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Framing a ‘climate change frontier’: international news media coverage surrounding natural resource development in Greenland

William Davies, Samuel Wright, James Van Alstine

Abstract

News media helps shape the discourse around natural resource issues, especially rapidly-emerging developments such as those taking place in the Arctic. Whilst the relationship between media and audience is complex, news media contributes towards setting the tone and expectations for the burgeoning number of stakeholders engaging with the region, especially in the case of Greenland. This study undertakes a thematic analysis of English-language news media coverage surrounding natural resource development in Greenland to explore how the issue is framed. Five media frames are identified: ‘emerging resource frontier’, ‘warming Arctic’, ‘high-risk activity’, ‘geopolitical Greenland’ and ‘vulnerable traditional societies’. An overarching frame is present within the coverage, one which depicts Greenland as ‘a climate change frontier’, facing ‘uncertainties in the face of rapid change’. Media portrayal of a close-knit relationship between a warming climate and a rush for natural resources in Greenland could be problematic for several reasons, namely the disparity between actual resource development taking place and an overemphasis on increased economic development following from increased warming.

Keywords: Natural resource development, Greenland, climate change, resource frontier, Arctic, Media frames

1. Introduction

News media influences discourse around natural resource issues (Entman, 2007, Hansen, 2010, Barua, 2010). It helps to form the frames of understanding people construct about the material world (MacDonald, 2003) and has tangible implications for natural resource governance by influencing stakeholders and decision-makers (Soroka et al., 2013, Sadath et al., 2013, Buhr and Hansson, 2011). For emergent and rapidly developing issues, the news media can often act as the main source of public information, especially if the issue involves places or characteristics its audience ‘have little or no direct experiential access to’ (Hansen, 2010: 181, Happer and Philo, 2013).

One emergent and rapidly developing issue that has garnered increasing global media coverage is ‘the changing Arctic’ (Koivurova, 2010). Placed under the global spotlight, the Arctic environment’s vulnerability to climate change lies at the heart of this attention (ACIA, 2004). Closely associated with this warming is the prospect of increased natural resource development, especially the region’s potential hydrocarbon reserves (Howard, 2009, Harsem et al., 2011). However, recent years have seen this narrative challenged, not so much downplaying the profound implications of climate change but wary of the notion a ‘resource rush’ is associated with this change (Young, 2012, Keil, 2014, Koivurova, 2013). Recent developments in the Arctic involve a complicated mixture of environmental, economic, social and political factors. As such, how news media worldwide engages with and frames this complexity for international audiences is of interest.

With the Arctic geographically remote from the majority of international news media audiences, an unfamiliarity with the region is likely. As Steinberg et al. (2014) note, '[f]ew people residing outside the region have first-hand experience of the Arctic... [f]or this reason media representations play an important role' (p275). This is especially the case for Greenland, an autonomous dependency within the Kingdom of Denmark. With a small population (57,000) comprised of 90 per cent Inuit ethnicity, much of its landmass situated above 66°N and approximately 80 per cent ice-covered (AMAP, 2010), Greenland possesses a demography and geography arguably emblematic of the Arctic region. Relatively unknown internationally, Greenland has 'entered the global consciousness and the global imagination in recent years' (Nuttal, 2012: 113), a consequence of burgeoning interest in the Arctic. As Greenland begins to establish itself on the global stage, the ways in which international news media discusses the country's resources are of importance, helping set the tone and expectations of the increasing number of global stakeholders engaging with the country.

Nevertheless, legitimate concerns exist around the oversimplification and exaggeration of media influence on audiences (Olausson, 2011), where an axiomatic assertion is too often made automatically assuming the 'media are central to explaining the dynamics of contemporary societies' (Couldry, 2005: 181). Whilst acknowledging the complexity of media-audience relationships and remaining wary of the dangers of oversimplification, news media still acts as an important source of discourse that sets agendas (Stamm et al., 2000) and guides public opinion (Doulton and Brown, 2009, Steinberg et al., 2014).

Exploratory in nature, this study undertakes a thematic analysis to explore the various ways in which English-language news media coverage frames natural resource development in Greenland. Here, the focus is upon 'external perspectives' to Greenland, so Greenlandic and Danish language news media coverage is not explored. The paper begins by briefly

touching upon the current social sciences literature covering Arctic and Greenland natural resource development. The methodology and the study's conceptual underpinnings are then outlined followed by a presentation of the five frames identified: 'emerging resource frontier', 'warming Arctic', 'high-risk activity', 'geopolitical Greenland' and 'vulnerable traditional societies'. An overarching frame is present within international news media coverage, one which depicts Greenland as 'a climate change frontier' which faces 'uncertainties in the face of rapid change'. The implications of this framing are then discussed before concluding remarks.

2. Arctic and Greenlandic natural resources: social science perspectives

As political and media attention surrounding Arctic natural resources has burgeoned, so has the Arctic social sciences literature. Common topics of interest include indigenous peoples, environmental change and regional geopolitics (Nyman, 2012). In essence, the literature aims to better understand the complex dynamics of Arctic natural resource development and the competing agendas and perspectives that shape it. That the Arctic is 'changing' is commonly cited, with something akin to a 'new Arctic' emerging (Doel et al., 2014, Stuhl, 2013). There is a general acceptance amongst Arctic scholars that growing interest in the region has largely been driven by a combination of rapidly warming climate and the perceived 'opening up' of the region creating greater access to its abundant natural resource base and possible shipping routes (Lindholt, 2006). The literature examines various aspects of this ecological and socio-economic change, from local to global, postulating possible futures and conceptually

analysing the Arctic (Avango et al., 2013, Young 2012, Knecht and Keil, 2013, Keskitalo, 2004).

Of particular fascination are the region's offshore petroleum reserves and the socio-economic and ecological ramifications of potential hydrocarbon development. Indeed, oil and gas features prominently within the contemporary Arctic discourse for numerous reasons (Avango et al., 2013): the vast estimates predicted by the US Geological Survey (USGS, 2008); the controversy surrounding offshore activity in wake of the Deepwater Horizon incident in 2011; and the relationship between fossil-fuel use and climate change. In their analysis of discourse surrounding oil and gas, Mikkelsen and Langhelle (2008) note tensions and opportunities between economic development, environmental degradation and indigenous rights, claiming a 'certain inevitability about increased Arctic oil and gas exploration and production' (p352). Concerns exist that resource abundance could lead to a confrontational situation as each state vies for a greater share of prized resources (Wilson Rowe, 2013). However some contradict these claims, citing well-established mechanisms for co-operation and the lure of offshore petroleum being, in reality, not particularly important to most Arctic countries for a variety of economic and technical reasons (Keil, 2014, Young, 2011, Lindholt and Glomsrød, 2012).

