CHAPTER 11

Resilience, Human Agency and Climate Change Adaptation Strategies in the Arctic

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Abstract

In the Arctic, indigenous peoples, researchers, and governments are working to develop climate change adaptation strategies due to the rapid changes in sea ice extent, weather conditions, and in the ecosystem in general. These strategies are often based on specific perceptions of vulnerability and work with a number of barriers for resilience. The objective of this chapter is firstly to address the position of institutional barriers in the studies and strategies. Secondly, the chapter analyzes the role human agency is ascribed in proposed strategies and projects in Nunavut and Greenland. With a focus on institutions and human agency, the question is not only 'how do people manage to adapt?' but moreover 'what restrains people from pursuing a given adaptation strategy?' The chapter introduces the concept of *double agency* which stresses two different aspects of human agency that can be used to understand the political processes taking place in the Arctic: one aspect emphasizes *stakeholder participation* and *integration* while the other aspect emphasizes *rightholder possibilites* and *self-determination*. The focus is thus on how adaptation strategies relate to political and legal processes at different scales and the implications for resilience.

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People's possibilities to deal successfully with climate change and to establish viable adaptation strategies including solutions to contemporary and anticipated problems, are, among other things, dependent upon the ability to cross a number of barriers. The Intergovernmental Panel on Climate Change (IPCC) fleshes out these barriers in its publications and addresses the complexity of issues. One of these barriers is the institutional and legal setup but even though equity and the diversity of coping potentials are addressed by IPCC, the structures of critical institutions and the derived allocation of decision-making authority are underplayed by IPCC in its work on resilience. This is striking as political institutions are often crucial for people's abilities to take action and to activate human resources and innovation. The Arctic, the region of focus in this chapter, offers interesting perspectives on the complexities and path dependencies of the institutional and legal setup as well as on potential solutions. Institutional change and reorganization, presently taking place in the Arctic at great speed, may constitute an important tool for Arctic societies to improve their horizon of possibilities and to pursue strategies in line with their visions and capabilities. In the Arctic, indigenous rights, decentralisation, participation, empowerment and self-determination figure very prominently in the rhetoric of Inuit organisations due to the colonial history and relations indigenous peoples have with the states. Their focus is both on how to empower people and on how to identify and evaluate people's vulnerabilities. Seen from an indigenous point of view, the lack of political elbow room and agency may actually make them vulnerable to climate change. In this chapter agency is understood as the potential to seize, create, develop, and pursue opportunities as well as to change, create, negotiate, and develop policy. Improving peoples' agency may improve their possibility to adapt to climate change and to create viable futures for their communities. However, one should not be so naïve as to assume that more agency in the hands of indigenous peoples in itself will lead to more equity and social justice or automatically reinforce sustainability, resilience, and workable climate change adaptation strategies. Conflicting knowledge claims, visions, positions, ideas, and needs within and between communities are indeed part of the indigenous world as everywhere else in the

world. In fact, a conceptualization of an unambiguous relation between indigenous empowerment and improved resilience and adaptation fail to acknowledge the ironical possibility that positive responses to and applications of that very conceptualization may actually result in social and political conflict as well as lack of adaptation.

However, the focus on agency may urge us to change the focus from *how to adapt to* change to *how to create* change when working with climate change adaptation strategies. A focus on agency favours a more complex representation of political processes to widen the scope of contexts in which climate change has to be dealt with. It is futile to attempt to design climate change adaption strategies without a broader perspective that encompasses the legal and institutional setup. Furthermore, the focus on agency challenges one-sided solutions and simple systemic representations because it provides an analytical platform to approach the dynamic, open, and conflicting nature of social, cultural, and political life. As such, a focus on agency may contest the standard definition of resilience. Resilience is commonly understood as related to a system's ability to maintain stability in times of shock or under stress, either through reaction or by change (Folke 2006: 255). In the words of Holling and Gunderson, the pursuit of resilience supports a 'future that encourages innovative opportunity for people to learn and prosper, that incorporates responsibility to maintain and restore the diversity of nature, and that is based on a just and civil society' (2002: 22). The concept of resilience and its built-in normative content may not, however, be the best all-encompassing analytical tool to navigate humanity in a more sustainable direction when faced with the complexity, openness, and dynamics in systems that are to be made resilient. Especially, with respect to climate change, we face challenges at all scales which need to be approached with more prevailing approaches than those stemming from the theories of resilience and adaptation. The focus on agency may add a dimension to the resilience discussions as it questions the systems and their structures that are to be made resilient, and it opens up for creativity and alternative futures in constant changing systems, which are difficult to demarcate. A focus on agency in climate change adaptation strategies furthermore points

our attention to the temporal aspect of agency employed in any adaptation strategy. The article will show how the temporal aspect may influence the contemporary as well as future possibilities to pursue societal goals.

