Master‘s thesis

Arctic and Subarctic Gateways for Private Nautical Tourism:

A Feasibility Study for Marina Development in Ísafjörður, Iceland

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Declaration

I hereby confirm that I am the sole author of this thesis and it is a product of my own academic research.

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Student‘s name

Abstract

Private nautical tourism in arctic and subarctic settings has been generally neglected in polar tourism studies. This thesis draws attention towards private nautical tourism as a viable economic supplement and alternative form of tourism for rural coastal communities. Understanding this opportunity, its economic and management implications, and its users' characteristics are the core of this research. The study covers basic concepts and provides a feasibility assessment for marina development *via* SWOT analysis for a gateway functioning community in the secluded Westfjords of Iceland. Research data are compiled from secondary sources, interviews, questionnaires and a synthesis of related scientific articles, industry and policy documents, media publications, and baseline information. The case study confirms the conditional economic feasibility of private nautical tourism developments in high-latitude gateway locations and reveals users as adventure-seeking, authenticity-driven and environmentally-motivated. It is concluded that marina-oriented developments meeting certain conditions can be beneficial to remote rural arctic and subarctic communities in diverse ways. However, because of short and unpredictable seasons and changing user volumes, private sector marinas must be integrated with other business in the community to be profitable.

Útdráttur

Ferðaþjónusta við einstaklinga sem sækja í siglingar á norðlægum breiddargráðum hefur fengið litla athygli í fræðilegri umræðu um ferðmennsku á norðurslóðum. Í þessari ritgerð er spjótunum því beint að þessari gerð ferðamennsku sem mögulegu arðbæru atvinnutækifæri fyrir smærri strandbyggðir. Í því tilliti er mikilvægt að efla skilning á eiginleikum og hagrænum ávinningi þessarar ferðmennsku sem og þeim þáttum sem skipta máli varðandi hegðun og neyslu ferðamannanna. Markmiðið er því að gera viðeigandi grunnhugtökum skil og byggir rannsóknin á hagkvæmnisgreiningu - SWOT greiningu - fyrir hinar strjálu hafnarbyggðir Vestfjarða, en greiningin byggir meðal annars á viðtölum og spurningalistum. Umfjöllunin er sett í samhengi við fræðilegar niðurstöður, fyrirliggjandi þjóðfélagslegar og hagrænar upplýsingar, stefnuyfirlýsingar stjórnvalda, umræðu í fjölmiðlum og önnur gögn sem snerta ferðaþjónustu á Íslandi. Niðurstöður rannsóknarinnar benda til þess að það séu möguleg arðbær tækifæri fyrir norðlægar hafnarbyggðir fólgin í siglingatengdri ferðamennsku fyrir einstaklinga. Enn fremur benda rannsóknarniðurstöður til þess að ferðamennirnir séu allt í senn ævintýragjarnir, áreiðanlegir og umhverfissinnaðir. Í lokaniðurstöðum er bent á að ákveðnar framkvæmdir og uppbygging á hafnarmannvirkjum geti komið strandbyggðum til góða í þessu tilliti. Hins vegar er stutt og óútreiknanlegt siglingatímabil og sveiflur í fjölda ferðamanna þættir sem gera það að verkum að þessi gerð ferðamennsku er ekki hagkvæm ein og sér.

To my son Felix Finnbogi,

marvelous explorer on a blue planet.

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Acronyms

EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
GMDSS	Global Maritime Distress and Safety System
ICG	Icelandic Coast Guard
ICOMIA	International Council for Marine Industry Association
JRCC	Joint Rescue Coordination Centre
NGO	Non-Governmental Organization
MRCC	Maritime Rescue Coordination Centre
MTC	Maritime Traffic Centre
M/Y	Motor Yacht
RIB	Rigid Inflatable Boat
SAR	Search And Rescue
SEA	Strategic Environmental Assessment
SRR	Search and Rescue Region
S/Y	Sailing Yacht
VTC	Vessel Traffic Centre

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Introduction

Into the Ocean

To escape demanding daily life, millions of people venture to ocean shores every year. In the coastal area they seek relaxation, recreation and leisure activities, which they actively pursue on land, on the beach, and in the water. In doing so, they spend considerable amounts of money. While most people spend their time in the vicinity of the shoreline, some are drawn deeper into liquid territory. When only the horizon is the limit, and direction, pace and destination are only theirs to decide, freedom does appear endless. For centuries, such freedoms were reserved for aristocrats, leading politicians, and highly successful businessmen. Beginning in the 1950s such pleasures became available to the average population (Orams, 1999). The popularity of leisure craft is therefore steadily on the rise.

Into Nature

Yacht users have, of course, many different ideals and reasons for their serious leisure. Some focus their activities on nature itself (*e.g.*, bird watching, whale watching, fishing, and diving) and use their vessel as a platform to reach the desired environment. These destinations might be on- and offshore, underwater, on the surface, in the air, or on distant and unexplored shores.

Into the Arctic

To some adventurous yacht users, major yachting grounds such as the temperate Mediterranean and Caribbean no longer hold the same allure. Instead, they turn to higher latitudes for the ultimate sailing experience. Often inspired by the spirit of polar explorers, they come to visit nature, places, and people of interest. Some boaters prefer to visit places that are viewed as impossible or difficult to get to by conventional transport. The exclusivity of such a destination has particular attractiveness not only to the active explorer, but also to the luxurious yachting market segment. Historically, yachts were technologies of the wealthy and the

powerful. Today, yachts have become easier to afford. Yachting as a luxury has evolved so that destinations have become as important signs of status as the yachts themselves. High latitude waters have become increasingly attractive to yachters, in part because they are off the beaten track and present access to spectacular nature.

Coastal and marine management (CMM) addresses diverse topics such as fisheries, aquaculture, marine transportation, coastal protection, coastal hazards, marine law, marine conservation, integrated coastal zone management, and non-living marine resources. A rather new specialty in CMM focuses on various aspects of marine recreation, tourism, leisure, and tourism. An important subsector of marine tourism is nautical tourism. There are many examples of private nautical tourism around the world. Many countries in the Arctic and Subarctic, including Iceland, consider fostering nautical tourism development.

Arctic and subarctic nations increasingly recognize climate change not only for altering of habitats but also as a chance for a prosperous future. This is foremost motivated by the availability and accessibility of previously inaccessible areas, which give opportunities to new economic ventures. Some benefiting economic sectors are Marine, Nautical, and Polar tourism.

This thesis focuses on a in the Arctic and Subarctic on popularity gaining tourism sector whose economic impact, even in its originating countries, has long been underestimated. This research acknowledges the changing demand in the global private nautical tourism market *inter-alia* observed by local institutions, which indicate a shift towards arctic and subarctic exploration, and analyzes on an example the feasibility for arctic and subarctic areas to adapt to these newly arising economic chances on a local scale.

It is expected that private nautical tourists who purposely cruise high latitude waters have significantly differing motives, objectives, and expectations compared to those in balmy cruising grounds, and that due to the environment – the physical nature – accessibility is seasonally limited.

On-route to their polar destination, the private nautical tourist will stop in rural communities that deliver selected criteria of importance. While some communities embody the final destination, others act as a transportation node, a provision node, or a base camp. Ideally, their characteristics are combined creating a *gateway tourism community*. Locations with higher populations, existing marine and general infrastructure, and attractive amenities in their vicinity are expected to see the greatest

rewards for *gateway tourism* associated with private nautical tourism. They are therefore focused on.

Their marina development feasibility is demonstrated with a case study of Ísafjörður, Iceland. Besides allowing for general statements on high latitude marina development, the case study has the purpose to provide a product that is of relevance to Ísafjörður brokers. Outcomes of this study shall supplement the gateway location's sustainability development by delivering feasibility recommendations and fundamental knowledge on marinas and the high-latitude private nautical tourist. Those shall foster diversification of local industry, education, and recreation, thus strengthen the region. While this study assembles basics and demonstrates a feasibility assessment using a SWOT (Strenght-Weakness-Opportunity-Threat) analysis, it aims to motivate a deeper research interest for this evolving tourism field overall.

Research Framework

Structure of the Thesis

This thesis concerns gateways for private nautical tourism and marina development in the Arctic and Subarctic, and provides a feasibility study for marina development in Ísafjörður, Iceland. This thesis is made up of two core parts.

Part One (chapter 1) embodies the theoretical background necessary to understand private nautical tourism in high latitude areas. Its content is of general value, whereby the information presented can be transferred to any coastal arctic or subarctic location. While this chapter encompasses many areas related to this type of tourism, emphasis is put on the facility rendering the service for private nautical tourists and their vessel: the marina.

Part Two (chapter 2 – 5) presents a case study for marina feasibility assessment *via* SWOT analysis. Secondary source data, questionnaires, and interviews are analyzed and supplemented with general observations, baseline data, and secondary study sources to complement the SWOT analysis. Chapter 2 introduces the research methodology. Chapter 3 introduces the general settings of the study community. Chapter 4 presents findings. Chapter 5 presents and discusses the SWOT analysis and includes a final feasibility statement and strategy recommendations, which complete the feasibility study.

Conclusions of the thesis are presented in a final section. Part One and Part Two embody single comprehensive parts of the thesis. The methodology chapter has been therefore included in Part Two. Information presented and outcomes discovered in both parts result in a conclusive statement for marina development and private nautical tourism in the Arctic and Subarctic.

Research Goals and Objectives

This thesis considers the following goals and objectives:

During literature research:

- Understand private nautical tourism, the tourist, technologies used, and challenges related to private nautical tourism within the Arctic and Subarctic
- Explore gateway community issues

- Understand general facilitating (marina) basics
- Explore the opportunity spectrum arising with a marina
- Name management and planning basics for a marina

In the feasibility study:

- Identify current settings (tourism, infrastructure, local and foreign yachting history)
- Illustrate impact magnitude of the private nautical tourism sector, locally and afar (using Broker-Local-Tourist mapping)
- Explore Ísafjörður's importance status for private cruising towards East Greenland
- Find and analyze current and past leisure vessel density in traffic boundaries of Ísafjörður
- Gather perceptions from local and foreign private harbor users regarding offered harbor facilities and desired improvements
- Gather visions, plans, actions, and support stance for marina development from members of the local government
- Conduct marina feasibility analysis for Ísafjörður and give recommendations

Limitations of the Study

The literature of arctic tourism studies is modest. A few scholars have made attempts to describe arctic nautical tourism, mainly focusing on cruise tourism and its impacts in the Antarctic, Arctic, and Subarctic region (*e.g.* Hall & Saarinen, 2010 (a, b)). Research with primary focus on private nautical tourism in these environments has, to the knowledge of the author, not been attempted yet. Peer reviewed literature sources on the topic are hence limited to the general field of private nautical tourism. Private nautical tourism data is not easily accessible and of uneven quality (Jennings, 2007). Additionally, there are neither established reporting mechanisms nor any formal requirements for reporting. This thesis relies on a synthesis of secondary sources, for example industry and policy documents, media publications and baseline data (retrieved *via* personal communication). Literature research whilst preparing this thesis took place in English, Icelandic and German to achieve a broader information spectrum.

Part One – Basic Concepts and Private Nautical Tourism in the Arctic and Subarctic

Chapter 1 – Theoretical Background

Chapter 1 delivers comprehensive, necessary fundamentals when considering private nautical tourism in arctic and subarctic areas. Knowledge provided here can, without limitation, be transferred to any coastal location within arctic and subarctic boundaries.

1.1 Tourism Model

Tourism is (judged on its direct economic impact and numbers participants involved) the largest industry worldwide (Miller, Auyong and Hadley, 2002: 5). International tourism arrivals in 2012 totaled a record-breaking 1.035 billion, an overall growth of 4% compared to 2011 (WTO, 2013: 3). For comparison, international tourism arrivals in 2001 totaled 693 million (Miller, Auyong and Hadley, 2002: 5), and were, at that time, also a record high. The international tourism export earnings generated in 2011 total a staggering total of US$ 1.03 trillion (WTO, 2012: 2,13), illustrating tourisms enormous economic importance. To understand this magnitude of influence one first needs to understand tourism. Fabbri (1990) plainly notes: “Tourism was – and essentially still is – recreational travelling”. The World Tourism Organization, however, defines more precisely:

> Tourism comprises the activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited. Tourism is different from travel. In order for tourism to happen, there must be a displacement: an individual has to travel, using any type of means of transportation […]. But all travel is not

tourism.

(WTO, 2004)

Trying to understand the key character of tourism: the tourist, Miller and Ditton (1986:11) advocate that a tourists fundamental motivation for travel "lies in its promise of contrast", and elaborate that the tourists opportunities for contrast or personal change can be found along three parameters: recreation, education, or instrumentation. Others "ascribe[s] motivation [generally] to a desire for "self actualization", a need to discover one's potentialities and limitations through intense activity and experience" (Csikszentmihalyi, 1988, on Maslow, 1965) to reach a certain level of "flow" in which "A person […] whishes to do what he or she is doing for the sake of the activity itself, independently of external consequences" (Massimini, Csikszentmihalyi, and Delle Fave, 1988: 65). Realizing the large spectrum of possibilities of each of these parameters helps explain why tourism today is so diverse. To ease the understanding of power dynamics in tourism, Miller and Auyong (1991) developed a simplified sociological model focused on three key actors: the local, the broker, and the tourist, hence called BLT – model (Figure 1).

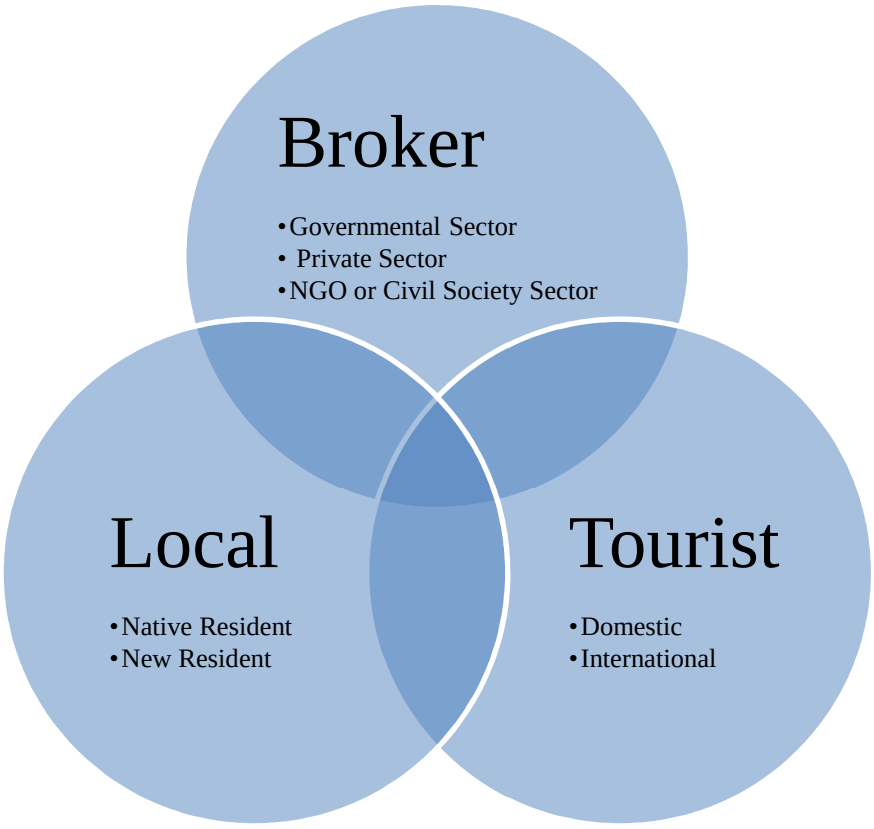

Figure 1: Sociological model of tourism (BLT-Model). After Miller & Auyong (1991)

Volumes and interactions between and within these actors shape overall development dynamics directly, even more so since status changes from actors, *e.g.* from local to broker or tourist to local, are common, and thus alter local social structures significantly. Miller (Personal Communication) theorizes another, especially for the in this study focused on area, significant opportunity and thus tourism development steering model that explains the combined effect of a social, an ecological, and a technological component to the local tourism (Figure 2). The social component derives in the BLT – model while the local natural environment defines the ecological component. The technological component describes the state and availability of technical advancements, which, without a doubt, can greatly affect the accessibility of the ecological/physical component. Such significant, tourism, and indeed migration and thus human history, altering technological advancements include trains, cars, ships, and airplanes; but also imply available and affordable new means of transport like outboard engines and leisure vessels, telecommunication, or navigational aids like GPS-technology.

Figure 2: Physiological, ethnological, sociological model of the tourism system. After Marc Miller, Personal Communication

1.2 Marine Tourism

Marine tourism is, by some accounts, the fastest growing tourism sector worldwide (Miller, 1993; Cater & Cater, 2001, Hall, 2001), which grows both in diversity and volume (NOAA, 1998, Moreno & Amelung, 2009). Marine tourism is described as including:

> […] Those recreational activities that involve travel away from one's place of residence and which have as their host or focus the marine environment (where the marine environment is defined as those waters which are saline and tide affected).
>
> Orams (1999: 9)

Needless to say these activities can take place in, on, and under a variety of water-based settings including estuarine, marine, and frozen, and include at least directly connected shore-based activities. Coastal tourism and marine tourism are thus closely related. Coastal tourism encompasses the complete range of tourism, leisure, and other recreationally focused activities that can take place in the general coastal area (land and sea) and offshore coastal waters (Hall, 2001: 602). It includes coastal tourism development (accommodation, entertainment, food industry, transport,

vacation homes) and infrastructure supporting coastal development (*e.g.* retail businesses, activity suppliers, marinas, directly connected service industries; Miller, 1993: 184 – 187) as well as activities such as recreational fishing and boating (coastal), snorkeling, diving, swimming, beach volleyball or coastal and marine based eco-tourism. Marine tourism, as a direct counterpart to terrestrial tourism, also includes ocean-based tourism such as deep-sea fishing and yacht cruising (Hall 2001: 602) and ranges from the direct foreshore via coastal zones into the as open ocean defined offshore areas (Garrod & Wilson, 2003). It's main objective is the marine environment, while the overlap with the coastal tourism environment derives from its necessity for access, supply, maintenance and storage. Given the dynamics described in the sociological-ecological-technological model (Figure 2), the array of new opening niches as business opportunities in such an environment is almost unlimited.

In a local largely intertwined industry, such as marine and coastal tourism, it is hard to distinguish stakeholders from each other and the sector carries obviously immense economic responsibilities and powers; especially for islands and remote coastal communities dependent on it (Miller, 1991). Research and academic studies started to focus at them 20 years ago (Miller, 1993; Miller, Auyong & Hadley, 2002; Hall, 2001). Coastal and marine tourism development, is controversial and complex, and not infrequently comes with drawbacks for the local natural or social environment. The latest management efforts try to gain better development control and are more than ever focused on overall sustainability that includes the ecological, economic, and local socio-cultural environment (Hall, 2001: 609 – 614). Often, these efforts originate from invested brokers, or directly affected locals and concerned tourists (Miller, 1993; Miller, Auyong & Hadley, 2002). Modern sustainability efforts attempt to include or combine tourism education, planning, and management and mitigation strategies.

1.3 Gateway Communities and Tourism

Gateway communities can be defined as entry points towards an attraction whose entry is limited either by the geographical, physical, or man-made regulated environment. Traditionally, they have served in many ways, such as entry into the new world (*e.g.* New York), entry point to National Parks, or as commercial and industrial gateway, like Hong Kong, into the Asian market. In this thesis, gateways

regarding the Arctic and Subarctic are defined as a location of strategic importance to the private nautical tourist. Their strategic focal point is considered to be on features such as alternative transportation, industrial infrastructure, supplies, and emergency services, and of course the vicinity to the point of interest, which is their overall objective.

"Due to their natural beauty and high quality of life, gateway communities have become a magnet for a growing number of people" (Frauman & Banks, 2011: 128). They are often surrounded by an environment that does not allow for unlimited growth, either bordered by protected land, certain geographical features, or via legislation (*e.g.* military site). As a result they are limited in the degree and direction they can be developed. Regarding this, McMahon (1999: 6) notes that "[…] no place will retain its special appeal by accident", describing that gateway cities often are a test site in the struggle between indiscriminate development and planned growth. At the same time, due to their attractive status, gateway cities face sometimes extreme growths through tourists, retirees, and second home ownership. A direct outcome is that "gateway communities offer important lessons for other rural areas grappling with rapid growth and change" (Frauman & Banks, 2011: 128). To counter uncontrolled development in various ways, McCool (1994) suggested a planning framework dealing with Limits of Acceptable Change (LAC). Gateway cities always face social structure changes. In many such places natives live alongside new residents that moved to the area for work within the local industry or to retire, mesmerized by the place just like the tourist. Although benefiting from the economic growth, feeling invaded and not under control of development is a commonly found perception amongst natives (*e.g.* Tosun, 2001). Resident's perception towards tourists is another issue. There is not much sense for a community to develop and promote tourism if the area lacks of support from its residents, since it leads to negative feelings towards the industry and "off-putting" reactions towards the tourist (Taylor, 1995). Horn & Simmons (2002; in Frauman & Banks, 2011: 129) report that:

> In an area where tourism is more spread around with a lower ratio of tourists to residents, tourism is viewed as being under local control and so is generally supported whereas an area experiencing a series of rapid changes generates more negative perceptions.

Evaluating their research, Akis *et al.* (1996) hypothesis that while tourism development increases, the perception of a positive development declines. While as the number of visitor's raises, positive views of tourists increase. If that is true reality, then it may not be the number of visitors that lead to negative perceptions, but rather the "corresponding perceived negative impacts of the tourist-related development" (Frauman & Banks, 2011: 129). It can then be concluded, that for gateways not only the limit of changes themselves are important, but also the rate the changes take place (Horn & Simmons, 2002).

1.4 Polar Tourism

Global climate change is the most pressing environmental concern for tourism (Patterson *et al.*, 2006). The changing climate has significant implications for key land, sea, and ice resources of Polar tourism in the Arctic, and for people and wildlife that inhabit the area (Stewart *et al.,* 2007: 378). Promoting public awareness of climate change in the Arctic[1] region has triggered a strong increase in Arctic maritime tourism; answering the growing demand of customers to explore remote, quickly altering and therefore unique places before they change.

Together with fisheries and mineral extraction, tourism can be seen as the most substantial economic driver in high latitudes today (Hall & Saarinen, 2010 (b)). Counting more than five million tourist trips that occur in the Arctic and Subarctic every year it comes as no surprise that tourism is deeply embedded in the processes of change that are occurring in the polar region (Hall & Saarinen, 2010 (a)). Polar regions represent, as destinations, peripheral attraction with exceptional challenges in accessibility for the general tourist and the private nautical tourist. Ironically, this very factor makes them marketable.

As Medvedev (2001: 91) points out, arctic areas are even more so attractive because of their remoteness, relative obscurity and anonymity. Over long periods of time the general idea "of the polar as empty space has been substantially defined by those outside of it and who may have never even visited it." (Hall & Saarinen, 2010 (b)) Perceptions of the "symbolic north" (Roth, 2005: 44), its wildlife, and geographical features have been portrayed by myths (*e.g.* Santa Claus; Grenier, 2007), reports from polar explorer, and documentations showing polar bears and snow and

ice (Hübner, 2009; Amaomao & Boyd, 2005) and so over time created "a "exotic" commodity for southern consumption" (Roth, 2005: 44).

The tourism industry is further using the fact that there is a clear difference between climatic Arctic regions that change as climate change progresses, and geographical as Arctic defined areas, which stay as designated. During climate change alteration they still feature their former natural state whilst slowly adapting to the new climatic conditions. These small transition time-frames make tourism inside the Arctic possible, since the tourist is in the geographical Arctic, but experiences more accepted Subarctic (summer) climate travel conditions. Tourists coming into colder regions of the globe not necessarily fancy colder climates. Their perceptions and expectations can vary greatly and have a direct influence on their overall tourist performance. Valuable first insights on the matter are given by Day *et al.* (2013).

[1]In this study referred to as arctic and subarctic areas are, for simplicity reasons, all geographical areas above 60°N.

Especially the cruising ship industry recognizes a rapid growth in tourism of the world polar regions (Hall & Johnston, 1995; see also Figures in 3.2.1). Polar cruise tourism is, nevertheless, in an unknown state, since "climate warming is altering the character and distribution of sea ice, increasing the likelihood of hull-penetrating, high latitude, multi-year ice that could cause major pitfalls for future navigation in some places" (Stewart *et al*., 2007). A negative impact for tourist transits is highly possible. A major accident in polar arctic waters could completely alter the polar cruise tourism industry, and possibly regulations for private nautical tourists, overnight (Stewart & Draper, 2006).

1.4.1 Challenges

Basic Challenges

Exploring arctic and subarctic waters and coastlines brings inevitable challenges. Some of them anticipated, others tolerated, and yet others totally unexpected. As for now, there are limited locations in these regions with man-made harbor structures to resupply and refuel vessels; especially in the sparsely populated areas of northern Canada, Greenland (*e.g.* Nielsen; Brinkhoff, 2013), Alaska and Russia. For reasons including storage space, export transport costs, or wildlife protection, fewer settlements willingly collect foreign waste (*e.g.* not Spitzbergen (Kings Bay AS,

2012)) and even fewer have facilities to take care of yacht repairs. As a result, crews of recreational vessels sailing such waters have to prepare more in advance than usual. There is a strong likelihood to see sailing yachts with motors or motor sailors in these waters rather than a pure motor vessel, since resource efficiency and independence are of high priority. Storage capacities for food, fuel, electric energy, and waste need to be taken into account just as much as constructional adaptations for the vessel. For better safety and comfort, the yachts are expected to have *e.g.* reinforced mechanical and hull features, cabin heating and insulation, electronic depth finder devices, and a dinghy for land access (K&M Yachtbuilders, 2003). Alternative energy providers like solar panels and wind or current generators need to be contemplated to ensure workability of critically important electronics, especially communication, on board. Also, boat-building materials need to be taken into account since they show different elastic capacities in the frigid Arctic climate than they do in warmer areas (Scharping, 1994).

As discussed, vast landscapes, wilderness, and unpopulated areas are more easily found than populated areas. This, in fact, is one major driver for people to visit the Arctic. Wildlife, however, is by no means kindly disposed towards humans. Many tourists are, for example, unaware of the physical fitness and abilities of polar bears and have been surprised by unwanted boarding visitors, or whilst tying up a boat on shore (Image 1). Hunting rifles increase the level of safety in the case of undesired encounters and thus are common on board.

Image 1: Polar bear attempting to board a yacht, Svalbard, Norway. Source: deadfix.com, 2012

Marine Traffic Challenges

Several enhanced marine risks are associated with the Arctic region. The Lloyd's Register offers in-depth knowledge on the topic in their report: "Arctic Opening: Opportunity and Risk in the High North" (Lloyds, 2012). Another valid source poses the FNI report: "IMO Guidelines for Ships operating in Arctic Ice-covered Waters" (Jensen, 2007). Fundamental excerpts are summarized in this section.

Knowing what to expect makes all the difference in safe maritime traffic. The biggest safety issues of which modern society is aware of are so called "known unknowns"; known safety issues which, due to their nature, enhance maritime traffic risks. Known meteorological phenomena such as icing (mostly November to April, northern hemisphere) and fog (worst in June and July, northern hemisphere) lead to capsizing or collisions usually accompanied by partial or total casualties to crew and lost or damaged equipment (Lloyds, 2012). Strong katabatic winds (spring to autumn, northern hemisphere) originating from ice-covered landmasses worsen any sea condition close to shore.

Climate change alters local weather conditions and sea state, though not necessarily to anticipated holiday-like weather conditions, leading to redistribution of climatic assets between tourism regions (Scott *et al*., 2004). Glacial ice, with its

different characteristics in water, is always a less expected threat since they also occur outside regular sea ice areas. The ocean liner TITANIC may be the most famous casualty of unprepared contact with such an iceberg. The increased seasonal and general loss of solid Arctic sea ice (NSIDC, 2012; Figure 3) supports shipping for commercial ships but can pose an expanded threat to smaller vessels. The break-off of solid ice results in larger carpets of ice floes, ice cakes, or pack ice (Bowditch, 1995). Other forms of sea-originating ice can be newly created nilas (Wilkinson, 2005), which are comparable to slush in water, or so-called pancake ice (Wilkinson, 2005). These ice carpets, with progressive volumes, spread faster and change in density and coverage, directed by currents and local weather. While commercial vessels can deal with these carpets, they pose a serious threat to recreational vessels, especially in stormy conditions, since they can harm the vessel severely in one-time chance encounters. That said, floating ice of any kind poses danger to vessels, no matter if structurally enhanced for the conditions or not, which is why incident scenarios are so diverse. Mainly hull, propeller, rudder and other associated machinery can become damaged or disabled. Another scenario is that of nilas, pancake ice, and drift ice, tending to envelop a small vessel. They then stick and fasten to it creating severe pack ice and icing-like conditions. In addition, nilas and early stage pancake ice can affect a yacht by freezing on submerged appendices or choking water intakes for onboard machinery, thus disabling maneuverability and seaworthiness.

