

Chapter 10

Activating Adaptive Capacities: Fishing Communities in Northern Norway

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Abstract We have increasingly more knowledge about the factors and processes that determine or shape adaptive capacity, but few studies that specifically address whether such capacity in fact is activated and used. In this chapter we draw on findings from a number of related empirical studies undertaken in northern Norwegian coastal communities between 2007 and 2014 to investigate whether the narrative, ‘*vi står han av*’ –“we face whatever comes”, as a subjective dimension of adaptive capacity, reflects how climate change is perceived and acted upon. We argue that the narrative reflects a discourse within which fishers perceive changing weather and the need for climate adaptation. By looking at this narrative as an analytical object we are able to identify how underlying meaning and worldview among fishers structure and constitute aspects of latent adaptive capacity.

Keywords Adaptive capacity • Perception of risk • Coastal fishers • Climate adaptation • Narratives • Northern Norway • “*vi står han av*”

10.1 Introduction

The heightened attention to adaptation as a necessary response to climate change and the need to develop an applicable and useful understanding of adaptation for practitioners have significantly increased research on and for adaptation. Over the past decade, research on adaptation to climate change has generated critical insights into adaptation processes, potential technological solutions, and limits and barriers to adaptation that all affect the outcome of adaptation efforts. This research has highlighted the linkages between changes in climatic, environmental and socio-economic conditions, and how communities and individuals adapt to these

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complex, interactive changes (e.g. Leichenko and O'Brien 2008; Hovelsrud and Smit 2010). Consequently, our understanding of the factors that enable, limit or trigger adaptation responses has increased proportionally.

Interestingly, while adaptation has gained solid legitimacy and focus among researchers and policy makers across societal levels, it is documented that many northern Norwegian communities do not consider climate adaptation to be a major concern (e.g. Hovelsrud et al. 2010; Amundsen 2012). People in northern Norway are accustomed to living with greater weather variability and perceive climate change to be of a lesser concern when compared to socio-economic challenges, such as outmigration, a lack of job opportunities, education, health care and recruitment to primary industries (Hovelsrud and Smit 2010; Dannevig et al. 2013; West and Hovelsrud 2010).

Recent analyses by Hovelsrud et al. (2015) argue that fishers respond to highly variable and uncertain conditions by drawing on a “combination of individual creativity and ingenuity, heroic efforts, physical and mental toughness, and time-tested knowledge, skill and experience” (for example about when and where it is safe to fish). Both climatic and societal challenges are met with the narrative “*vi står han av*” – here unpoetically and insufficiently translated as “we face whatever comes”; a narrative with deep historical roots expressing a perception of high resilience to challenging societal and environmental conditions (cf. Nesse 2008). The phrase captures a multitude of meanings applicable both historically and currently to societal and environmental (including weather) challenges. According to Nesse (2008: 155, authors' translation)

It provides comfort to a collective which has been tested and tried. It is not I who handles hardship, it is we – together. In addition, the phrase contains a kind of humble pride in mastering. In these four words we find the brave and courageous northern Norwegian who does not hide that they are capable of something. We also find the poetic northerner who enjoys company with others and enjoys creating linguistic euphemisms with hidden and double meanings. Last but not least, we find the northern Norwegians who live with nature – a nature both known and mastered.

In this chapter we will explore the narrative “we face whatever comes” as a proxy for the perceptions and articulations of changing weather conditions in coastal fishing communities. We suggest that the underlying values, knowledge, practices and world views reflected in this narrative have a bearing on perceptions of risks and activation of adaptive capacity. The analysis is based on interviews and conversations with fishers that live in different municipalities throughout northern Norway and that are facing similar challenges in weather and resources variability, and in socio-economic and demographic conditions. The temperature in northern Norway is projected to increase by up to 4 °C by 2100, with changes in prevailing weather, a rise in sea-level, as well as changes in mean ocean and air temperatures, and precipitation (Førland et al. 2009; Hanssen-Bauer et al. 2009). Increasing ocean temperatures are expected, and it has already been observed that this increase is changing the magnitude, composition and spatial and temporal distribution of important commercial fish stocks (e.g. Drinkwater 2005; Sundby and Nakken 2008). Fishing constitutes an important historical basis for livelihoods, culture and

identity across the case sites, which is clearly reflected in local narratives (Hovelsrud et al. 2010, 2015). The fisheries resources of the region are rich and include species such as winter spawning cod (*Gadhus morhea*), Atlantic halibut (*Hippoglossus hippoglossus*), capelin (*Mallotus villosus*) and herring (*Clupea harengus*).

