on attitudes toward the potential loss of environmental attributes and drivers of change that were measured in the 2015 Lofoten survey. The 2017 national sample survey was narrowed down to 9 environmental attributes and 12 drivers of change. The analysis in this paper is based on these variables, which are directly comparable between samples. Data were analysed in SPSS using (ONEWAY) analysis of variance to test for differences between the Lofoten sample and the national sample. We also broke the overall national sample into six regional units, Northern Norway, Central

Norway, West coast, Eastern Norway, the South coast and the Oslo region to allow testing for potential differences between north vs. south, inland vs. coastal, and rural vs. urban.

RESULTS

The Lofoten sample (N=403) comprised 53% men and 47% woman, and the average age was 51 years. The national sample (N=1000) contained 58% men and 42% women, with an average age for the sample of 45 years. The education level is on average a little higher in the national sample than among the Lofoten residents (measured as the highest level completed). In the Lofoten population, 14.9% had completed primary school, 42.2% secondary school, 23.3% undergraduate level university/college (1 – 3 years after secondary school), and 18.4% graduate level university/college (4 years or more after secondary school). The corresponding figures for the national sample were: 8.3% primary school, 34.7% secondary school, 24.5% undergraduate level university/college, and 27.8% graduate level university/college.

Lofoten residents as well as the general public expressed interest in questions regarding the use and management of the natural resources in Lofoten. Lofoten residents scored significantly higher on this question than the general public (2.58 vs. 2.22 on a scale from 1 (not at all interested) to 3 (very interested), $F=95.691$, $p=0.000$). Within the national sample the Westcoast region scores significantly lower than all the other regions in terms of interest in management of Lofoten's resources ($F=2.750$, $\text{Sig.} = 0.018$). The average length of residency for people in Lofoten was 39 years. Amazingly, almost one-half of the Norwegian public reported having set foot in Lofoten. 20.6% have been there once, and 27.4% have visited the area on two or more occasions. We also asked the national sample to rank the attractiveness of Lofoten compared to other locations. About one-quarter (25.9%) of the population stated that Lofoten is considered far more interesting than other places, while 7.8% found Lofoten less interesting, and 66.3% found it difficult to compare Lofoten to other places. There were no significant differences between the six regions in their rating of the attractiveness of Lofoten. The basis for comparison was an open question where respondents could list a concrete location, place or region the respondents considered particularly attractive, which not surprisingly yielded a long array from small rural communities, to municipalities, counties and even larger regions (i.e. the fjords, central Norway). There was a large diversity in attractive locations spread out across Norway, and again not surprising since this was a national sample. There were no particularly dominant clusters of places or destinations, but what is worth noting is that people evidently perceive attractive places to range widely in geographic scale from single mountains and rural towns and cities to large regions.

Perceptions of potential loss of environmental attributes

Table 1 shows how Lofoten residents and the general population evaluated the potential loss of a selection of environmental attributes in Lofoten. All of the statements were described as the discontinuation of activities or absence of fish and wildlife species. Therefore, these statements focused on the detraction of elements from the current situation, without incorporating the possibility of an increase in wildlife species or activities. The general picture is that both locals and people living outside Lofoten viewed all of these changes, should they occur, as negative developments. None of the statements included here were perceived as even moderately positive changes. The potential demise of the cod fisheries yields the most negative scores, followed by the vanishing of sea eagles, degradation of fishing villages and traditional fishing cabins ('rorbuer'), the loss of whales and seals, the absence of sheep grazing and cessation of tourists visiting the islands and the disturbance of northern lights and dark winter nights by artificial lighting. All of these potential changes evoked reactions in the range from "would be very negative" to "somewhat negative" range. For the majority of these rather drastic potential alterations in the Lofoten environment we found significant differences between Lofoten residents and the general population. People living outside Lofoten considered the potential disappearance of the cod fisheries and the absence of sea eagles and seals as more negative impacts than the local population does. On the other hand, Lofoten residents rated changes like cessation of sheep grazing, decline and degradation of fishing settlements and discontinued use of drying racks for fish as more negative than the general population. They also rank artificial light pollution as more negative than the general population. Interestingly, there was also a significant discrepancy in the attitude towards tourism. A drastic decline in tourism visitation was perceived by locals as less of a problem compared to the general population. However, we did not find any significant differences between the six national regions in their rating of any of these items.