Since most nautical tourists venture into the Arctic and Subarctic to explore its shoreline, sea ice can also impact the overall journey without physical ice contact. For example, loose drift ice being pushed by winds will aggregate and thus possibly block a fjord that has been chosen for shelter. Vessels inside become deadlocked over longer periods of time, while yachts on the outside are unable to reach inside the fjord.

Due to the high expense and difficulty of monitoring and forecasting any ice type it can be expected that such actions will be, at least those with high resolution, concentrated on shipping routes only, leaving large sectors of the Arctic without service. Grounding on uncharted obstacles, like rocks, is another common reason for incidents (Lloyds, 2012; Stewart & Dawson, 2011).

A well-known “known unknown” wildlife issue is the unintentional collision or otherwise threatening encounter with marine mammals. Particularly whales, larger pinnipeds, or polar bears all show higher population densities in arctic and subarctic

waters (Tynan & DeMaster, 1997). Especially whales and larger seals can damage vessels similar to the formerly described incidents. Other “known unknowns” are the delay in, or lack of, salvage exacerbated by remoteness, and the general lack of safe (natural) harbor information.

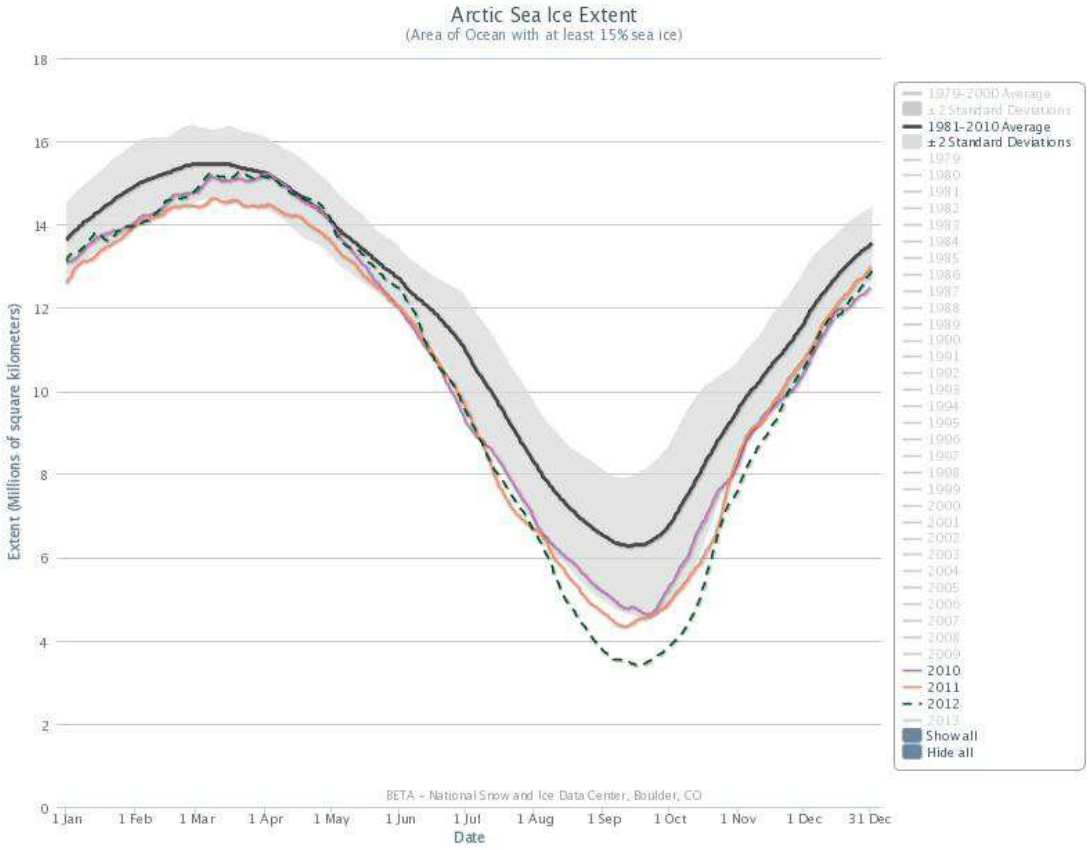

Figure 3: Arctic sea ice extent from 1981 to 2012. Source Charctic, NSIDC, 2013

Known safety issues are issues that human kind can influence entirely. Efforts undertaken to change their impact directly affect the knowledge of previously listed issues. Publishing better maps, and providing timely detailed hydrographic and meteorological data are of utmost importance (Lloyds, 2012; Jensen, 2007). Also, institutions and legislation can control vessel voyage feasibility. Their entry allowance in areas can be focused on vessel-specific crew arrangements including certain states of experience and education. They also can specify or dictate how far an icebreaker vessel, a pilot and/or escort arrangements for certain areas are necessary (Lloyds, 2012). Another controllable safety issue is large-scale offshore waste disposal and lost freight from merchandise vessels. Unregulated or unreported, it not only poses a threat to the environment, but can also be a safety issue.

In the Arctic, like in the oceans themselves, there are still undiscovered natural phenomena hidden. Those completely unknown phenomena, nevertheless, pose a possible safety issue and are assumed to include meteorological phenomena and enhanced rogue and freak wave mechanisms. Modern science is putting great effort into discovering and exposing these phenomena, making them more predictable (see *e.g.* Lavrenov and Stepanov, 2005; Lavrenov, 2003; NSIDC (a), 2013; NSIDC (b), 2013).

Electronic Communications Challenges

The combined occurrence of magnetic and solar phenomena, interference in the ionosphere, and necessary geostationary satellite geometry mean that high frequency radio and GPS signals are degraded above 70°-72° North; a major issue for communications, navigation, and search & rescue (Lloyds's, 2012). Limitations and expense of high rate satellite communications may be partially resolved with the launch of a number of Arctic-specific satellite communications systems by the European and Canadian space agencies (Dufour, 2009) in coming years. Today's Iridium constellation of communications satellites provides communication services that operate in the Arctic environment, albeit with limited bandwidth and high expense (Lloyds's, 2012).

Marine Insurance

One decisive factor for decrease or increase of leisure vessel activity in any area can be the balance or degree of safety and risk components of human or natural origin presented at that location. Aside from logbooks, charts and other published documents, insurance demands acting as regulatory tools can help decision-makers to identify high-risk areas and to plan a journey according to their abilities and experience, thus acting as a regulatory tool.

> The maritime insurance industry can play a critical role in reducing [financial] risk for shipping companies [and leisure vessels] in the Arctic, as elsewhere [(*e.g.* piracy in other parts of the globe)]. If insurers are unable [or unwilling] to cover shipping through the Arctic, or if rates for insurance cover are exceptionally high, the economic viability of some Arctic shipping may be brought into question.

(Lloyd's, 2012: 49)

For private and charter vessels, this implies that vessels without insurance coverage for a certain Arctic area it might either decide to not enter or be especially driven to it for its larger larger degree of adventure, thus attracting high-risk takers. In general, Arctic areas with less or no commercial traffic pose higher elevated danger levels to leisure vessels in distress than those with some traffic, as timely emergency response is not only more unlikely, but close to impossible.

1.5 Private Nautical Tourism

Private nautical tourism, a sub-category of nautical tourism, is one of many tourism types in the field of marine tourism. "Nautical" developed from the Greek word *naus*, describes ship, boat, or seamanship (Luković, 2012). The more modern word "navigation" describes the theoretical and practical skill and ability to handle and steer a boat from one location to another. When "navigation" and the associated term "maritime" are used together, it is understood as "seafaring". That might explain why "maritime tourism", or the English "yachting tourism", and other nautical tourism denoting terms are very often used when communicating on the subject internationally. In reality, those terms describe very particular fields of marine tourism that differ from each other. An in-depth description of nautical tourism can be found in Lück (2007). In this thesis, nautical tourism deals with boaters (the tourist) and their impacts whilst traveling (to their vessel or with their leisure vessels between locations) only. It is equal to yachting tourism, but not reduced to, whereby yachting tourism is a kind of tourism focused on luxury at sea (status portrayal), developed before interest in seafaring as such. This tourist mostly sleeps aboard, uses local facilities and infrastructure, and pursues desired holiday activities (Natchez, 2006; Robinson, 2009).

Private nautical tourism is a niche-tourism that contains an exception in the general tourism definition since its time-span can vary from a day cruise to a worldwide travel beyond the defined one-year time limit (see chapter 1.1). The typical nautical tourist finds great pleasure in using his method of transport (Natchez, 2009: 1), which, on the contrary to other carriers, covers longer distances rather slowly.

Although it might be “the most expensive way to travel uncomfortably” (boaters saying), the choice of carrier purposely shifts the focal-point from the destination alone to the journey as well. This mentality defines a vital part of the overall travel experience. Needless to say, without the vessel, many destinations would be unreachable for the tourist altogether.

In the last few decades, private nautical tourism rose strongly in popularity (Derksen, 2007; Cope, 2007; ECLAC, 2003). Still, private nautical tourism has not until recently been paid much attention. Surprisingly, even in the birthplace of the yachting culture, Great Britain, empirical data including the overall impact of travel is hard to gather (Robinson, 2009). However, the British Marine Federation estimates a value of 2.2 billion British Pound for the UK leisure boating sector alone, which support around 63.000 jobs (British Marine Federation, 2006). Luković, (2012: 418) stresses:

> The multiplying effect of tourism should not be neglected: it results from the fact that money spent by the tourist does not remain in the place of its consumption, but continues to circulate and have a chain effect on economic events. Accordingly, money circulates on the national and supra-national level within an entire economy, flowing from one business to another, from industry to industry, and the more it circulates the bigger are its economic effects.

For any receptive country, private nautical tourism can be a source of currency flow, which contributes to the balance of payments to the host country. Private nautical tourism as such is thus considered as aninvisible export (Luković, 2012: 418). Taking a social perspective, it is the intertwining of information, knowledge, lifestyle, and culture between nations that comes with nautical tourism. Since the younger generations, as reflected in their interests and education, are impacted by tourism generally and nautical tourism in particular, their focus in change for social and economic development can be a significant factor in the process of local social change (Luković, 2012: 418).

1.5.1 Yachting

Definition and History

A nowadays generally acknowledged definition of a yacht implies an on water moving vehicle that fulfills a non-commercial purpose related to sport, recreation or representation (Scharnow, 1981).

A clear distinction is made between a sailing yacht (S/Y) and a motor yacht (M/Y). Smaller sailing vessels, such as dinghies or daysailers, are usually referred to as sailing boats, but fall within the definition of yacht as defined by the "International Regulations for Preventing Collisions at Sea", published by the International Maritime Organization in 1972, called a yacht (Scharnow, 1981). In a competitive environment, any sailing vessel taking part in an official offshore race is referred to as yacht (ISAF, 2011). Yachting in the sense of activity is referred to as recreational sailing or boating. It does include and is not limit to the activity of a sports environment.

The word "Yacht" was first foundin the French text "Histoire de la Marine Française" from 1551 (Giorgetti, 2000: 3), wherein it was used to describe a pastime. It's origin is believed to be derived from northern European areas; the Danish and German "Yagd", the Swedish and Dutch "Yagt", and the Sami "yat" all carry meanings of hunt, chase, and fast (Giorgetti, 2000).

Dutch texts from the late 16th century on described a "Jacht" as a small and fast going sailing vessel deployed by the military for message delivery, border patrolling, state business, or enjoyment, but also as the preferred mean of transportation for pirates and smugglers (Scharnow, 1981; Giorgetti, 2000: 3). While Danish chronicles from the 17th century onwards brand a "yagt" as lean and agile tender; it was the English that used "yacht" in the pure meaning of "pleasance boat" for the first time (Giorgetti, 2000: 3).

Sailing for pleasure, however, is rooted much deeper in history. Stanislao Bechi (1785) wrote an essay called "*Istoria dell'origine, e progressi della nautica antica*", translated as "history of the origin and progress of seafaring", in which he describes that some already owned vessels fo no other reason than representation and pleasure, such as Cleopatra with her vessel "Galea" and Philopator, King of Egypt, owned vessels for no other reason than representation and pleasure. Similar use of vessels by other aristocrats existed throughout history.

The first as such acknowledged "Yacht in history", the "Mary", was given to King of England Charles II in 1660 by a Dutch business man during an official visit

of the King to the Netherlands (Giorgetti, 2000: 5). Aristocracy exchanged, portrayed, and occasionally competed with each other's yachts over the next decades. It was in the 17th century that yachting as such created its own dynamic and cultural value, when yachting's general meaning of pleasure transformed from hitherto associated rest-and-relaxation to friendly competition with opponents. The first yachting clubs were founded, and by 1775, a new word described the sportive competition between vessels, speed, and the constant aim to better the capabilities of man and vessel: "Regatta" (Giorgetti, 2000: 8). Not before the 18th century did American colonists become active in from then on eager persuaded yachting sport. Competitions between aristocracy of the "Old World" and the wealthy and successful of the "New World" established races with global participation. The prestigious America's Cup, first held around 1850 (Giorgetti, 2000: 68), triggered a strong increase in the popularity of the sport, which still exists today. As a result, yacht design and construction experienced a revolution. Empirical research and test tanks lead to accelerated evolvement of the naval architect profession. It's outcomes influenced commercial shipping and warfare technologies, which are recognizable still today. Only to the end of the 18th century did people of less-fortunate classes involved themselves with the recreational sailing pleasure. Throughcompleting a circumnavigation of the world between 1895 and 1898, Joshua Slocum is reported to be the pioneer of ocean voyaging or long-distance cruising (Cox, 1999). Both World Wars brought yachting as international sport to an almost standstill.

While aristocracy slowly left the world stage and a new world order surfaced, it was inventions like the combustion motor and its mass adoption, production, and usage in recreational and leisure enormously increased popularity of leisure boating enormously. Simultaneously, new materials like aluminum and fibreglass, which were lighter, more robust, and for mass production more feasible, transformed the leisure vessel industry. From the 1950's onwards boat ownership grew massively, making the oceans more accessible to a greater number of people (Orams, 1999: 17). International competitions and global races since are more common than ever, continuosly pushing the boundaries of yacht design, technology, and the human capabilities of both design and operating such vessel. It is only a question of time when such competitions enter the higher-latitude areas of the northern hemisphere.

Vessel Classes, Categories, and Technologies

The variety of yachts is just as diverse as their history, and vessel characteristics can differ significantly between different categories, types, and classes. Vessel owners choose their vessels depending on task, destination, and a personal set preferences and priorities (Howard, 2000). Their vessels will show certain characteristics in regards to hull shape, draft, beam, length, freeboard, height, materials used, electric power usage, and fuel- grey- and fresh water tank volume, which are meant to satisfy an optimum between handling, comfort, travel radius, and speed while moving (Jim Howard, 2000).

There are two main categories of recreational vessels, distinguished by their principal source of propulsion: Motor or sail; thus motor yachts and sailing yachts. Due to their complex history, yachts have no comprehensible or easily understood classification. Classes of yachts are divided according to production type (self-made, production-line made, custom-made), production cost (low-budget, medium-range budget, luxurious), and time period that motivated the design (classic, contemporary, modern). Additionally, new types and classes' surface regularly in the yachting industry, trying to promoting and distinguishing single shipyards, naval architects, or yacht owners from others. Yachts are purpose-built, whereby types can vary greatly from each other: recreation (including fishing), exploration, expedition, presentation, accommodation (living space), or race (Scharping, 1994). Some subtypes are: ocean racer, cruiser-racer yacht, long-range exploration yacht, cold-water expedition yacht, daysailer, and weekend cruiser. The number of hulls defines one of yachts significant features. They are separated into monohull (most common), catamaran, and trimaran. Position and amount of mast and sail on a S/Y identify its type further (*e.g.* slup, ketch, kutter).

Since the 1950's, drastic developments in technologies and construction materials positively impacted affordability, durability, and reliability of leisure vessels, resulting in an ongoing boat ownership boom (Orams, 1999: 17; Jennings, 2007, chapter 2). Aside yachts, many other leisure vessels surfaced on the market, but not all leisure vessels are yachts. The boundaries are somewhat fuzzy, however, it can generally be stated that a yacht features: a cabin in which one can stand upright, a carrying capacity of more than two people, and onboard conveniences like toilet facilities or a small pantry. Vessels like inflatable's and jet skis are common

accessories on Megayachts and Hyperyachts (luxurious class). Platform based houseboats, open sport boats (speed boats), and RIB's do not classify as yachts.

The today most common found gizmos aboard a yacht are constantly advancing technologies for navigation (radar, sextant, GPS), weather tracking (chart plotter), and communication (radio, satellite phone; Robinson, 2009). Additional technologies such as solar panels, desalinators, life rafts, EPIRB (emergency position indicating radio beacons), yacht tender, or self-steering equipment enhance independence and safety and thus are often found on cruising vessels. In fact, "increased power of those gadgets is emboldening many a boater to become more adventurous than they otherwise might have been" (Natchez, 2006: 1).

Defining the Market - Tourist Classes

Yachting as sport and leisure includes difficulty levels from easy to extreme, individual to team pursuits, low to high impact, casual to committed participation, modest to sophisticated equipment usage, and from relatively inexpensive to expensive setups (Jennings, 2007, chapter 2). Equally, leisure and recreation experiences provide a range of choices. When sailing with a yacht, boundaries amongst sailing as sport, recreation, and leisure are to some extend unclear, and include features found in serious leisure, touristic experience, or a lifestyle pursuit (See also Stebbins, 1992; Csikszentmihalyi, 1988). "As lifestyle pursuit, sailing becomes labeled "cruising" and at the same time as a subculture (Jennings, 1999), which incorporates sport, recreation, leisure, and 'work'" (Jennings, 2007, chapter 2). Cruising is influenced by a number of factors, such as time, finances, family life cycle, and participant's perceptions of skill, novelty, adventure, and challenge (Jennings, 2007).

General arctic and subarctic waters demand for leadership with experience and advanced skills. The tourist must also devote a certain amount of money and time for his journey. It can thereby be said that private nautical tourists cruising high latitude waters are considered yacht cruisers (serious leisure), where their activity has become a lifestyle. Naturally, the number of active people pursuing this activity, especially in the colder regions of the planet, is quite limited. This expected private nautical tourist could further be categorized in terms of the degree of specialization that might be achieved. Amateurs and hobbyists fill the lower ranks, while in the industry-employed

or personally engaged nautical tourists, such as yachting professionals, exploration professionals, and expedition professionals, fill the upper ranks.

A higher variety of user classes are typically found within slowly establishing local yachting areas. Such places foster an active sailing sport culture, and for that draw enthusiasts, hobbyists, volunteers (opportunity user), and novices. Further, in areas facilitating charter flotillas long-distance cruising to reach the desired water's is eliminated, thus the market opens for another, less serious but nevertheless interested user class. While some sail to explore new destinations, others pursue the activity to enjoy the sea. By the latter, marinas are often considered as "necessary evil" (Favro & Glamuzina, 2005: 1), explained by the vessels short duration of stay. Robinson (2009) defines generally, that most users stay inland or adjacent to and along the coast with only the most experienced and able venturing to neighbor countries. He adds that domestic users tend to take trips of varying duration, spending some time and perhaps some nights at their permanent berth (if they have one) before moving on and cruising to other locations. Private nautical tourists generally do not limit themselves to marinas. It should be recognized that many prefer to anchor in bays, or use ungoverned or private moorings, preferring to retain some independence from commercial facilities. This preference implies that growth of nautical tourism and the range of activities it involves carry risk of saturation of coastal regions.

Ownership of a yacht is a desire many sailing enthusiasts have in common. Owning a boat that is large enough to holiday aboard is a considerable commitment, with the corollary that most owners of these craft are likely to use them for several trips each year. A reasonable amount of people opted for shared ownership among friends, and either use the boats together or alternate usage, but dividing expenditure.

1.5.2 Marinas

Definition

Marinas render the services to private nautical tourists. A marina is a safe, manmade harbor for recreational purpose only. While some small commercial fishing dinghies, water taxi or ferries, and rescue boats might not be excluded, one would most likely not find large scale cargo transfer piers and infrastructures, nor massive ship yards, container terminals or oil storage blocks. Instead, marinas are often accompanied by *e.g.* seashore restaurants, traffic reduced walk and shopping areas, housing,

entertainment and other additional tourism facilities, and supply, repair and maintenance services. Marinas can be classified according to (Luković & Gržetić, 2007):

The level of equipment:

- Standard, with basic conveniences;
- Luxury, with high level of conveniences;
- Recreational, with the possibility of using additional sport, recreational and entertainment facilities.

The position of maritime zone:

- Open
- Semi-enclosed
- Enclosed

Marina ownership:

- Private
- Municipal
- Public

Location:

- Sea/Ocean
- Estuary
- Lake
- River
- Canal

Spectrum of Marina Infrastructure

Land and water property usage of a marina are higher than one might expect; whereby working marina infrastructures are very complex. The Australian Department of Urban Affairs and Planning (1996) states: "Marinas and related facilities are shoreline facilities that service boats and include water-based as well as land-based facilities for the boats and the users". There are many guidelines for marina developments worldwide (*e.g.*, Schwarzenegger *et al.*, 2005; EEAA, 2005; Department of Urban Affairs, 1996).

Those guidelines state certain facilities a marina may include, such as:

- *Berthing, mooring, and other docking facilities*: Jetties, wharves, pontoons, moorings, wet-berths, ramps, and holding piles (all optimally providing rescue equipment, and water and electricity connectors);
- *Navigation and safety facilities*: Harbors, channels, breakwaters, groins, wave

barriers, navigational markers;

- *Dry storage facilities*: Hard stands, storage hall, stacks (partly or wholly enclosed), racks, cradles, hoists, cranes, straddle-carrier, fork lifts;
- *Boat maintenance, repair and construction facilities:* Dry docks, slip ways, engine-, electrical-, and instruments workshops, shipwrights, sail makers, storerooms (including for chemicals), boat washing facilities;
- *Service facilities*: Refueling facilities, fuel storage, pump-out facilities, waste collection, treatment and storage or disposal facilities, water storage and supply facilities, fire control services, oil decontamination facilities, amenities
- Parking, passenger or heavy vehicle access, public access, landscaping;
- *Commercial and retail facilities*: Chandleries, provisions, and food outlets, boat sales;
- Ferry, boat hire, and charter services; and,
- Related tourist or accommodation facilities, boat club facilities.

Any facility or equipment in the water is indispensable for a marina since accommodating and securing vessels is the marinas main purpose. Land-based facilities can be divided into direct required, direct related (extra service), and indirect related services. Core provisions of a marina include pier- and general harbor- and harbor entry (parking) space, and the supply of electric energy, fresh water, and fuel. Other important aspects can include disposal of grey water and general waste or weight limitations for cranes or slipways.

Primary and Secondary Marina Impacts

Any kind of marina development will influence its surrounding social, economic, and biological environment in multiple ways. Nowadays, many countries dictate EIA and SEA during the application periods for projects. With that they are trying to take possible impacts into account enabling them to start mitigation measures, especially for high social and environmental impacts, at the early stage of the planning process. Often, impact from the planned project on its environment (biological) is taken into account. Less often are social impacts and their economic impacts recognized (Favro & Glamuzina, 2005). By legislation, issues that pose a threat to the planned project and originate from the surrounding environment are rarely accounted for (*e.g.* forest fire, storm flooding, sea level rise; Favro & Glamuzina, 2005). In fact, many marinas worldwide, albeit knowingly connecting land with sea and developed as savior from physical hazards (storms, big waves), deal with fluctuating water level changes only with *e.g.* piers, pontoons and harbor protection structures (usually limited to tidal spring tide and hundred year return wave levels only). On the other hand, plans for

accompanied buildings, such as recreational homes, clubhouses, and chemical storage rooms do not take such impacts into consideration.

In the following sections, key issues of every sector: environmental, social and economic, shall be summarized. In the industry, many of the environmental issues are known and addressed when trying to achieve a Blue Flag label. Other issues are observed and mediated through guidelines and legislation issued by local authorities. Scientific research on impact originating from marina facilities is modest.

Environmental

Environmental issues related to marinas include:

- *Pollution*: Water, land, and air;
- *Optical*: Visual appearance of structures and waterfront; engine smoke; airborne industrial dirt from maintenance area; smell of harbor water;
- *Noise*: From motoring vessels, harbor vehicles and commuting vehicles; noise originating from masts and ropes on sailing yachts during higher wind speeds; industrial noise (maintenance area), recreational noise (clubhouse, parties, pool areas and visitor accommodation, general liveliness in marina);
- *Chemical*: Spills from refuel stations, pump-out facilities, and engine maintenance, soil and water contamination from service and repair areas (paint, batteries, oil, others); leak in storage facilities; sewage; higher concentration of chemical agents (*e.g.* zinc and copper from anti-fouling paints on hulls (Showalter & Savarese, 2004; Addison *et. al.*, 2008);
- *Ecosystem impact to sensitive species*: On land, intertidal, and in the sea, for flora and fauna (*e.g.*, nesting birds, juvenile and endangered fish, mammals, wetlands, sea grass);
- *Marina facilities*: Pontoons and permanent moorings can cause disturbances on the sea floor, alter the local habitat, or effect behavior pattern of marine wildlife. Solid placed structures can alter currents and thus reshape the seafloor;
- *Erosion, alteration and modification of the landscape and sea floor*: *e.g.* acceleration of natural erosion due to diversion of currents and sediment transport, dredging, dune displacement, regular/frequent wave impact;
- Exposure to the open sea (safety);
- Hydrological, water quality;
- Traffic, parking, and supplies;
- *Cumulative impacts from inside and outside the marina*: Combination and interference of environmental impact effects (*e.g.* waterfront renters with similar usage, competitive usage, different usage ideas (stakeholders)).

Social

Social aspects related to marinas include:

- Health and safety;
- Employment;
- Amenity (*e.g.* attractiveness);

- Access issues such as public access to public land, waterfront and waterways, access for people with disabilities;
- Residential and user structure (age, income, society status, involvement);
- Local traditions and heritage;
- Local infrastructure such as water, electricity, communications, on-demand services, maximum carrying capacities (seasons); and,
- Foreseeable development in local property and housing prices.

Economic

Economic impacts are just as diverse and intermingled with each other as they are with the social and environmental issues. The biggest difference is that, depending on size and status of the marina, economic impact can impact effects far over the municipal borders. Boost in demand for equipment, supplies and specialist will support economic growth not only county-wise, but possibly nationally and even internationally (see also BLT – Mapping, 4.3.6). Once a marina reaches such point of importance, it can carry great responsibilities for economic growth and employment (*e.g.* Royal Marina of Monacco). Figure 4 names a selection of influential responsibilities that can be born in a single marina.

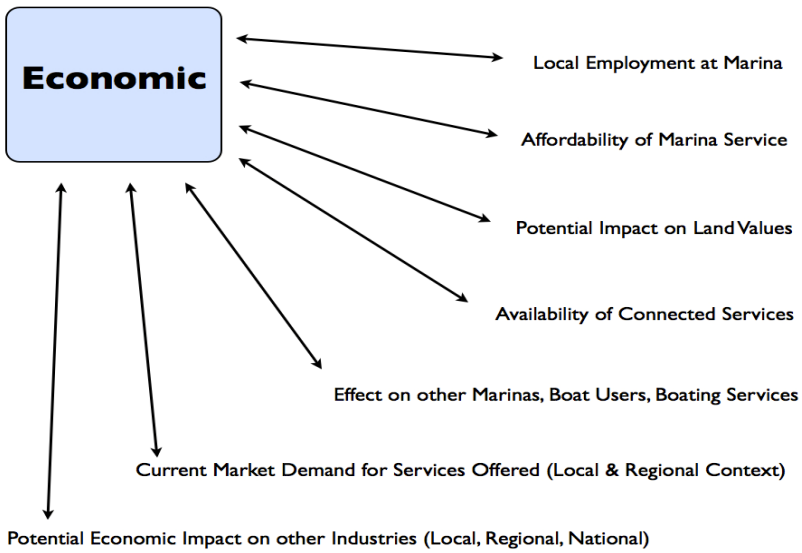

Figure 4: Possible economic impact and responsibilities arising from a marina. Source: Author

Local Opportunities

> Numerous […] municipalities throughout the world are learning that nautical tourism has meaningful economic impacts upon the local communities and are now actively seeking more nautical tourism. In many areas municipalities are actually working with marinas to allow increased expansion and enhancements along with other ways of attracting the nautical tourist dollar.

(Natchez, 2007: 2)

Yachting creates an environment that encourages investment, income, and profit from marina services to a direct business or local community (Luković, 2012). Examples are widely found around the Caribbean, Australian, or European coasts. In Europe they are foremost in the Mediterranean and on the Atlantic coast, but also in the Baltic region. The influence of marinas in less-developed areas can be crucial and becomes, as in concentric circles, a centre of extended development. (Luković, 2012: 426).