Peer-reviewed research on natural resource development in Greenland is relatively sparse compared to other parts of the Arctic. This is understandable given its very small population, although there are signs in recent years that this is changing (McDowell & Ford, 2014, Nuttall, 2012, Ren, 2014). The issues and themes are similar to the wider Arctic literature: impacts of dramatic climate change, the opening-up of the region, traditional livelihoods and the sustainability challenges of pursuing economic development without environmental degradation. Particular to Greenland is the pivotal role natural resource development will play in determining whether ambitions of political independence from

Denmark are realised (Nuttall, 2008). Contrary to this independence narrative, McDowell & Ford (2014) rarely found the issue mentioned when interviewing Disko Bay inhabitants about potential hydrocarbon development.

Studies that have included an exploration of media coverage around Arctic natural resource development are relatively few in number and often not explicitly focused on natural resources. Steinberg et al. (2014) explore contemporary Arctic discourse by examining how various news-outlets frame an 'Arctic media event', in this instance the Arctic Council ministerial meeting held in Kiruna, Sweden in 2013. Journalists focusing on common 'hot topics' such as natural resources, shipping routes and climate change was widely observed, along with divergent framings of the region's relevance. One common theme found across all the media reports analysed was 'a common understanding that the Arctic is increasingly important not so much for what *it is* as for what it may *become*' (Steinberg et al., 2014: 286). Nyman (2012) reviews three books from the proliferation of Arctic-themed literature published in recent years as a foundation to discuss popular media views, emphasising 'the difficulties in translating the issues of a complex region with a variety of actors, resources, opportunities and concerns' (p401). Wilson Rowe (2013) details how both English-language and Russian media depict the Arctic region as a zone of potential conflict. Christensen's (2013) analysis on representations of Arctic climate change in three newspapers between 2003 and 2010 finds melting sea-ice 'addressed as both a global and local risk category' (what she terms 'scalar transcendence') and its coverage bringing together several 'complex questions' under one banner ('topical multiplicity') (p39). In an examination of petroleum discourse in the European Arctic, Jensen (2007) outlines two competing discourses, pro-oil and anti-oil, within Norwegian media coverage. Only one example exists of media analysis in relation to contemporary Greenland, Bjørst's (2012) examination of the shifting political positions in the climate debate within Danish-language media between 2001 and 2011. These

studies all offer insight on media discourse surrounding various aspects of the contemporary Arctic. Rather than focusing on either the Arctic region in general or examining domestic news media coverage in certain parts of the Arctic, this study makes novel contributions by analysing how international news media portrays the specific issue of natural resource development in a particular region of the Arctic, in this case Greenland. How this was undertaken is now outlined in the methodology section.

3. Methodology

3.1. Background context

Greenland is one of the world's largest countries (840,000 square miles) and also one of the least dense in terms of population. A Danish colony for over two hundred years (1721-1953) Greenland has been progressing towards complete independence aiming to become the first Inuit nation state (Nuttall, 2008). Greater autonomy was granted to Greenland in 2009 under the status of 'Self-Rule' which critically gave the country control over the use of its vast natural resource reserves (Harsem et al., 2011). These oil and mineral resources are diverse, comprising of gold, diamonds, iron ore, cryolite, lead, zinc, molybdenum, oil, natural gas, uranium and other rare-earth minerals (Nuttall, 2008). Rare-earth mineral reserves are considerable near the site of Kvanefjeld¹. Whilst some extractive activity has previously occurred in Greenland, it has been on a relatively small-scale (E.g. the Nalunaq gold mine) (Long et al., 2012). The US Geological Survey estimates vast offshore oil reserves in the west and north-east region of the country (USGS, 2008). The Disko Bay region has become of particular interest, a consequence of its 'relative accessibility and promising subsea geological features' (McDowell and Ford, 2014: 98) (see Figure 1).

¹ See <http://www.ggg.gl/investor-information/asx-announcements/greenland-government-introduces-uranium-licensing-framework-for-the-kvanefjeld-multi-element-project/>

3.2. Conceptual Framework

In its exploration of English-language news media coverage around Greenlandic natural resource development, this paper uses a thematic analysis to identify media frames. Thematic analysis expands upon the quantitative nature of content analysis ‘to go beyond observable material to more implicit, tacit themes and thematic structures’ (Joffe, 2011: 211). The method involves the identification, analysis and reporting of ‘themes’ within data (Braun and Clarke, 2006). Themes are described as patterns of meaning that are either explicitly or implicitly found in the content of a dataset (Joffe, 2011). When carried out effectively thematic analysis offers a useful means to ‘summarize key features of a large body of data, and/or offer a ‘thick description’ of the data set’ (Braun and Clarke, 2006, p97).

Thematic analysis is a useful analytical tool to identify patterns of meaning (i.e. ‘media frames’) relating to how the media comprehends, understands and portrays certain events and issues (Gitlin, 1980, Reese, 2007). Entman (1993) describes framing as ‘selecting some aspects of a perceived reality and making them more salient in a communicating context, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described’ (p38). Frames act as structures of perception and beliefs behind particular standpoints (Schön and Rein, 1994) and a means in which the complexity of reality is organised into something coherent and meaningful (Gamson et al., 1992, Carvalho, 2000). In this instance, how international news media organises the complex reality surrounding natural resources in Greenland into a coherent picture. Media frames matter (Lakoff, 2010, Tierney et al., 2006) as the emphasis or neglect of certain aspects ‘defines the boundaries of the debate by placing the event or issue within a certain sphere of meaning’ (Gandiwa et al., 2014: 2).

3.3. Data collection

This study focuses on the period between January 2004 and February 2014, a period where global attention towards Arctic issues burgeoned (Koivurova, 2010). An online search of English-language news media was conducted (E.g. newspapers, wire articles, press releases and industry reports). The *LexisNexis* database was queried using the search terms ‘Greenland’ and ‘Mining’ or ‘Oil’ to return articles that contained this term within the body or headline text. There are some limitations in taking this approach. The choice of key words could potentially omit certain facets of news media coverage and subsequent omission of particular patterns as a result. Furthermore, in only analysing English-language news media the breadth of possible articles returned is restricted. Nevertheless, whilst such a search cannot provide a definitive account of the global news media discussion around Greenland natural resource development, *LexisNexis* is widely-regarded as a comprehensive database with an extensive global spread of news and industry publications and has been used in many other studies for similar purposes (see Tyrrell and Clark (2014), Jaspal and Nerlich (2013), Nerlich (2010)). As such, it is felt the articles obtained offer a useful snapshot of the news media discussion worldwide. The thousand ‘most relevant’ articles were determined algorithmically via *LexisNexis* and selected for analysis. Of the chosen articles, 277 were disregarded as irrelevant (E.g. a reference to Greenland, Virginia) or duplications of the same article over several news outlets. Articles were read and coded with no predetermined categorisations outlined. Categories were instead developed as analysis progressed, offering a flexibility to the coding approach. Two researchers analysed five hundred articles each, of which a sample were cross-referenced to reduce researcher bias (Krefting, 1991, Butcher et al., 2001). Once complete, this coding facilitated an interpretative analysis of the articles’ content whereby frames within the news media coverage were identified. Whilst coding was used to facilitate this interpretation, this analysis was qualitative in its approach, not

quantitative. The nature of interpretative approaches ensures exact replication of findings is limited. However, interpretative methods offer the subtlety and nuance to obtain a greater understanding of underlying patterns of meaning around a particular issue (Carvalho, 2000).