Vulnerability and victimization

The issue of agency is not ignored by IPCC and policy makers, who clearly acknowledge that the possibilities of people to adapt to climate change are unevenly distributed in the world where aspects such as gender, ethnicity, education, economy, and dependence on particular ecosystems among other things are stipulated as factors affecting people's coping potentials (Bruce et al. 1995; Garcia-Alix 2008; Tauli-Corpuz & Lynge 2008; United Nations High Commissioner for Human Rights 2009). Research into the vulnerability of people has been pursued parallel with studies into vulnerable regions. The extreme vulnerability of very large sections of the world's population and the need to push for adaptation strategies incorporating and benefitting these marginal groups have become increasingly pressing as contemporary and future mitigation policies cannot neither in the short or long run successfully obviate the challenges and problems of vulnerable groups facing the double exposure of problems related to both climate change and globalization processes (O'Brien & Leichenko 2000; Leichenko & O'Brien 2008). Globally, these groups increasingly demand that the international response to climate change also focus on their adaptation problems and capacity building due to the damaging climate events that will occur (Pielke et al. 2007).

Marginal and vulnerable people are already struggling with existing societal and economic problems and thus their potentials to cope with climate change have to be seen in a larger framework (Nuttall et al. 2005). Therefore, the solutions to reducing their vulnerability are extremely complex and involve issues related to societal transformations only distantly related to what we normally consider relevant and necessary for climate change adaptation. In line with this, the *Working Group II* of IPCC points out that '[r]ecent studies on the implications for adaptation...indicate that such changes may imply

larger policy shifts; for example, towards protection of the most vulnerable' (Klein et al. 2007: 759).

Indigenous peoples worldwide often perceive their position to be marginal at both the national and international scene, and they demand greater influence in decision making with regards to climate change and push for more respect for their self-determination and land rights as essential tools to adapt to climate change (Nilsson 2008). Indigenous peoples experience different kinds and degrees of colonial and post-colonial asymmetrical power relations with state institutions, and for these groups any climate strategy is carried out within these relations – and thus carries political implications. With respect to the climate change discourse, indigenous peoples are often placed in a position as victims (Bravo 2009). However, the current discourse on self-determination emphasizes agency and it is actually changing and challenging the position as victims.

Although the 400.000 indigenous people of the Arctic comprise less than 2 percent of the world's indigenous peoples, their experiences with a rapid changing and destabilized Arctic ecosystem due to climate change and its profound implications for their societies may serve as a case not only for other indigenous peoples but for marginalized and vulnerable groups worldwide. The Arctic as a region is unique with respect to the de-colonization processes that have taken place since the 1960s. In 1971, Alaska Natives got the Alaska Native Claims Settlement Act, in 1975 the Cree and Inuit signed the James Bay and Northern Quebec Agreement, in 1979 Greenland got Home Rule, in 1984 the Inuvialuit signed the Inuvialuit Settlement Agreement, Inuit in Northern Canada established Nunavut in 1999, in 2005 Nunatsiavut was settled in Labrador, and in 2007 the Nunavik government in Northern Québec was established. These are just examples of the many agreements in the Circumpolar North that have been signed since the 1960s. Last year (2008), Greenland and Denmark negotiated a law giving more self-rule to Greenland and opening up for total independence if Greenland so wishes. This law was launched June 2009 on the national day of Greenland and marks a major step in the relationship between Denmark and Greenland. Despite a common point of departure (a widespread wish of more self-determination among indigenous

peoples), these pan-Arctic processes of political devolution are quite diverse and assign different potentials of agency to indigenous peoples. The agreements vary in character from region to region. By using very comprehensive categories, one could characterize the conditions as state capitalism in Greenland, state intervention in Canada and state subventionism in Alaska (Rasmussen 1999: 222). Some agreements work with regional self-government, some with land claims, and others with ethno-political governments (Dahl 1993). Some indigenous peoples (e.g. Inupiat of Northern Alaska) have pursued more autonomy under existing political structures (boroughs). In some regions the political solutions are combinations (e.g. in Nunavut (Canada) where regional self-government is combined with land claim). The complexities and diversities of processes of de-colonization and path-dependencies make indigenous empowerment a very unclear concept but it points to an ambition and a process of increased agency rather than a definite end goal where 'scores are settled' and 'things are set right'.

The extraordinary movement of indigenous empowerment and regional political decentralisation we observe in the Arctic (Dahl 1993) direct our attention to three points: *First*, these political and institutional setups are negotiated and reflect the possibilities, agendas, and contexts existing when they were adopted. *Second*, these agreements and laws are living and changing in order to meet new challenges. *Third*, the institutional setup is an important tool for Arctic peoples to cope with societal challenges (e.g. climate change) themselves. It is therefore crucial to ask the following questions: Do these agreements act as institutional and legal barriers or do they actually provide Arctic peoples with agency to cope successfully with changes in their society? And what kind of agency do they provide?