Many favored locations within the Arctic and Subarctic might be known to boaters, either local or foreign, but for various reasons, are not commercially developed. These features account for natural safe harbors and bays that offer no man-made infrastructure, but due to their features have been visited frequently. Such markets are referred to as "potentially new markets" (Luković, 2012: 404). An already existing market that is expanding or developing its features, *e.g.* a fishing port with value to private nautical tourists, is becoming a part of nautical tourisms market supply, and is thus referred to as a "developing new market" (Luković, 2012: 404). An "effectively new market" refers to locations that are new to boaters but known to local businesses that have for various circumstances, *e.g.* national park or military zone, and has thus been prevented to develop commercially (Luković, 2012: 404). "Completely new markets" are places that are new to business and boater. There is high potential for such places in the Arctic, which, with proceeding climate change, is expected to become more populated. Such areas will be exposed to a variety of challenges including legislation, supply support, and a high financial effort to establish the most necessary infrastructure (*e.g.* material costs, labor, storage, housing).

Marinas usually adapt to the environment in which they are found or the role of which they have been assigned and developed. Accordingly, there are considerable variations between marinas entailing expanded local opportunities. Luković (2012) classified six different marina roles:

1. A marina that independently develops its own potential within its area;
2. A marina whose facilities reach beyond the usual limitations, and thus are developing and involving the locality;
3. Marinas that are attractive due to their link with a important/attractive urban center;

4. Marinas that are part of a larger tourist region;
5. Marinas that have a sustainable coexistence with industrial and other economic zones;
6. Marinas that are linked to wider sports facilities, through which they realize their commercial potential.

Economic opportunities that come with a marina are diverse. The action radiuses of private nautical tourists are, since they arrive at a location *via* vessel, mostly limited to methods of transport either brought with them (*e.g.* bicycle) or offered in vicinity of the marina (public transport, taxi). This limitation creates an advantage for marina-neighboring businesses. As a result, it is the marina and local community that benefits the most from the private nautical tourist (Natchez, 2006: 2). Expenditures of private nautical tourists usually include: transport to and from the vessel, occasional land-based overnight stays, vessel related expenses, fashion related expenses, cuisine, entertainment, and local attractions. A business opportunity that is directly marina and private nautical tourism related are yacht charters. Yacht charters exists either as bareboat charter, whereby no crew provisions are included as part of the agreement, or as vessel charter with a skipper (and crew). Charters cost examples are given in Luković, (2012: 407 – 410). Yacht charters are increasingly popular since they allow to exploration of an unknown environment in a vessel of usually higher standard, without sacrificing valuable holiday times in vessel transit. A SWOT analysis to assess feasibility for yacht charter is presented by Payeras *et al.* (2011). To open the charter market to less experienced customers, some companies organize what is known as flotilla sailing. This activity implies a small yacht fleet of up to 12 yachts that explores the sailing grounds together. They are often escorted by a larger vessel and lead crew, which provides assistance and guidance when needed (Derksen, 2007). For some nautical tourists, seeing idiosyncratic settlements can be part of the anticipated tourism experience, further offering aadditional economic income sources to their inhabitants.

Branding is a very effective way to draw attention towards a destination (Bates, 2008). It is often used to either revive or introduce communities to the demanding tourism market. Finding a local feature that is distinctive, authentic, and possibly undiscovered is the key to success (Bates, 2008). A marina, but also piers (Barrow, 2008), can be used to differentiate or even recreate a location. Different marina

designs and layouts can create uniqeness and attractiveness even if the areas nautical market is already oversaturated (see examples in Image 2).

Image 2: Branding trough marina facility layout and design. Source: Quays Marina Portishead, UK, 2012 (left) and Marina Altenhagen, Germany, n.d. (right)

Marina Planning and Management

Due to their magnitude of environmental, social, and economic impacts for a region, marinas are probably one of the most demanding projects in coastal planning. They have to fulfill higher demands on visual appeal than *e.g.* shipping piers, are usually closely integrated in townships, recreational areas, or nature reserves and thus can impact *e.g.* population and tourism structures, overall infrastructure of the municipality, and the employment market of the area, while simultaneously offering opportunities for integrated measures regarding marine hazard protection. As explained in *Local Opportunities* under 1.5.2, some communities identify and separate themselves from others, using wilderness sights, remoteness, developing style, or social class levels to attract customers.

The existing challenge in the management and planning process is large. It includes: creating environmental issues on land, in neighboring water systems (*e.g.* wetlands), the intertidal areas, and inshore areas both inside and outside the marina area in line with municipal, regional and governmental planning; dynamics of local support; economic feasibility; competing and supporting stakeholders; guarantee of multiple usage of the waterfront areas and to open or excluded public access long-term; consider and adapt to all of the former with respect to climate, social class, and overall demand changes.

Worldwide modern approaches for effective planning include tight governmental legislations and provincial and municipal strategic plans and guidelines

(*e.g.* Schwarzenegger *et al.*, 2005; EEAA, 2005) and is just as important as local involvement of stakeholders and the general public. Static strategies and plans are being more frequently replaced by dynamic and adaptive planning strategies that recognize not only changes in demand, infrastructure, and protection values, but also latest scientific findings, as well as NGO's and other private organizations input on ever evolving guidelines. Inter-sectoral planning and ecosystem-based planning are used widely, where as EIA, scoping, and SEA have found their place in basically every first-world country planning paradigm. Still quite new are site-specific action plans are quite new. An action is layout for actually doing something. So, rather than having guidelines and legislations, it describes specific actions that have to take place at the considered site to fulfill the approval of authorities.

When planning a marina, a large variety of factors have to be considered. Such factors include: location and natural environment; technical and technological criteria; economic feasibility; institutional- and political criteria; ecological criteria; and social and cultural criteria. To reiterate, all such factors are taken into account in the social, ecological, and technological model, presented in 1.1, Figure 2. An advanced method using these factors for finding the most viable marina location is described in Kovačić (2010). Methods to select possible marina development locations are given in Jugovic *et al.* (2011) and Kovačić (2009).

Strategic tourism planning involving naval tourists also must have a clear understanding of vessel category, (*e.g.* type and class) in which a certain user group can be expected to arrive. If the planned grounds are inaccessible to the user group, or the local infrastructure is either unfit or unable to fulfill their core provisions, the anticipated success of the investment is bound to end in failure (Image 3). Thus, acknowledging different vessel characteristics allows for determining maximum and optimum carrying capacities of a marina within the local environment, and thus is key for realizing the magnitude of its cost and possible benefit.

Image 3: Differently sized leisure vessels (front) and their occupied pier space. Source: Author, 2013

The best development conditions for a marina exist, naturally, when they are attempted inside the town environment, since the city environment delivers a larger infrastructure. The marina will have to adapt to a certain extent to the city's environment and local planning and legislation. There are, however, examples that show that marina development can dominate the local tourism environment to such an extend, even when the location was already an established tourism center, that the community surrenders to the marinas influence and readjusts its complete development towards the (large-scale) marina. Such an example is the by Immo-Center Group company established Spanish "Empuriabrava" marina on the Costa Brava (Luković, 2012: 426).

Management, and management plans and tools deal not only with the actual management of the marina once established, but also during the construction phase. A large amount of extra issues arise during the establishment period due to equipment and material used, their size, weight, chemical danger or simply amount of the equipment being used. With mitigation management efforts such as zoning, such impacts can be reduced to a minimum *e.g.* with time, size, and area restrictions. Environmental mitigation agreements, local observer and environmental managers enforcing at the site are other possible measures.

Who the legal owner(s) and operator(s) of the marina are directly influences its management effectiveness. That effectiveness in particular determines the competitiveness, adaptability, and quality of offered service.
Most common ownership-operator schemes are (see also Luković & Gržetić, 2007):

- Municipality owned: Managed by local government;
- Municipality owned: Private business management under contract of the local government;
- Private ownership: Private business; and,
- Private ownership: Private club.

Once a marina is established, management strives for sustainability. A private business-run marinas' basic income derives from users that base their vessel within the marina over long period of time and make use of the diverse services offered. Visiting vessels alone are a rather unreliable, though welcomed external income source. They are only then considered as main focus group only when visitor traffic turnover in a season exceeds that of the permanent marina user significantly. Only then do they have enough potential to carry the complete marina business (for that season) successfully. Such environments only exist in well-established, private charters, including yachting grounds (Luković, 2012). The leisure vessel industry is very dynamic and continuously strives for innovation and enhancements to fulfill the wishes and needs of the market. This drive implies that over time not only used materials and technologies, but also vessel types evolve, which can lead to a shift in most commonly used vessel types. Factors of higher importance to consider are overall boat lengths and hull type (monohull, catamaran, trimaran). It is important that marinas evolve with such changes and adapt *e.g.* pier and storage space to stay competitive (Robinson, 2009).

To stay competitive, measures like quality control, ongoing infrastructure improvements, and satisfaction surveys are not uncommon. A rather modern management tool, useful for *e.g.* community support and user awareness, is the approach to get nationally and internationally acknowledged eco-labels, so called "Blue Flag" labels (National Park Service, 2001; ICOMIA, 2005; MIAA, 2011; IMCI, 2011). Although promoting more tourism than eco-sensibility in lower categories, they do require advanced, eco-system supporting measures in top-level categories. Other aspects of marinaging marina operations are general environmental monitoring

(periodically) and carrying capacity control (taxation, waterfront and wetland rent, facility and infrastructure fees). Specific management regimes also have to adapt to municipal changes in zoning and adaptive integrated management strategies like Integrated Coastal Zone management (ICZM).

Nautical tourism and its sub-industries are usually exposed to a strong element of seasonality (Luković, 2012: 404). That seasonal aspect demands particular management skills and problem solving *e.g.* in regards to employment of professional staff and facility service and security, to maintain business continuity. Such local economic seasonality also has profound implications also for family life and small (family-run) business growth and viability (see also Getz & Nilson, 2003). It shall be mentioned though, that such seasonality is not an all-inclusive negative aspect since it offers a different environment outside the nautical tourism season that can be beneficial to other industry sectors and the local community.

According to the International Council of Marine Industry Associations (ICOMIA) the most serious handicap for marina development worldwide-recognized is the lack of understanding of the economic benefit of marinas and the negative effects of uninformed regulatory actions that hinder growth of the marina industry (ICOMIA, 2005). Since marinas are widely perceived as playgrounds for economically advantaged yacht owners (which for developing countries might ring true), they suffer image problems with government bodies.

Part Two – Feasibility Study for Marina Development in Ísafjörður, Iceland

Chapter 2 – Methodology

2.1 Method of Procedure

Part Two provides a SWOT analysis for a marina in the coastal town of Ísafjörður in the Wesfjords of Iceland. The author is a resident in Ísafjörður. This thesis is motivated by his personal interest in making Ísafjörður an ecologically, economically and socially sustainable community. It is his belief that private nautical tourism offers an underestimated opportunity for remote coastal communities in the Arctic and Subarctic.

The objectives of this analysis are to deliver a product that is of business relevance to local brokers in Ísafjörður, and to use Ísafjörður as case study for a rural coastal community within Arctic or Subarctic boundaries. Therefore, this SWOT analysis will help to identify existing strengths and weakness of the town and the harbor regarding the business idea and compare those factors to opportunities and threats that the community and the marina could face. After a feasibility statement and recommendations for the case study, this thesis also presents conclusions on feasibility for marina developments in first: Iceland, and secondly: the general Arctic and Subarctic area as a whole.

To conduct the feasibility study, three kinds of data (interviews, questionnaires, secondary source data) were collected, analyzed, and finally, together with theoretical knowledge and baseline data, entailed into a SWOT analysis. Overall, a variety of factors need to be considered. Those factors included *e.g.*: season, demand, support, space, stakeholder involvement, organization, and decision makers. Development and overall feasibility factors related to the marina users included: What is needed? What is wanted? What should or must be avoided? Are potential users willing to pay? What else is their impact/benefit? To discover, address, and evaluate those factors, Part Two

has been divided, besides this methodology section, into three sections: “Settings”, “Findings”, and “Discussion”. The pertinent, theoretical background on private nautical tourism in the Arctic and Subarctic, necessary for establishing the basis of the feasibility study has been given in Part One.

“Settings” presents general tourism and infrastructure related information on Iceland, the Westfjords, and Ísafjörður, as well as existing local and foreign yachting activity, yachting related infrastructure of Ísafjörður, and safety and exploration settings to East Greenland. Finally, socio-economic power relations regarding Ísafjörður’s private nautical tourism are illustrated *via* table-formatted BLT – mapping.

“Findings” contains qualitative and quantitative data results of three different main sources: Secondary data sources, questionnaires combined with semi-structured interviews, and elite interviews. The secondary data sources deliver explicit information on private nautical tourist volumes, duration times, and origins for two separate locations within Ísafjörður’s marine traffic boundaries. One is positioned in Iceland, one in Norwegian territory. Semi-structured interviews combined with questionnaires deliver visitor volumes, origins, and duration of stay, along with insights on experienced and preferred perceptions for Ísafjörður Harbor from both local and visiting pleasure craft users. Elite interviews on the topic of private nautical tourism were conducted with local leaders to understand the extent of political, administrative, and local knowledge, support, and actions undertaken concerning a marina development project. Each interview partner plays a specific, locally leading role, which is presented in the relevant section.

The “Discussion” section assigns and evaluates the sum of compiled information in the SWOT context. At its end, a conclusion and recommendations for the case study are given.

2.2 Qualitative and Quantitative Data

Three different data sources supplemented this study: Interviews, questionnaires, and secondary data. Secondary source data is data that has, due to time and resource deficiency, not been collected by the researcher himself. These data supplements the research with a larger database and allows to (with limitations) adequately capture developments that took place before initiation of the research and is therefore

essential in analyses dealing with developments over longer periods of time. Secondary data always has a pre-established degree of validity and reliability since the data has been produced by a different source than the researcher. Understanding the background of the data and how its compilation increases reliability of the data by minimizing bias and error included in the data set (see also Bishop, 2007). The secondary source data used in this thesis is quantitative data only. Primary data sources used in this study are made of questionnaires, semi-structured interviews, and elite interviews. Questionnaires are a type of data assimilation in a consistent context when dealing with groups of research participants. They allow for statistical evaluation, but limit research results in the way they are performed and understood. Formulation of stated questions, their received perception, the participants knowledge on the topic, and limited answer options bias the research, which is why they are most reliable in collecting values or facts (*e.g.* country of residence, length of vessel) rather than personal ideas or experiences. The questionnaires used in this thesis were used to conduct both qualitative and quantitative data, whereby qualitative data was collected with the help of semi-structured interviews.

Semi-structured interviews, a method for "qualitative interviewing", deliver qualitative data by sacrificing "uniformity of questioning to achieve fuller development of information" (Weiss, 1994: 3) In addition to the data brought to light *via* questionnaire, the qualitative interview produces a fuller, nuanced interpretation of an issue based on the experience of the interviewee (Weiss, 1994: 3). However, the qualitative interview as such is not suited for research that requires statistical data; rather it is a tool designed to extract feelings, thoughts, facts, and experiences of an individual on a specific topic (Mack & Woodsong, 2005: 2). The term "qualitative interviewing" itself is an umbrella term for a variety of interview styles, such as (from less to more structured): Informal conversational interview, general interview guide approach, and the standardized open-ended interview (Turner, 2010: 755–756). Standardized open-ended interviews, like those used in connection with the questionnaires for this study, are very structured in terms of phrasing and the order of questions. The method helps to minimize interviewer bias with *e.g.* preconceived open-ended questions that are read *verbatim*, and eliminates variability in which way questions are asked between subjects.

A different, more open interview style called "elite and specialized interviewing" (Dexter, 1970) has been used to illicit the most possible detailed

information from leading individuals. This interview style is very similar to the "general interview guide approach" insofar as it ensures that the same general areas of information are covered from all interview partners and the interviewer maintains, as being the one who asks questions, in control over the entire discourse. It can also allow both the interviewee and interviewer a great deal of flexibility in specific areas, and more importantly, the interviewee to define single situations. By doing so, the interviewee is more likely to divulge otherwise never obtained important information. Between the three people interviewed in this thesis with the "elite and specialized interviewing" method, two were due to leader position awarded elite-status. One person, who is working close to them in their professional working field but with lower influence status, was awarded informant-status (Dexter, 1970: 7–11). Here, the key to minimize interviewer bias is a concise, objective, and stimulating interview style.

In qualitative interviewing in general, there are certain source of bias and error. Foremost, "the quality of the information obtained is largely dependent upon the interviewer" (Patton, 2002: 314), meaning the horizon of knowledge, flexibility, and interview style brought by the interviewer. Another common error is to ask questions, and to seek answers, that match a hypothesis or premeditated conclusion.

2.2.1 Secondary Source Data

To allow estimates of potential user volume and private nautical tourism trends within Ísafjörður's fetch-area, leisure vessel data from two other harbors, substituting Ísafjörður harbor's lack of leisure vessel statistics, were used. Both chosen harbors are within maritime traffic boundaries of Ísafjörður and inside subarctic and arctic waters.

The first chosen harbor, the marina of "Brokey – Reykjavík Yacht Club" (Brokey, n.d.), lies within the boundaries of The Old Harbor of Reykjavik on the subarctic west coast of Iceland, roughly 220 kilometers south of Ísafjörður. As Iceland's maritime hub and capital, Reykjavík is expected to have the best-suited facilities for visitors coming *via* vessels of any size, and due to its attractions and amenities, also has the highest volume of foreign vessel traffic. The second chosen harbor, Ny-Ålesund Harbor (Kings Bay AS, 2012), is one of two harbors on the island of Spitzbergen, located in the Arctic roughly 1,500 kilometers north of Ísafjörður. Both harbors provided their data *via* e-mail.

The "Brokey – Reykjavik Yacht Club" is a private club owning a marina inside

The Old Harbor in Reykjavik, which again is run by Faxaflóahafnir –Associated Icelandic Ports (Associated Icelandic Ports (AIP), n.d.). The club has its own facilities, administration, and management, including a harbormaster, and pays annual fees to AIP. Fees paid to Brokey are decided upon by its management and can differ from harbor fees paid to AIP. Visiting leisure vessels calling to make port in Reykjavík are usually, but not necessarily, assigned to Brokey. Other possible placements include the small fishing craft section of the Old Harbor of Reykjavik and a private marina in Gufunes (outside downtown Reykjavík limits). Recreational vessels can also stop in Hafnarfjörður or Kópavogur Harbor, which are also based in the capital area. For this study, Brokey's harbormaster Arnar F. Jónsson provided visitor statistics from 2009 to 2012. He informed that in the summer of 2012, they, for the first time, had a full-time employee to service their visiting leisure vessels. *Via* e-mail he also stated (November 26th 2012):

> Most foreign recreational vessels that arrive in Reykjavík use our facilities. […] It was in 2009 that foreign boats started to come to our marina. Before that boats went to Faxaflóahafnir(port of Reykjavík). I have to point out that in 2011 our pontoon was not in place in the harbour until late july, few boats however got to use our premices.

Data from Ny-Ålesund Harbor from 2006 to 2012 has been provided by Ole Øiseth, director of Kings Bay AS, and Dag F. Fjeld, harbormaster of Ny-Ålesund Harbor. No data has been provided for 2008. Mr. Fjeld admits, "There might […] be some recreational vessels missing in cruise calls from 2009 and older" and that he personally thinks, "there are more leisure vessels coming here every year."

Data sets of both locations were inconsistent in regards to document content organization and category names over the provided period, possibly indicating that recreational vessel counts in earlier years were not taken seriously. Data representation value of, in particular, the earlier years is carefully considered. Both harbors provided best-organized data sheets with larger variety of details for the years 2011 and 2012. The complete data set provides, however, valuable information on overall received recreational vessel counts and their return rate at both locations during the same season (see Figure 17 in 4.1.1). Since Ísafjörður is positioned

between both sample locations, one could conclude similar possible maximum user counts and future demand.

2.2.2 Questionnaire and Semi-structured Interviews – Visiting Yachts

A series of combined questionnaires and semi-structured interviews were conducted to reveal origins, motivations, expectations, experiences, individually carried demands, and activities undertaken by crewmembers of yachts visiting Ísafjörður. The semi-structured interview was based on the questionnaire document (see Appendix A, Q I). First, quantitative data was requested. Qualitative questions were asked in sequence as laid out by the questionnaire document. The researcher filled out the document while leading the interview. Its results were expected to support the reality of the theoretical BLT – model established in section 3.3.6, and to allow for insights on this special tourist type. The latter will help to determine overall feasibility and modify future developments of a marina in Ísafjörður accordingly. Participants in this part of the research were responsibility-carrying individuals for their journey, usually the skipper, often accompanied by crewmembers. The responsibility-carrying individual was, aside from their personal preferences, expected to make strategic decisions for vessel and crew. Participating crewmembers were expected to increase the depth of insight into the maturity of Ísafjörður's harbor concerning private nautical tourism and the general perceived experience. The sum of information aims to pinpoint alterations that would be welcomed or necessary.

During the period of April to September of 2012, 21 vessels had been registered as visiting Ísafjörður. Participating vessels were chosen based on accessibility. Their number was limited by the available time frame of both researcher and visiting yacht. Twelve vessels took part in the ~ 30 minute-long questionnaire and semi-structured interview. Two vessels were, due to time constraints, only briefly interviewed. All crews responded positively when approached. Communication took place in English and German. Their identity has been kept anonymous.

2.2.3 Questionnaire – Local Yacht Owner

Research using a questionnaire was conducted with available local yacht owners after the summer season passed (November 2012; see Appendix A, Q II). The

questionnaire had to be filled out by the participant, who did so either in English or Icelandic. The questionnaire was written in English. Two participants needed guidance due to a language barrier. The researcher was inactive while the questionnaire was being filled out, except for questionnaire related questions.

Eight local recreational boat owners took part in the questionnaire. All questioned boat owners were easily approachable, and showed great interest in the questionnaire. Seven of the approached people own a S/Y and two of them a motorboat, one with cabin and one without.

Local recreational fishing boat owners have purposely not been approached. To start with, their vessels are similar to the industrial line boat fishing fleet and have nothing in common with offshore sport fishing yachts. Personal communication with the local recreational fishermen revealed that these users prefer to stay inside the line boat fishing fleet section of the harbor Area II. To them, cost efficiency to reach the sea and the closeness to amenities such as the harbor fuel station, landing cranes, and floating piers with electricity and water, are of high importance. Since all amenities in the described harbor section are up to local industrial standard, all possible needs for the Ísafjörður local recreational fisherman are seen as fulfilled.

2.2.4 Elite and Specialized Interviewing

Questions all three participants were faced with included:

- Are you for or against marina development?
- What speaks for/against it?
- Assuming that you would have all the money necessary and total control of development: How would you develop the harbor to accommodate/facilitate the needs of recreational local and visiting vessels?
- What are the current challenges of the town/the harbor?
- What importance has a harbor development considering recreation vessels to other local projects?

Mayor

This interview was conducted to gain insights in two different areas: the town and local nautical tourism. Aspects concerning the town revolved around its general economic state, set priorities, and future outlook as well as administration and finance between the harbor and the local government. Regarding nautical tourism, information needed to be gathered on: Existing knowledge about marinas and their users, implemented strategies, plans, and goals, and actions that have already been set

in motion. The mayor was easy to approach and showed great interest for the interview subject. He has approved the display of interview information given in the thesis, including his name. The interview lasted 35 minutes.

The mayor of Ísafjarðarbær, including Ísafjörður, is 40-year-old Daníel Jakobsson. He was born and raised in Ísafjörður, studied business administration at the University of Iceland and has been town mayor since 2010. According to him, he has strong personal relations to Ísafjörður from childhood on, had a successful sports career in cross-country skiing, which carried him all the way to the Olympics in Lillehammer in 1994, and has a genuine interest in a sustainable, economically successful community.

Harbormaster

This interview aimed to gain insights on thoughts, ideas, and actions undertaken by the harbor management towards servicing leisure vessels, as well as the general administration and issues of the harbor. The harbormaster was easy to approach and not hesitant to answer any questions. He approves of the information presented in the thesis, including his name. The interview lasted 45 minutes.

Guðmundur M. Kristjánsson, by profession master (captain) for high sea vessels, is harbormaster of Ísafjarðarbær since 2002. According to him he has been employed worldwide, including in the Caribbean, and gathered knowledge, aside from inside the fishing business, in the cruise ship and leisure vessel sector. His office is located in Ísafjörður, at the Pollurinn-facing industrial pier, in vicinity to the recreational boat section of Ísafjörður Harbor.

Development Official

Two interview sessions with the chairman of the "Working Group for Future Development of Pollurinn Inlet" (Starfshópur um framtíðarskipan Pollsins á Ísafirði) took place: the first in June 2012, and another in January 2013. The first interview aimed to shine a light on the task of the group, its influential scope and power, and to accumulate collectively generated ideas. The second interview addressed progress, public response, and revision of old and new proposals. Mr. Halldórsson was very welcoming and interested in the subject of the thesis. Publication of information derived from the two interviews for this thesis has his approval, including his name. The first interview lasted 40 minutes, the second 25 minutes.

The chairman of the working group, Gísli Halldór Halldórsson, has worked since 2004 at the college of Ísafjörður, and since 2006 also for Ísafjarðarbær, and graduated in Coastal and Marine Management at the University Centre of the Westfjords in 2010. His current roles in Ísafjarðarbær include *inter alia* town representative, town council president, chairman of the town of Flateyri, and chairman for the interview role.

2.3 SWOT Analysis – Literature Review

In business, a feasibility study is part of the strategic planning process used to examine the strengths and weakness of an existing or new venture, and to discover its likelihood of success (Panagiotou, 2003; Athiyaman & Robertson, 1995; Leigh, 2006). Feasibility studies examine the threats posed by the business environment and take the resources required to achieve the business's goals into account (Barney, 1995; Leigh 2006; Panagiotou, 2003). There are many analytical frameworks to assess the feasibility of ventures. All of them consider a variety of factors correlated to the business environment as a whole, as well as the internal and external factors unique to that business (Hetzel-Silbert & Silbert, 2007; Panagiotou, 2003).

In this thesis, a SWOT analysis is used to determine the feasibility for marina development in Ísafjörður, Iceland, and to draw conclusions for marinas in the arctic and subarctic environments as a whole. The general goal of a SWOT analysis, whereby "SWOT" stands for "Strengths, Weakness, Opportunities, and Threats", is to emphasize and maximize internal strengths and associated external opportunities coming with the venture, and to identify and eliminate internal weakness while minimizing external threats (Leigh, 2006; Panagiotou, 2003; Table 2). Consideration of these attributes allows decision-makers to assess the business venture holistically, and to implement the SWOT findings into their strategic planning. Ideally, that strategy maximizes desirable attributes while minimizing the undesirable. Strategic planning only focused on the positive qualities of a business idea and its opportunities whilst neglecting the negative aspects of the business environment is not only shortsighted and inadequate, but can end in failure of the complete venture. To provide guidance during SWOT matrix development, Capon and Disbury (2003; cited in Leigh, 2006: 1096) provide the following definitions:

- *Strength*: An internal competence, valuable resource, or attribute that an organization can use to exploit opportunities in the external environment.
- *Weakness*: An internal lack of competence, resource, or attribute that an organization requires to perform in the external environment.
- *Opportunity*: An external possibility that an organization can pursue or exploit to gain a benefit
- *Threat*: An external factor with the potential to reduce an organization's performance.

Table 1: Generalized SWOT matrix. After Leigh (2006)

	Desirable	Undesirable
Controllable (Internal)	**Strength** (Improve)	**Weakness** (Extinguish)
Uncontrollable (External)	**Opportunity** (Maintain)	**Threat** (Reduce)

According to Leigh (2006), it was in 1950 that George Albert Smith Jr. and C. Roland Christensen at the Harvard Business School realized that an organization's desired results are influenced by "enhancers" (driving forces) and "inhibitors" (limiting forces). From there, both developed the SWOT analysis as analytical method for matching an organization's competitive strategy with the internal and external business environment (Leigh, 2006: 1091). By the 1960's, the strategy was officially promoted as a strategic planning tool in business and very quickly evolved to an omnipresent tool used throughout the business management sector for analyzing feasibility of a venture (Leigh, 2006: 1091). Over time, the SWOT analysis grew beyond its original business-oriented uses and can now be found in a variety of fields being used as comprehensive basic analytical tool, including tourism (*e.g.* private nautical tourism: Payeras *et al.*, 2011; Genc & Guler, 2006) and SEA (UN, 2007).

Lately, the SWOT analysis is, despite its success, under scrutiny of some strategic planners, which resulted in several variations of the framework (*e.g.* Silbert

& Silbert, 2007; Panagiotou, 2003; Kajanus *et al.*, 2003). Recognizing the value of a SWOT analysis in the field of business strategy, especially in the process of decision-making, it is criticized that a SWOT analysis in complex business environments is too vague and thus ineffective and insufficient for advanced multi-variant analysis (Panagiotou, 2003).