Perceptions of the role of drivers of change

On the topic of how various drivers of change might affect the future in Lofoten over the next ten years, we found that for most of the drivers, the effects were anticipated to be either negative or of limited importance. Coastal pollution, the change of landscape features in cultural landscapes due to forest expansion, climate change, oil- and gas exploration in coastal waters, population decline in areas outside regional centres, are all drivers of change that were thought to influence the conditions and development in Lofoten in a negative direction (Table 2). Drivers like establishing Lofoten as a World Heritage site, development of renewable energy, nature-based tourism, market access for fish and landing facilities, as well as international environmental policies, elicited responses in the range

from "makes no difference" to "would be somewhat positive". In terms of average scores, none of these drivers were thought to have a highly positive effect on future development. The drivers of change that did receive limited positive anticipations all deal with activities that may generate awareness and economic revenues (tourism, renewable energy, cultural heritage and environmental conservation), while governance related drivers like state level bureaucracy and international environmental politics were perceived to have little or no effect on future development of Lofoten. Interestingly, the highly profitable industry of salmon and trout aquaculture fall in the same category of drivers having a perceived minimal impact on the future.

We found significant differences in responses between the Lofoten and the collective national samples for seven of the twelve drivers of change included here. Lofoten residents had a more positive view of the potential impact of renewable energy, nature-based tourism and aquaculture than the general population, but a less positive view of market access for fish and landings sites, state bureaucracy, international politics, and plans for World Heritage status. However, although the differences in perceptions between Lofoten residents and the general population were statistically significant, they were for the most part relatively small in a practical sense, i.e. they more or less point in the same direction. When we broke down the analysis, we found significant differences across the six national regions for only two statements. People in the Westcoast region were somewhat less worried about the effects of exploitation of hydrocarbons on future development than people in other parts of the country ($F=5,172$, $\text{Sig.} = 0.000$). People in the Northern, Westcoast and South coast regions perceived forest encroachment and associated change in the cultural landscape to be a significantly more negative factor on future development than people in other parts of the country ($F=4.064$, $\text{Sign.} = 0.001$)

DISCUSSION

Popular literature as well as research frequently emphasizes the environmental qualities and sometimes uniqueness of the Lofoten islands (Mehmetoglu & Olsen 2013, Fyhri et al. 2009, Kristoffersen & Midtgard 2016, Steen Jacobsen & Tømmervik 2016). The results from this study concur with the general image of Lofoten as a region with widespread environmental value. Amazingly, one-half of the Norwegian public have visited Lofoten one or more times, and a quarter of the population find the archipelago far more interesting than any other place they know in Norway. Lofoten residents as well as the general public place a high value on the Lofoten environment, in the sense that they consider the potential decline or loss of key environmental attributes as quite negative. This pertains to all the factors included in this study. Perhaps the most striking message from the findings is, albeit apart from a few exceptions, the overall similarity

between the local and national publics in their perceptions. It is also noteworthy that the national public expresses relatively homogenous views across the country. We did expect to see differences in perceptions of environmental issues in Lofoten between northern and southern Norway, or between coastal and inland regions. However, only two issues stand out. People in the Westcoast region appear some less worried about the impacts of oil and gas development on the future livelihoods, perhaps because this region has a long (>50 years) history of off-shore hydrocarbon development, which has been associated with relatively few negative impacts. Furthermore, residents in northern Norway and the western and coastal regions are more concerned about the shrub/forest encroachment into the cultural landscape than people in the central- and eastern (including Oslo) regions. To some extent this could reflect contrasts in rural and urban perspectives, but also historical and present differences in agricultural practices.