Vulnerability and institutional barriers

The institutional, legal, and political setup is critical when evaluating vulnerability and improving the adaptation capacity of people, communities, and societies (see e.g. Chapin III et al. 2006; Handmer 1999; Nuttall 2008a,b; Nilsson 2008; Keskitalo 2008; Adger & Kelly 1999; Yohe et al. 2007). It is widely mentioned that the political re-

alities at different scales influence vulnerability. Anisimov et al. for example state that:

> [r]esilience and adaptability depend on ecosystem diversity as well as the institutional rules that govern social and economic systems. Innovative co-management of both renewable and non-renewable resources could support adaptive abilities via flexible management regimes while providing opportunities to enhance local economic benefits and ecological and societal resilience...Although Arctic communities in many regions show great resilience and ability to adapt, some responses have been compromised by socio-political change. (2007: 673)

Increasingly, institutional structures are pointed out as barriers: 'New studies carried out since the ... [Third Assessment Report (TAR)] show that adaptive capacity is influenced not only by economic development and technology, but also by social factors such as human capital and governance structures' (Adger et al. 2007: 728; see also ibid. 733). In Smit & Pilofosova (2001: 895-897) six features of communities or regions that determine their adaptive capacity are put forward: economic wealth, technology, information and skills, infrastructure, institutions, and equity. However, in the Fourth Assessment Report of IPCC (FAR) political and institutional barriers are not dealt with in detail nor separately in the section (17.4.2) named 'Limits and barriers to adaptation' (Adger et al. 2007: 733-737). Future assessment reports from IPCC may include this aspect more in detail, but an elaboration of the abovementioned features put forward in TAR by Smit & Pilofosova is needed. Presently, the scattered remarks on institutional barriers by IPCC offer very few hints as to what importance institutions have in climate change adaptation strategies and resilience.

Framing the adaptation problem as an institutional one helps to address the political and legal contexts within which adaptation is implemented and discussed. Vulnerability then becomes a problem *of* society not *for* society (Hewitt 1995, 1997). FAR (Klein et al. 2007) deals to a limited degree with the policy and institutional contexts within which adaptation and mitigation can be implemented and discusses inter-relationships in practice (Klein et al. 2007: 766). The

institutional perspective is relevant as it directs our attention to different arenas and levels where solutions to climate change adaptation can be found. Governance and the distribution of rights and benefits are crucial factors to how adaptation capacity is distributed and activated. The lack of local sufficient political institutions and hindrances to access political frameworks may constitute barriers to institute changes that can support local people's adaptation strategies and ways of doing, being, and knowing (see also Keskitalo 2008). Despite the fact that institutions shape, enforce, constrain, and reduce adaptive capacity and so prefigure adaptive action (Pelling et al. 2008), vulnerability, and adaptation discussions have, according to Keskitalo (2008: 23), for long '...exhibited a rather instrumental and management-oriented view of adaptation in social systems and excluded explicit discussions of power and politics from the process of adaptation, despite acknowledging their importance.' Smit & Wandel (2006: 289) suggest that where political constraints are particularly binding, adaptation may be considered by attempting to change those structures themselves. This is an endeavour which in some cases is *beyond* fixing institutional inefficiencies and weaknesses as well as avoiding institutional instability.

I suggest that political and legal institutional structures should be addressed directly when evaluating adaptation capacity (see also Nilsson 2008: 15). This is particularly important when working with indigenous peoples, as their relationship to the authorities carries a particularly political dimension where the question of *collective rights* to self-determination is of paramount importance. For many indigenous peoples the question of collective land rights (and the right to manage and develop the use of those lands) is a core issue but a political can of worms when addressed to the state.

Double agency

Indigenous peoples are often pointed out as vulnerable with respect to climate change and they are indeed experiencing the double exposure of processes related to both globalization and climate change (O'Brien & Leichenko 2000; Leichenko & O'Brien 2008). Their vulnerability is among other things closely linked to their political and

legal status which limits their agency. Indigenous peoples in the Arctic aspire to activate what I term *double agency*. Both aspects of double agency are important and the question is how to mobilize human resources in order to activate the human potential of creativity so much needed to deal with climate change.

The first aspect of double agency is people's possibilities to influence, add knowledge, experiences, perceptions, anticipations, and perspectives to political processes and decisions; in short to make a difference in climate change adaptation strategies and policies. This aspect emphasizes *stakeholder participation* and *integration* and often involves connecting people between different levels of decision making. Co-management regimes in Canada (Berkes 2001) are good examples of an institutional integrative system where indigenous peoples participate in most aspects of decision making concerning resource management in what they consider their homeland. This aspect of agency is primarily pursued within existing structures.