The empirical material for this chapter is drawn from previously published studies carried out in coastal communities in northern Norway between 2007 and 2014 (West and Hovelsrud 2010; Hovelsrud and Smit 2010; Hovelsrud et al. 2010; Dannevig and Hovelsrud 2016). These studies assessed whether northern communities are particularly vulnerable to climate change and investigate the impacts and adaptive responses to multiple stresses and changes in coupled social-ecological systems including fisheries – the main focus here.

We start by presenting the theoretical framework in section 10.2 and move on to a broader discussion of the underlying structures of the narrative in section 10.3.

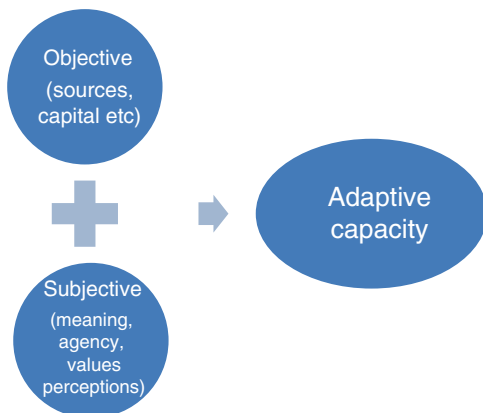
10.2 Theoretical and Conceptual Framework

10.2.1 Climate Adaptation and Adaptive Capacity

The concept of adaptive capacity is rooted in both the physical and social sciences and is generally referred to as the capacity of a social-ecological system to be robust to disturbance and to adapt to both exogenous and endogenous changes, whether observed or anticipated (Armitage and Plummer 2010; see also Chap. 6, this volume). Additionally, adaptive capacity is seen as shaped by rights and access to resources, equity, available infrastructure, scientific and traditional knowledge, efficient and enabling institutions, governance systems, and the distribution of benefits and costs (Adger et al. 2009; Keskkitalo et al. 2011; Kofinas et al. 2013; Hovelsrud and Smit 2010; Brown and Westaway 2011). Place-based attachment is another subjective dimension and a powerful motivator for adapting to change (Adger et al. 2009; Fresque-Baxter and Armitage 2012; Amundsen 2013). Social sciences place adaptive capacity within a suite of sources, determinants or attributes such as financial, technical, social, institutional, cultural and political resources, in relation to the social processes and structures through which they are mediated (Armitage and Plummer 2010). Whether adaptive capacity fits with norms, values, world views, knowledge and preferences is also of importance (e.g. Ostrom 1998, 2011; Adger et al. 2009). The latter have consistently been overlooked in climate change research and policy with implications for adaptive processes (Wolf et al. 2013).

In this chapter, we align ourselves with the literature that describes adaptive capacity along both objective (resources, governance, education, and income), and subjective (perceived risks and feasibility of adaptation, self-efficacy, values and meaning) dimensions (Grothmann et al. 2005; Lorenzoni et al. 2007; O'Brien and Wolf 2010; Kuruppu and Liverman 2011; Wolf et al. 2013). By connecting weather and climate change to world views, meaning, belief systems, culture and values and

Fig. 10.1 Conceptualization of how objective and subjective dimensions together form adaptive capacity. Such capacity can potentially be latent and activated in either dimension but here we suggest that it may be latent under the objective heading and activated by subjective aspects



interpretations of the need to adapt, to what, by whom and in what ways (Jasanoff 2004, 2010; Hulme 2008; O'Brien and Wolf 2010), we allow for multiple understandings and narratives about adaptive needs (Amundsen 2012). Correspondingly potential endogenous limits to adaptation that may emerge from within the same goals, values, assumptions, beliefs and understandings of human society become detectable (Adger et al. 2009).

Figure 10.1 offers a schematic of the relationship between the objective and subjective dimensions of adaptive capacity. Our focus here is on one subjective dimension, exemplified by a particular narrative that has a role in whether the latent aspects of adaptive capacity are activated or not.