4. Media frames

4.1. Emerging resource frontier

This frame sees Greenland portrayed as a ‘new frontier’ in resource development (The Scotsman, 2008): a depiction commonly-ascribed to the Arctic as a whole in recent years. This frame centres around three elements: abundance, remoteness and activity.

Littered throughout the news media coverage are references to the abundance of Greenland’s natural resource base. This abundance is characterised by hyperbolic language describing Greenland’s reserves as ‘glistening riches’ (Associated Press, 2009), a ‘mining bounty’ and ‘a veritable treasure chest of minerals’ (The Times, 2010). The use of oil-rich Saudi Arabia as a comparison for equivalent estimates of oil emphasises the vast quantities and potentially society-changing levels of wealth under discussion. In a similar fashion to petroleum, Greenland’s rare-earth mineral deposits are spoken of as globally-significant quantities, the biggest outside the world’s dominant exporter, China.

Greenland’s ‘remoteness’ is emphasised throughout, contributing to the construction of Greenland as a ‘frontier space’ as well as part of a wider Arctic frontier region. Here, frontier is characterised more in geographical terms with ‘explorers’ entering ‘one of the most remote corners of the globe’ (Associated Press, 2006). Nonetheless, when this remoteness is coupled with Greenland’s cold, harsh climate, not only do we witness a ‘new’ frontier space becoming explored, but also an activity pushing the frontiers of modern technology and its technical capability to extract resources in such challenging conditions.

The language used to describe Greenland's remoteness is worthy of particular attention. A contrast exists between one perspective leaning towards a more environmental-conservationist description of remoteness and another depicting a desolate hinterland at the world's periphery. Observing the former, we see Greenland's environment described in positive terms, emphasising what is 'there' and what could be lost with increased resource development. Its environment is depicted as a 'pristine environment' (The Guardian, 2014), 'untouched' (Carleton Place, 2010) and 'one of the world's last wildernesses' (India/Pak, 2012). The latter focuses more on what is not there with an emphasis on the harshness of environmental conditions and lack of human activity, with Greenland's environment consisting of 'barren wastelands' (Yukon, 2012a) and 'frozen wastes' (The Guardian, 2013).

The third component shaping this frame centres on the flurry of resource interest and activity in Greenland. To the backdrop of Greenland's resource abundance and geographical remoteness, considerable attention is placed on the extent of activity and whether political structures and environment systems can keep up with its pace. Greenland is depicted as a resource frontier facing a sudden free-for-all in which it is ill-equipped to cope. This is highlighted in the hyperbolic language used to describe the pace of activity. Pertinent examples include 'the scramble for Greenland acreage' (Investors Chronicle, 2009), 'mining firms are in a mad dash to cash in on Greenland's bounties' (Mail and Guardian, 2014), and 'a huge stampede, the gold rush of the 21st century' (Daily Mail, 2010).

4.2. Warming Arctic

Closely associated to notions of an emerging resource frontier is climate change. Positives of climate change tend to outweigh discussion about negatives with phrases such as 'warming fuels dream of hidden wealth' (Associated Press, 2009) and 'global warming is a gift from the heavens' (The Globe and Mail, 2010) commonplace. Climate change is ever-present, routinely used as background context to the emerging resource accessibility: 'ice

thaw fuelled by global warming make Arctic exploration more feasible' (The Calgary Herald, 2011) and '...global warming also has helped spur the potential oil boom in Greenland' (Washington Times, 2009). A nuanced portrayal is less prevalent. More familiar discussions of climate change tend to emanate from stories featuring actions by Greenpeace, for example in the wake of their disruption of the Cairn drilling season: 'Cairn might be a step closer to finding oil off Greenland, but this takes us one step back in the fight against climate change' (Agence France Presse, 2010).

Impacts on Greenlandic communities from climate change are occasionally referenced. 'Climate change is destroying the traditional shrimping economy of Greenland' (FPBN, 2013) and 'all Inuit leaders agree climate change is having a big impact on their communities' (CBC, 2009) are two such examples. Tensions exist between taking action on climate change and resource extraction: 'the island's leaders treat potential oil reserves and melting ice as two separate issues' (Associated Press, 2008). This 'delicate balance' of 'a haven for environmentalists looking for evidence of global warming and as the latest frontier for oil and gas' (The Herald, 2008) is one that defines the tone and structure of news media coverage.

There is acceptance that this change is inevitable, which has fostered the development of an adaptation argument: 'Anderson isn't keen on saving the ice –“it's too late for that already, it's going”' (Halesowen News, 2009). This movement towards adaptation highlights an interesting observation, that unlike many other climate debates there is little discussion whether it is occurring or not. Climate change and its impacts are considered to be definitive and happening. References are made using present or even past tenses: 'climate change has been 'helpful rather than unhelpful' to miners in Greenland' (Associated Press, 2009); 'the changes that climate change has brought' (Targeted News Services, 2013). This contrasts

with language commonly associated with climate change discourse that focuses more on future projections and scenarios (Nakicenovic and Swart, 2000).

4.3. 'High-risk' activity

The term 'risk' is prevalent throughout the articles. What becomes evident, however, is the different interpretation of what constitutes risk. This divide is most keenly observed between industry interpretations of risk and those of an environmental and socio-economic perspective. Extraction in the Arctic is often described as a 'high-risk, potentially high-reward' venture of which Greenland is an often cited example. This could refer to multiple types of risk, yet the pervasive use of the term relates to the possibility of financial loss. Statements from industry representatives discuss 'a 'frontier opportunity', with risks and rewards both high' (European Spot Gas Markets, 2010). This view of risk is exemplified by Cairn's decision to bring in additional partners following failure to discover commercial quantities of petroleum '...to re-balance its portfolio to reduce its exposure to the high-cost, high-risk frontier waters offshore Greenland' (Platts Oilgram New, 2012).