For the case study of this thesis, the SWOT analysis is adapted insofar as to consider the town of Ísafjörður, including its complete amenity, industry, service, and administration infrastructure connected to private nautical tourism, as internal environment, and to assume that the local decision-makers fulfill positions comparable to those of a company CEO. The SWOT analysis illustrates, due to the time frame of this thesis, existing fundamental feasibility probabilities only. By considering the extracted uncontrollable external opportunities and threats, inferences on marina development within the arctic and subarctic environment can be made.

Chapter 3 – Setting

3.1 Tourism in Iceland

The tourism industry is one of the top ranking income sources of Iceland today. Between 2003 and 2011 it has grown by 75% (McKinsley, 2012) and delivered a GDP share of 5.9% in 2009 (Óladóttir, 2012:2) alone. In 2012, Icelandic tourism increased by 20%, the highest tourism growth in all of Europe, highlighting Iceland as an emerging vacation destination (ETC, 2013). The Icelandic Tourist Board states:

> International visitors to Iceland have almost doubled since 2000. […] The annual increase has been around 6.1% annually since 2000. If this trend continues we may expect 1 million visitors to Iceland by 2020.
>
> (Óladóttir, 2012: 2)

To put facts into perspective, Iceland's population at January 1st, 2011 was 318,452 people (Hagstofa (a), 2012: 46) and foreign visitor numbers already amounted to

540,824 people (Hagstofa (a), 2012: 179). Visitor numbers to Iceland peak significantly during the summer months (see Figure 5).

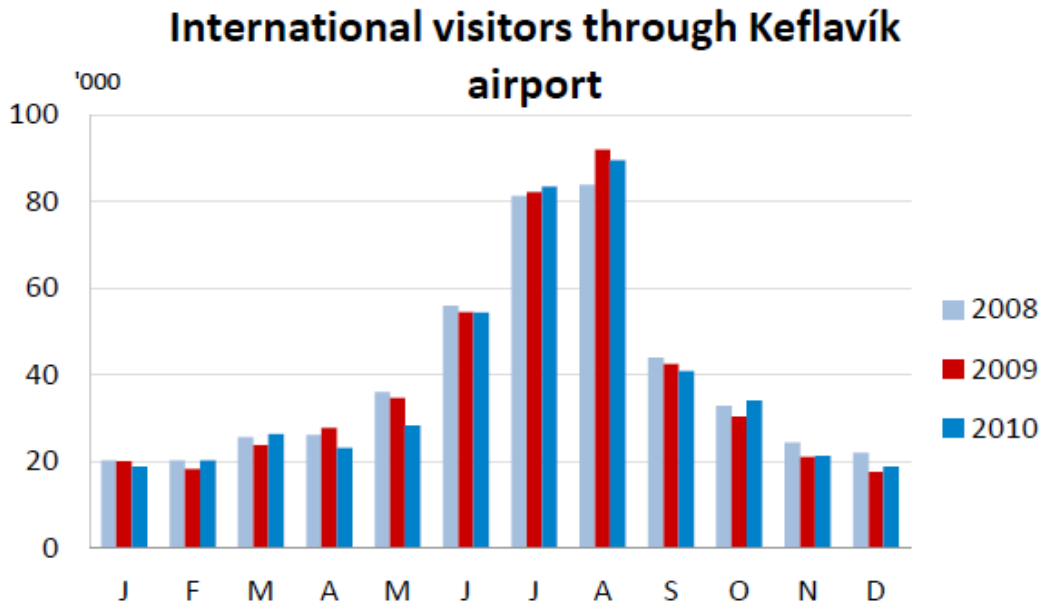

Figure 5: International visitors to Iceland, Keflavík airport only. Taken from: Óladottir (2011)

The most common form of tourist transportation is rental cars (Óladóttir, 2012: 12); allowing the highest possible degree of independence. 96% of all visitors stated satisfaction with their visit; 79.1% of all visitors stated a likely or very likely return for another visit to the island (Óladóttir, 2012: 15). The most memorable aspect for foreign visitors is nature, scenery and landscape, and nature related activities (31%) as well as local people and their hospitality (13.5%) (Óladóttir, 2012: 14). According to the survey (Óladóttir, 2012: 11), the most important sources from which to gather information about Iceland are the Internet (75.4%), books and brochures (42.5%), and friends and relatives (30.9%).

3.2 The Westfjords

The Westfjords are a desolate part of Iceland coming closest to East Greenland. At up to 18 million years old they are the oldest part of Iceland (Þórdarson & Höskuldsons, 2002). They form Iceland's biggest peninsula, located in the secluded north-west corner of the island amidst the waters of the Denmark strait, connected to mainland Iceland only via an isthmus between Gilsfjörður and Bitrufjörður (Figure 6). The

registered size of the Westfjords is 9,356.8km^2, of which 21.5km^2 form islands and skerries (Guðmundsson, 2012). The highly mountainous peninsula is compiled from more than 56 fjords and bays, of which 14 form the northerly-located largest fjord, Isafjörðurdjúp. Its extremely fissured and rugged, often magnificent cliff-like features bring forth a massive coastline length of 2,981km, of which 923km of its length derives from islands and skerries (Guðmundsson, 2012). Important landmarks within the Westfjords are the Hornstrandir Nature Reserve, with the Drangajökull glacier, the Dynandi waterfall, the bird cliffs of Látrabjarg, and the vast beach of Rauðasandur. Despite the region's size, the Westfjords support a population of only 6,955 people (Hagstofa (a), 2012: 48), distributed sparsely over 15 towns, villages, and settlements. Ísafjörður is the largest town in the Westfjords and is the *de-facto* regional capital. It is part of the Ísafjarðabær municipality, accounting for 3,755 residents as of January 1st 2012 (Hagstofa (a), 2012: 48): more than 50% of all people living in the Westfjords.

3.2.1 Tourism in the Westfjords and its Capital: Ísafjörður

The Westfjords Marketing Office describes the Westfjords proudly: "Dubbed 'the most famous unknown place in Iceland"' (Westfjords Marketing Office, 2012). In 2010, the Westfjords region of Iceland achieved the "Aquatic Sustainable Tourism Offer", a prestigious EDEN award that stands for "European Destination of Excellence" (European Commission, 2010). The region shortly thereafter was ranked among the global 10 best destinations for 2011 by the renowned travel guide Lonely Planet, describing it: "As isolated as […] spectacular" (Lonely Planet, 2010).

Be it a blessing or a curse, this remote position, off the beaten track, requires the tourist to consciously decide to a venture into a less visited, rural and likely less developed, but therefore more authentic, territory. Long travel times, likely difficult and quickly changing travel conditions, and limited transportation alternatives (see infrastructure section) aggravate tourism influx. Simultaneously, those factors bestow the determined traveler with a raised level of adventurous and explorative experience.

Considering the former, it comes as no surprise that the Westfjords, for years, has ranked amongst the regions with the lowest overnight stays of all regions nationwide (Hagstofa, 2009; 2010; 2011) with domestic and foreign tourists roughly reaching 5% of the Icelandic total in 2011 (Hagstofa, 2012 (b)). Interestingly, for some years, the number for domestic tourists staying in hotels or guesthouses in the

region has been almost identical to those of foreign visitors using the same accommodation type (Hagstofa, 2009; 2010; 2011). Such an equal ratio between foreign and domestic visitors is rare nationwide. In 2011, statistics using the same parameters (Hagstofa (b), 2012) skewed towards foreign tourists (60%) compared to domestic visitors (40%). In light of the earlier-mentioned international attention (European Commission, 2010; Lonely Planet, 2010), and a general increase in foreign tourists in Iceland (Óladóttir, 2012: 2), these developments origininate in the slowly increasing momentum of the Westfjords tourism sector, rather than a loss of domestic tourists for the Westfjords. This trend is becoming more obvious, comparing foreign visitor numbers from 2009 and 2011. In 2009, about 2% (Hagstofa, 2009) of all visitors to Iceland visited the Westfjords, while in 2011, 13.9% (Óladóttir, 2012: 13) came; 11.1% paid Ísafjörður a visit. Elíasdóttir *et al.* (2008) revealed the initial motivation for domestic and international visitors: "the outdoors" (94%). High-ranking interest sectors in this study and its follow-up study did include environmental protection and conservation, sustainable tourism and photography, but also arts and culture (Elíasdóttir *et al.*, 2009).

Currently, two main marine tourism sectors are active on a large scale in the Westfjords: sea angling and cruise ship tourism. Recreational sea angling is active in five villages: Bolungarvík ([1]Vaxon (five boats, one ferry), [2]Iceland Sea Angling (six boats)), Súðavik ([2]Iceland Sea Angling (10 boats)), Suðueyri ([3]Iceland Pro Travel (10 boats)), Flateyri ([3]Iceland Pro Travel (11boats)), and Tálknafjörður ([2]Iceland Sea Angling (five boats)).

Ísafjörður Harbor has received port calls from cruise ships sailing in the Sub-arctic and Arctic since the late 90´s, trying to substitute losses created by the crumbling local fishing business sector (Personal Communication, Guðmundur M. Kristjánsson, Harbormaster Ísafjörður, October 10th 2012). Cruise ship passengers use Ísafjörður´s amenities, take part in bus tours to nearby villages and monuments, and sail to the island of Vígur to watch puffins and other wildlife. Cruise ship tourism poses a valuable asset for Ísafjörður's economy as it helps to strengthen local tax revenues and demographics and encourages economic sectors to diversify. For most vessels, Ísafjörður is only one of many stops in Iceland (Cruise Europe, n.d.). While vessel numbers were minimal in the beginning, port call numbers in recent years have

[1]Vaxon, (n.d.); [2]Iceland Sea Angling, (n.d.); [3]Iceland Pro Travel (n.d.)

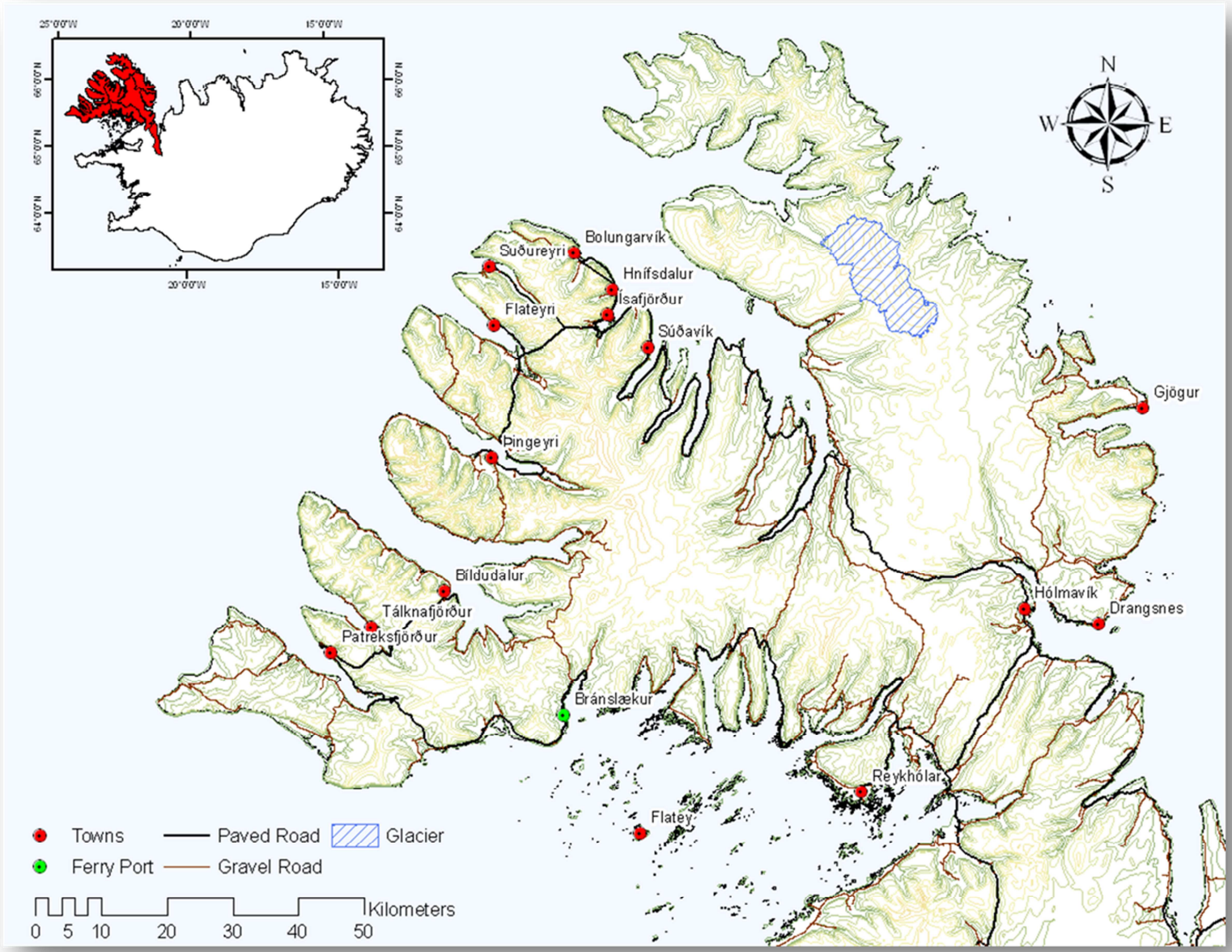

Figure 6: General map of the Westfjords and their location in Iceland, including towns, road infrastructure and ferry port. Source: Author

reached substantial figures (Figures 7, 8, 9) bringing up to 31,000 passengers in the 2012 season (Personal Communication, Guðmundur M. Kristjánsson, Harbormaster, Ísafjörður, October 10th 2012). Other commercial offers in marine tourism from Ísafjörður include ferry transport to Hornstrandir, Viðey, and Flatey (Borea Adventures, Sjóferðir, VAXON), sailing yacht charter (Borea Adventures) and kayaking (Borea Adventures, Kayak Center Iceland), and whale watching and sea safaris (Kaldasker ltd., Sjósigling ltd.).

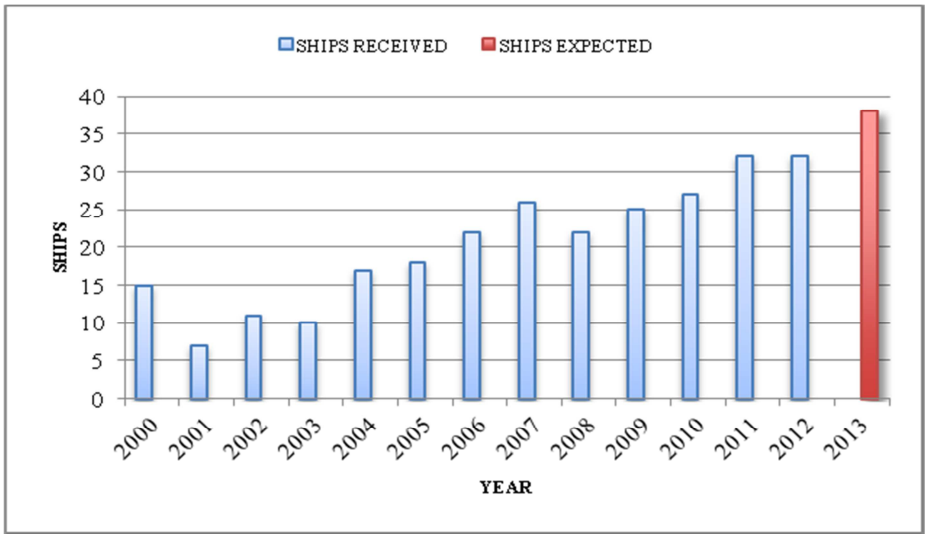

Figure 7: Cruise ship counts for port Ísafjörður from 2000 to 2013.
Data source: Ísafjörður Harbor

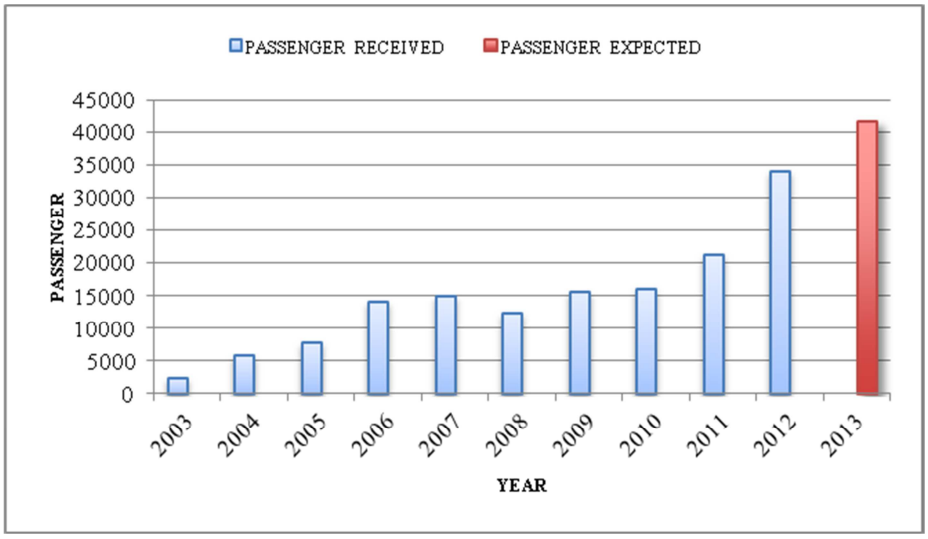

Figure 8: Cruise ship passenger counts for port Ísafjörður from 2003 to 2013.
Data source: Ísafjörður Harbor

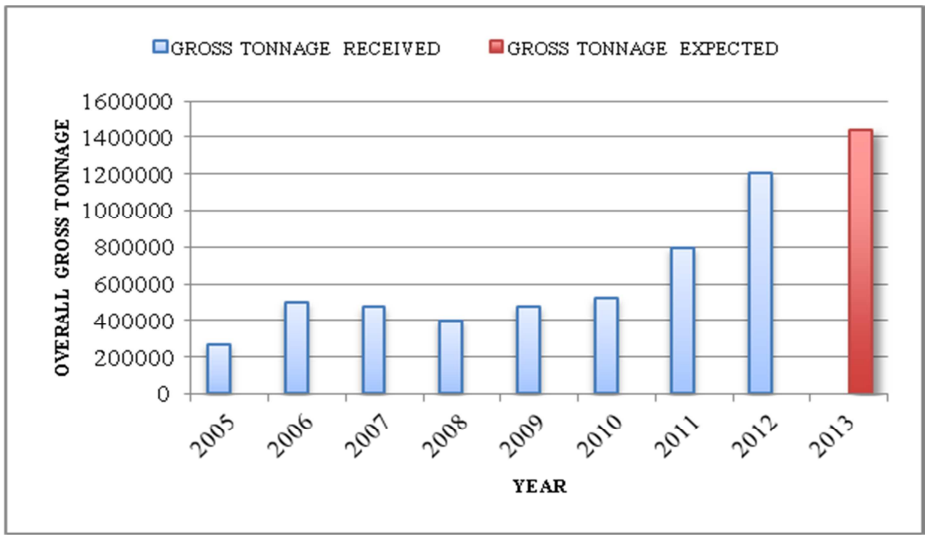

Figure 9: Total gross tonnage of cruising vessels calling port Ísafjörður.
Data source: Ísafjörður Harbor

3.2.2 General Infrastructure of the Westfjords and Beyond

Successful nautical tourism in any area relies on proper land-based infrastructure, not just in the vicinity of a marina, but also in the general sailing grounds. The ability to communicate and to deliver supplies, spare parts, or even specialists for technical assistance or repairs is of utmost importance. This section deals with the existing infrastructure inside the Westfjords and across its borders, from the waterfront to national connections.

All 15 communities inside the Westfjords have been established on the shoreline due to their fishing history, thus are placed inside natural harbors and inherit manmade harbor facilities to some degree. Since fishing is still a common local industry, even if only on small line boats, one can find electricity, water, oil supplies, slipways or trailer ramps, small workshops, and a convenience store in each of the communities. Post services (Morgunblaðið, October 30th 2012) and bank branches (Fréttaveita Vestfjarða, May 24th 2012), amongst other services, have suffered closures over the last years and can no longer be found in all communities.

The distance from Reykjavík to Ísafjörður is 456km (Landmælingastofnun, 2012), which implies a travel time of about six hours in good driving conditions. The Icelandic Road Authorities managed to cut travel-times for this connection and simultaneously raise road safety and travel experience by constructing causeways, a larger bridge over a shallow fjord, drilling tunnels through mountains, placing major parts of the road close to the shoreline, and a road surface change to tarmac instead of

gravel. Shorter travel-times are important since they raise quality of life, connect the Westfjords communities with the rest of Iceland and raise potential for tourism and business. Each community is connected with at least one other community via a sparse road system consisting of a mix of tarmac and, often single lane, gravel roads (see Table 3 and Figure 6). Due to the elevation of the connecting roads, the southern and northern parts of the Westfjords are seasonally disconnected in winter. Road closures take place when peak tourism season ends and snowfall volume and frequency increases, where low numbers of road-users make road clearance unfeasible. Every year, the Icelandic Road Authority shows great efforts to open up connecting roads by May at the latest (Vegagerðin, 2012).

Table 2: Distance between communities in the Westfjords. Two road categories: BUSL = tarmac road, möl = gravel road; distance in kilometers. Taken from: Jóhannesson et al. (2010)

	Ísafjörður		Bíldudalur		Tálknafjörður		Patreksfjörður		Flókalundur		Reykhólar		Reykjavík	
	Km	Busl/möl	Km	Busl/möl	Km	Busl/möl	Km	Busl/möl	Km	Busl/möl	Km	Busl/möl	Km	Busl/möl
Ísafjörður			145	56/89	162	73/89	173	83/90	116	48/68	255	117/138	456	318/138
Bíldudalur	145	56/89			19	19/0	30	30/0	45	8/37	184	77/107	384	277/107
Tálknafjörður	162	73/89	19	19/0			18	18/0	62	25/37	201	94/107	401	294/107
Patreksfjörður	173	83/90	30	30/0	18	18/0			61	61/0	200	130/70	401	331/70
Flókalundur	116	48/68	45	8/37	62	25/37	61	61/0			139	69/70	339	269/70
Reykhólar	255	117/138	184	77/107	201	94/107	200	130/70	139	69/70			228	228/0
Reykjavík	456	318/138	384	277/107	401	294/107	401	331/70	339	269/70	228	228/0		

There is a car ferry (Seatours, n.d.) on the southern side of the Westfjords, connecting travelers from Stykkishólmur to Brjánslækur. Its services include stopover and supply of the inhabited island Flatey in Breiðafjörður.

Many settlements have remnants of smaller airports once supplying the area with mail, medical services and goods. Serviced airports of different sizes exist in Bíldudalur, Patreksfjörður, Gjögur, Ísafjörður, Hólmavik, and Þingeyri, whereby only Ísafjörður, Gjögur, and Bíldudalur have regular scheduled flights (Air Iceland, n.d.; Eagle Air, n.d.). Ísafjörður is connected with Reykjavík at least twice a day via Air Iceland (Air Iceland, n.d.). Their airplanes transport either 37 passengers (Bombardier DHC-8-202) or 50 passengers (Fokker 50) on a 40-minute flight. Bíldudalur has scheduled flights to Reykjavík once a week by Eagle Air (Eagle Air, n.d.) using a 9 seat Cessna. The same company offers flights once a week in the winter and twice a week in the summer to the secluded far-north based settlement of Gjögur; using the 9 seat Cessna.

The newest addition in regards to transport infrastructure is the re-established international export route of Iceland's shipping company Samskip (Visir, February 22nd 2013), now linking Ísafjörður and Bíldudalur into the route again (see Figure 10). With it, cargo can be conveniently delivered to the European market, and *vice versa*.

Internet and cell phone coverage on land and sea is provided in many, but not all parts of the Westfjords (see Figure 11). Landline-provided Internet is available in all 15 settlements.

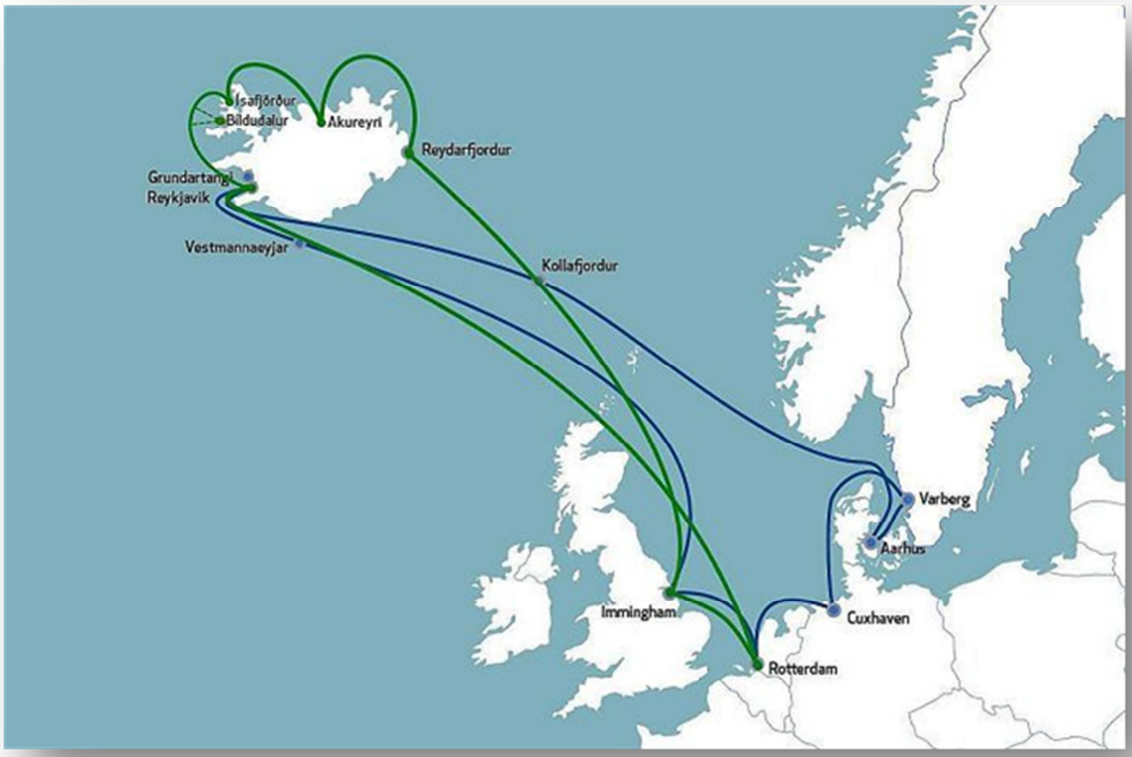

Figure 10: New monthly shipping route of Samskip (green). Taken from: Visir (February 22nd 2013)

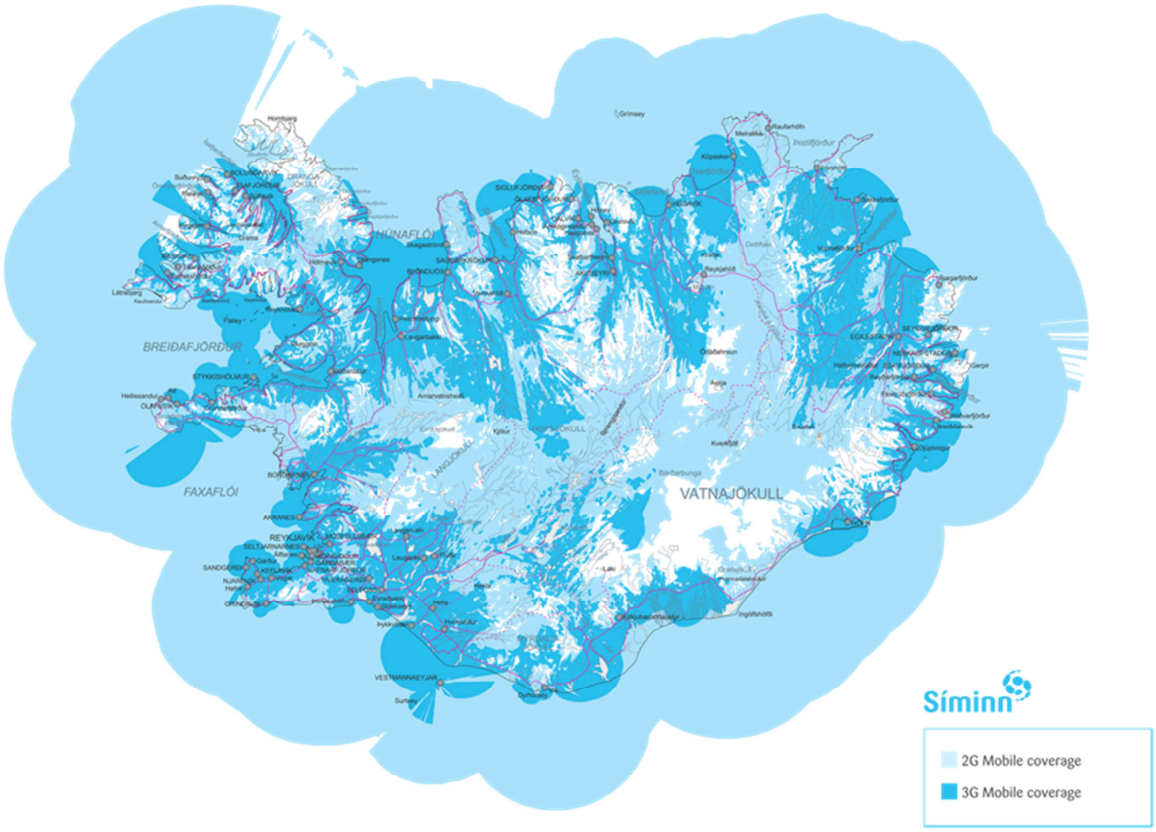

Figure 11: Cell phone coverage in Iceland, example of provider Síminn. Taken from: Síminn (n.d.)