The general trajectory of negative perceptions of a potential decline in environmental qualities is fairly similar for locals and the general public, but there are some differences worth noting. People living in Lofoten place more emphasis on factors related to resource harvesting and consumption-oriented values, i.e. fishing and agriculture than people living outside Lofoten. Outsiders are somewhat more concerned with the, arguably iconic, cod fisheries and wildlife like sea eagles and seals. It is worth noting that the concern for the cod fisheries is even higher (although statistically significant, not conceptually large) among the general public than the local population, which attests to the national significance of this resource. Cod fishing in Lofoten is a key economic pillar both for the local fishing industry and large portions of the national coastal fishing fleet which migrates to Lofoten during the season (Michalsen et al. 2008; Opdal 2010). Cod also signify the very essence of the Lofoten heritage and history (Sande 2015). The fact that the Norwegian public expresses such strong concern about a potential decline in the cod fisheries, probably reflects that the public strongly associate the region with this species/activity, and perhaps also fear that this high-quality food resource would no longer be available to people across the country. A potential major decline in tourism also elicits differences in response among Lofoten residents and the general public, in fact this was the most significant difference of all the items included. Again, the national concern is larger than the local view. We suspect the reason is that the local population not only benefit from employment and revenues, but also directly experience the problems and disadvantages of the mass influx of visitors to their home communities more or less year-round.

We also found differences in perception among local residents and the larger public when it comes to perceptions of drivers of change for future livelihoods. Again, the general pattern is relatively similar for the two samples, but with statistically significant differences for some drivers. Both locals and outsiders cluster marine pollution, degradation of agricultural and cultural

landscapes, climate change, hydrocarbon exploration and rural population decline as drivers with a negative influence on the future. Production and development-oriented drivers such as renewable energy, heritage conservation, nature-based tourism, fish processing and environmental policies, tip the attitudes more towards indifference or slightly positive effects. Lofoten residents attribute more importance to resource-based production; with the exception of market access for fish, than outsiders. The latter attribute more importance to heritage conservation and domestic and international policies for future development. However, as far as both locals and the general public go, none of these natural and societal drivers of change are perceived to have very substantial impacts (positive or negative) on future livelihoods. Which begs the question; what factors – if any, do Norwegians think will have a salient influence of the future of Lofoten?

Lofoten epitomises many of the current challenges facing northern coastal regions. Key issues include risks assessments associated with oil and gas exploration and other industrial activities (Hiis Hauge et al. 2014, Hasselström et al. 2017), determining socio-economic and cultural vulnerability (Dolan & Walker 2006, McLaughlin & Cooper 2010), trade-offs between different types of ecosystem services (Martín-López et al. 2014), the consequences of climate change (Correll 2006, Ford & Furgal 2009), and who should have a say in major policy decisions (Bryson 2004, Buanes et al. 2004, Soma & Vatn 2009). This study shows that different types of environmental values matter to Norway as a nation. Lofoten residents emphasize utilitarian values and provisioning ecosystem services, which corroborates other recent research on local perception of environmental and social change in Lofoten (Kaltenborn et al. 2017a), while people living outside the region are more concerned with conservation-oriented values and cultural ecosystem services. However, we hasten to add that this is a highly simplified picture. The observed differences are only questions of degree and not clear-cut distinctions. For instance, the public places great value on the cod-fisheries, and probably interprets this as both consumptive (food) and non-consumptive values (classic Lofoten image, traditions, culture, and recreational experience). Lofoten residents are concerned with agricultural and marine production, landscape change and population decline, but most likely think of this as a potential change in livelihoods, heritage and well-being, encompassing material and non-material and non-market values. Lofoten residents and the national public differ statistically on some of the issues in this study, but both samples express views that we take to express a similar perceived relationship between cultural and provisioning ecosystem services.

In conclusion, it is evident that the Lofoten archipelago is a region that matters to the Norwegian public at large. It is sensational that half the adult population report that they have actually visited the islands, and a significant portion claims that Lofoten surpasses any other place, destination or region they are familiar with in terms of attractiveness. We would argue on two

accounts that the general public can be considered a definitive stakeholder in the terminology of Mikalsen and Jentoft (2001) in discussions about future resource exploitation in Lofoten. First, the Norwegian public expresses a strong interest in the environmental attributes and services in the region expressed through actual visitation and stated preferences. We consider this a sufficient proxy for legitimacy. An emphasis on conservation values is arguably an indicator of urgency, since the choice between development paths in resource exploitation presently are high on the political agenda. While the general public may not be formally recognised as a definitive stakeholder on all accounts, the public potentially has the opportunity to form strong political coalitions and wield significant power to sway decisions one way or the other. The effectiveness of this hinges on the extent and nature of cross-scale political and social interactions, for instance to what extent the local tourism industry allies with national tourism strategies and international ecotourism companies. Second, as we argued earlier in this paper, environmental services and biodiversity are increasingly considered common, even global goods of importance well beyond the immediate geographic area. For example, the European landscape Convention (Council of Europe 2000) calls for a stronger European identity, shared concern and broader responsibilities for European landscapes, especially those threatened by industrial development.