A proportion of the coverage was company statements, stock updates and investment advice which used the term risk in a technical or legalistic form. Statements regarding the extraction potentials of plots regularly contained disclaimers like '[f]orward-looking statements address future events and conditions and therefore, involve inherent risks and uncertainties' (PR Newswire US, 2005), while expected minerals are discussed as 'risked potential'.

Environmental NGOs and social commentators also describe Arctic resource extraction as a high risk venture. However, this focused less on economic and operational considerations, instead deploying the term risk to describe the potential negative consequences to society and the environment. Discussions on environmental and societal risks are often intertwined with Greenlandic lifestyles' strong relationship with nature, such

as hunting and fishing. Risks are often discussed with references to the ‘pristine’ or ‘untouched’ environment, or ‘traditional society’ by news agencies and environmental groups.

The debate over environmental risk became more pronounced following the Gulf of Mexico disaster in which an estimated 4.4 million barrels of oil were spilled from a BP drilling rig (Crone and Tolstoy, 2010). This oil spill is closely associated with the risks of Arctic drilling and an illustration of potential disasters. Cairn Energy acknowledged this shift, providing statements on their ‘risk mitigation programme’, ‘well control and risk management’ and their efforts ‘to manage all the risks very clearly and in a focused way’, broadening their definition of risk to environmental and technical considerations and moving away from the language of investment.

4.4. Geopolitical Greenland

Within parts of the news media coverage we see explicit efforts to place Greenland within a geopolitical context. The emphasis is on the strategic importance of Greenland: its geographic location and the political ramifications of its large deposits of high-demand minerals in a globalised world. This frame positions issues of energy security, foreign policy and sovereignty at the forefront, relegating more domestic concerns of the debate such as local pollution effects on fisheries or community upheaval from foreign workers.

There is a strong notion of Greenland ‘emerging from isolation’ and realigning its position in globalised world. Here, an increasingly autonomous Greenland, with well-documented aspirations of eventually achieving full-independence from Denmark (Nuttall, 2012), is keen to establish itself as a global player in its own right, using its natural resources as important leverage in this process. In this context, domestic political decisions surrounding natural resources can ‘pack a global punch’ (Scotland on Sunday, 2013), with the country having ‘so much to offer the globalised world’ (Architects Journal, 2012). Greenland’s global

significance has much to do with the type and abundance of its mineral wealth. Such are the importance of rare-earth minerals to high-tech industries and oil to a global economy hugely dependent on hydrocarbons, it is perhaps unsurprising the news media talks up Greenland's significance in the global arena and how 'this once easily forgettable island is poised for great things' (RIN, 2013).

Much is written on the increasing international attention towards Greenland. With Greenland shifting away from the auspices of Danish colonial rule, it enters unknown geopolitical territory. When combined with the general uncertainty of an Arctic-in-flux due to a warming climate, this has led to concerns that Greenland is particularly vulnerable from foreign influence. World powers most commonly described in the news media as trying to wield influence are China and the EU. China's perceived influence is largely through its involvement with several proposed large-scale mining projects, such as the \$2.3 billion iron-ore mine just outside the capital Nuuk (Nuttall, 2012) which has since failed to attract the required investment to continue. Viewed through a geopolitical lens, parts of the news media discuss these investments as part of a larger territorial game by China, a 'Chinese master plan to take over the Arctic and its resources' (RIN, 2013). Such suggestions tend to be refuted by Greenland politicians and Chinese officials labelling concerns over a Chinese invasion as 'polar paranoia' (The Financial Daily, 2012). Regardless, this idea of a geopolitical power struggle over Greenland and its resources is consistently reasserted when news media coverage presents headlines such as the 'EU scrambles for Greenland's wealth: 'Raw material diplomacy' to exploit icy wilderness' (The Guardian, 2012) and 'US signals it is ready for Arctic oil battle' (The Guardian, 2011b).

4.5. Vulnerable traditional societies

This frame places natural resources as more of a social-cultural issue for Greenlanders, with less concern for the global implications of resource development. Here, the common issues

are about the tensions between modernisation and traditional livelihoods, the influx of immigrant workers and their impacts on the nation's small population. Concerns by non-Greenlandic commentators are aired about Greenland's ability to effectively govern resource extraction, given the economic disparity between its public institutions and the clout of large international oil and mining companies. The size of the population is often referenced in relation to the question of 'whether such a tiny population can cope' (The Financial Daily, 2012). Even when spoken in positive terms, language is more aspirational in tone, 'Greenland's ambition is to have sufficient capacity' or 'a traditional society trying to make its own way in the world' (Toronto Star, 2012).

One of the central social concerns is the impact of high levels of immigration. Some of these concerns relate to the impact on working conditions and employment, partly fuelled by the 2012 Large Scale Project Act that relaxed rules on foreign recruitment: '[the national labour union] does not want local pay scales undermined or jobs lost to foreign workers' (Yukon News, 2012b). A second debate is fostered by the Inuit Circumpolar Council whose current leader, the Greenlandic Aqqaluuk Lyngé, regularly makes statements concerning immigration. Greenland's small population being overrun is his most common argument against development, examples including 'we cannot afford to be a minority in our own country', 'large numbers of workers are brought in from outside, indigenous people risk becoming a minority' (The Guardian, 2011a) and 'the many thousands of foreign workers they would bring in would have a devastating impact on what is already a very fragile Greenlandic culture' (Cyprus Mail, 2014).

Despite concerns about immigration, potential for investment from a domestic perspective has largely been covered in favourable terms and even as essential, with most people seeing it 'not as opportunity, but as necessity' (The Financial Daily, 2012). The social and economic issues that are present in Greenland are regularly mentioned, with references to

alcoholism and suicide. This is often related to dwindling populations as unemployment increases. Consequently, exploitation of resources is given as an opportunity to resolve this, '[w]e cannot live with unemployment and cost-of-living increases while our economy is at a standstill' (The Telegraph, 2013).

5. Discussion

5.1 A climate change frontier facing an uncertain future

Of the five frames identified, two frames, 'warming Arctic' and 'resource frontier', serve as contextual background in which the Greenland natural resource development story is then told and whereby other frames of risk, vulnerable traditional societies and geopolitics emerge. These two frames are often employed in unison, with a warming climate emphasised as a key factor in Greenland emerging as a resource frontier. Interestingly, this relationship is seldom refuted by the global news media. Such is the close association of these two frames, they can be bought together to encapsulate the global news media's framing of Greenland: 'climate change frontier', a remote frontier space abundant with globally sought-after minerals emerging in an era of established climate change. Perhaps it is unsurprising to find the global news media's framing of Greenland natural resource development in such a manner. With climate change becoming increasingly ingrained in the global discourse, greater global media interest on its impacts is inevitable and with the Arctic region warming twice as fast as the rest of the world (ACIA, 2004), Greenland natural resource development was always likely to be tied up with the wider climate change discourse. Similarly, the resource quantities under discussion coupled with the remoteness and relatively untouched Arctic environment of Greenland was always likely to lend itself to a certain frontier imagery.