3.2.3 General Infrastructure of Ísafjörður

Ísafjörður is the unofficial capital and largest town inside the Westfjords, located in Skutulsfjörður. As such, it acts as a regional center for administration, commerce, and, as earlier explained, transportation. Its extraordinary location assured attractiveness throughout Icelandic history and has shaped Ísafjörður as one of Iceland's oldest towns with a long record in fishing and trading.

As stated by Jónsson *et al.* (2009), one can find the highest density of all infrastructure features in the downtown part of Ísafjörður (see Figure 12). General services offered include information services, postal services and banks, shops, restaurants, cafés, and general food suppliers, groceries, gas stations, health care facilities, workshops, educational institutions, local government offices, and accommodation, transportation, and tourism services (see Appendix B, Table 6). Amenities offered include sports, religious and cultural centers, festivals, and surrounding nature, as listed in Appendix B, Table 7.

Figure 12: Infrastructure density in Ísafjörður. Taken from: Jónsson et al. (2009)

3.3 Yachting in Iceland

3.3.1 Yachting in Iceland, Domestic

Information presented in this chapter originates, unless otherwise stated, from personal communication with Birgir Ári Hilmarsson[1].

Over centuries, Iceland has been known to be a country with a pedigree of successful and highly skilled fisherman and seafarers. Iceland's inhabitants looked upon the ocean as a necessary workspace; an environment full of wealth but also danger. For many, there is a common belief that the ocean is not a playground one would spend their free time on, explaining the rather low number of 419 registered recreational vessels (Siglingastofnun, 2013) on this completely coastal-inhabited island. Nevertheless, some seek recreation, competition, generational seamanship training, and skill sharpening through non-commercial water-based activities.

Since the mid 18th century, non-commercial sailing can be found equally placed to rowing, horse riding or wrestling in many places in Iceland. To a large extent, these activities are ones by which Icelanders were surrounded in daily life due to their occupations/residency. Competitive behavior developed naturally and was widely socially supported. By 1890, the first ever-recorded sailing regatta took place in Akureyri. Shortly after, in 1898, a race took place in Reykjavík, but was of little success. Vessels that operated in these races were well-known fishing boats; a far cry from a purpose-built racing vessel.

By the 1930's, the first changes took place when dinghy sailing started in the Reykjavík area; initiated by some wealthier residents. The presence of British and American forces during the World War II had long-lasting impacts on the country in many ways. Icelanders lovingly recall this time as the golden war, as it massively boosted their economy and infrastructure development. Influenced by British and American cultural and social ideals the first Icelandic sailing club, the "Reykjavík Yacht Club", was established in 1944. After the troops left, Iceland plummeted into a crisis, and the sailing club vanished with it.

In the 1950's, sailing started again in Akureyri. The "Sjóferðafélag Akureyrar", which later got the name "Nökkvi", was established in 1961. Reykjavík followed just a year later by launching the sailing club "Siglunes". Later, in 1971, "Brokey" in Reykjavik and "Ýmir" in Kópavogur were founded. More clubs appeared shortly thereafter, such as "Vogur" in Garðabær and "Thytur" in Hafnarfjörður. By 1973, the Icelandic Sailing Association (SÍL; SÍL n.d.) was founded. Its main mission to this day is to govern the sports of sailing, rowing, and kayaking in Iceland. Under its governance, Iceland has managed to have four entries in Olympic sailing races so far. At present, there are 10 sailing clubs that are active members of SÍL: "Brokey" and "Kayaklúbbur Reykjavíkur" in Reykjavík, "Ýmir" from Kópvogur, "Þytur" in Hafnarfjörður, "Siglingadeild Snæfells" in Stykkishólmur, "Sæfari" in Ísafjörður, "Drangey" in Sauðárkrókur, "Nökkvi" in Akureyri, "Siglingadeild Völsungs" in Húsavík, and "Kayakklúbburinn Kaj" in Neskaupstaður. The sailing school "Siglunes" in Reykjavík is devoted to teaching water sports to youth.

[1]Chairman of the YMIR sailing club, Kópavogur, current committee member of the International Sailing Federation (ISAF), and former president and board member of the Icelandic Sailing Association

Describing yachting history focused only on clubs and races illustrates an incomplete development, since most of their activities concentrate on the sport as such. Single actors, nationwide, have also been interested in smaller pleasure vessels for purely recreational reasons. At first, fishermen were using small rowing boats for recreational fisheries, *e.g.* for lumpsucker fish. Later, people living in more densely populated areas with historic connections to fishing, and now with thriving land based economic sectors, started to show interest in the ocean as a recreational playground. First, smaller self-made boats appeared. Later, popularity for pleasure boats rose greatly, supported by advancements in technologies and their affordability, such as outboard engines, the introduction of speedboats, and water skiing. A yachting culture started to develop during the early 1970's when sailing and motorboats with cabins started to spread out and finally became popular. During this time, about 30 sailing boats that ranged from 18 to 28 feet were built in Iceland. In the 1990´s, national pleasure vessel ownership counts remained stationary. The numbers of Icelanders interested in spending free time on leisure vessels still increased, but expensive imports and a comparably short usage season motivated many enthusiasts to make use of yacht charters in exotic areas with comfortable season periods, such as the Mediterranean or Caribbean. A thriving economy enabled Icelanders from the early 2000´s until 2008 to afford foreign-built recreational vessels and modern sailing and motor vessels started to occupy mooring space in the traditional Icelandic sailing hot spots.

Siglingastofnun (Personal Communication, January 2013) counted 419 registered recreational vessels in Iceland on January 1st, 2013, thereof 79 sailing vessels and 340 motorized vessels, where marginal numbers of motorized vessels were recreational fishing vessels. The longest existing pleasure boating club in Iceland, supporting pleasure boat owners outside of a sports-incentive environment, is "Snafari", established in 1975 and still successfully running its marina near Elliðaár in Reykjavík today.

There are two yacht charter companies operating in Iceland: Borea Adventures (Borea Adventures (a), n.d.) and Harpa Yachts (Harpa Yachts, n.d.). Both offer substantially different services, as Harpa Yachts deals with customers in the luxurious experience segment of the charter market (Image 4), and Borea Adventures mainly services the adventurous and outdoors-seeking customers (Image 5).

Image 4: Charter vessel operated by Harpa Yachts. Taken from: Harpayachts (n.d.)

Image 5: Sailing vessel operated by Borea Adventures. Taken from: Arctic Adventures (n.d.)

3.3.2 Yachting in Iceland, Foreign

Foreign yachts have been visiting Iceland for pure pleasure much longer than one would expect. Barrow (1835) and Cross (1854) described private, non-commercial journeys in times of aristocracy. Royal visits continued after the Second World War, *e.g.* with the Duke onboard the British Royal Yacht "Britannia" in 1964 (Pathe, 1964), and do so to this day, *e.g.* with a visit from the Royal Danish Yacht "Dannebrog" (Image 6) in 2011 (Iceland Review, 2011). Naturally, it is larger yachts and their owners that draw attention nationwide and beyond, leaving arrivals of small yachts less documented. More recent arrivals of the latter include visits from the Superyacht of Microsoft co-founder Paul Allen named "Octopus" (Image 7) in 2012 and the Superyacht "Hetairos" (Image 8) in 2010.

Image 6: Royal Danish M/Y "Dannebrog". Taken from: Charterworld (n.d. (a))

Image 7: M/Y "Octopus" in Faxaflói, Reykjavík, August 4th 2010. Taken from: Þrastarson (n.d.)

Image 8: S/Y "Hetairos" in Akureyri, North Iceland, June 28th 2010. Source: Author, 2010

With yacht races of the series “Skippers D´Islande”, which took place in the years 2000 and 2006 (Skippers D’Islande, a, b), Iceland has been involved in international yacht races for the first time. The races followed a traditional route of French fishermen that used to fish in Icelandic waters and lead in the first race from Paimpol, France, via Reykjavík back to Paimpol, and in the second race from Paimpol via Reykjavík and Grundafjörður in Iceland back to Paimpol (Skippers D’Islande, n.d. (a) and (b). The 2006 race involved 19 sailing yachts covering 2,615 miles (Skippers D’Islande, n.d. (c); Image 9). A third race with different stopover points was planned for 2010 (Skippers D’Islande (a), n.d.) but did not take place (Brokey, 2011).

Image 9: Racing vessels of Skippers D'Islande race in Reykjavík, 2012. Source: Author, 2006

Image 10: [1]S/Y "Polar Bear" in Akureyri, North Iceland, June 28th 2010. Source: Author, 2010

Image 11: [2]M/Y "Hanse Explorer" in South West Iceland, August 29th 2011. Taken from: Ship-Photos (n.d.)

Aside from private yachts and yacht races, there are several foreign yacht charter companies actively cruising Icelandic waters (*e.g.* "Polar Bear"[1], "Hanse Explorer"[2], Image 10 and 11) or planning to do so in the future (*e.g.* "Lars"[3], "Icebird"[4]).

3.3.3 Yachting in Ísafjörður, Domestic

Information presented in this chapter originates, unless otherwise stated, from personal communication with Torfi Einarsson[5] and Jón Ólafur Sigurðsson[6].

In the capital area and in Akureyri, sport triggered the establishment of clubs. In the Westfjords, with Ísafjörður as the center of its progress, different developments took place. Here, people had strong interests in the pure recreational part of spending time on the water; a pleasant way to reach the shores of, by then, the long-abandoned Hornstrandir area.

[1]S/Y "Polar Bear", owned by: The Polar Front Sailing Adventures. They visited Iceland in 2010 and 2010. Source: Personal Contact and The Polar Front (n.d.).
[2]M/Y "Hanse Explorer": This 48m balk ice-going M/Y, marketed by Infinity Yacht Charters Inc., Canada, visited Iceland in 2011 (Infinity Yachts, n.d.).
[3]M/Y "Lars": This is a 36m balk ice-going explorer M/Y, marketed by CharterWorld LLP, UK (Charterworld (b), n.d.).
[4]S/Y "Icebird": Ice class S/Y, owned by Spirit of Sydney, Australia (Spirit of Sydney, n.d.).
[5]Founding member and head of department for sailing education of "Sæfari" club; sailing yacht owner based in Ísafjörður
[6]Self-made sailing yacht owner based in Ísafjörður

The ongoing general technical development and growth in income, due to a successful local fisheries sector, supported these developments. In 1972, the first speedboat (18 feet), an engine driven open pleasure boat, arrived in Ísafjörður. Shortly thereafter, the club "Sæfari" was founded, quickly counting 10 speedboats up to 25 feet maximum length. Events such as the "Djúp Rally", group cruises with all family members aboard, took place inside Ísafjarðardjúp and the activity term "boat camping" evolved locally. The first sailing dinghy appeared in Ísafjörður in 1976, slowly awakening sailing as a motor boating alternative. As a result, several local enthusiasts followed the nationwide boat building hype, creating sailing boats (timber and glass-fiber hulls) with cabins in the beginning of the 1980´s. From then on, two to three sailing yachts were permanently based in Ísafjörður until the end of the 1990's. "Sæfari" as a club for sport boats disappeared in the 1980´s, but was reestablished in the 1990´s as club to foster kayaking, sailing, and other sea related sports. With the turn of the century, local yacht numbers started to rise, as elsewhere in Iceland.

Today, there are 46 recreational vessels registered in the Westfjords alone (Siglingastofnun, Personal Communication, January 2013), thereof 41 as motorized and five (all in Ísafjörður) as sailing vessels. Of those 46 boats, 31 were built in Iceland (one sailing boat). While the majority of recreational vessels in Ísafjörður consist of motorboats mainly used for recreational fishing, it is the number of sailing yachts and cabin cruisers that steadily rises. Outside the official registration of recreational boats, there are three newly arrived S/Y in Ísafjörður (2012) that are not yet registered. Pier space is further occupied by differently registered vessels such as a charter S/Y from Borea Adventures and a fast going RIB for daily tourist exploration. A third vessel, a large S/Y intended for luxurious charter, is neither in operation nor registered. In town, existing boats under 6 meters length, independent of their class and type, do not pay a harbor fee and do not need to be registered, but also occupy pier or mooring space. According to the Harbormaster of Ísafjörður, domestic visiting vessel numbers vary between one and three per season (Personal Communication, Guðmundur M. Kristjánsson, Harbormaster Ísafjörður, October 10th 2012).

3.3.4 Yachting in Ísafjörður, Foreign

While large, luxurious vessels mainly visit the capital area and Iceland's second largest city, Akureyri, smaller vessels venture to less populated areas, including the

Westfjords. Unfortunately, proper bookkeeping of arrival and duration of foreign vessels is not demanded by Siglingastofnun. Their counts and financial impact has been insignificant in the past, which is why the accounting choice is left to the harbor management (Personal Communication, Guðmundur M. Kristjánsson, Harbormaster Ísafjörður, October 10th 2012). As a result, reliable counts are non-existent. Yachting visitors in the last 10 years include Britain's most famous celebrated yachtsman, Sir Robin Knox-Johnston[1] (Borea Adventures (b), n.d.), yachting journalist Tom Cunliffe[2], and the French adventurers and book authors Thierry Fabing[3] and Gilles Elkaim[4]. Tony Fleming, owner of Fleming Yachts (Fleming (n.d.), Image 12), circumnavigated Iceland and reported his adventure, which included Ísafjörður, via blog[5]. Excerpts of it were later published in the worldwide-distributed yachting magazine "Boat International" (Boat International, 2010). Gerard Dijkstra[6] (Dykstra Naval Architects (n.d.); Image 13) and Gilles Elkaim made, among other yachting visitors, use of Ísafjörður as their base camp and winter quarters. According to the Harbormaster of Ísafjörður, foreign visiting vessel counts average between 15 to 20 vessels per season (Personal Communication, Guðmundur M. Kristjánsson, Harbormaster Ísafjörður, October 10th 2012).

Image 12: M/Y "Venture II", owned by Tony Fleming, in Lónafjörður, Northern Westfjords, Iceland. Taken from: Tony Fleming (n.d.)

Image 13: S/Y "Bestavær II", owned by Gerad Dijkstra, in Ísafjörður, Iceland. Source: Gerad Dijkstra, 2012

[1]Sir Robin Knox-Johnston was the first person to sail non-stop single-handed around the world in 1969. He is the former owner of the now Borea Adventures (Borea Adventures (a), n.d.) operated yacht "Aurora" (ex"Antiope Clipper").
[2]Tom Cunliffe (Cunliffe, n.d.) is a highly active British yachting journalist, promoting the medium via TV, video and DVD, books, online blogs and Blogcasts as well as magazine articles. He has been a freelance author for the magazine Yachting Monthly since 1987.
[3]Thierry Fabing (Fabing, n.d.) from France sailed the Northwest Passage twice and visited Iceland several times over.
[4]Gilles Elkaim (Elkaim, n.d.) from France is a paid adventurer and book author working in the Arctic and Subarctic since 1983.
[5]Tony Fleming (Fleming, n.d.) writes a continuous online blog during his journeys.
[6]Gerard Dijkstra (Dykstra Naval Architects, n.d.) is a naval architect for yachts including long distance cruising yachts for Arctic waters. As a navigator he won the Whitbread Around the World Race onboard "Flyer", broke the transatlantic speed record onboard "Windrose" in 2005. His company also designed well-known yachts such as the "Maltese Falcon" and "Athena".

3.3.5 Yachting-Related Infrastructure of Ísafjörður

Ísafjörður Harbor is located on the sandy peninsula part of historical downtown Ísafjörður. Its location offers maximal space usage of navigable town coastline, permitting one larger harbor district on the western peninsula side inside the Pollurinn inlet, from hereon referred to as Area I, and a second one on its eastern side, from hereon referred to as Area II (see Figure 13). Both areas offer a safe harbor.

Area I consists of a long and rather wide main pier, a designated mooring area for smaller crafts facing downtown, and a smaller, U-shaped and ducked away harbor basin in close vicinity to the town center; referred to as designated recreational vessel harbor. Inside the latter, there is a ~ 50m long permanent floating dock and a second, smaller floating dock during the summer season. Area I can be seen from almost anywhere within Pollurinn, especially from the historic downtown, and thus considerably shapes the town's visual image. This original port area features freezer and general storage buildings, some marine services based companies, a weighbridge and pallet scale, and the harbor office. Its main pier is primarily used to service larger vessels of the fishing industry. The formerly described smaller harbor basin is shared between medium sized fishing, tourism charters, and recreational vessels.

Area II features the shortest distances to Ísafjarðadjúp and the open sea. The area is divided into four sections (see Figure 13): cargo and cruising liner pier, harbor basin A, harbor basin B, and oil pier. The cargo and cruising liner pier is located on the deeper channel of Skutulsfjörður, allowing ships with larger drafts to be serviced. To deliver security measures demanded for foreign ships, the direct pier area has been fenced of. Additionally, video cameras have been installed on tall floodlight posts. A larger container storage plot accompanies this greater pier area. Harbor basin A has multiple belay options. Recreational vessels, mostly small leisure fishing vessels, are accommodated by a floating dock during summer season. A tour operator is provided with its own floating dock, fitting his complete fleet. Ships can tie up on a pier adjacent to the cargo and cruising liner pier. Transition to harbor basin B is created by a larger timber pier that can accommodate vessels of various sizes on three sides. The pier facilitates small-scale landing cranes, a pallet scale with office, and a timber building associated with the aforementioned tour operator. In harbor basin B there are three swimming docks and a timber pier. Dock one services the local line boat fishing fleet, dock two the harbor operated tugboat and a rescue vessel. Dock three features a floating dock based patrol station. Vessels working in the local aquaculture industry

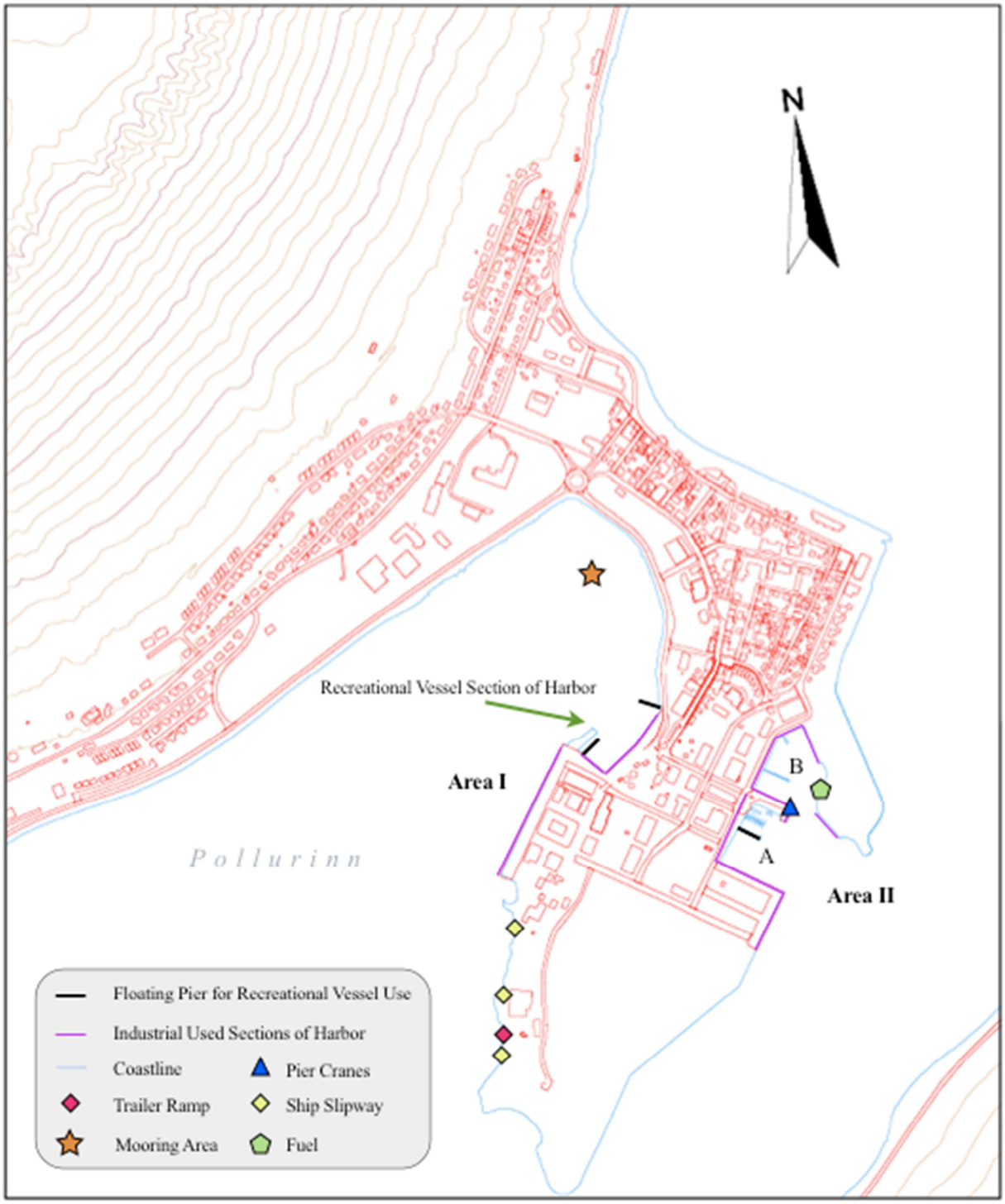

Figure 13: Ísafjörður Harbor, location and usage. Data source: Tæknideild Ísafjarðabæjar; Processing: Author

mainly use the northernmost situated timber pier. The oil pier is the newest addition to Ísafjörður harbor. Built on newly reclaimed land, it is intended to relocate the district oil storage from oil silos that until now have been located close to the designated recreational harbor area. Construction works on the pier area are not finished yet, but the pier itself is ready for use. Industry close to the harbor waterfront of Area II is connected to fish processing and fishing industry machinery. A little further,

complexes dealing with cargo distribution and storage as well as many marine connected service industries can be found.

All piers of the harbor are provided with fresh water and electricity connections at reasonable intervals. Availability of such services on floating piers is limited to the floating pier of the industrial fishing fleet (Area II, basin B) and the year-round recreational vessel pier (Area I). An Internet connection or WIFI does exist, although only in close vicinity to the harbor office. A trailer ramp is located at the southern tip of the peninsula (Figure 13). The neighboring slipways are privately owned, whereby the indoor slipway is a ship-launching slipway with poor pulling capacities. There are no designated parking areas within harbor limits. At present, parking is permitted anywhere inside the harbor area. Video cameras as a security measure only exist in the vicinity of the cruising liner pier in area II. Pier access is, with the exception of the fenced off cruising and cargo pier, open to the general public.

The diverse marine industry infrastructure of Ísafjörður is traditionally accustomed to servicing the local fishing fleet and fish processing (see Appendix B, Table 8. Industrial marine services offered include: engine and machinery services, metal workshops, timber workshops, glass fiber works, electricians, electronics specialists, spare parts and fitting dealer, painter and paint shop, safety equipment dealer, fuel, oil, and other specialized liquids supplier, land based storage, flag manufacturer, portable crane service, and rope and wire commerce.

Resources for customized services for recreational vessels like general yacht services, storage, rigging services, upholstery, clothing and yachting specific gear are limited or non-existent. Infrastructure demands from yacht owners reach, depending on their user category, beyond technical services into specifically yachting associated related services, such as security and privacy, catering, cleaning, transportation, brokerage, and fashion. In Ísafjörður existing directly related services are listed in Appendix B, Table 9. All but one (Fjarðanet) marine based infrastructure sectors are based on the peninsula of Ísafjörður and are as easily approachable for recreational harbor users as the general downtown infrastructure.

Facilities of the former shipyard, at which up to the end of the 1990’s ships were built, are today owned by Skipanaust; a company dealing with general metalwork. Although Skipanaust does not offer professional ship building services anymore, equipment including heavy metal machinery and ship slipways can be

rented (Personal Communication, Aðalsteinn Ómar Ásgeirsson, Owner Skipanaust ltd., December 6th 2012).

Due to the marine traffic volume received, previously existing local marine industry density, and for being a trade center in general, it is Reykjavík that offers the most marine industry related services in Iceland. Many worldwide leading companies associated with this sector have a sales office and/or service center here, from where they serve the national market. Since the recreational boating market is strongest in the capital (see also section 3.3.1), some in this market segment specialized companies could gain a foothold successfully. Before seeking out foreign services, yacht owners are encouraged to use domestically available resources.

3.3.6 BLT – Mapping

With respect to the information presented in section 3.2, a resulting, comprehensive theoretical BLT model can be presented (Table 3); visualizing the local, national, and international magnitude of power relationships related to private nautical tourism in Ísafjörður. The influential weight of locals and tourists does vary depending on duration of stay, and thus can further be classified into: permanent, long term, and short term.

3.3.7 Icelandic Maritime Traffic Surveillance and Search & Rescue

The maritime executive body for Iceland is the Icelandic Coast Guard, short ICG (ICG, n.d.). Among its main tasks are national defense, law enforcement, fisheries control, maritime and aviation monitoring, search & rescue, and counter terrorism activities. Other responsibilities include explosive ordinance disposal, minesweeping and the fulfillment of international obligations like UN and other peacekeeping missions. The ICG Search & Rescue Region (SRR) stretches far over the Icelandic EEZ (Figure 14) and measures ~ 1.8 million square km. Vessel movements inside the Icelandic EEZ are monitored inside the Maritime Traffic Center (MTC). The MTC, the ICG communication center, and Maritime Rescue Coordination Center (MRCC) are together united as Vessel Traffic Center (VTC), which is operated 24/7 by the ICG. In combining the for Icelandic vessels mandatory automatic Vessel Monitoring

Table 3: Simplified theoretical BLT model for private nautical tourism in Ísafjörður. Source: Author

Broker	Public Sector	On-site Broker	Ísafjörður Harbor Authority, Ísafjörður **(**Town), Ísafjarðabær (Municipal Government), Westfjords Development Agency (ATVEST)*, Westfjords Marketing Agency*
		Off-site Broker	National Government: Customs (Tollur)^, Tax Office (Skattstofan)^, Icelandic Maritime Administration, Ministry of Industries and Innovation
	Private Sector	On-site Broker	Yacht Charter Company, Maintenance Services, Repair Services, Spare Part Services, Storage Service, Basic Supplies & Services (Food, Fuel, Communication, Financial), Transportation Services (Air & Land), General Local Tourism Industry, Entertainment Industry, Westfjords Tourism Association
		Off-site Broker (Non-residential and Foreign)	Yacht Charter Company, Spare Part Services, Equipment Service Transportation Services (Air, Land & Sea)
Local	Ísafjörður	Native	Resident, Local Yacht Owner, Water Sports Club
		Non-native	Resident, Local Yacht Owner, Water Sports Club
	Iceland	Non-native, Native	Resident, National Yacht Owner, Water Sports Club
Tourist	Icelandic (domestic)	Private	Recreational Naval Tourist
	Foreign	Business	Yachting Professional, Exploration Professional, Expedition Professional, Scientific Professional, Journalist
		Private	Recreational Naval Tourist

Public and Private Sector Broker, ^Associated with On-site Broker

System (VMS), coastal radio information, and the Global Maritime Distress and Safety System (GMDSS), the VTC gained maximum information access concerning maritime traffic inside Icelandic waters (ICG, 2013). The automatic monitoring

capacities of VMS are up to 1,100 vessels. At present, decked vessels registered in Iceland amount to 1,056, thereof 70 sailboats and 26 pleasure craft (Siglingastofnun, 2013). In their latest available report (ICG, 2010 (a)), the LHG reports an average of 380 vessels per day inside the Icelandic EEZ. A maximum was reached in the summer of 2010, when with 1,140 counted vessels in a single day; automatic monitoring capacities were exceeded (ICG, 2010 (a)). A continuous growth in daily vessel counts can, without improvements on the monitoring system, severely stress monitoring capacities, since every vessel registered outside the VMS needs to be monitored by for the safety and security of all monitored vessels responsible staff at the MTC.