Our contention is that the subjective dimensions of adaptive capacity, such as values, culture, agency, cognition, perceptions, beliefs, context and place, are particularly relevant when investigating how latent capacity is activated. We therefore think of adaptive capacity as a potential attribute that must be activated to enable adaptation (Brown and Westaway 2011: 322). It is important to note that not all aspects of adaptive capacity are latent; some capacities are already in play to ensure adaptation. According to Berkes and Ross (2012: 15) the latent capacity to adapt is activated through human agency. This is also connected to psychology and cognition, such as the capacity to act independently and make free choices (Brown and Westaway 2011; Grothmann and Patt 2005). Bruner (1987: 4) recognizes that mental models are simplified representations of the world that exhibit story-like properties and that “we organize our experience and our memory of human happenings mainly in the form of narrative-stories.” In the process of learning, people do not just add new information to loosely accumulated knowledge; instead they construct mental models that make sense of what they see (Kempton et al. 1995). Investigating community resilience across groups, Buikstra et al. (2010) found several such attributes of adaptive capacity, including positive outlook, core values and work ethics, community ethos, beliefs and sense of purpose. Here we consider the narrative phrase *‘vi stâr han av’* – “we face whatever comes”, as rooted in context-specific experiences, practices and cognition of the actors.

Whether the latent parts of adaptive capacity are activated or not will have a bearing on how resilient or vulnerable a community is in the face of risks and perturbations. Norway as a country is described as having high adaptive capacity (or low vulnerability) to climate change and this has been found to create a level of complacency which may mask the barriers and constraints to adaptation at sectoral or local levels (O'Brien et al. 2006). In the cases presented here we explore whether the fishers' narrative of high resilience hinders long-term and needed adaptation. We surmise that these structures, internal to individual and community perceptions of climate change and adaptation policies, may obstruct the activations of latent adaptive capacity. Our exploration into the relationship between narratives and adaptive capacity will contribute to the understanding of the complex and interrelated structures that shape perceptions of risk and the need to adapt to climate change.

10.2.2 Subjective Dimensions of Adaptive Capacity: Local Perceptions as a Point of Departure

The underlying assumption of emic perspectives is that beliefs, practices and institutions can only be understood from the context within which they originate (Schmidt 2010). Focusing on narratives allows for an investigation of climate adaptation in terms of its meaning to the actors situated in a particular historical, cultural and political context. We understand the concept of narrative broadly as referring to a social process (Cortazzi 2001:384; Paschen and Ison 2014). "In narrative theory, the term 'narrative' at its most abstract is used to refer to 'structures of knowledge and storied ways of knowing'" (Cortazzi 2001, quoted in Paschen and Ison 2014:1084).

Narratives are seen as stories reflecting perceptions that in turn are connected to wider discourses in society. The way people perceive and rationalize climate change and strategies for adaptation is informed, assessed and structured through broader discourses that structure and constitute their livelihood and identities. Narratives can be seen as both structures and constructs that come into existence through the communication of sentient agents. The emic position of narrative analyses takes place on the basis of individuals' or groups' shared perceptions, embedded in language and communication, and not on the basis of true, real-world-observations which are found in the literature to be a trigger of climate adaptation (Dannevig et al. 2013). Narratives and discourses are rather investigated as communication, text, frame, myths, collective memories, stories, scripts, and practice (Hajer 1995; Arts and Buizer 2009).

Attention to a duality in narratives allows for discussing and revealing the underlying structures through which changing weather and adaptation policies are being perceived among local actors. Through narrative analyses, the subjective dimensions of adaptive capacity and the meaning and saliency of changes in climate and policies can be discovered. Narrative analyses thus enable us to unpack the broader

discourse through which the activation of adaptive capacity is taking place. Through the ‘*vi står han av*’ narrative we can increase our understanding of how these subjective dimensions come into play in promoting and constraining the social actors and in activating the latent parts of adaptive capacity.

10.3 “We Face Whatever Comes” – the Narrative of Northern Coastal Communities

The narrative ‘*vi står han av*’ “we face whatever comes” conveys “optimism and determination in the face of the unpredictable social, economic and climatic conditions that are central features of life in northern, coastal communities” (Hovelsrud et al. 2015: 207). As Hovelsrud and others (2015: 202) have noted: “fishers’ narratives [in general] reflect occupational values of freedom and independence, mastery of a traditional and time-tested craft, maintenance of local traditions, knowledge and identity, providing fresh, local food, creating local employment and income, and being resilient and adaptable to unpredictable conditions.” These narratives reflect perceived resilience to challenges in both environmental and socio-economic conditions, and indicate that climate adaptation is not perceived as urgent or critical for fishers, despite the fact that they are engaged in a primary industry that is exposed and sensitive to climate change impacts. The expression also refers to a high confidence in their resilience and adaptability, as well as their optimism and determination to meet future challenges. We suggest that the narrative is situated within a broader societal frame and can be structured along four dimensions.