The second aspect – and for indigenous peoples often a crucial one – is people's possibilities of actively pursuing creative, flexible, and innovative strategies that create change and transform society in directions that lie within a horizon of expectation and possibilities of the group in question. This aspect emphasizes *rightholder possibilites* and *self-determination* and involves expanding the framework of choices and decisions. This entails considering mechanisms to improve peoples' political and legal entitlements and rights to negotiate, create, plan for, seize and pursue opportunities and change be it societal, political, economical, technical, cultural, or institutional. This aspect of agency thus supports the creation of new institutions and structures, among other things. Consequently, it necessitates that the political context and institutional setup are revisited and evaluated in relation to indigenous peoples' rights to land and self-determination. In the Arctic, the contemporary political context but also indigenous peoples' political and legal struggles can be understood by applying both aspects of agency.

By stressing the two aspects of agency our attention is directed to the fact that coping with climate change is not only about improving the *integration* of stakeholders and their knowledge. For indigenous peoples it is in a number of cases also about *removing* legal

barriers and about *creating* enhanced governance opportunities. By doing this indigenous peoples may better carve out their own spaces of hope and vision rather than – as it is often the case – be reduced to knowledgeable stakeholders or clients to be integrated in existing programmes and institutional setups. Having agency as an analytical tool it is possible to accentuate potentials, directions, and limitations in political processes, strategies, and actions.

Human agency in relation to a changing environment due to climate change is often seen to be prioritized in comparison with human agency in relation to society (Bertelsen 1996: 67). For Arctic indigenous peoples, as for most of the world's population, adapting to climate change may imply making radical societal changes and reforms. Even though group solidarity and coherence cannot and should not be taken for granted, indigenous peoples want to act as a collective, in order to improve their possibilities as a collective and to deal with disagreements about strategies, priorities, and even the demarcation of the collective in question, which cannot be clearly defined. When indigenous peoples strive to gain a political platform furnishing what I term double agency it implies that they are able to pursue strategies building both on a status as *stakeholders* (participation and integration) and *rightholders* (self-determination). Both aspects of human agency for indigenous peoples spring from a collective categorization and representation often combining indigenous cultural identity with expansionist colonial histories. Group legitimization and justification thus assumes vital importance and climate change adaptation strategies are in some way tangled up in politics of identity. In fact the politics of identity may inhibit strategies reflecting the diversity within indigenous communities. This will be shown later in this chapter where politics of identity place local people in a position as Inuit hunters because it fits the general discourse.

Participation and integration of indigenous peoples within existing and improved institutional structures is an important platform for agency when formulating climate change adaptation strategies and I term it the first aspect of double agency. The second aspect of double agency is people's possibilities of actively pursuing new, flexible, and innovative strategies and to activate the human resources

that are needed in order to navigate towards a horizon of expectation and possibilities. There has been much focus on the first aspect in IPCC but very little on the second one.

Human agency is, according to Emirbayer & Mische (1998), a temporally embedded process of social engagement that may orient itself in different ways towards the past, the future, and the present. The temporal dimensions of agency have implications for how societal problems are approached and how solutions are designed. According to the authors some actors approach projects and realize them on the basis of habitual and selective reactivation of past patterns of thought and action as routinely incorporated in practical activity, where stability and order are emphasized (the iterational element) (ibid. 971). Other actors apply a more projective approach where the possible future trajectories of action may be creatively reconfigured in relation to actor's hopes, fears, and desires for the future (the projective element) (ibid. 971). Finally, actors may apply a more practical and normative approach based on emerging demands, dilemmas, and ambiguities of presently evolving situations (the practical-evaluative element) (ibid. 971). When analyzing how human agency is advanced in the Arctic it quickly becomes apparent that people swift between the temporal orientations, but in some contexts some of them become more dominant. The chapter will show, how in Arctic Canada, climate change research pursued in cooperation with indigenous peoples often puts emphasis on their past experiences and patterns of action. As a consequence, research into ways of strengthening adaptation capacity often encourages habitual approaches rather than focussing on adaption to alternative future societal scenarios and activate human agency in relation to those. In Greenland, the climate change debate is tightly tangled up in questions of future self-determination, economic development and new occupations. This focus stimulates an agency potential that is rather detached from past and present experiences, where even present limitation and concerns are downplayed. In both regions, the fundamental understanding of what constitutes adequate human agency has consequences for the selection of participants in policy and strategy design, for the implementation of strategies and for how future engagement and agency are framed.

In the Arctic, several adaptation strategies are in the process of being formulated (see Decker et al. 2008; Fugal and Prowse 2008; Indian and Northern Affairs Canada 2008; Intergovernmental Climate Change Impacts and Adaptation Working Group 2005; Kelman 2008), and my research into some of these processes in Canada and Greenland indicates that each process emphasizes different aspects and temporal dimensions of agency that may influence coping strategies in fundamental ways.