With a ‘climate change frontier’ setting the context, we observe three different frames central to Greenland natural resource development: ‘vulnerable traditional societies’, ‘high-risk activity’ and ‘geopolitical Greenland’. A central characteristic tying these three frames together is one of *uncertainties in the face of rapid change*. As Greenland becomes a climate change frontier space, what will happen to traditional livelihoods or Greenland’s geopolitical standing in the Arctic/wider world? How risky is resource activity in Greenland? Is it even financially viable to develop resources in Greenland? In the case of offshore oil, are there any reserves at all? Questions of ecological, economic and social uncertainty regarding all aspects of Greenland’s natural resource development permeate through much of the global news media coverage. This uncertainty is accentuated by the novelty of both Greenland as a natural resource-producing space and the contemporary environmental problems it faces, namely rapid climate change. Figure 2 visualises the relationship between these five frames.

5.2 Problematic framing?

One question emerging from this work is to what extent is the framing of a climate change frontier problematic? Whilst news media depictions of this kind certainly echo reality to some degree (the Arctic climate is warming with dramatic effect and natural resource interest in this remote part of the globe is on the rise) the extent to which Greenland natural resource development is a ‘frontier’ opening up through ‘climate change’ is certainly subject to debate. With regards to notions of an emerging resource frontier, despite the excitable talk the truth remains that limited extraction activity has taken place in the last decade, nor is this likely to change in next decade at the least (Nuttall, 2012). In this respect, there is a danger of global news media getting ahead of itself and contributing to inflated expectations that do not match up to reality. Furthermore, the use of frontier-style terms such as ‘barren wastelands’, ‘pristine environments’ and ‘wilderness’ risks underplaying the people of Greenland’s voice in natural resource development. Indeed, observing the language sometimes used, it could

quite easily be mistaken the area under discussion was the remote regions of the North Pole, not the territory of Greenland.

As for a warming Arctic driving a race for resources, it is unclear how much of this is a factor and not merely a backdrop in which natural resource interest takes place. There appears to be no incidences where a warmer climate has been linked *directly* to resource activity and it is impossible to know how much interest in Greenland's resources would have still existed even if the climate wasn't warming to the extent it is. In light of widespread media coverage that strongly associates the two, there is certainly a need for empirical research exploring the extent of this relationship. Whilst talk of increased accessibility, longer summer seasons and reduced sea-ice cover are sure to encourage greater enthusiasm from extractive industries, some argue a warmer climate is not necessarily favourable, E.g. increased sea-ice melt may increase iceberg hazards for offshore activity (Lindholt and Glomsrød, 2012). What can be said with some certainty is consistent global demand for commodities such as hydrocarbons² and rare-earth minerals coupled with Greenland's strive for economic independence would have almost undoubtedly led to some degree of interest. That oil exploration took place in Greenlandic waters during the 1970s (Gregersen, n.d.), a time before climate change was a widely acknowledged phenomenon and its impacts felt, attests to this. Indeed, it is interesting to note how discussions from decades ago about Greenland's natural resources bear striking resemblance to those of the present day (see Miles and Wright, 1978).

² Whilst global demands for hydrocarbons are unlikely to dwindle in the near future, the dramatic fall of the price of oil in January 2015 has raised questions about the economic viability of pursuing offshore oil in the Arctic. See - <http://www.alaskaenergyforum.com/article/plunging-oil-prices-cast-doubt-on-arctic-drilling>

By intrinsically combining climate change with resource activity in Greenland there is a danger of overemphasising the trope that increased economic development follows from greater climate change. Climate change depicted positively as a key to unlock Greenland's vast economic potential might overshadow more negatives consequences of rapid warming such as impacts on traditional livelihoods or disruption of fisheries, especially in a country seeking to drastically improve its economic output. To counter this, perhaps an effort to 'reframe' (Doyle, 2011) Greenland natural resource development and decouple climate change from resource development is required, with each approached on their own terms. This is not to completely refute any relationship between the two but could arguably allow for more nuanced accounts of developments in Greenland.

6. Concluding remarks

The portrayal of a close-knit relationship between a warming climate and a rush for natural resources in Greenland echoes much of what has been written in the wider Arctic social sciences literature over the last decade. Nevertheless, a sceptical turn has emerged amongst Arctic scholars against this simple narrative (Young, 2012, Keil, 2014, Koivurova, 2013). This scepticism is not reflected in the news media coverage observed here although this could change in the future. However, the absence of a 'resource rush' would arguably represent a less captivating story for media audiences and unlikely to receive as much attention. Given the issue's complex nature, capturing its intricacies through compendious media coverage is always going to be a challenging, if not near-impossible, task. Therefore a certain framing is required to engage readers and place developments in an understandable context. Nevertheless, with growing global attention towards developments in Greenland and the wider Arctic, this framing becomes of increasing significance. Media frames percolate into the policy space for those stakeholders involved with the issues at hand but not necessarily

familiar with the region, facilitating misinformation in the policy process or overemphasising certain areas of the debate (Hansen, 2011, Soroka et al., 2013).

The extent to which these frames impact policy and governance surrounding Arctic natural resources requires further research. There are plenty of opportunities to expand on the exploratory findings of this work. A focus on Greenlandic and Danish language news media would prove an interesting comparison. Observing similarities, differences and tensions between how different stakeholder groups frame the issue, from ground-level Greenlandic community to Arctic and global-wide policy circles, would offer useful insight. Similarly fruitful would be to delve deeper into the notion of ‘risk’ that presented itself in this analysis, what is meant by various stakeholders when they speak of ‘risk’ and why such differences matter. The complexity and contemporary nature of Greenland’s changing environment serves as fertile ground for research into the juxtaposition between climate change and natural resource development.

7. References

- ACIA, 2004. *Impacts of a warming Arctic: Arctic climate impact assessment overview report*, Arctic Climate Impact Assessment, <http://www.amap.no/documents/doc/impacts-of-a-warming-arctic-2004/786>.
- AMAP, 2010. *Assessment 2007: Oil and Gas activities in the Arctic – Effects and Potential Effects. Volume 2*. Arctic Monitoring Programme. Oslo, Norway.
- Avango, D., A E. Nilsson and P. Roberts. 2013. ‘Assessing Arctic futures: voices, resources and governance’. *The Polar Journal* **3**(2): 431-446.
- Barua, M., 2010. ‘Whose issue? Representations of human-elephant conflict in Indian and international media’. *Science Communication* **32**: 55–75.
- Bjørst, L R. 2012. ‘Politiske positioner og skift i den grønlandske klimadebat fra 2001 til 2011’. *Tidsskriftet Grønland* **60**(1): 2-19.
- Braun, V. and V. Clarke. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology* **3**: 77–101.