10.3.1 Sociopolitical Context

The first dimension relates to the sociopolitical conditions within which the fishers operate as economic actors. The coastal fishers partaking in the research overwhelmingly emphasize non-climatic issues such as resource management regulations and local socio-economic challenges when describing the overall vulnerability of their livelihoods (Hovelsrud et al. 2010; West and Hovelsrud 2010; Hovelsrud et al. 2015). They express more concern about the impacts of structural fisheries reforms, which have contributed to reduced numbers in fishers and boats, and with more locally pressing issues such as outmigration and general employment, than climate change (Hovelsrud et al. 2010; West and Hovelsrud 2010). While employment in the northern Norwegian fisheries has seen a steady decline over the past several decades, the industry remains important for the local economies, for cultural identity and connection to place in the case of communities (e.g. West and Hovelsrud 2010; Amundsen 2012). Therefore, the urgency of climate change and adaptation policies is perceived as less salient for fishers when compared to the direct impacts

of national fisheries management policies, fluctuations in international markets and local socio-economic conditions.

10.3.2 Coastal Culture

The second dimension pertains to the identity of fishers and the role of fishing in a wider coastal cultural context. Along with Nesse (2008), we contend that the narrative ‘*vi står han av*’ is motivated and shaped by the collective experience of living with highly variable natural climatic variability and challenging weather conditions. The plural “we” refers to a collective experience that has been tested throughout history (Nesse 2008). Coastal fisheries are an important cornerstone of employment and income, and are strongly rooted in the place where fishers live and deliver their catch. The reduction in the number of fishers and vessels therefore, has consequences for the culture, traditions and identities of coastal communities. By maintaining a traditional livelihood, providing fresh clean food, and keeping the houses lit along the coast, the fishers see themselves as stewards of their coastal culture. In northern Norway, fishers and non-fishers alike invoke the moral justifications for fishing and the responsibilities of fishers towards the economic and social welfare of their communities (Hovelsrud et al. 2015). This echoes the poetic northerners, noted by Nesse (2008), who value their community, and who understate the daily hardships with a narrative that at once acknowledges but glosses over the challenging conditions. This confirms earlier studies showing how climate adaptation is only addressed when a risk (for example climate change) is perceived as salient and relevant by those who need to adapt and when such risks are situated within past experiences and existing cultural frames (e.g. Wlezien 2005; Dannevig and Hovelsrud 2016).

10.3.3 Fishers’ Identity and Knowledge – Freedom and Independence

Independence and freedom also emerge as significant identity markers from interviews with fishers (Hovelsrud et al. 2015). Fishers generally operate under highly variable and uncertain conditions, in weather, management and markets, which require an individualistic attitude and a heavy reliance on their own knowledge and experiences. Fishing practices, traditions, operations, gear, and crafts are not derived from scientific or theoretical expertise, but rather accumulated practical experiences that have provided fishers with adaptive capacity and strategies towards challenging and variable weather throughout history.

Although climate change is projected to substantially influence livelihood activities and area planning in northern Norway (Hovelsrud et al. 2010; Øseth 2010),

research indicates that local perceptions of risks associated with climate change differ from the evidence researchers have found (Hovelsrud et al. 2015). Despite the perception that anthropogenic climate change does not affect fishers' livelihood vulnerability, they are well aware that their livelihood is exposed to such changes. But, climate variability and change fall within the existing and recognized high natural variability in local weather patterns and the resource base (fish stocks). When confronted with information about the possible consequences of climate change for their livelihoods, fishers cited similar weather events that happened up to 100 years ago, and interpreted the projections as a part of the natural and seasonal variability with which they are highly familiar. The fishers framed discussions of the causes of past and current fluctuations, particularly in local fish stocks, in terms of wider marine ecosystem dynamics and interactions that include the effects of predation and the abundance of other fish and marine mammal stocks on survival and feeding conditions, the general health of the marine environment, natural fluctuations in ocean temperatures and chemistry, and human activities, including illegal fishing, the pollution of harbours, and overfishing (West and Hovelsrud 2010).

10.3.4 Fishers' Knowledge and Science

Although the fishers acknowledge global warming and also observe changing conditions that correlate with scientific observations and modelling of climate change, they do not readily view these as salient. The fishers recognize that the substantial shift in the distribution of cod and fish stock composition may affect what and where they can fish. But whereas marine scientists (e.g. Sundby and Nakken 2008) attribute the substantial shifts in cod distribution and fish stock composition to increasing temperatures, fishers argue that such changes are part of cyclical changes in fishing conditions. They do not readily accept that such changes are caused by anthropogenic climate change, because their collective memory and experience recall that such changes have happened in the past. Instead they frame the changing fisheries conditions within a wider marine ecosystem dynamic, impacted by both human activities and environmental changes (West and Hovelsrud 2010).