Climate change adaptation strategies in Canada and Greenland

The politics of scale and the temporal dimensions of climate change adaptations strategies set the ground for Arctic peoples' participation as well as the directions and success of the strategies. These aspects have to be closely revisited, especially now when the melting ice makes the Arctic accessible to resource extractive industries and the shipping sector to a degree never seen before. The future global attention and activity in the Arctic will transform the possibilities and have impact on the socio-economic, cultural, political and security setting of the Circumpolar North. The expansion of economic activities in a rapidly transforming Arctic poses management challenges for the entire Arctic region related to security, governance, and international cooperation as the transformations in the Arctic will affect the world and most likely change the global system of transport and geopolitics.

Arctic states are working to ensure the long-term stability of the region and the future of northern communities. Adaptation strategies may thus find strength in equipping people at a local level with the possibility to influence and manoeuvre in this rapidly changing natural and political landscape. A major challenge in adaptation strategies is to raise awareness of the long view (Folke et al. 2002: 6) and to provide the fundament for human agency to deal innovatively with the developments in the region. Otherwise they might not be in a position to seize new opportunities. Inuit Tapiriit Kanatami, representing the Inuit in Canada, also wants to break the history of dependence and has a desire to bring about a reduction in outside

support and to reduce the heavy reliance on public sector activities and subsidies (Inuit Tapiriit Kanatami 2008); so Inuit are pushing for change (see also Inuit Tapiriit Kanatami 2007). This political agenda coupled with the challenges of climate change pose legal questions as pointed out by Beach (2000): '... [w]ere the climate to change so as to demand or make possible new forms of livelihood for northern indigenous peoples, the new livelihoods would not entail the legal or moral justifications for Native monopoly of resource access enjoyed by many Natives today' (see also Budreau & McBean 2007: 1313f; Fenge 2001: 82). Beach is directing our attention to the fact that indigenous peoples' present status as rightholders is not sufficient to secure a legal basis for alternative futures.

With respect to the Arctic, climate change is yet another challenge to many communities which are already struggling with a number of cultural, legal, social, economic, and political problems. Climate change may magnify existing local problems and amplifies the international stakes in the Arctic. The number of cross-cutting issues and scale-crossing relations even in the most remote communities present the researchers and policy makers with a setting of great complexity which do not invite to simple reductions. In spite of this many researchers have a particular interest in how climate change will affect the indigenous way of life based on hunting and fishing. It is an easy focus in relation to climate change discussions because they are easily pointed out as vulnerable. The focus may indeed also spring form the very fact that indigenous peoples themselves put emphasis on these activities as an important element in their own culture, political identity, and group justification vis-à-vis the state. In the contribution of the Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change Anisimov et al. (2001: 827) predict that climate change in the Arctic '...will entail adjustments in harvest strategies as well as in allocations of labor and resources'. Other authors (Nuttall 2008b) emphasize that the hunting way of life is affected and constrained by many factors, where climate change is but one and they thus add more complexity to the contemporary Arctic reality. Still, the hunting way of life is the centre of attention.

In the Canadian north the institutional and political setting em-

phasizes the inclusion of communities and indigenous peoples and quite a few workshops have been held to integrate local perspectives, indigenous knowledge, and local perceptions of vulnerability and risk (Ford & Smit 2004; Ford et al. 2006, 2007, 2008; Government of Nunavut 2005a,b,c,d). By doing so the strategies respect and become more related to local needs, conditions, and ideas, and the strategies and capacity building strategies thus have a strong local resonance. This local integration and partnership is one aspect of human agency. It opens up for alternative ways of doing, being, and knowing and thus challenges the privileged voice of authorities and scientists. This approach is a direct result of the empowerment of Arctic indigenous peoples since the 1970s and Canada's special responsibility to honour indigenous peoples' interests and concerns (Inuit Tapiriit Kanatami & Inuit Circumpolar Council (Canada) 2007). Several studies on indigenous peoples' observations and vulnerability have been pursued in the Circumpolar North and Canada, and are using these kinds of *down-scaled studies* to strengthen research into how climate change is experienced and will influence local communities as seen from the local point of view. According to Ford et al. (2008: 55) these 'down-scaled projections provide detailed regional and site scenarios of climate change for community-based vulnerability analyses...' and the approach can identify what capacities for coping with change exist, and thus inform the development of adaptation policies. This local focus circumvents the problems linked to national adaptation programmes of action which often lack micro-level socio-economic information, and contain gaps in stakeholder participation in the planning, design, implementation and monitoring of projects (Adger et al. 2007: 733).