Interestingly, the local population and the general public are more or less in agreement in their concern for the potential loss of key environmental attributes and natural and human caused drivers of change that may affect livelihoods and the environment. In other words, they do not differ strongly in their views of environmental values, in contrast to much of the research on stakeholder values at different scales. Two things are important here. First, it is evident that both cultural- and provisioning services are seen as important values in future perspectives of change among locals and people outside the region. This is also supported by recent research from the Lofoten region showing the interrelatedness between cultural and provisioning ecosystem services (Kaltenborn et al. 2017b). This indicates that a range of both material and non-material values should be assessed and incorporated in future decisions about resource exploitation options. Second, there is no doubt that cultural ecosystem services and the non-economic and experiential values of Lofoten are considered highly important way beyond the region. So, one can surmise that there may be differences in value preferences within each population that are larger than the overall differences between the local and national samples.. One can hardly treat the general public or the local population as homogenous groups of stakeholders, and the question is rather how to define the field of interest and identify the players in discussions about the development of a northern, coastal region which ostensibly is seen as important, unique and attractive by a large portion of the nation.

Perhaps the key issues are how we decide what it takes for a place or region to be awarded the label of national importance and what types and extent of ecosystem services, benefits and values should substantiate that. Hence, the cross-scale interactions in this case run both within the national and local samples, as well as between locals and outsiders. These interactions will be manifested as negotiated outcomes of power relations, where key elements are how decisions are negotiated and how trade-offs are handled to give space for manoeuvring (Adger et al. 2006, Neumann 2009). The transaction costs of reaching some kind of consensus around a sustainable future for Lofoten are negotiations over shared values, feasible objectives and appropriate actions to reach these objectives. Considering what is at stake in this region, the transaction costs can be significant, even prohibitive, and will challenge the political game of agreeing on how wide to cast the net of legitimate stakeholders.

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Figure 1. Study area – The Lofoten – Vesterålen archipelago.