Buhr, K. and A. Hansson. 2011. 'Capturing the stories of corporations: A comparison of media debates on carbon capture and storage in Norway and Sweden'. *Global Environmental Change* **21**: 336–345.

Butcher, H.K., P.A. Holkup, M. Park and M Maasz. 2001. 'Thematic Analysis of the Experience of Making a Decision to Place a Family Member with Alzheimer's Disease in a Special Care Unit'. *Research in Nursing & Health* **24**: 470-480.

Carvalho, A., 2000. Discourse analysis and media texts: a critical reading of analytical tools. Paper presented at the International Conference on Logic and Methodology, RC 33 meeting (International Sociology Association), Cologne, 3–6 October.

Christensen, M. 2013. Arctic Climate Change and the Media: The News Story That *Was*, In: Christensen, M., Nilsson, A E. and Wormbs, N. (eds) *Media and the Politics of Arctic Climate Change: When the Ice Breaks*, Palgrave Macmillan, pp26-51.

Couldry, N. 2005. Transvaluing media studies. In: J Curran and D Morley (eds.), *Media and cultural theory*, pp177-194. Abingdon, New York.

Crone, T.J. and M. Tolstoy. 2010. 'Magnitude of the 2010 Gulf of Mexico oil leak'. *Science* **330**: 634–634.

Doel, R.E., U. Wråkberg and S. Zeller. 2014. 'Science, Environment, and the New Arctic'. *Journal of Historical Geography* **44**: 2–14.

Doulton, H. and K. Brown. 2009. 'Ten years to prevent catastrophe?: Discourses of climate change and international development in the UK press'. *Global Environment Change* **19**: 191–202.

Doyle, J. 2011. 'Acclimatizing nuclear? Climate change, nuclear power and the reframing of risk in the UK news media'. *International Communication Gazette*. **73**: 107–125.

Entman, R.M. 1993. 'Framing: Toward clarification of a fractured paradigm'. *Journal of Communications* **43**: 51–58.

Entman, R.M. 2007. 'Framing bias: Media in the distribution of power'. *Journal of Communications* **57**: 163–173.

Gamson, W.A., D. Croteau, W. Hoynes and T. Sasson. 1992. 'Media images and the social construction of reality'. *Annual Review of Sociology* **18**: 373–393.

Gandiwa, E., S Sprangers, S. van Bommel, I. Heitkönig, C. Leeuwis and H.H. Prins. 2014. 'Spill-over effect in media framing: Representations of wildlife conservation in Zimbabwean and international media'. *Journal for Natural Conservation* **5**: 413-423.

Gitlin, T. 1980. *The whole world is watching: Mass media in the making & unmaking of the new left*. University of California Press.

Gregersen, U. n.d. *A summary of the oil & gas exploration history of Greenland*, Greenland Oil Industry Association, <http://www.goia.gl/OilGasinGreenland/History.aspx> (accessed 18th March 2015)

Hansen, A. 2010. *Environment, media and communication*. New York: Routledge.

Hansen, A. 2011. 'Communication, media and environment: Towards reconnecting research on the production, content and social implications of environmental communication'. *International Communication Gazette*. **73**: 7–25.

Happer, C. and G. Philo. 2013. 'The role of the media in the construction of public belief and social change'. *Journal of Social and Political Psychology* **1**: 321–336.

Harsem, Ø., A. Eide and K. Heen. 2011. 'Factors influencing future oil and gas prospects in the Arctic'. *Energy Policy* **39**: 8037-8045.

Howard, R. 2009. *The Arctic gold rush: The new race for tomorrow's natural resources*. Continuum International Publishing Group.

Jaspal, R. and B. Nerlich. 2013. 'Fracking in the UK press: Threat dynamics in an unfolding debate'. *Public Understanding of Science*. **23**(3): 348-363.

Jensen, L.C. 2007. 'Petroleum discourse in the European Arctic: the Norwegian case'. *Polar Record* **43**: 247–254.

Joffe, H. 2011. Thematic Analysis. In: D. Harper and A.R. Thompson (eds.), *Qualitative research methods in mental health and psychotherapy: A guide for students and practitioners*, pp 209–223. Hoboken: John Wiley & Sons.

Keil, K., 2014. 'The Arctic: A new region of conflict? The case of oil and gas'. *Cooperation and Conflict* **49**: 162–190.

Keskitalo, E C H. 2004. *Negotiating the Arctic: The construction of an international region*. New York: Routledge.

Knecht, S. and K Keil. 2013. 'Arctic geopolitics revisited: spatialising governance in the circumpolar North', *The Polar Journal* **3**(1): 178-203.

Koivurova, T. 2010. 'Limits and possibilities of the Arctic Council in a rapidly changing scene of Arctic governance'. *Polar Record* **46**. 146–156.

Koivurova, T. 2013. The Dialectic of Understanding Progress in Arctic Governance. *Michigan State International Law Review* **22**(1): 1-21.

Krefting, L. 1991. 'Rigor in qualitative research: The assessment of trustworthiness'. *The American Journal of Occupational Therapy* **45**: 214–222.

Lakoff, G. 2010. 'Why it matters how we frame the environment'. *Environmental Communication* **4**: 70–81.

- Lindholt, L. 2006. 'Arctic Natural Resources in a Global Perspective'. In S. Glomsrød and J. Aslaksen (eds.), *The Economy of the North*, pp27-39. Oslo: Statistics Norway.
- Lindholt, L. and S. Glomsrød. 2012. 'The Arctic: No big bonanza for the global petroleum industry'. *Energy Economics* **34**: 1465-147.
- Long, K., B. van Gosen, N. Foley and D. Cordier. 2012. *The Principal Rare Earth Elements Deposits of the United States: A Summary of the Domestic Deposits and a Global Perspective*, USGS Scientific Investigations Report 2010-5220.
- Macdonald, M. 2003. *Exploring media discourse*. Oxford University Press.
- McDowell, G. and J.D. Ford. 2014. 'The socio-ecological dimensions of hydrocarbon development in the Disko Bay region of Greenland: Opportunities, risks, and tradeoffs'. *Applied Geography* **46**: 98–110.
- Mikkelsen, A. and O Langhelle. 2008. *Arctic oil and gas: sustainability at risk?* Routledge.
- Miles, P. and N.J.R. Wright. 1978. 'An outline of mineral extraction in the Arctic'. *Polar Record* **19**: 11–38.
- Nakicenovic, N. and R. Swart. 2000. *Emissions Scenarios*. Cambridge: Cambridge University Press.
- Nerlich, B., 2010. "'Climategate": paradoxical metaphors and political paralysis'. *Environmental Values* **19**(4): 419–442.
- Nuttall, M. 2008. 'Self-rule in Greenland-towards the world's first independent Inuit state'. *Indigenous Affairs* **8**: 64–70.
- Nuttall, M. 2012. 'Imagining and governing the Greenlandic resource frontier'. *The Polar Journal* **2**(1): 113-124.
- Nyman, E. 2012. 'Understanding the Arctic: Three popular media views on the north'. *Political Geography* **31**: 399-401.
- Olausson, U. 2011. "'We're the ones to blame": Citizens' representations of climate change and the role of the media'. *Environmental Communication* **5**: 281–299.
- Reese, S.D. 2007. 'The framing project: A bridging model for media research revisited'. *Journal of Communication* **57**: 148–154.
- Ren, C. 2014. 'Cool or hot Greenland? Exhibiting and enacting sustainable Arctic futures'. *Journal of Cleaner Production*, In Press.
- Sadath, N., D. Kleinschmit and L. Giessen. 2013. 'Framing the tiger—A biodiversity concern in national and international media reporting'. *Forest Policy and Economics* **36**: 37–41.
- Schön, D.A. and M. Rein. 1994. *Frame reflection: Toward the resolution of intractable policy controversies*. Basic Books.