Seen from an indigenous perspective this involvement and respect for indigenous knowledge is quite different from earlier dominating relations they have had with scientists and state authorities. Their observations, experiences, worries, and ideas matter in this perspective. Social vulnerability is defined at the local level, and Ford finds that local knowledge and the land-based skills allow 'response with experience' (Ford 2007: 155). People-participatory processes are important as cultural traditions and livelihoods are at stake.

Community based studies integrating community stakeholders aiming to contribute to practical adaptation practices are indeed important for indigenous capacity building, for policy recommendation, and for the direction of action taken. Part of the methodology (see Smit & Wandel 2006) is to identify *relevant* conditions within the community and then apply risk and vulnerability assessments aiming to provide suggestions for new initiatives, policy modifications, economic and technological support programs, and capacity building plans that will enhance the adaptation capacity of that particular community.

Institutional aspects are integrated, but it is often addressed as a question of how to make the existing system better and of 'getting it right'. In Canada, the focus on the hunting system among other things results in proposals of giving financial support to purchase new equipment to cope with the changing environment (Ford et al. 2008: 54). Adaptation policy identifies what policy measures are required '...to moderate or reduce the negative effects of climate change, as well as how best to develop, apply, and fund such policies' (Ford et al. 2007: 151-152). Focus is primarily on ways to change behaviour (like change in hunting strategy or the sharing of meat) as the main adaptive strategy (Ford 2007: 154), although Ford & Smit (2004: 395) in one sentence mention that '...increased political autonomy and comprehensive land-claim agreements may further strengthen the adaptability of communities'.

These local studies of potential coping strategies are informative. However, by extreme down-scaling and sector-focussing the research approach detaches itself from the complex social, economic, cultural, and political setting outside the chosen sector (here the hunting sector) which influence changing behaviour and perspectives. Societal and economic changes related to tourism, militarization, commercialization of harvests, industrial development (e.g. mining), and wage-based activities are treated as something from the outside that influence the coping strategies within the hunting sector rather than as something that have to be understood as an integral part of the system and the community's adaptation capacity. In these approaches, the Inuit are therefore kept in a position as hunters – an image that fits into the discourse of indigenous peoples as traditional

and closely linked to the land only by their hunting activities. These studies do not consider urbanization or industrialization as part of Inuit adaptation strategies, even though most communities have experiences with and orient themselves towards these two forces (AHDR 2004). Therefore, some conclusions seem rather disconnected to the complex contemporary Arctic context. For example it is stated that the '...adaptability of younger generations to future climate change will depend upon how well they acquire Inuit traditional knowledge and land-based skills' (Ford et al. 2008: 58; see also Ford et al. 2006). As climate change will transform both the ecosystem and boost many non-indigenous activities in the north, the younger generation probably needs more than that. Making sector-oriented analyses uninformed about the political institutions is a way to 'deconstruct actors to a point where adaptation to change is no longer possible' (Keskitalo 2008: 2). When *mainstreaming* adaptation strategies, it takes place within existing structures of power and discourses. Indigenous peoples struggling to break their asymmetrical power relation to the state and to establish platforms of agency (in particular the second aspect) may not benefit much from mainstreaming, which can be perceived as a continuation of their marginal position. Rather, they need *upstreaming*, where existing institutional and political structures are revisited and changed to facilitate adaptation strategies which place agency more firmly in the hands of indigenous peoples giving them the right to pursue alternative societal strategies that may or may not prove to be viable in their dealings with climate change.

The focus on local and indigenous knowledge linked to the hunting sector is so strong in the Canadian Arctic that it among other things raises the question of the 'politics of scale' (see e.g. Nilsson 2007) both with respect to spatial and temporal dimensions. First, the clear demarcation of locality and community as the point of departure and main frame of reference underplays local people's entanglement in extra-local structures of economy and urbanization. The research projects which inform policy makers downscale human relations and human agency and by doing so maintain Arctic communities in an arena of limited resources which will affect the understanding of them as vulnerable. The urban entanglement is for

example taken out of the strategies by down-scaling the focus, and the potentials in the urban structure for local people are left out, even though urbanization is extremely strong in the Arctic both with respect to migration-patterns and positive and negative impact on peoples' lives – even for people living far away from urban centres (Nielsen 2005; Sejersen 2007; Sejersen forthcoming)

Inuit knowledge is a major resource in the adaptation strategies as it is closely linked to the understanding of Arctic peoples as intimately bound to the natural surroundings of their communities. In this case the temporality of agency is characterized by an extreme cramming of the past into the present. This perspective, which in fact may be supported by a majority of Inuit community members, also demarcates relevant knowledge and thus carves out only a fraction of the experiences and perspectives that local actors have and may use to mobilize new ideas, strategies, and scenarios. In these adaptation processes the history and political experiences of Arctic indigenous peoples are left out, as are their visions to establish and maintain self-governing and economic viable regions. The downscaling of perspective is linked closely to a discourse of *societal maintenance*.