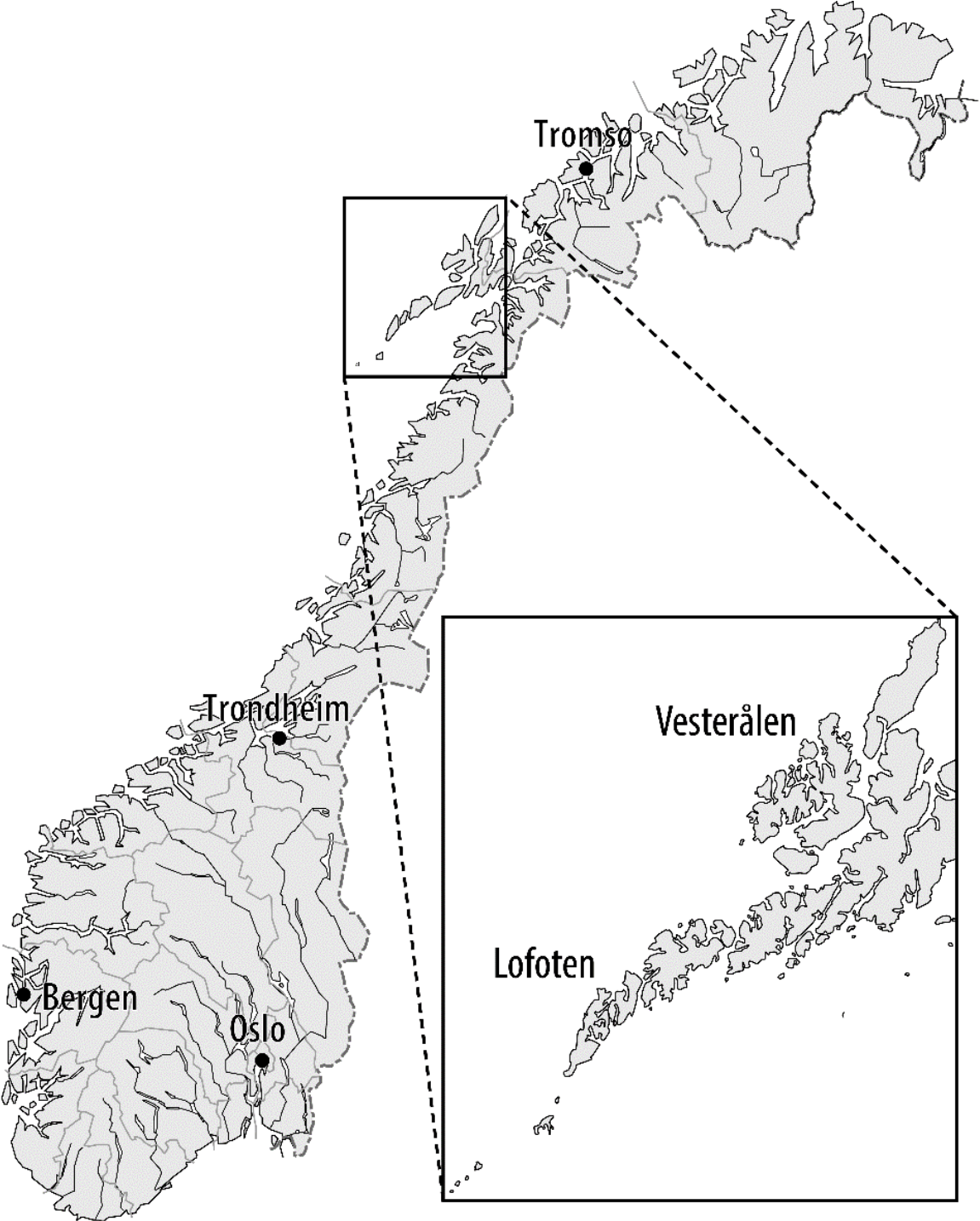


Table 1. Effects on the sense of well-being if the following happens in the near future (Mean scores)

	National Mean scores N=1000	Lofoten Mean scores N=403	F-value	Sign.
It is no longer possible to fish cod in the waters around Lofoten	1.40	1.53	4.544	0.033
Hardly any tourists come to Lofoten anymore	1.84	2.20	26.127	0.000
It is no longer possible to see whales in the sea surrounding Lofoten	1.69	1.75	0.762	0.383
Most of the seal species more or less disappear	1.75	2.04	17.802	0.000
The sea eagle disappears form Lofoten	1.52	1.96	52.020	0.000
The drying racks for fish are no longer in use and must be removed due to degradation	1.86	1.65	9.464	0.002
There are no longer any sheep grazing anywhere in Lofoten	1.93	1.70	10.670	0.001
Fishing villages and fishermen's cabins degrades	1.65	1.58	1.064	0.302
Northern lights and dark winter nights are disturbed by light pollution from settlements and industry	2.06	1.88	6.443	0.011

Response format: 1: Would be very negative, 2: Would be somewhat negative, 3: Makes no difference, 4: Would be somewhat positive, 5: Would be very positive

Table 2. Effects (positive or negative) of drivers of change on development in Lofoten during the next ten years (Mean scores)

	National sample N=1000	Lofoten sample N=403	F value	Sign.
Climate change	2,15	2,18	0.144	0.705
Exploitation of oil and gas in the sea outside of Lofoten	2,41	2,39	0.064	0.800
Population decline outside regional centres	2,24	2,22	0.130	0.718
Salmon and trout aquaculture	3,11	3,28	0.130	0.033
Market access for fish and fish landing facilities in Lofoten	3,69	3,51	4.575	0.033
State level bureaucracy regulating the fisheries	3,24	2,86	20.796	0.000
Nature based tourism	3,66	3,91	12.096	0.001
Development of renewable energy	3,79	4,03	10.308	0.001
Pollution of the coastal environment	1,58	1,70	3.177	0.075
Lofoten as a potential future World Heritage Sites	3,87	3,61	10.007	0.002
Regrowth of scrubs and forests in cultural landscapes	2,09	2,07	0.073	0.788
International environmental policies	3,47	3,21	9.152	0.003

Response format: 1: Would be very negative, 2: Would be somewhat negative, 3: Makes no difference, 4: Would be somewhat positive, 5: Would be very positive