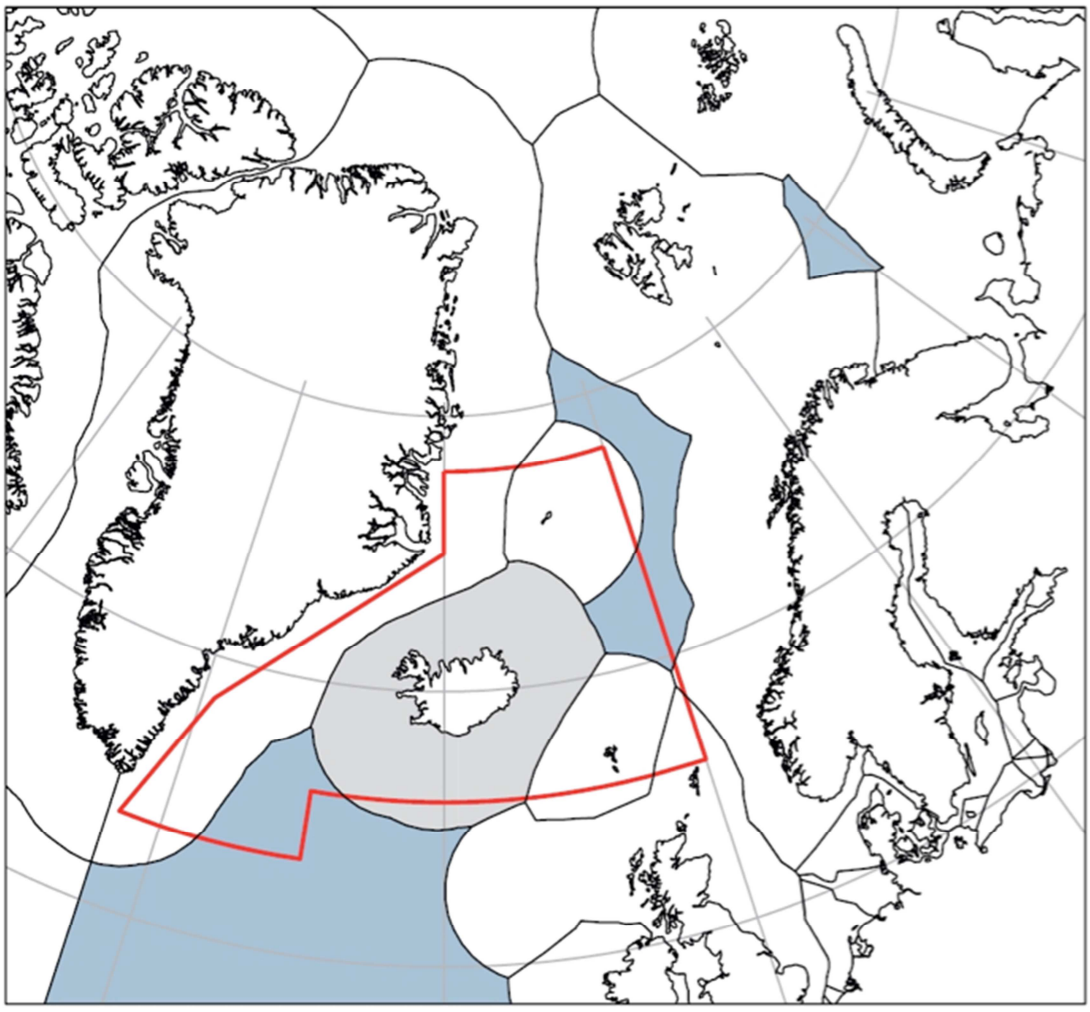

Figure 14: Border of ICG's SRR (red) and Icelandic EEZ (gray). Taken from: ICG (n.d.)

As mentioned, the ICG is, by legislation (Icelandic Government, 1996/1997), responsible for coordination and execution of all maritime and aeronautical Search & Rescue (SAR) operations inside its SRR. The Maritime Rescue Coordinating Center (MRCC) is part of the Joint Rescue Coordination Center (JRCC) based inside the ICG

operations center, forming an all-inclusive contact point for all maritime related information. With its 24-hour watch, fastest reaction times to emergencies are secured (ICG, 2013).

To execute the entire range of its tasks, the ICG has three ships, one plane, two helicopters and one survey boat at its disposal, operated by 170 personnel. Inshore emergency response is administrated by the ICG using local voluntary rescue organizations united under ICE-SAR (ICE-SAR, n.d.), operating: 14 Iceland-wide standardized and ICG financed rescue vessels of British origin with a cruising speed from 12 to 30 knots; 25 fast RIBs and ~ 95 motorized rubber dinghies (Image 14). The inshore rescue vessels are strategically placed where inshore fishing boat incidents in Iceland's EEZ are considered most likely (Landsbjörg, 2013). Their action radius ensures total coastal coverage (Figure 15). Offshore emergency response radiuses at 2010's available finances and equipment are visualized in Figure 16 (ICG, 2010 (b)), covering only Iceland's EEZ and to Iceland closest parts of East Greenland in an acceptable time frame. Despite adding a new vessel (Þór) with 19.5 kn cruising speed by autumn 2011 (ICG, 2012 (a) and (b)), the ICG fleet still cannot guarantee timely emergency response in all SRR sectors.

Image 14: ICE-SAR fleet. Taken from ICE-SAR (n.d. (a))

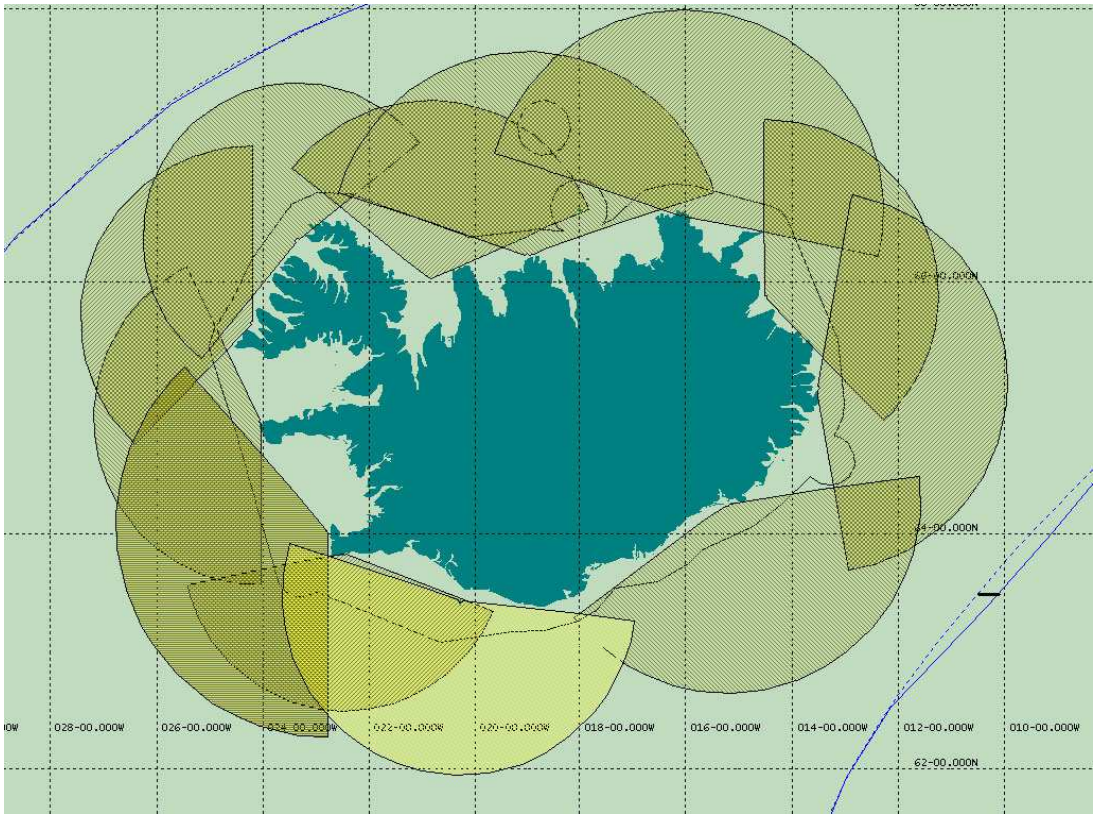

Figure 15: ICE-SAR inshore vessel distribution and 6hr action radius according to maximum cruising speed of stationed vessel; one arch (green) per vessel. Taken from: ICE-SAR (n.d. (b))

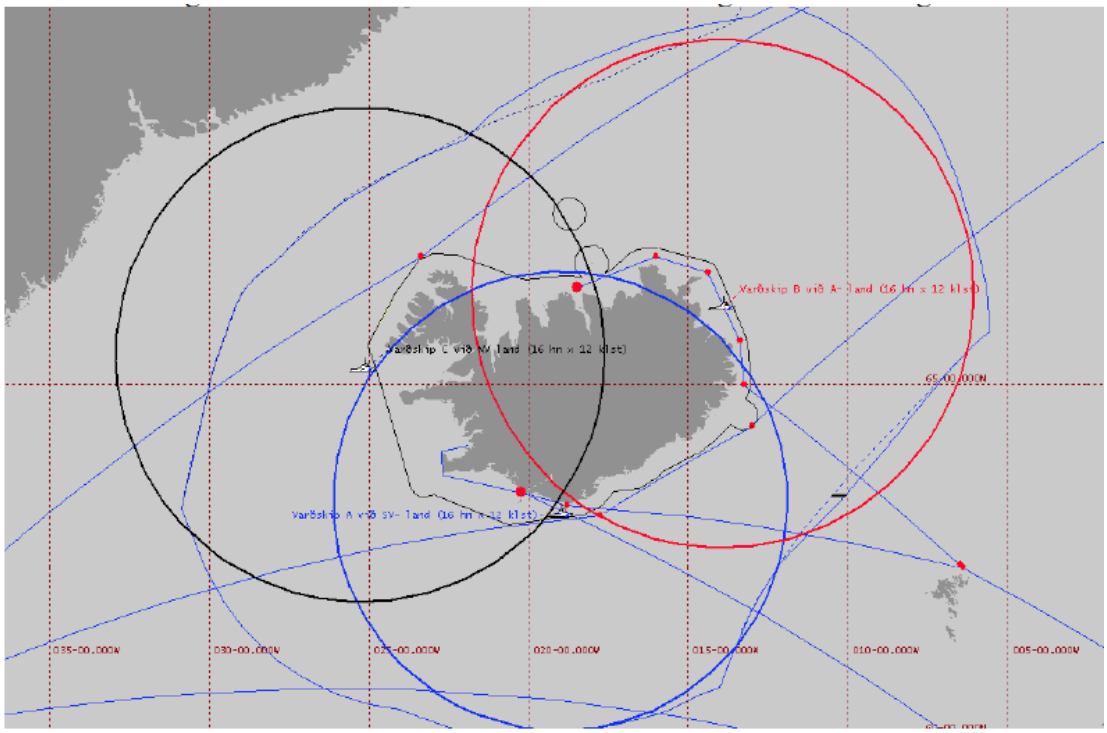

Figure 16: Theoretical 12hr action radius of ICG's three vessels at speed of 16kn (black, red, and blue circle; as of 2010). Taken from: ICG (2010 (b))

3.4 Yachting to East Greenland

3.4.1 Accessibility

Ísafjörður has, with just 150nm distance to the Greenlandic coastline, the shortest distance of all recreational vessel-welcoming harbors in Iceland. Due to local weather and ice conditions, anticipated maritime journeys to East Greenland's shores, with non-ice-strengthened vessels, have to take place in a very narrow time-window. The window is set at about a 1.5-month time frame, from the end of July to the middle of September, which is often heralded by the autumn's first heavy storm (Personal communication with Sigurður Jónsson, skipper of S/Y "Aurora", Borea Adventures, July 2012). Short travel times to the point of destination are essential for successful exploration. Large drift ice fields and thick fog pose major obstacles for safe ocean crossings. Those do not only appear in the spring and the beginning of the summer, but are likely during the whole cruising season (Personal communication with Sigurður Jónsson, Skipper of S/Y "Aurora", Borea Adventures, July 2012), making each season to some extend unpredictable and alternative travel areas welcome. Often unreliable or conflicting ice reports from different suppliers, with frequently large gaps between observation times, increase risks further (Personal communication with Sigurður Jónsson, Skipper of S/Y "Aurora", Borea Adventures, July 2012). For those venturing between East Greenland an Iceland, Ísafjörður offers the closest safe harbor on the Icelandic side of the ocean, including a small offshore rescue vessel.

3.4.2 Infrastructure and Alternative Carriers

East Greenland consists of only three municipalities (Brinkhoff, 2013): Kujalleq, Semersooq, and northeast Greenland National Park. Overall population in East Greenland is estimated to approx. 3,500 people (Brinkhoff, 2013; The Official Tourism Site of Greenland) in an area covering 1,457,000 km² (Nielsen). In fact it is one of the most isolated habitations in the world with more than 20.000 km of coastline but only two towns and five smaller settlements (Nielsen, n.d.). Its general location between the Greenlandic icecap and the polar sea ice limits accessibility for supply vessels to only six months per year (Nielsen). People living in East Greenland manage to sustain themselves with their historic lifestyle, which involves hunting and

fishing, but nevertheless rely heavily on outside supplies for a somewhat modern level of comfort. Such supplies include oil and gas, building supplies, machinery, electronics and non-traditional food. Local transportation infrastructure is significantly different:

> Due to the climate and landscape there is no infrastructure outside Tasiilaq and the settlements. In the wintertime the local transportation is by helicopter, skidoos and dogsleds. In the summertime it's by speedboats and helicopter.
>
> (Nielsen, n.d.)

Departing from Iceland, there is only one alternative carrier to a leisure boat with which tourists can reach selected communities in East Greenland: the airplane. Charter and scheduled flights depart in Reykjavík or Akureyri. Permits for Ísafjörður functioning as international airport servicing direct flights to East Greenland do not exist yet, but are under active discussion (Bæjarins Besta, 2013). Greenlandic airports currently serviced by Icelandic companies include: Ittoqqortoormiit, Narsarsuaq, Kulusuk, Ilulissat, Nuuk, and Nerlerit Inaat known as "Constable Point" (Air Iceland, n.d.; Norlandair, n.d.).

Chapter 4 – Findings

4.1 Qualitative and Quantitative Data Results

4.1.1 Secondary Source Results

Private nautical visitors counts of both locations are displayed in Figure 17. The Icelandic data delivered insights in demographics and interests of the visiting vessels coming to Iceland. The majority of visiting vessels at Brokey come from Europe, with France, the UK, and Poland being the largest visitor group. The Scandinavian countries, the Netherlands and Germany are equally represented. More exotic were worldwide visitors coming from Russia, USA, Canada, and Australia. In the last three years, roughly 18% of all yachts visiting Brokey have also visited Ísafjörður and the Westfjords. The yachts stated to be on route to either Greenland, to circumnavigate Iceland, or to be on transit between the American and the European continents. National visitor numbers have been, with one or none per season, very low.

Table 4, which shows the seasonal private nautical visitor numbers, reveals a high number of S/Y's compared to M/Y's as used means of transportation. However, in the data set there are charter companies using M/Y's to cruise Spitzbergen waters also. Only one M/Y has been counted in Brokey over the presented time frame.

Table 4: Private yacht data for Ny-Ålesund Harbor from 2007 to 2012. Adapted from Fjeld, Personal Communication, December 4th 2012.

Year	Yacht Counts, Overall	Visits Undertaken With Private Yachts, Overall
2006	5 (4 S/Y's, 1 private M/Y)	5
2007	12 (9 S/Y's, 3 private M/Y's)	15
2008	No data	No data
2009	30 (30 S/Y's)	40
2010	35 (33 S/Y's, 2 private M/Y's)	46
2011	40 (40 S/Y's)	58
2012	37 (35 S/Y's, 2 private M/Y's)	56

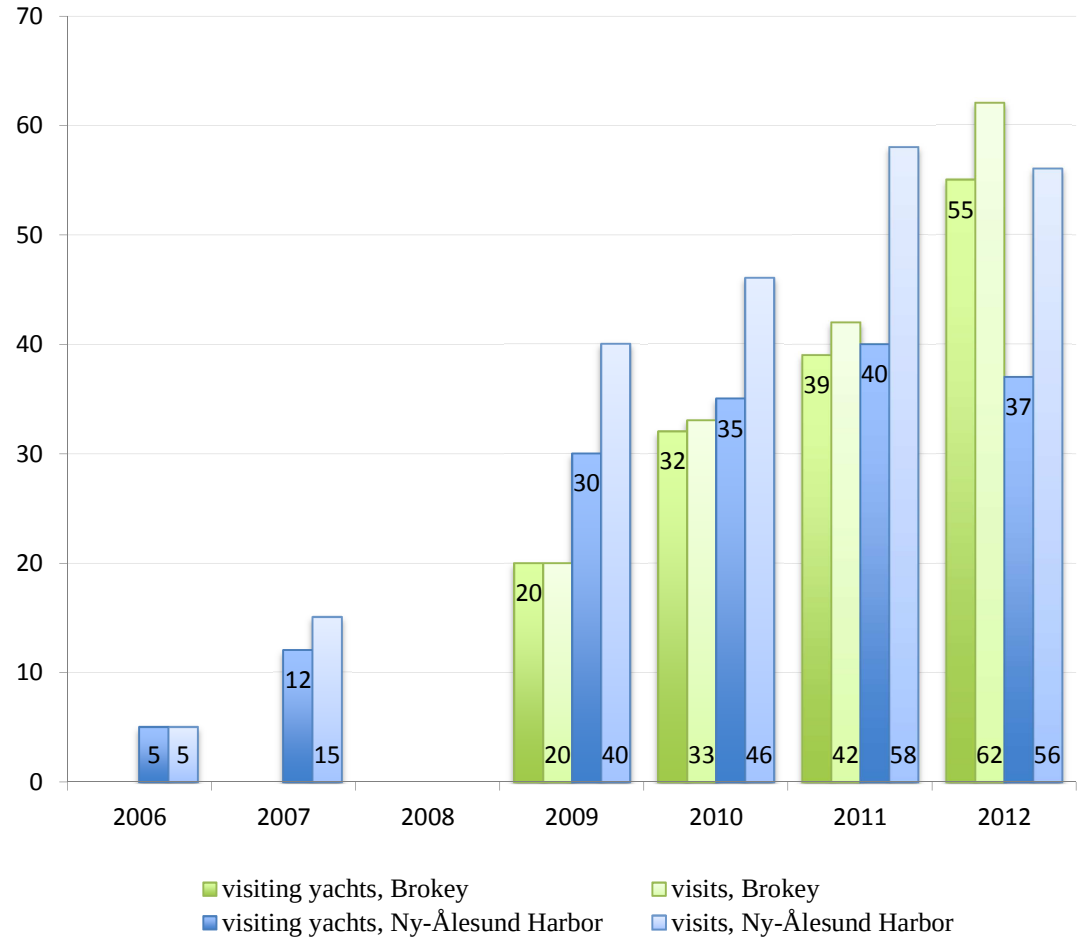

Figure 17: Yacht visitor counts for "Brokey – Reykjavík Yacht Club" in Iceland (Subarctic), and Ny-Ålesund harbor, Spitzbergen, Norway (Arctic). "Visiting yachts" representing overall vessel counts per season; "visits" representing the complete number of registered visits, including in that season returning vessels.

4.1.2 Questionnaires and Semi-Structured Interview Results

Visiting Yachts

During the period of April to September of 2012, 21 vessels have been observed as visiting Ísafjörður. The visiting vessels were registered in 13 different countries, including Iceland (Figure 18). Eight vessels returned to Ísafjörður at least once more during that season, adding to Ísafjörður Harbor's overall recreational vessel visit count, which resulted in 30 visits for the season. Results for the overall counts stem from personal observation.

Out of all interviewed yachts, the average duration of stay in Ísafjörður is five days; their average duration in the Westfjords region is 12 days. Average crew numbers on board number two to three people, while the mode capacity to carry people on board was eight people. The visiting charter yachts could, theoretically,

accommodate 15 and 17 people. One of them returned to Ísafjörður Harbor two times, exchanging crew and guests whilst stocking up on supplies. Overall, 101 people arrived in Ísafjörður with or for non-locally registered leisure vessels, including the guests received on the returning charter yacht, but not including guest received for the local charter yacht (Borea Adventures, n.d.).

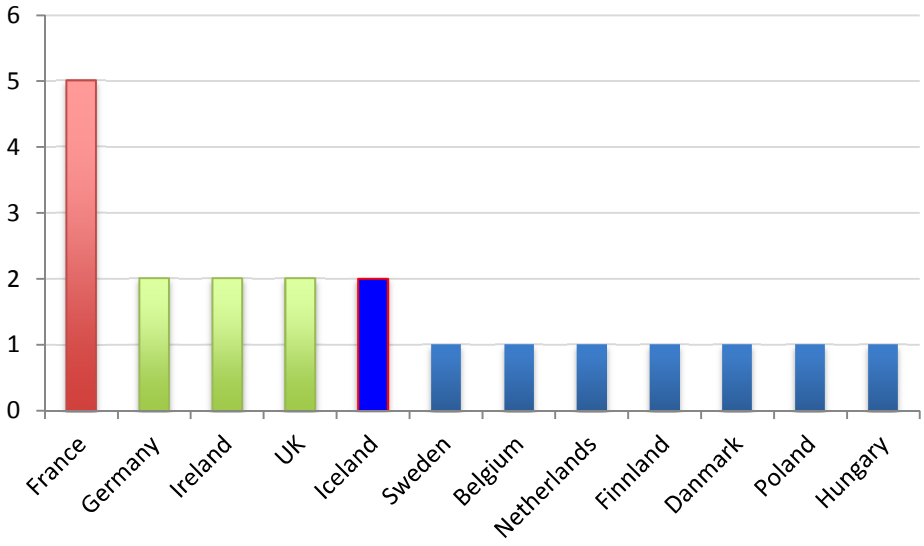

Figure 18: Yacht counts by registered country.

Four vessels were sailing around Iceland, while nine vessels were on transit to Greenland. Three vessels commented that they came to see the general Westfjords region specifically. Only two yachts chose to make port in Ísafjörður spontaneously while sailing in Icelandic waters. All other nautical visitors included the harbor deliberately as a general stop-point or back-up port for their journey. Ísafjörður was either known from former journeys, from the word of mouth of likeminded comrades, or from articles found in magazines, online blogs, or other media. A high number, 86%, used a British cruising guide (Ker, 2004), which features Ísafjörður Harbor, as cruising aid. Of all interviewed yachts, eight made active use of the airport; receiving an overall of 25 people. An additional number of five yachts did not do so this season, but would if the situation presents itself.

All approached yacht users verified the gateway character of Ísafjörður for Greenland, the Westfjords, and Iceland in general, as well as for yacht through traffic from the American to the European continent and *vise versa*. Those headed for, or returning from, Greenland stressed the strategic importance of Ísafjörður for their overall journey.

Expectations and perceived experiences by the interviewee were divided into two sections: For the town overall, and for Ísafjörður Harbor alone. Talking about the town, during the interview recurring descriptions of their expectations included words like “rural”, “exotic”, “pretty”, “safe”, and “authentic”. Stated town experience was 100% positive, illustrated as “surprisingly dynamic”, “friendly”, “clean”, “hopeful and romantic sorted”. Some visitors stated that “[they] came on purpose, [and] stay on purpose”. It should be emphasized that the “not commercialized appeal” of the “perfect base camp” in a “working port” has been perceived as “romantic”, “authentic”, and “whished-for experience”. Asked about their observations from other Icelandic ports compared to Ísafjörður, a regularly described perception was that people in Ísafjörður generally appear to be more genuine, helpful, and welcoming. Interviewees that returned to Iceland for several years reported a change in attitude *e.g.* in Akureyri and Reykjavík, now leaning more towards maximizing income whilst not providing better, but instead decreasing, customer care and quality of service. Those locations were described as approached only if necessary, and for the shortest amount of time.

Harbor expectations varied between yachts (Figure 19). The two S/Y’s that clearly expected a fully developed marina have their origin in developed yachting countries. General expectations included: A safe fishing harbor, shared pier space with the local fleet, a yacht-friendly but not tailored (for yachting purposes, underdeveloped) harbor, and marine supplies, services, and repair facilities. Basic, and thus expected, visitor services included: toilet, shower, washing machine, dryer, Internet, and information board advertising general and marine related infrastructure of the town and harbor.

Harbor experiences have been diverse, but none of them negative (Figure 20). While one yacht crew generalized that “Iceland is not prepared for pleasure craft” and a considerable amount “hoped for more harbor related services”, others stated their experience as “better than expected” and to be “a pleasant surprise which they would recommend […] to others”. Very positively received and thus particularly highlighted were the floating pontoon and its location, and the availability of water and electricity. Also recognized were the “very helpful staff and residents” and the availability of “people that can do things”. The latter include organizational skills from harbor staff, local marine related industries and local yacht owners for items, repairs, or

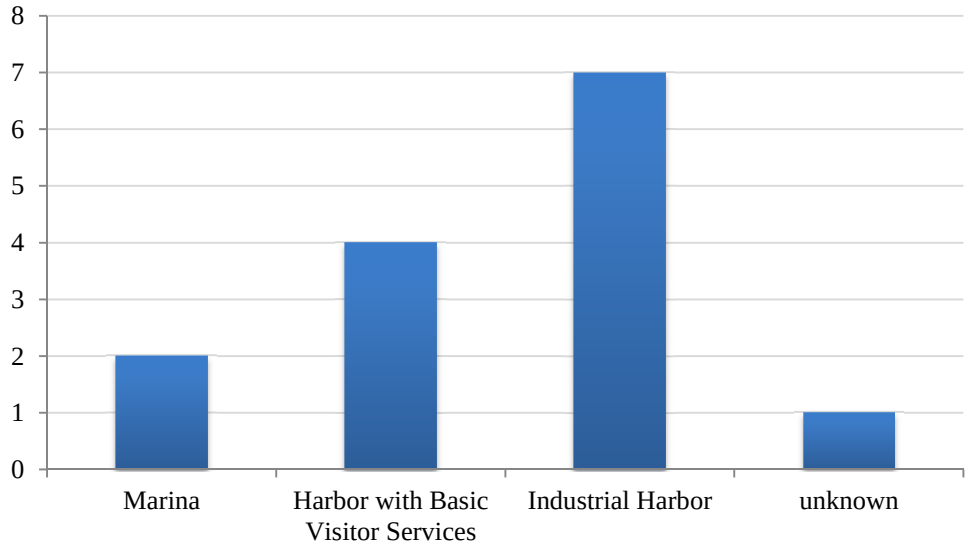

Figure 19: Distribution of expected harbor type from nautical tourists' point of view.

information needed. The evident proportion of unknown satisfaction derives from the timing of the interview. Three yachts had been approached shortly after arrival and were thus without deeper-rooted opinion yet; two of those yachts left the same day (unlikely due to perceived experience but because of their stated journey schedule). No common opinion could be found on harbor fees charged, either (Figure 21). While the majority of those interviewees with an existing opinion declared the charge to be low, thus saying they expected or would be willing to pay more, there was one crew that regarded fees as too high and another that was against harbor fees altogether. Interestingly, both latter vessels were of larger nature and their owners with above average income (high paid professionals). They and many other interviewees stated that in the majority of Icelandic harbors the visited, especially rural ones, their stay was without harbor costs. Uncertainty about local charges and the non-availability of publicly available lists regarding them and locally offered facilities were described as aggravating to journey planning. The high number of unknown satisfaction degree regarding harbor fees originates from the interviewees' unknown total sum of expected charges at the time of the interview. Opinions on considered local over-winter stays differed from yacht to yacht, and were mainly of financial and strategic nature. Those that would not consider it justify the stance with connected travel costs and the unavailability of their yacht in home waters. Those that would consider it do so with respect to saving transit times towards their next anticipated high latitude exploration location, and with focus on low local storage costs[1]. Following their

perceptions of the current situation of the harbor, the interviewees were asked to name their personal harbor ideals for Ísafjörður (see Figure 22). A majority of 57%, or eight yachts, preferred the current fishing harbor appeal, saying it is “perfect the way it is”,

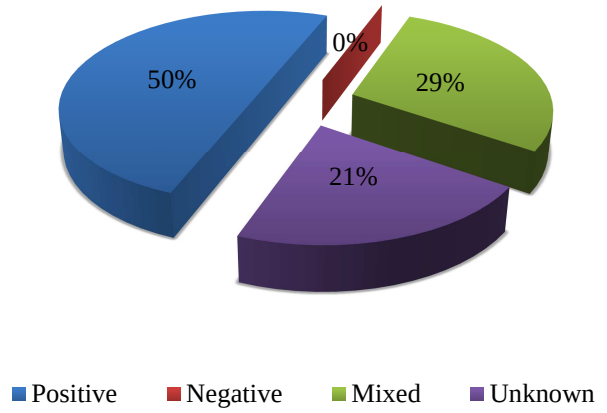

Figure 20: Satisfaction with currently offered harbor services.