In Greenland, on the contrary, climate change adaptation strategies are *up-scaled* to such an extent that Greenland is turned into one single community. This national point of departure silences local concerns and the Greenlandic authorities have not had any major processes which integrates local people to any great extent in the few discussions they have had on climate change. The knowledge regime and the research pursued stress scientific understandings of economy and technology, and the government encourages the young generation to pursue education in technical and academic disciplines. The discourse is one of *societal transformation*, where extra-local structures (e.g. the global financial market) are important in defining adaptation strategies. Urbanization is not only accepted as a major force in society but used actively by the Inuit run government to strengthen self-determination (Sejersen 2007). The eagerness to work towards more self-rule and economic development is supported by the population (75% voted yes on the referendum on self-rule in 2008). In Greenland, the strategy is to diversify the econ-

omy through hyper-industrialisation which involves a major transformation of society. By doing so the society hopes to be able to break the economic dependence on the fishing industry which faces severe changes due to climate change and other factors. However, the social, cultural, and environmental costs of hyper-industrialization are difficult to evaluate as routines for Environmental Impact Assessments and Social Impact Assessments are not as elaborate as in North America (Lynge 2008; Nuttall 2008b). The integration of elaborate local knowledge and community studies in policy making is not given the same priority as macro studies of the national economy and the labour market. Greenland may thus be limited in their adaptation strategies due to lack of adequate research and local involvement. At the moment one of the major problems of the Greenland government is to politically solve the predicament of combining the initiation of national hyper-industrialization with global mitigation goals (in fact Greenland has requested to be allowed to increase their CO_2 emission with 1500%). The extreme push for societal transformations and the political drive to gain more self-determination affect the temporality of agency in Greenland in ways that cram the future into the present (Hastrup 2007).

Double agency in the Arctic

Ecological changes caused by climate change along with socio-economic changes are increasingly pushing for the need to diversify the economies of Arctic communities. Many communities are now directing their attention and activities towards non-renewable resource industries operating in the Arctic in one way or another. If the Arctic communities are to adapt to climate change and diversify their economies, indigenous peoples therefore have to benefit from these industrial activities, and any adaptation strategy has to integrate this. The main question is to what extent the legal and institutional setup stimulates them to activate agency in this direction when it comes to climate change adaptation strategies.

The first aspect of agency (*participation*) is already quite elaborate in Nunavut and Greenland. In Nunavut, for example, land claim agreements clearly stipulate that Inuit are to benefit from these in-

dustrial activities through job opportunities, as formulated in the Inuit impact and benefit agreements. This is an integral aspect of the first aspect of agency which is based on respect, integration and benefit. However, if one looks at the second aspect of human agency (*rightholder possibilites* and *self-determination*; the capacity to act and work for change) it is possible to identify political and institutional barriers for change not only within the existing co-management regimes, but also within the land claim agreements. Stated differently, although the Nunavut Land Claims Agreement is the most far-reaching agreement between an indigenous group and the federal government ever signed in Canada (Légaré 2008: 346), it may be appropriate to revisit and evaluate the existing land claims agreement in Nunavut in order to find out if it is geared to meet the challenges of climate change. The Agreement gives Inuit ownership rights to 18% of the 1.9 million square km. land in Nunavut of which 10% includes subsurface rights by which Inuit can benefit from any mineral or energy extraction. Benefits in the form of taxes and royalties from the remaining 82% are primarily given to Canada. Therefore, it may strengthen Inuit communities to get a larger share of the revenues as rightholders in order for them to broaden the horizon of possibilities and to seize new opportunities by acquiring more control, management, and benefits over Crown lands and resources in Nunavut (O'Reilly & Eacott 1998). This will require major political re-negotiations as those we have seen recently between Denmark and Greenland which acknowledged Greenland's subsurface property rights. Considering the fact that mining by far is the most dynamic private sector in Nunavut, it is therefore interesting to note that this sector is not integrated in climate change adaptation strategies at the community level neither by researchers nor indigenous peoples.