Soroka, S., S. Farnsworth, A. Lawlor and L. Young. 2013. Mass media and policy-making. In: E. Araral Jr, S. Fritzen, M. Howlett, M. Ramesh and X. Wu (eds.), *Routledge Handbook of Public Policy*, pp 204-214. New York: Routledge.

Stamm, K.R., F. Clark and P. R. Eblacas. 2000. 'Mass communication and public understanding of environmental problems: the case of global warming'. *Public Understanding of Science* **9**: 219–237.

Steinberg, P., J.M. Brunn and A.M. Ingrid. 2014. 'Covering Kiruna, a natural experiment in Arctic awareness'. *Polar Geography* **37**(4): 273-297.

Stuhl, A. 2013. 'The politics of the "New North": putting history and geography at stake in Arctic futures'. *The Polar Journal* **3**(1): 94-119.

Tierney, K., C. Bevc and E. Kuligowski. 2006. 'Metaphors matter: Disaster myths, media frames, and their consequences in Hurricane Katrina'. *Annals of the American Academy of Political and Social Sciences* **604**: 57–81.

Tyrrell, M. and D.A. Clark. 2014. 'What happened to climate change? CITES and the reconfiguration of polar bear conservation discourse'. *Global Environmental Change* **24**: 363-372.

USGS. 2008. *90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic*, US Department of the Interior, US Geological Survey. <http://www.usgs.gov/newsroom/article.asp?ID=1980> (accessed 27th November 2013).

Wilson Rowe, E. 2013. 'A dangerous space? Unpacking state and media discourses on the Arctic'. *Polar Geography* **36**(3): 232-244.

Young, O R. 2011. 'The future of the Arctic: cauldron of conflict or zone of peace?'. *International Affairs* **87**(1): 185-193.

Young, O R. 2012. 'Building an international regime complex for the Arctic: current status and next steps'. *The Polar Journal* **2**(2): 391-407.

8. Appendix

8.1 Media references

Agence France Presse (24/08/2010) 'Cairn discovers gas in offshore Greenland amid protests'.

Architects Journal (28/08/2012) 'Sustaining Greenland at the Venice Biennale'.

Associated Press (18/07/2006) 'Greenland opens new round of concessions for oil exploration in fragile Arctic'.

Associated Press (14/01/2008) 'Greenland opens to oil firms; melting ice unlocks reserves'.

Associated Press (28/09/2009) 'In Greenland, warming fuels dream of hidden wealth'.
Carleton Place (05/05/2010) 'Greenland oil rush looms'.
Cyprus Mail (31/01/2014) 'Greenland's race for modernity'
Daily Mail (21/08/2010) 'Miners In New Gold Rush For Rare Earth Metals'.
European Spot Gas Markets (29/11/2010) 'For the Record'.
Foreign Policy Blogs Network (FPBN) (29/10/2013) 'Analysis: Implications of Greenland's decision to allow uranium mining'.
Halesowen News (21/11/2009) 'Predicting a future for the Arctic'
India/Pak (02/08/2012) 'EU eyes Greenland resources'.
Investor Chronicle (21/10/2009) 'Explorers chase Greenland spoils'.
Mail & Guardian (10/01/2014) 'Navigating the Arctic minefield'.
PlattsOilgram News (29/08/2012) 'Cairn expands in Morocco as profits slump'.
PR Newswire US (20/06/2005) 'Cabo announces Greenland drilling contract with International Molybdenum Ltd.'
Resource Investing News (RIN) (04/02/2013) 'Greenland Resource Sector Confirms No Favoritism'.
Scotland on Sunday (12/03/2013) 'Greenland election becomes vote on foreign investments'.
Targeted News Service (17/01/2013) 'Spotlight on the Arctic at Brussel's Cine-ONU'.
The Financial Daily (09/11/2012) 'Expectations as China eyes riches'.
The Globe and Mail (02/10/2010) 'The Inuit of Greenland have weather on their side'
The Guardian (04/07/2011a) 'Arctic resource wealth poses dilemma for indigenous communities'.
The Guardian (13/05/2011b) 'US signals it is ready for Arctic oil battle: Environmentalists fear carve-up of resources: WikiLeaks cables raise spectre of new cold war'.
The Guardian (16/03/2013) 'Financial: Greenland voters send warning to oil and mining companies: Government ousted over fears for country's assets: Campaigners alarmed by foreign investors in Arctic'.
The Guardian (01/08/2012) 'Environment: EU scrambles for Greenland's wealth: 'Raw material diplomacy' to exploit icy wilderness Melting offers prize of ore and gems as well as oil'.
The Guardian (06/01/2014) 'A new frontier: UK mining company joins scramble for Greenland's mineral riches: Chinese backing sought for Arctic iron ore project: Environment will not suffer insists firm's boss'.
The Herald (17/01/2008) 'Fears as melting ice brings new interest in Greenland's oil and gas'.
The Scotsman (11/01/2008) 'Greenland the new frontier for Cairn'.
The Telegraph (04/11/2013) 'Greenland - the world's newest frontier; With huge reserves of minerals, oil and gas buried under their icebound nation, Greenland's tiny population may be about to become very rich'.
The Times (7/1/2010) 'Thawing assets; Global warming will ease access to the vast mineral wealth of Greenland, writes Kieran Cooke, but at what cost to local people and the environment?'.
Toronto Star (11/11/2012) 'China eyes Greenland's natural riches; But great expectations could lead to greater disappointments, for locals and investors'.