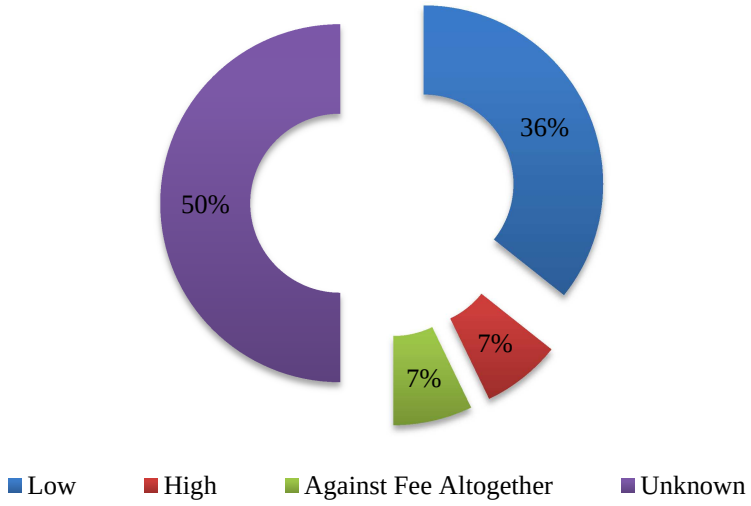

Figure 21: Stated perception of charged harbor fee.

[1]A brief discussion with the Isafjörður based customs officer revealed uncertainties over regulations for yachts that cruise or stay stationary inside the country for longer than three months at a time. At the time of this study, unlike foreign cars, foreign yachts can stay inside Icelandic territory without having to pay extra fees or usual VAT. It is, however, under discussion to change that regulation. The current regulation makes over-winter stays for foreign yachts very attractive, while a change could impact existing and future winter storage business.

but mentioned that adding general crew facilities that could be used by anyone in the harbor area should be seriously considered. Those facilities included, as mentioned earlier: toilet, shower, washing machine, dryer, Internet access and an information board for general information and advertising. Another 29%, or four yachts, would enhance the harbor to a purpose-built pleasure craft harbor with fishing harbor appeal. Besides enhancements already mentioned in this paragraph, they would add the following: More floating pier space with water, electricity, and emergency equipment equally available to all yachts; free of charge moorings; security enhancing camera installations; grey-water pumps and storage; roofed land-based storage; and a designated room or building containing a small library, near to the dock, with documents of local knowledge and maps, pictures, guestbook and general meeting or socializing space. Some, however, "fear overdevelopment" by hastily initiating development and stressed that the overall appearance of a traditional fishing harbor must not be "jeopardized". The optimum named by this second group does, in fact, mirror a lot of attributes generally found in a less-developed marina. Their reservations for a completely developed marina deal mostly with limitations to size, development degree and visual appearance. One crew in this group had, however, no preference between a marina and a fishing harbor.

Of all approached yachts, only one interviewee would welcome a fully developed marina. Since many of the visiting vessels were registered in highly developed yachting countries, their objections to such developments were of interest. Feelings on the topic were very mixed. For some, a marina poses "no problem for as long as not too big" and is generally seen as "very pleasant if simple but efficient". To others they feel "too plastic" and are, since such places are known from home, less attractive for longer stays. An economically concerned interviewee felt that a marina in these latitudes is "not necessary and unfeasible". Both Irish yacht crews claimed to be against the "fancy" marina culture, which is why they were sailing in Arctic and Subarctic waters. The most drastic received was the comment: "If you change it, we will not come anymore."

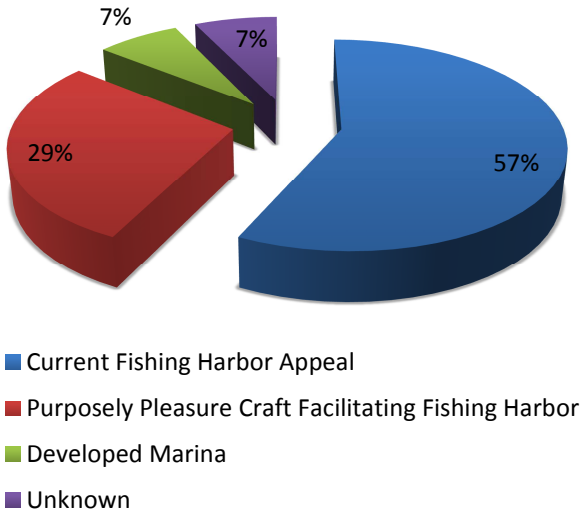

Figure 22: Nautical tourists' imagined harbor ideal, as stated by the interviewees.

Of all vessels interviewed, the extent of their skippers' experience, and thus their tourist class, distributed as follows: Four yachting professionals, one exploration professional, one expedition professional, and eight recreational skippers. Two vessels were also crewed by business tourists, classified as journalists. At least one yacht (Polish) carried scientific professionals.

Among other concerns related to their journey and Ísafjörður, stated issues were a lack of cartography in certain areas inside the Westfjords, weather reports via radio not in the English language, and the lack of proper designation and indication of aquaculture sites. Rising numbers of aquaculture pens have been described as "undesired", threatening the attractiveness of areas fostering such industry on a larger scale.

Local Yacht Owner

All but one owner supports a local marina development. The one against it prefers a fishing harbor with recreational vessels in it to secure authenticity (Figure 23). Seven of the eight questioned boat owners would support harbor developments by paying higher fees. The local resenting a higher fee is not the same local resenting developments towards a marina. Their support is motivated by the hope for better facilities for the recreational user, local economy influx by attracting additional vessels and tourists, and elevated quality of life and experience for locals and tourists due to the improved appeal of the town.

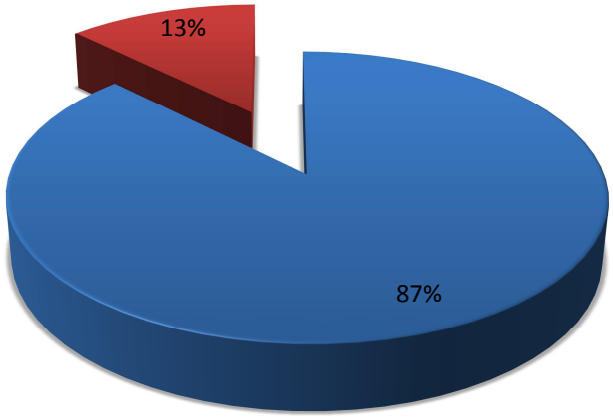

Figure 23: Marina development support. Blue representing vessel owners positive towards marina development, red representing vessel owners negative towards marina development.

Fifty percent of the vessel owners were satisfied with the harbor facilities currently offered, the other half were not. The majority, seven, of the questioned locals would prefer to have a fixed spot on the pier assigned to only their vessel, if offered. One local stated to have no opinion, while nobody wanted to continue the current way of spot handling (Figure 24).

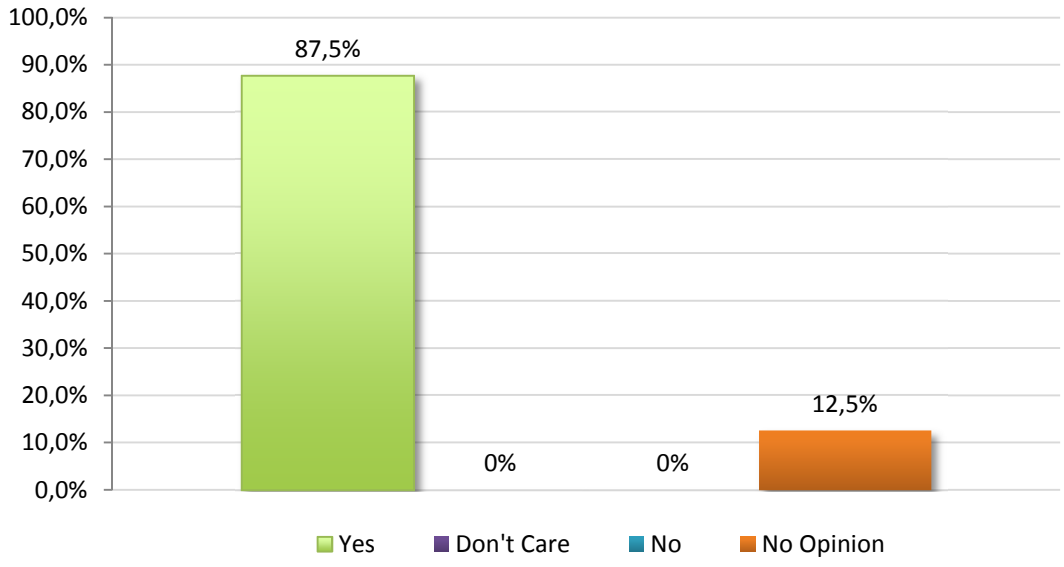

Figure 24: Local vessel owner preference regarding personally assigned dock location inside Ísafjörður Harbor.

The way the yacht owners stated usage of harbor facilities distributes as follows: Floating pier 75%, mooring 75%, water supply 100%, electricity 87.5%, garbage 50%, crane 50%, and garbage 12.5% (Figure 25).

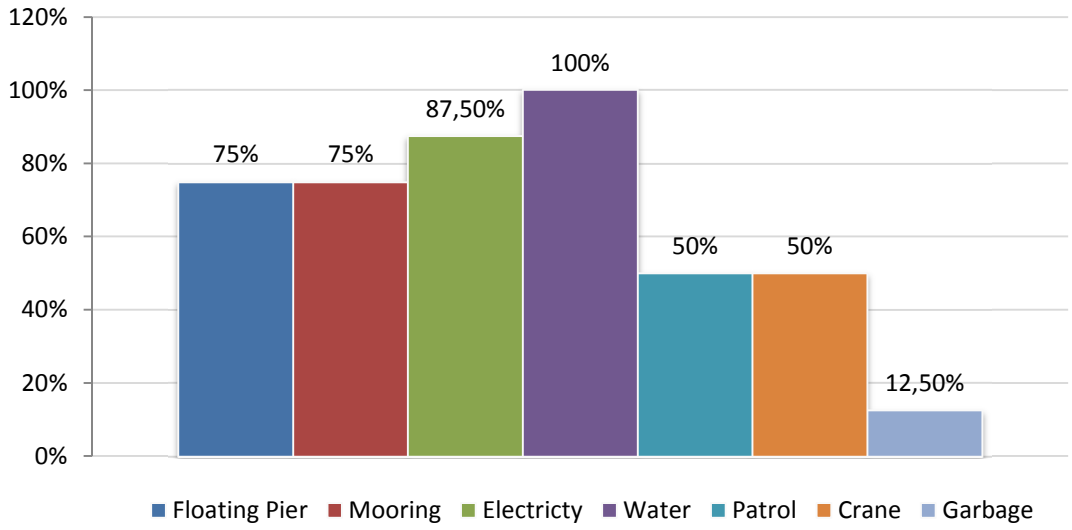

Figure 25: Stated usage of harbor facilities. Questionnaire results from local vessel owner.

To get insights into personal priorities with regard to harbor improvements, the interviewees were asked to list and arrange the transformation they would undertake if they were left in charge. The questionnaire revealed the following personal relevance to the local boat owner (1 = highest importance, 6 = least importance): 1) More user space by adding additional floating piers, 2) Improvements for a safer harbor with better shelter, 3) Provision of sanitary facilities including toilet and shower, but also washing machine and dryer, 4) Improved pier amenities including internet and direct water and electricity supplies for every vessel, 5) Arrangement of indoor boat storage with heat and electricity supplies as well as proper waste disposal facilities close to the boat location, 6) slip-crane for larger vessels, outside boat storage, information service via pier-side board or flyers, guest housing for visitors, and a designated anchorage area in the Pollurinn inlet.

4.1.3 Elite Interviewing Results

Interview with the Mayor of Ísafjörður

Mr. Jakobsson is “very positive” towards a marina development in Ísafjörður. He believes it is “something that we can have a lot of money from […] both from servicing the ships and also in terms of income”. In his opinion, the Icelandic

yachting market is very small. His main focus would be on foreign vessels coming for the summer season and possibly staying over winter on land; nevertheless, he sees similar opportunities arising from Icelandic yacht owners coming from distant parts of the country.

His main motivation for a marina development is to foster tourism, general advertisement, further employment of in-town existing economy sectors, the creation of new jobs, and the opportunity to lengthen the tourism employment ratio beyond the current season. During the interview he reveals:

> We want to build a marina […]. We have not come any further in market segments […]. Where we are at now is like 10 to 20 yachts per year visiting […] that were very happy […], so I said to the harbor master: This is something we should look into.

Further on he admits that: “We don’t know anything about this business. We are basically there now, trying to figure out where to go from [here]”. He confessed to have no knowledge about the target group and to be aware of the lack of an official development vision for Ísafjörður as to be a marine tourism gateway to the Westfjords and Arctic waters.

One of many issues Mr. Jakobsson sees are with larger winter storage for yachts: “Because we have no space”. He made clear that he prefers a development growth in small steps over time to monitor its financial impacts, and the degree of adaptation and response from locals and tourists to it. Referring to the former he restates: “So, 20 new spots and see where it goes”.

An in his eyes for the town, a perfect marina would combine (aside from the obvious needs of recreational boat owners) storm surge protection and public shoreline access. More detailed ideas include: placement of more vessels closer to downtown; floating piers since: “They are comfortable, cheaper, easily manageable and allow for change of position, size, and quicker growth”; wooden harbor structures and main piers (“Rather see wood than concrete”); shoreline walking paths; and timber piers that support a historically authentic appearance and allow people to fish from. A first stage would be to use the current recreational vessel harbor more, whilst over time slowly extending it.

In the eyes of its mayor it is important for the town to have ownership over the marina. Regulations regarding such ownership were obviously unknown since he stated: “It might not even be allowed to have a private marina”. He could, however, see, as one possibility, a private company managing the marina under “[…] some kind of agreement […]”.

Confronted with marina related questions about environmental protection and labeling, Mr. Jakobsson stated that he would like to see Ísafjörður: “[…] As role models for how things could be done different, more environmental friendly”, admitting: “We want to be green. We are not green but believe to be. So, we want to be green.” Challenged on the current state of Pollurinn and possible impacts on its biota originating from a marina he replies: “We haven’t come that far yet [to think of that].”

There has already been one open town meeting about the marina and storm surge protection issue. According to him, participation has been plentiful, thus he feels confident that the public is very interested in the matter. He believes that: “Most of the people in town want the same thing”.

First startup ideas of Mr. Jakobsson include an “[…] Investment of 100 million ISK for 20 spots. If you could get 500.000 ISK out of each [spot] per year, it’s a good investment, basically. That’s what I was writing on a paper, knowing nothing”. Questions about other existing obstacles aside money were replied to as: “No, just money, money and time”. In regards to the priority ranking of a marina development over other projects the town is dealing with Mr. Jakobsson concedes:

> It hasn’t really become a project yet. We have yet to sit down [and make it one] […]. We have yet to define the project, what is the project, therefore it’s nowhere in the line […]. Its something we are starting to look into and we are trying to combine with the storm surge protection, which I am not sure is going to happen.

Protecting the town from sea impacts is, as he explains, a governmental issue that is not budgeted for in the next three years. He sees, however, chances for financial help from the government if the marina supports coastal protection efforts. A more urgent issue is tourism development, which the town is: “Looking very much into”. Asked

about the current financial state of the town he replies that when he started in 2010, he mostly:

> Lived in Excel, trying to cut costs […] and turning around the economy. The financial situation of the town has been very tough. Now things are looking better and we actually have some money for development. [We] have a lot of projects we would like to go into. But projects that we are going into are projects that are cutting costs, like […] buying […] new heating systems for a house […] and projects that are partly funded by the government. […] And we have been trying [a lot] but had to leave out a little bit, to go into projects that make the town more beautiful. These two issues have basically taken all the money. […] What we are hoping for is that after 2012 – 13 we will finally have some kind of money to do something other than buying a pump or whatever.

Helping to understand town economics he reveals that: "Roughly 25% of income of the harbor comes from cruising liners. That income goes directly into the town treasury. The town then gives the harbor a budget". At the same time he reveals his personal views on the cruise ship tourism:

> Do we want the biggest ships with three four thousand people, or are we gonna set out some kind of 2000 to 1000 [limit]. So I think we want to be small and we don't want to lose what we have today, which is rural, emptiness, waste […]. That's what we are selling. […] We want to look more having much out of each tourist then having mass tourism. […] We guarantee that there is never more than one cruise liner per day.

Final remarks were made on how he is confident that a marina will make the town more attractive for both tourists and locals; that it will help to reconnect locals with the shoreline and their seafarer heritage and by doing so, at once raise quality of life.

Interview with the Harbormaster of Ísafjörður

Mr. Kristjánsson explained that he is responsible for services in all harbors inside Ísafjarðarbær, which are: Ísafjörður, Flateyri, Suðureyri, and Þingeyri. To do so, he is given a workforce of seven people. Four of them are stationed in Ísafjörður: he

himself, a pilot and a engineer for the tug boat, and a disabled general staff member working on a 50% basis. Three additional staff members are distributed to the towns of Flateyri, Suðureyri, and Þingeyri. He affirms that the harbor itself is 100% owned by the municipality, with the Mayor as his direct superior. Mr. Kristjánsson points out that “all income generated by the harbor directly flows into the municipality treasury”, and that “it is the municipality administration that gives the harbor an annual budget”. From that budget, maintenance and service costs as well as wages and improvements need to be covered. All major development efforts have to be decided upon by the harbor committee, and agreed to by the Mayor and the harbor captain. They are financed out of the harbor budget and eventually the municipal treasury. Due to the town’s financial situation, all major harbor developments rely on subsidy from the government. Mr. Kristjánsson stresses that he generally applies for development funds at Siglingastofnun (Icelandic Maritime Administration), but unless pushed by the Alþingi as important, they will not generally be granted. Aside the described linkages, he also has to follow Siglingastofnun’s implementations regarding safety and procedural rules and regulations inside the harbor.

Mr. Kristjánsson describes the harbor as a struggling business compared to its past. He says Ísafjörður used to be not only “The biggest moneymaker for the municipality”, it was one of the “biggest harbors in Iceland due to the fish landings” and the cargo turnover that created. But “landing numbers plummeted since the quota system was implemented”, and by 2005 when “They [the government] stopped to support cargo transport on the water”, so did cargo shipping. “Now the income [from the fishing industry] has dropped by more than 50%”. He reports that, in 2011 “it [the harbor] made some little money”, and that for 2012 he “hope[s] to have made 3 – 4 mil. ISK over zero. All the years before we lost money every year”. Since fishing vessels of any kind, aside general pier costs, have to pay a 1% surcharge of their landed fish-tonnage value, the fishing sector still generates 75% of the overall income for Ísafjörður Harbor, but cargo and cruising liner income are slowly on the rise. So far, recreational vessels have nominal impact on the harbor income.

The harbormaster claims to be very supportive towards any marina developments. Questioned about marketing efforts to promote Ísafjörður as yachting destination are echoed with preference to “prepare the harbor for higher demand before advertising it, so promises can be kept”. He confirms he has observed growing leisure vessel numbers visiting and staying in Ísafjörður, which in return triggered in

him “for many years […] the idea to improve the facilities for yachts”. Asked to specify his ideas, he replies: “I want to accommodate yachts in a proper way, and a marina is what this kinda business is used to”. For doing so, he wants to get his “wildest dream” of a marina on paper and then slowly develop towards it. Albeit believing that the harbor will never grow that big as to be a marina only for pleasure yachts, he sees potential for additional harbor income, improved appeal of the town, and added means for local industries. Where exactly on the marina development scale he would like to see this project is yet unclear to him:

> To measure our needs […] we need to spread out, find where we want to go and do some marketing research. Is this worth to spend money on? And, how many yachts can we expect in five years, ten years. What income can we expect to have?

He has, however, fundamental ideas including to deliver “basic things”, like toilet, shower, washing machine, and dryer, the broader usage of adaptive pontoon piers, and to keep, for privacy and business reasons, charter vessels (most of all local ones) separated from other vessels. He is reasoning that the latter offer a service that carries the need to be constantly and reliably approachable. The harbor provides the facilities and the charter company in return pays for the delivered service. These services present, due to their duration and special arrangement, a higher value income source. Part of his “wildest dream” is to “give charter companies their own service buildings […] and another service building for recreational boat crews and their needs”. Other measures imagined include an increase in mooring space as an attractive (cheaper) alternative to pier-space, and, if mediation measures or legislation for safety and security make it necessary, the fencing off of piers belonging to the marina. His safety concerns are not elevated facing possible visits of luxury yachts since, for privacy reasons: “Celebrities and big yachts that are coming anchor and stay away from the pier by choice, not because we cannot accommodate them”.

The harbormaster is aware of the fact that current M/Y and S/Y numbers do not have a big financial input into the harbor and rather high maintenance and service costs:

> So far the yachts coming in here have been of low [...] charge and they believe that we charge too much. Hence we are not going for it because of the expected income [for the harbor]. […] We are spending a lot of money for marketing of cruise vessels, and this is a growing business [in town]. […] That's easy money what you get for it, for example one big vessel [cruise liner] is charged for 2.5 mil. ISK for a one day visit. That is much more than you can expect from recreational vessels for many years, by much lower personnel input compared to the number of people you serve.

He is somewhat shaken as, in his eyes, "a lot of vessels take advantage of amenities but do not pay the fees at the end". Albeit mentioning that more yachts would benefit the town's visual image, local businesses and the overall tourism sector, he has the impression that most of:

> The visiting yachts are not spending much money on their journey […]. Most of them buy their stuff in their own country, a lot of canned food, so they are not spending much here.

According to Mr. Kristjánsson, obstacles for a marina project are widespread, for they clutter financing, administration, and service. He explains that he has "no potential for a workforce just dealing with yachts", but could imagine short-term employment such as "maybe a student job". He has to spend additional money "to hire extra staff to secure the harbor [for cruise ships] in the summer" already, and, as a money-saving and service-increasing attempt, welcomes and introduces amenities to visiting yachts. He is, however, not so optimistic that he will "get money for [marina] improvements in the coming years", leaving money as his biggest worry. Private companies offering to invest in a marina would be received very skeptically, forasmuch as he "would question their real intentions", assume foul play in the application process towards authorities, and feel uninformed thinking: "Does he know more than I know?"

Administrative issues derive from the overwhelming amount of additional paperwork if yachts would be taken seriously as business and the long approval process for any major harbor developments. He hopes that for the future the harbor

council shows efforts to quicken decision-making, ergo allowing him “to go ahead with the action” in a more timely fashion.

Mr. Kristjánsson makes clear that, for now, the marina is not a priority, but “might get there if income either for harbor or for the town rises significantly”. Contemporary priorities are to improve facilities for cruise vessels, which are “Big money for little job”. He highlights that “the harbor just spent over 200mil. ISK on renovating the pier inside Pollurinn” for 10m draft ships, and that he applied for dredging the channel towards Pollurinn. The action applied-for later is expected to support larger vessel entry to the inner harbor and better inner-water column exchange in concert with lower current speeds. Those in turn benefit sewage flushing, a thriving local biota, and marine traffic safety. The expected “dredging cost is between 200 – 300 million ISK”. Another important focal point is the completion and commissioning of the nearly finished oil pier. The newest idea for improvements in the harbor aims to enhance services for any vessel up to “30 or possibly more tons”, including yachts. By changing an application to Siglingastofnun from a new trailer-ramp towards a combined trailer-ramp and crane section for U-crane usage (Image 15), the harbormaster wants to fulfill increasing requests from industrial and recreational vessel users beyond Ísafjarðarbær limits. The goal is to offer a harbor

Image 15: Example of U-crane in a UK marina. Taken from: Joiner (n.d.)

with slipway independent infrastructure, which will serve industries related to service, repair, storage and transport. Existing ship slipways in Ísafjörður limit commercial growth by excluding or hampering marine related industries that lack alternatives, as slipways do not allow for moving vessels with trailers away from the slipway.

Interviews with Development Official

Mr. Halldórsson explains that this particular working group had been established to collect and promote knowledge and ideas for the Ísafjörður surrounding water body and shoreline, in particular Pollurinn inlet, that could support the town's future on a social, economic or environmental level. It can be described as a brain pool composed of members from town administration and the general public. The group currently consists of seven local members with diverse backgrounds, including two local yacht owners, an architect, and a resource manager.

"The Icelandic Road Authority", Halldórsson says, "is responsible for the road safety of Pollgata and wanted to raise the stone armor on the water facing side of the road". But similar efforts undertaken in the town of Flateyri had negative impacts on town appearance and locally experienced living quality of its residents. Residents of Ísafjörður were expecting similar results and protested. Mr. Halldórsson stated that:

> The Icelandic Road Authority agreed to cooperate with the town in constructing and financing an alternative solution for as long as it does fulfill their road safety requirements and their own financial input does not exceed their own solution.

The thereupon-established working group wanted "to attract tourism but fight debris and sea water level rise simultaneously" whereas "an affordable and effective storm surge protection scheme for the Pollurinn facing [downtown] part of Ísafjörður" had priority. Proposed solutions in the first interview acted primarily around breakwaters, and a marina development on different locations inside the Pollurinn inlet, which would sustain an "authentic experience with fishing town atmosphere". The group was convinced that the attractive look of a marina would increase tourism. In the second interview Mr. Halldórsson reported that, over time, the purpose and goals of the group grew "way beyond the initial reason", triggered by response in a public meeting and the Mayor. The extended purpose includes actively seeking for

ways that increase quality of life and reconnect residents with the waterfront as a recreational playground, further reestablishment of human interrelation with marine nature habitat inside city limits, and the search for alternative shoreline usage and protection. Nevertheless, “protection from storm surge and promoting tourism are still on the forefront”. Mr. Halldórsson reviews the public meeting, which was held at the end of 2012, as very successful, pointing out that participation was plentiful. He says that people had “a lot to say” and “were not short on ideas”. Proposed solutions presented in the second interview were much more diverse. The chairman explained that one idea dealt with bridge-connected stone islands that increase natural habitat space and offer in calm weather pleasant views onto the town while actively breaking down swells in storm conditions. Another idea reintroduced long reaching timber piers following historic templates, which would increase historic overall image of town, reduce swell heights, offer connection points for floating piers, and provide for a quintessential seaside experience. A third idea connected shoreline, timber piers and a possible marina with timber walkways, which again would raise the seaside experience, but also offer a safe disconnection from traffic on the neighboring road. Finally, a beachfront was set forth for consideration. With it, Mr. Halldórsson explained, on one hand debris would be kept away from the road and wave height more effectively reduced, thus act as an effective storm surge protection tool. On the other hand it would allow for beach access and direct water contact within downtown limits, raising attractiveness, historic appeal and recreational value.

Experiencing the previously described public involvement and swiftly unveiling of new ideas from it and other sources, including the local University Center, lead Mr. Halldórsson to believe that the “scope and power of the group is more effective and faster when it comes to trigger development ideas”. Albeit his group is ranked below the harbor committee and the town development group, his group cannot only approach both groups but also the Mayor directly, leaving out the usual “mill process”. He sees another advantage in the fact that his group can fall back on a larger knowledge pool and network since his group members come from a variety of sectors and are not united by a governmental administrative background. Optimum effectiveness is reached in the fact that the most feasible solution is brought faster to the table. Mr. Halldórsson remarks that his group has, however, no power in the final decision-making. The latter is in the hands of the responsible development group and the Mayor.

Chapter 5 – Discussion

5.1 SWOT Analysis for Marina in Ísafjörður

This chapter deals with the feasibility study. Facts accumulated are summarized and discussed. The sum of all factors is presented in a SWOT matrix, which allows for a feasibility statement. The feasibility statement includes recommendations intended to support the local feasibility for marina development.

5.1.1 Strengths

Geographical Location

Ísafjörður's biggest strength to all national competitors lies within its geographical position. To yacht skippers, the most important factor for deciding on a port is the geography of the location, the climate, and the local wind regime followed by the nearest distance to an airport. Visiting yachts have confirmed the town's gateway character making it, for them, the most important strategic port. Aside from the distance to East Greenland, major advantages of Ísafjörður is the highly attractive alternative home sailing ground offering: Hornstrandir wilderness, idiosyncratic settlements, and authentic heritage sites, as well as the Westfjords as a whole. It has also been described as a convenient stopover location when circumnavigating Iceland.