However, Nunavut and Canada have recently taken steps to address questions of community development that may have an influence on climate change adaptation strategies and by doing so they distinguish themselves from the US, which primarily maintain a strong focus on continued research into risks and uncertainties related to climate change (Trainor et al. 2007: 633). The Inuit Action Plan (Inuit Tapiriit Kanatami & Inuit Circumpolar Council 2007) is designed to initiate a comprehensive long-term vision planning,

where Inuit specific solutions designed in full partnership with Inuit are implemented (ibid. 20). The new partnership established between Canada and Inuit – as established in 2005 in the Partnership Accord between the Inuit of Canada and her Majesty the Queen in Right of Canada (see Inuit Tapiriit Kanatami & Inuit Circumpolar Council 2007: 91-95) – calls for a new and more positive relationship between Inuit and the government. The Action Plan states that even though its success is linked to the ability to use existing structures the plan will 'research the creation of new or reformed institutions and processes to address Inuit issues be they national or international in nature' (p. 22). It contains a full section (pp. 53-74) on the inclusion of Inuit into foreign policy related to the management of the oceans and coastline. These institutional changes are also reflected in the Aboriginal and Northern Community Action Plan (ANCAP) (Indian and Northern Affairs Canada 2006) which encourages Inuit organisations, businesses, and authorities to apply for funding in order to '[r]eview existing policy and legislation, including land claims and implementation plans, as well as Aboriginal dimensions of international initiatives to identify major policy gaps and options for addressing climate change adaptation' (Indian and Northern Affairs Canada 2006: 3). These initiatives revisit the political structures and the cross-scale relations, partnerships, and cooperation that are available for communities and important for further development (Folke et al. 2002: 21; Keskitalo 2008: 22). Thus, the dominant perspective emphasizing habitual and past patterns of thought and action as well as stakeholder participation and integration is slowly beginning to be replaced by a focus on rightholder possibilities and perspectives emphasising projective approaches addressing alternative futures.

One may approach the new self-rule agreed upon by Denmark and Greenland with a similar focus on agency. It provides Greenland with the possibility of taking control over own affairs to a large extent and thus supports the unfolding of the second aspect of double agency. However, the premise of the new law is that Greenland initiates an industrial revolution of a magnitude where it is difficult to anticipate the consequences. The law – the legal framework for future agency – may in fact limit Greenland and may not provide the

tools and means for this industrial revolution and the societal transformation that the changing climate opens up for. In a more globalized Arctic the ability to act on the international arena and to attract foreign investments is a necessity for a successful adaptation. Greenland has already sufficient expertise and political possibilities in terms of foreign policy, and these are now formally being integrated into the self-rule law. But are they far reaching enough? For example, the law does not provide Greenland with satisfactory prospects of pursuing its own foreign policy on matters related to climate mitigation strategies.

Inuit in Nunavut do not share these international political openings to the same extent, and this may in fact limit their adaptations strategies as the international arena and the Arctic as a global geopolitical and economic hot spot will demand increased involvement in international negotiations and relations. However, the Inuit Action Plan paves the road for more involvement in foreign policy affairs and Inuit in Nunavut may thus be in a position where they can influence issues of sovereignty and international engagement in the Canadian North. The Arctic Council, where indigenous peoples are permanent participants, also offers a regional circumpolar arena for Inuit to put forward these international concerns, but the policy mandate of the Council is rather limited and it is difficult for the Council to fully address and act on the complexities of climate change. A focus on institutional barriers to adaptation to climate change could thus also include a revision of the Council.

Conclusion

The two Arctic examples presented in this chapter each show the difficulties in demarcating the system agents have to navigate within and adapt to. In Nunavut, the dominant discourse demarcates a system that *shrinks* reality beyond recognition, whereas in Greenland, the discourse demarcates a system that *slings* reality in all directions. This is also reflected in the research studies pursued. In Canada, they focus on processes at the community level while in Greenland they focus on processes on a national level. There is an uneasiness about system demarcation to such an extent that agency becomes limited

in both cases. In both regions people face rapidly developing futures in which learning to manage by change may be too vague a strategy for creating room for manoeuvring where the ability exists for the agents, taking responsibility, and anticipating future trajectories of life (Hastrup 2009: 211-217).

The chapter's focus on agency also directs our attention to institutions and political structures as barriers when pursuing climate change adaptation strategies. We probably need total transformation and rethinking of institutions and systems altogether. To address these challenges, adaptation may be a concept that is too instrumental (Thompson et al. 2006: 2) and which does not accentuate our role as social and cultural engineers. Adaptation seems to reduce the full potentials of human agency and creativity, and it downplays the fact that climate adaptation is to make societal choices informed by many other concerns and challenges than climate. The question in the Arctic is who influences these choices and whether there is institutional capacity to deal with entangled and perforated socio-ecological systems that are complex, dynamic, and prone to non-linear, uncertain and often abrupt changes. Faced with major contemporary and future changes, it is important in climate adaptation strategies to address Arctic peoples' capacity to play a key role in the regional and global dialogues about the kind of development that should take place in the Circumpolar North (Nuttall 2001: 28). Adaptation strategies developed now will set the framework for future agency. It is therefore of paramount importance to give attention to the legal and institutional setup in climate change adaptation strategies and studies. This attention may also give priority to factors and a broader perspective that are downplayed in IPCC as well as in both analysis and policymaking – factors that paradoxically may erode viable adaptation strategies and all the work that is done to strengthen resilience.

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