Washington Times (22/06/2009) 'Danish island fuelled for independence; Control of oil reserves could build up economy'.

Yukon News (21/09/2012a) 'Race is on as ice melt reveals Arctic treasures; "We are aware that is because we now have something to offer, not because they've suddenly discovered that Inuit are nice people."'

Yukon News (28/09/2012b) 'Melting Greenland weighs perils against potential; "For me, I wouldn't mind if the whole ice cap disappears'.

Figures

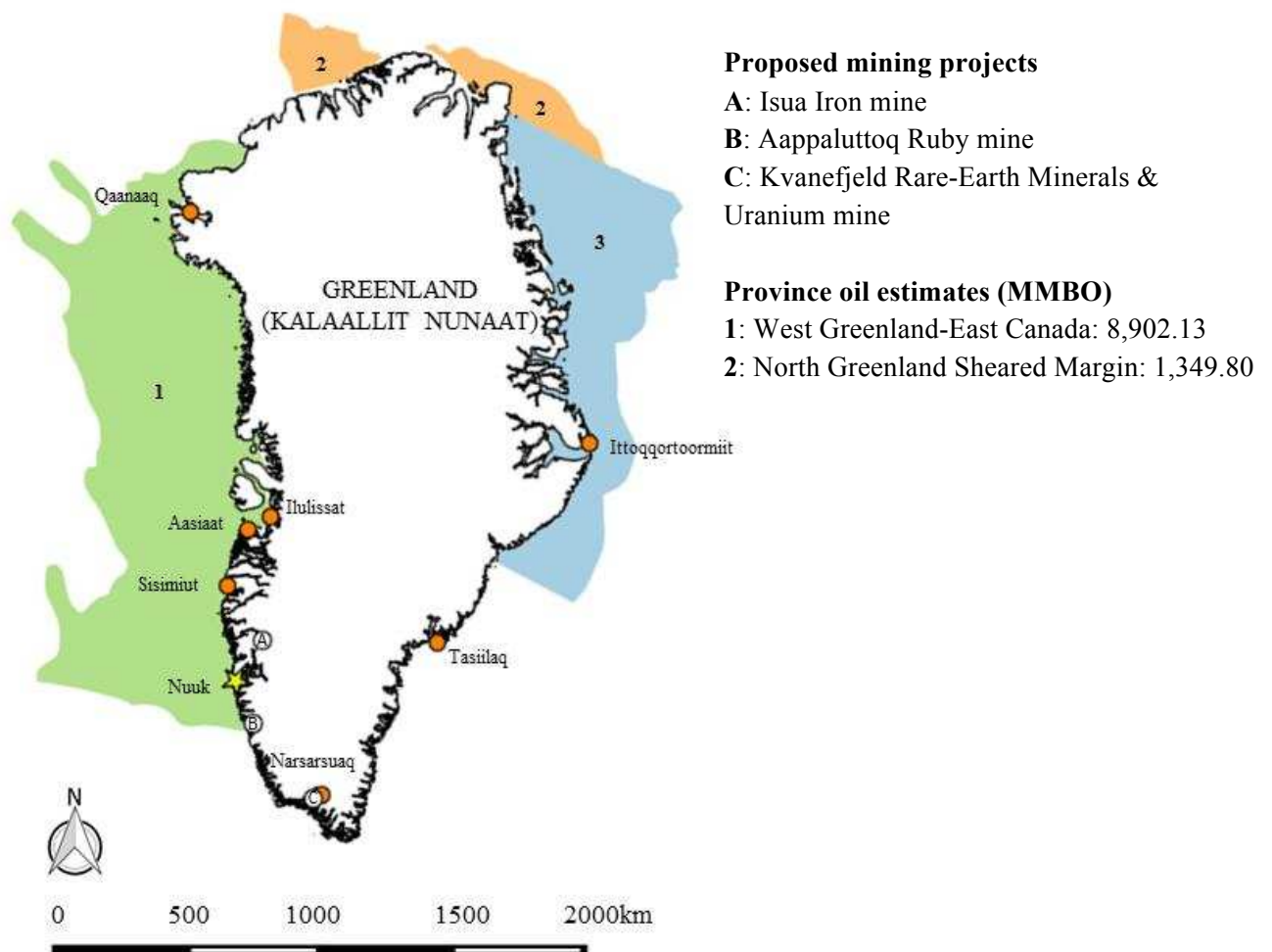


Figure 1. Map of Greenland. The map presents proposed mining projects and oil estimates for geologic provinces within Greenlandic waters. Data: USGS, 2008.

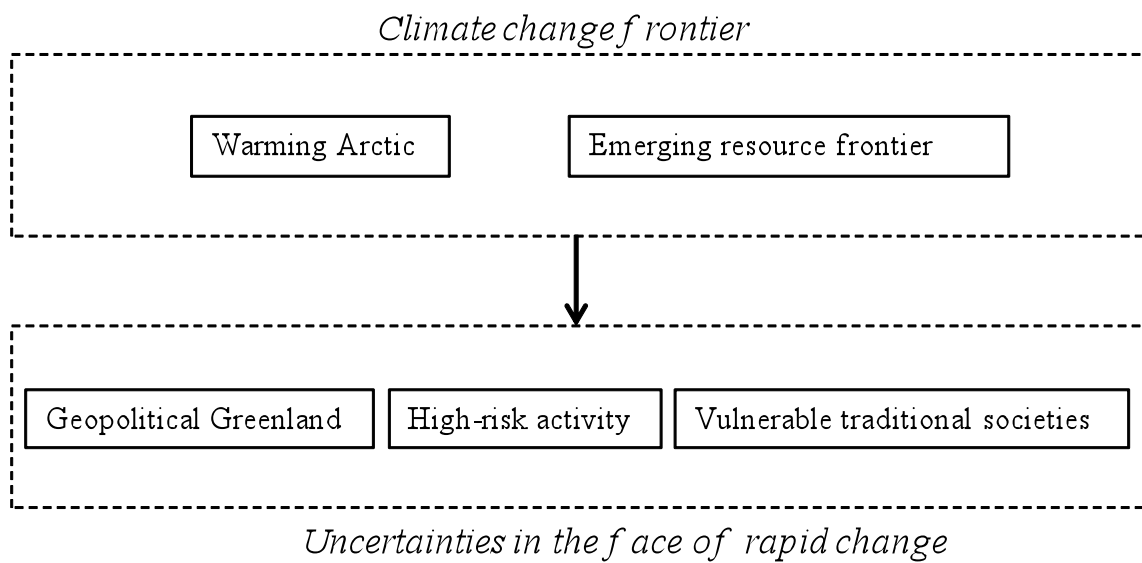


Figure 2. Schematic visualising the relationship between the five frames identified within international media coverage of Greenland natural resource development.