The fishers also contend that the science informing Norwegian marine resource management is at odds with their own experiences and knowledge. It may not be too farfetched to connect the lack of trust in marine science to that of scientific climate change discourse. This is supported by the argument that cognitive and moral sensibilities are shaped by peoples' discourses, which in turn influence how people interpret facts, evidence and the credibility of science (Hajer 1995). The confidence, or "humble pride in mastering" as Nesse (2008) notes, captured by the expression '*vi står han av*' may explain how the challenges associated with changing natural systems are not perceived to be as urgent as those reflected in science and policy. However, the '*vi står han av*' narrative does not necessarily signify a complete disconnect between scientific and local understanding of climate change. The fishers note that they continually make adjustments (either as individual entrepreneurs

or in a professional capacity) to deal with climate/weather variability and change, and with socio-economic challenges. It nevertheless demonstrates the significance of the correspondence between different knowledge systems. Scientific knowledge about climate change and its production, framing, communication and uses in policy processes need to correspond to the wider discourses in coastal communities in order to be perceived as salient and urgent (e.g. (Jasanoff 2004; Wlezien 2005; Dannevig and Hovelsrud 2016). If the information and knowledge communicated by the bureaucracy and policy makers (in this case those involved in fisheries management or national climate policy) do not fit with how the individual or group perceive a concern or problem, it will likely not be acted upon (as is the case with the fishers in northern Norway).

10.4 Concluding Discussion

This chapter has explored how narratives such as “we face whatever comes” reflect fishers self-reliance, a history of pride in mastering a demanding environment, professional independence and freedom, as well as extensive knowledge about the marine environment derived from centuries of accumulated experience. The narrative structures we have suggested influence the perceptions of changing weather and determine whether and how adaptation is deemed relevant. As earlier studies of fishers have shown, anthropogenic climate change may not necessarily be a part of their perception of reality, and there is often a discrepancy between community perceptions and scientific findings regarding the urgency of climate change adaptation (e.g. Moser 2010). This discrepancy between scientific and fishers’ understanding of climate change, in addition to other socioeconomic stressors, and a collective memory of previous successful responses to challenging weather, may impede climate adaptation. Climate change is not perceived as salient by the fishers, and they will therefore not initiate adaptive responses. The filters through which we interpret and understand realities, therefore, may create barriers for responding to climate change. For policy makers and scientists, it is imperative that the underlying and multiple realities within which people operate are addressed for climate adaptation to be considered necessary and successful (see Amundsen 2014).

In this chapter we have initiated a discussion of some of the potential reasons why latent adaptive capacity is not activated. Our analysis is driven by the idea that it is not sufficient to have a high adaptive capacity in terms of financial and social capital, infrastructure and resource access if these remain latent, and if there are aspects of society which thwart such activations. We suggest that there may be subjective dimensions and internal barriers associated with the questions of whether and how adaptive capacities are activated. These subjective dimensions are expressed through narratives that structure local perceptions of climate change and adaptation needs. The structuring dimensions of particular relevance in this chapter have been socioeconomic conditions, cultural and historic context, identity and confidence in knowledge systems. Altogether these structures constitute particular world views

that, in turn, may either hinder or facilitate local adaptive capacity to reach its full potential.

We conclude that a focus on narratives provides a venue for understanding how people perceive a potential and somewhat intangible risk such as climate change, and a way to analyze multiple realities and the underpinnings for adaptive capacity. A better understanding of the apparent inertia in society to accept the need for climate adaptation, partially explained by the lack of salience of climate change science, may thus be gained from studying narratives. The lack of concern that is expressed through shared narratives strengthens and validates cultural values and world views. This, we conclude, requires the inclusion of narrative research and an understanding of differing values, priorities and experiences when addressing climate change and climate adaptation (Paschen and Ison 2014; West and Hovelsrud 2010). Conversely we conclude that in order for climate change to be a salient issue it “needs to be integrated into the everyday narratives that people tell about themselves and their world” (Lejano et al. 2013: 61). This means that there may likely be a need to expand the narrative. Fisheries management officials and politicians will likely increase their credibility and relevance by being attentive to the local narratives into which their information is incorporated and acted upon.

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