Attractive Tourism Location

As chapter 3 described, Iceland generally is an attractive tourism location with significantly growing tourism visitor numbers. Although the secluded Westfjords do receive smaller tourist numbers than the rest of Iceland, local tourist numbers, including those derived from cruise ship tourism, are rising (see also 3.2.1). The Westfjords, and Ísafjörður offer ecologically preserved marine environments, unique natural sights, and many alternatives for recreation, motivating private nautical tourists to spend more time exploring the area (see Apendix B, Table 7). Ísafjörður itself has a long historical heritage and presents its maritime tradition openly. By the private nautical tourist, those features were perceived as authentic and non-overdeveloped, which resulted in an overall postive impression. It shall also be

mentioned that due to the nature of the private nautical tourist, recieving vessels results in increased visitor numbers to Ísafjörður without occupying local guest housing or increasing road congestion, while contributing to town atractivness and economic input. The tourist travels with his own housing and uses an “alternative” travel infrastructure.

Water Space

Figure 13 shows clearly available, protected water space on the Pollurinn side that could be harvested for marina development. The well-protected recreational vessel section of Area I offers limited space big enough to service current local yacht numbers and, with the addition of an extra floating pontoon, could also service visiting yachts without relocating single vessels to the mooring area. Development space to adapt to growing demand is available, but would need enhanced coastal protection measures to deliver similar safety and protection as the current location. Interviewed visiting yachts were very pleased with the position of the floating pier since it is located close to the city center and surrounded by authenticity underlining fishing vessels. The assigned harbor section in Area I is thus preferred by recreational boaters, whereby town appeal and image are successfully enhanced.

Figure 6 illustrates the sail territory of the Westfjords; enough water space to welcome larger vessel numbers without congesting traffic waters or loss of a remote cruising experience.

Community Support

In the interview, the Mayor and the informant stated positive responses from the general public towards marina development. The harbormaster and the Mayor, who both play significant roles in the development process, also expressed their personal and professional support for marina development. Both do recognize that a marina as a single business is not economically feasible, but realize that marina development enhances the overall town appearance, the maritime heritage image of the town, and offers additional income for local industries and businesses.

Marine Safety Net

Out of all locations east of Greenland, Iceland offers the best and closest safety net. Within Iceland, the Westfjords are closest to Greenland and thus maximizes

probabilities for fast emergency response. Inside the Icelandic EEZ, emergency response probabilities are very reasonable (see also Figure 15 and 16). Furthermore, no piracy or terrorism issues from Arctic waters around Iceland and East Greenland have ever been reported.

Stabile Political Order

The political order in Iceland is considered stable insofar as there is no inner political potential leaning towards revolution, rebellion, or change in the political system. Political swings and opinions, as in all democratic societies, do of course exist.

Town Service Structure

Ísafjörður has, considering its size and population, town and marine infrastructure that is unmatched by other settlements of similar size inside Iceland. Daily needs and goods are just as much available as financial and communication services. Considering that Ísafjörður is a developing new market (see *Local Opportunities* under 1.5.2), it can be said that it has resourceful marine infrastructure. Assistance in minor repairs, professional assistance, and basic seafare services are available. Interviewed marine tourists made active use of the existing infrastructure and reported business with local brokers such as buying ropes, shakles, anchor chains, and general supplies, such as fuel, water, oil and mainatance materials. They also employed electricians and metal-workers. Furthermore, they participated in active tourism activities such as renting a car, bike, or motor roller, using the swimming pool, visiting museums and dining in local restaurants. General tourism infrastructure in Ísafjörður does exist and is constantly evolving.

Transport and Traffic Infrastructure

Ísafjörður is accessible *via* airplane, ship, and road transportation, all of which offer an excellent connection nationally and internationally. Specifically the airport has a key function for private nautical tourists. It enables the boater to quickly leave town to another destination of importance and *vice versa*, which makes their favored sailing grounds more easily accessible. The airport does support active crew exchange, and, with the short domestic flight times, supports yacht berthing for domestic residents that live in a different part of the country. The reestablished shipping route connecting Ísafjörður *via* cargo vessel with the rest of Iceland and Europe allows spare part and

complete vessel transport *via* ship from the European continent directly to Ísafjörður Harbor.

Locals

Private nautical tourists interviewed emphasized the helpful, qualified, and welcoming character of Ísafjörður locals, which was stated as above average and happily received. The fact that Ísafjörður locals can communicate in English and approach visitors openly has been stated as very attractive. Furthermore, attractiveness is perceived as enhanced by the maritime tradition that is alive within the local community.

5.1.2 Weaknesses

Short Season

As with all countries in the Arctic and Subarctic, tourism is strongly seasonal (see also Figure 5). While land-based tourism can be marketed throughout the winter, sea-based tourism comes to a halt due to the uncomfortable and partly highly hazardous sailing conditions, even for the serious adventurer. To directly connected business sectors, this reality has undesired consequences as it hinders their full-year operating ability (see *Local Opportunities* under 1.5.2). This hindrance might explain why the strong marine Icelandic industry, so far, has been overall hesitant to adapt to the current market. The fishing industry has demands all-year-round and thus is a more predictable business.

Low User Numbers

Comparison of marina usage data from other destinations in Ísafjörður's fetch area revealed that Ísafjörður is receiving fewer vessels than comparable locations. Since the overall boater numbers in the area is already heavily reduced by the demand on seafarer skill and distance to European and American based marinas, receiving the maximum possible tourist number is crucial.

Little Available Land Space

Ísafjörður is already facing spatial and development limitations typically found in gateway locations (see also 1.3). Space to accommodate storage needs of vessels and

associated equipment is a crucial part to securing an income source from yacht owners all-year-round. These space issues might magnify when additional marina related facilities, such as designated parking spaces, storage for hazardous and non-hazardous chemicals, disability-friendly pier access, public washrooms, or crew and race meeting facilities are contemplated.

Traffic Infrastructure

While Ísafjörður is connected with a variety of traffic options, there are large gaps within the service cycles of public transportation. In particular, busses do not connect well to other parts of the country and do not operate all-year-round. While air traffic is scheduled twice a day, it is heavily weather dependent. Another air traffic infrastructure issue is that Ísafjörður has only direct connections to Reykjavik. An alternative connection for public transportation is a fairly developed road system. One road connects Ísafjörður to the rest of Iceland *via* tarmac road, while on all other roads, gravel is encountered at some point. Another major obstacle is travel time on these roads. Due to Ísafjörður's remoteness, it takes about 3.5 hours just to leave Westfjords territory.

Lack of Private Nautical Tourism Cluster

Ísafjörður is traditionally a fishing town and thus focuses on its industrial needs in regards to development. Ísafjörður lacks a marine or coastal zone-based development strategy that would streamline development and sustainability efforts. For leading a professional run marina, focusing on the particularities of yacht users and their equipment, the town lacks professionals for this specialized industry sector. For now, it is Ísafjörður Harbor that services visiting vessels. Staff resources for the summer season are already exhausted, as the interview with the harbormaster revealed. Another issue is the lack of an educational institution that would foster yachting offspring, thus potential new marina users. Educational institutions, such as a yacht sailing schools, marine museums, and private polar exploration institutions are knowledge centers that increase the attractiveness of the area in which it's found. These centers reaffirm the importance of traditional leadership of the seafare settlement, as is not currently supported in Ísafjörður. Missing marina associated services such as professional skippers, yachting related supplies and fashion, lowers

attractiveness for users and other associated businesses. While Ísafjörður has a somewhat diverse marine industry, it does not fully satisfy private nautical tourism needs.

Administrative and Legislative Obstacles

The Icelandic local and national government is not ready for private nautical tourists. While some institutions, such as the mentioned customs office, realized the need for considering nautical tourist-related regulations, quick response is lost due to the organizational structure of the governmental body. Legislations are, in particular, necessary for *e.g.* marking aquaculture cages for marine traffic, or logging detailed harbor reporting schemes for visiting yachts. The local administration also needs to present and advertise the local available facilities to private nautical tourists actively and clearly. Ísafjörður Harbor does, for example, not present any online information for visiting leisure vessels, and does not state available facilities or price policies.

Improper Waste Management

All sewage outflows of Ísafjörður lead into the sea. Grey-water pumping facilities for recreational vessels only exist as a mobile service. In public, waste is not sorted, and garbage cans and waste containers are unevenly and ineffective distributed.

Entertainment Infrastructure

The entertainment infrastructure of Ísafjörður is modest. Concerts in bars and movies in the cinema are offered on the weekend. Several named festivals (see Apendix B) take place throughout the year. Daily base entertainment is non-existent. Negative or positive perception towards these attributes depends on the observer. To some, this "sleepy town" appeal might be attractive.

5.1.3 Opportunities

Green Marina Certification

Fulfilling the requirements of a green marina certificate pays off twofold. First, the environment in and around the marina is not only considered and protected, but depending on the achieved degree of certificate, highly likely to be enhanced towards a healthier state. Secondly, a green marina certificate acts as an advertisement tool by

promoting the marina *via* media publications and catalogs. The environmentally sensitive user can then, with the help of these publications, consciously choose a destination meeting their preferences. Such efforts would fit straight in with local government policies, since the Mayor described goals aiming for a realistically green community.

Existing Demand

Growing leisure vessel owner numbers in Ísafjörður (currently 10 S/Y and two M/Y) exceed current available pier space, and thus justify developments towards servicing recreational vessels. Personal communication with members of the "Reykjavik Yacht Club", the marina Gufunes, and the Sailing Club "Ýmir" (see 3.3) revealed that available pier space in all three locations in the capital area is very limited. Thus, new-coming yacht owners struggle to find an open pier space and are actively looking into alternative locations within Iceland. Such opportunity could trigger domestic vessels to re-locate to Ísafjörður, comparable to summerhouses, from different parts of the country. Ísafjörður might indeed fulfill such a need since it has development water space, a 40-minute flight connection to the capital city, and attractive sailing grounds.

Local Economy and Planning

To be economically sustainable, Ísafjörður needs to diversify its income source, and thereby also diversify its industrial sectors as much as possible. Local marina development carries enough potential to employ a variety of industrial sectors, at least seasonally, and to gain importance for this specific tourism sector in Iceland. Distribution centers for water-based leisure-oriented equipment are so far located in Reykjavik. Shifting demand towards last-minute preparation initiated by foreign vessels while getting services in Ísafjörður could potentially shift the market importance towards the Westfjords. Such importance would be strongly magnified when foreign charter vessels base themselves inside the town. Developing visitor management plans can greatly enhance economic success of existing tourism industries while focusing on sustainability and protection of the natural environment (Kenneth District Council, n.d.).

Branding

Ísafjörður choose to focus on its marine heritage (Teiknistofan Eik, 2009), which is in-line with an active tourism port. Future facility development, such as a marina, should align with tourism and city planning to emphasize its branded character. Possibilities are *e.g.* timber pier structures following examples from the model of historic town days (see also Barrow, 2008). Ísafjörður has the unique chance to establish itself as branded "The Gateway to the Arctic", since the steady rise in cruise ships that call port in town likewise operate in Arctic waters.

New Market Creation

Establishing a marina might trigger tourism development that is directly related to private nautical tourism, such as a yacht charter business, which in return will strengthen local existing sectors. Tourists using such rather extraordinary tourism activity usually have a certain, above average, income. They not only bring more money into the area, they also promote their experiences more actively by word-of-mouth and through diverse media. Overall, such market creation is beneficial in regards to international outreach and financial income. Other new markets might include high-latitude racing, or yachting related equipment, such as sailing boots, sailing suits, ropes, and luggage.

Redevelopment of Local Boatbuilding Industry

Ísafjörður actively produced vessels until the end of the 90's. Local boatbuilding knowledge is a valuable asset that defined the area for decades. It is expected that the yachting market, the local work force, and the observing tourist would positively receive a revival of this industry sector.

Investment into New or Combined Forms of Tourism

Having a private vessel at disposal offers a completely new range of options for new or combined forms of niche tourism. Examples could be a combination of *e.g.* photography with a yacht trip, a local private diving tour, hikes and general exploration of uninhabited bays, land- and combined sea-based adventure trips, or bird watching and whale watching excursions. The possibility for diversification of

tourism offers is obvious and is expected, since tourists, more than ever, look for experiences out of the ordinary.

Cuisine

Local restaurants offer a variety of local foods, such as fresh fish and sheep dishes. Local Icelandic cuisine, albeit by quality quite satisfying, cannot be classified as extraordinary. It does not encourage a traveler to come to town just for the sake of tasting locally offered food. While the “slow food movement” gradually establishes itself, a wider adoption would benefit Ísafjörður as overall tourism destination.

Creation of Maritime Industry Cluster

Compiling yachting professionals from the fields of operation, education, handcraft, and management in one location can establish a very knowledgeable and influential “center of excellence” that might be enough motivation for single individuals to visit the center and to take part in activities and offered educational opportunities. Furthermore, it might attract an event of international scale, such as yacht races or classical yacht festivals. Ísafjörður would, again, increase in importance and would be in the national and international spotlight.

Accommodation Facilities

Higher established marinas very often offer housing for charter crews, club members, or committee members. For marinas, such housing is an extra income source that assures that needs of yacht owners can be met without relying on a secondary business. Such housing facilities would increase in the availability of peak-season overnight stays, which again benefits the town in tax revenue.

Increasingly Popular Destination

With ongoing diversification of local industries, in particular the tourism industry, the town also rises in appeal to a wider variety of tourists. Diversity as such is also a safety net. A higher diversity permits single sectors to have lows or to fail without impacting the overall tourism market. Simultaneously, when an area rises in importance to the overall economic sector of a region or nation, its governmental

support to enhance infrastructure, and the response from infrastructure servicing companies, such as airlines or telecommunication, rises.

Development of Nautical Tourism Strategy beyond Ísafjörður

The town of Ísafjörður can, as a gateway community, offer the Westfjords a private nautical tourism strategy that involves all of the Westfjords. A designated yacht cruising ground of this size stays attractive even for returning vessels. With essential infrastructure made available in major fjords and appropriate management strategies in place, it is yacht cruising that could define one of the tourism sectors that are associated with the Westfjords. Such an economy sector, once established, could support all rural coastal communities of the Westfjords in a very unique way. The tourism strategy could, for example, entail a harbor certificate valid in all harbors around the Westfjords, which has to be paid only once. With it, initiative is given to explore communities outside Ísafjörður but within the Westfjords' limits. Broader implications would be initiatives for yachting enthusiasts to circumnavigate Iceland, either in their own or with a chartered vessel.

Differentiation and Quality Improvement of Offered Services

An often underestimated, but significant, factor in tourism is the quality by which a service is provided. When the existing tourism market is limited to a narrow degree, it can be the decisive factor that determines success or failure in business. Icelandic tourism service has the reputation to lack on service quality compared to those offered in other countries used to a developed service industry (*e.g.* USA, Canada, France). That implies that even small service enhancements become recognized quickly and tourism services offered will be remembered as above average.

5.1.4 Threats

Environmental Threats

Town sewage and general harbor waste are considered to be the major pollutant of Pollurinn at the moment (Gharibi, 2011). Another known pollutant is a broken oil pipe inside the harbor pier of Area I, which is leaking during low springtides. This issue is considered taken care of since oil storage shall be transferred in the near future towards the new oil pier in Area II (Personal Communication, Harbormaster,

November 2012). Other environmental threats include choppy swells and carried-along debris in high springtides and strong southwest winds. At times, both swell and winds can increase to such a degree that the protected pier inside Area I is reaching its capacity to withstand forces.

Uncontrolled Development

Uncontrolled development is a major issue that a lot of "boom-cities" and gateway cities have to address. Those developments consider the housing market, socio-cultural structures, and development of single industry sectors. By defining strategies including acceptable limits of change (LAC), such developments might be counteracted (see *Marina Management*).

Stakeholder Conflicts

The potential marina area is also used by the local fishing industry and leisure activities (*e.g.* kayaking). The Ísafjörður Harbor office uses a building close to the pier. Other stakeholders are private businesses, which are actively making use of the available key pier space. Designation of land- or water-based areas to the private nautical tourism sector alone might lead to conflicts with those stakeholders. The interviewed visiting tourists perceived the active fishing harbor and close vicinity of local business as ideal and authentic, which gave the location a certain charm. Conflicts arise when the business is hindered in tourism action. Minor issues would be *e.g.* that larger recreational vessel user numbers lead to congested parking in front of business, hindering their activity.

Investor Uncertainty or Loss

Political powerful debates, unclear legislation, and local conflicts can all lead to an overall negative perceived image for future developments. In the worst case, feeding the willing investor to many uncertainties destroys such chances.

Climate Uncertainty

Forecasts in climate change carry great uncertainties. They strongly depend on values of environmental variables and their weight taken into account when forecasting is conducted. It is unknown how exactly the environment will respond to the altering climate. If, in fact, storm intensity over the anticipated season increases, it might render a complete region unfeasible for casual, recreational yachting activities.

Similar effects occur, when from the polar cruise tourism industry (see 1.4) feared alterations regarding drift ice developments ring true. It can be expected that the kind and degree of condition alteration (marine traffic supporting or hindering) determine future polar tourism areas. If traffic conditions between the Westfjords and East Greenland are enhanced, it will empower Ísafjörður's gateway position. If the opposite takes place, Ísafjörður will have no draw to Greenland-bound private nautical tourism.

Risk to Identity Loss

Tourism can be very, socially, economically, and environmentally powerful. If development is too profit-orientated and does not pay attention to the local socially and ecological environment, it can very quickly happen that an area looses its original identity; either by visual appeal, social structure, or in its economic sector.

Competition

Marina competition from the same area or another key positioned towns or harbors can seriously harm economic benefits from a developed marina.

Decrease in Marina Demand

Global events, such as financial crises, political crises, or war can affect the tourism industry so much that local demand for a marina vanishes. Such events are, while not anticipated, almost impossible to predict.

5.2 The Feasibility for a Marina in Ísafjörður

The currently existing harbor infrastructure regarding leisure vessels has been received with mixed feelings. While visiting vessels first of all praise the floating dock, the vicinity to the city center, the mix with local vessels, and the authentic appeal of a working fishing harbor, they expected basic facilities like toilets, showers, washing machines and dryers, and hoped for dock-side-available Internet and local infrastructure information on arrival. Local recreational vessel owners are aware of the advantage of a floating dock. Since vessel numbers exceed the docks capacity, especially with expected visitors, existing local recreational vessel owners welcome any actions that increase docking space. Their satisfaction with currently offered services were mixed. Aside from dock space, their issues revolved around density of

service on the dock (limited water and electricity supply for all vessels), crane and slip capacities and limitations, and winter storage. The majority of the visiting vessels and the local yacht owners are willing to pay higher fees if better harbor infrastructure were available. Both the Mayor and the management of Ísafjörður Harbor generally support marina development, as they see several benefits it could bring into town. However, actions towards development have not been yet undertaken.

A SWOT matrix delivering an overview of all aspects regarding a local marina development in Ísafjörður can be found in Table 5. Ísafjörður and the Westfjords offer a very attractive natural sailing environment that can be categorized as a developing new market (see also *Local Opportunities* under 1.5.2). Private nautical tourism increases overall attractiveness of the town and underlines the locally found maritime heritage without increasing stress on local road or accommodation capacities. As the BLT – mapping showed, it further supports a variety of local and national brokers that are directly and indirectly connected to marine services and general tourism. Welcoming private nautical tourists and local recreational vessel users with appropriate facilities offers a large spectrum of additional opportunities for the town, including marketing and diversifying local economy sectors.

There are only two other areas in Iceland which, taken their infrastructure into account, could function as an Arctic gateway: the capital area and Eyafjörður (Akureyri). Neither of these places has similar attractiveness as alternative sailing ground nor shows an advantage in distance to East Greenland or islands situated in higher-latitudes. They do, however, feature a larger variety on marine and tourism connected services. Visiting yacht owners prefer the scenery and authenticity of the surrounding infrastructure within Ísafjörður, including localities, and rural fishing industry coined settlements. Within Iceland as a whole, it is only Ísafjörður that fulfills their demand to a higher degree.

It is concluded, that any development in Ísafjörður with interests towards private maritime tourism would benefit local brokers and the overall town image and enhance the already existing *gateway tourism community* character of Ísafjörður. A marina development is, considering certain conditions, feasible. Those conditions include the appeal of the marina in context of the town, the services and qualities it provides, and the mixture of visiting yachts with local leisure and industral vessels.

Table 5: SWOT matrix for marina development in Ísafjörður, Iceland.

	Desirable	Undesirable
	Strengths (Improve)	**Weaknesses (Extinguish)**
Controllable (Internal)	Geographical Location (Gateway & Stopover Point) Attractive Tourism Location (Nature, Wildlife, History, Town) Water Space Community Support Marine Safety Net No Terrorism or Piracy Issue Stabile Political Order Town Service Infrastructure (Basic, Tourism, Marine) Transport/Traffic Infrastructure (Land, Sea, Air) Locals	Short Season Low User Numbers Little Available Land Space Traffic Infrastructure Lack of Private Nautical Tourism Industry Cluster (Development Strategy, Professional Management, Direct Related Educational Institution, Marine Associated Services / Professionals (Diversity)) Administrative & Legislative Obstacles Improper Waste Management Entertainment Infrastructure
	Opportunities (Maintain)	**Threats (Reduce)**
Uncontrollable (External)	Local Economy & Planning Branding (“Gateway to Greenland”) Green Marina Certification Existing Demand (Local & National) New Market Creation Redevelopment of Local Boatbuilding Industry Investments into New or Combined Forms of Tourism Cuisine Creation of Maritime Industry Cluster Accommodation Facilities Increasingly Popular Destination Development of Nautical Tourism Strategy beyond Ísafjörður Differentiation & Qualitative Improvement of Offered Services	Environmental Threats Uncontrolled Development (incl. Socio-cultural changes) Stakeholder Conflicts Investor Uncertainty or Loss (Conflicts & Politics) Climate Uncertainty Risk to Identity Loss (Competitive Branding, Branding Conflict (Coherence)) Competition (Towns, Marinas) Decrease in Marina Demand (Global Economy, Global Conflicts)

5.2.1 Recommendations

Visiting yachts play a role in receiving important non-local tax-return dollars. Staying attractive to yachting tourists while expanding capacities is important for successful development. For Ísafjörður, keeping the overall identity as a historic and still-active local fishing and trade center is key, and thus implemented in the town's local planning. That planning should be extended into future developments regarding a facility for leisure vessels. A harbor development that positively surprises visiting yachters by facilitating all their needs, but tactically keeps a fishing harbor atmosphere, is the way to go. Focus should also be paid to the single-user classes and their specific preferences. Being able to satisfy diverse user groups maximizes income sources. For a marina-oriented development it is recommended to use comprehensive, step-wise, dynamic planning that includes a development strategy. This strategy should be coherent with the community tourism strategy and the local land-use plan and should additionally follow a coastal zone management plan, set out by the town. The marina-oriented development strategy should further implement regularly updated importance-performance analysis, an LAC framework (see *Marina Management* in 1.5.2), and sensitive, community based development. It is further recommended to develop the facility for leisure vessels foremost focused on the local and national demand, since foreign visitor figures carry stark uncertainties. Additional recommendations to enhance overall feasibility are given in the next two sections.

Improve Strengths by Eliminating Weaknesses

Recommendations given in this section are directed to the local administration of Ísafjörður and Ísafjörður Harbor.

Short Season: Promote yachting in the area to adventure tourists, extreme tourists, and also promote combined forms of tourism associated with *e.g.* winter sports and yachting. Promote local opportunities at specialized conventions.

Low User Numbers: Increase local and national user numbers by advertising in appropriate places (*e.g.* yachting magazines, *via* Iceland Tourism Board, general media) to the local and foreign yachting communities.

Little Available Land Space: Reassess current land use plans and existing land users and optimize distribution of area and connected users.

Traffic Infrastructure: Continue efforts on enhancing road networks, road quality (tarmac), and minimizing overall travel distance.

Lack of Private Nautical Tourism Industry Cluster: Employ industry professionals in marina and/or overall management (development strategy). Encourage local industries to engage in businesses with recreational vessel owners to cater to their specific needs. Advertise the potential for local charter business. Establish a meeting point for like-minded locals and visitors that can act as knowledge centers. Invite foreign professionals for guest lectures at the University Center of the Westfjords. Encourage yachting events *e.g.* classic yacht event, explorer meet and great, *etc.*

Administrative & Legislative Obstacles: Simplify handling processes for leisure vessels (paperwork). Promote existing legislative and administrative issues on a national level to push for changes. Improve international media advertising. Update websites regularly.

Improper Waste Management: Rethink and change existing facilities towards better availability and distinction of waste-type. Offer a grey-water discharge point or facility, as it is also usual for recreational camper vans.

Reduce Threats While Maintaining Opportunities

Recommendations given in this section are directed to the local administration of Ísafjörður and Ísafjörður Harbor.

Environmental Threats: Implement tight environmental legislation and promote local guidelines and a code of conduct. Achieve globally recognized environmental label standards that can turn a former threat into a strength that echoes positively on area branding and market creation.

Uncontrolled Development: Counteract with *e.g.* legislation, permits, and taxation as regulatory tools.

Investor Uncertainty or Loss: Support economy sectors looking for investors by initiating marina development plans and a public vision statement, thus confirming municipal support for this economy sector.

Risk to Lose Identity: Assure coherent branding throughout the development area. New development sectors and facilities should be in-line with local tourism and general development strategies. They can be controlled by local legislation and approval schemes.

Competition: Use location and marina branding. Maximize offered services and their delivered quality. If appropriate, try to develop partnerships with the competition or international (Greenland) partners.

5.3 Looking Ahead

It is hoped that findings of this thesis are helpful to Ísafjörður brokers regarding decision-making and policy implementation. Additional research could foster development by providing a clearer understanding of the direct impacts of the private nautical tourist and local yacht owner. Such research could include assessment of expenditure coming from visitors and local yacht owners, or research on satisfaction level of locals, local yacht owners, general tourists, and private nautical tourists. It might also be of interest, where, in particular, the private nautical tourist gathers the information for their total journey, their travels to Ísafjörður, and what time frame for planning is used.

Conclusions

Overview

As this study shows, private nautical tourism in the form of yacht cruising is taking place in high-latitude areas. The current high-latitude private nautical tourist could be characterized as adventurous, authenticity-driven (opposed towards overly touristic-centered development) and environmentally concerned. Since this study investigated an area only a fraction of the arctic and subarctic territory, it is overall tourist volume, counted by vessel numbers and carried passengers that remain unknown. Recalling that as private business run marinas usually derive their basic income from long-term users and specialized marina services, the obvious is that such businesses will only be feasible in clenched recreational vessel use areas, for now assumed as limited. It has been, however, also shown that coastal communities throughout the world benefit from receiving private nautical tourists.

Prospects for Marinas in Iceland

As leisure vessel ownership data did show, sailing as leisure is by no means an activity many Icelanders pursue. Still, Iceland offers fishing industry-related marine infrastructures around the island. These infrastructures provide safe harbors, repair services for minor issues, and provide basic supplies. Engaging further in nautical tourism by attracting international races, supporting the establishment of a yacht charter market, and advertising Iceland and its moderate accessibility from Europe to private yacht owners, will induce a stronger private nautical tourism sector in Iceland. Such engagement can be expected to, as proven in other countries, seasonally support its coastal communities. It is highly questionable, however, if income produced from private nautical tourists alone will sustain such communities. For many reasons, vessel and visitor numbers are unlikely to reach the volume similar to established yachting destinations. General shortcomings are presented by a short season accompanied by uncertain weather development. For now, the visitors' main expectation in these waters is rural fishing villages in undeveloped surroundings with little private marine traffic. Demanding waters that require advanced skills and long travel times for those who consider coming aboard their own vessel further sifts-out potential nautical

tourists. The latter might, nevertheless, support over-winter stays of foreign yachts in Iceland.

With current private nautical tourist and local leisure vessel owner numbers, a SWOT analysis for marinas anywhere in Iceland can be expected to show far less feasibility as the one performed in this study, with exception to the capital and possibly Eyjafjörður area since their features include, in their own way, attractive local sailing grounds and advanced infrastructure. At present, marinas considered as a stand-alone business will only be economically viable, if at all, in high-populated areas that offer: an attractive, safe, close-by, and unrivaled water space with quick sailing water entry; generous land space; advanced marine service infrastructure; general amenities and land-based infrastructure; and, potential for larger long-term customer numbers. Some of the biggest obstacles from an economics point-of-view are the costs for creating the marina infrastructure, wages and availability for professional, but seasonally, employed personnel servicing facilities and customers, and inconsistent capacity utilization on land and water over the year. In the end, the marina will still compete with prices and service offered by the municipal-owned harbor, which does not depend on income from leisure vessels alone. Services offered inside a marina must be those required, needed, demanded, or requested by customers and outperform comparable ones offered in its vicinity to validate its price tag necessary for survival.

That being said, Iceland has the opportunity to establish a nationwide acting leisure vessel based recreational industry sector. With general political and financial support for welcoming private leisure crafts, which at a minimum includes appropriate pier space and access to basic crew facilities, it will attract more private nautical tourists, both domestic and international. With such support, investments into new businesses *e.g.* local bareboat charters, will be motivated and existing economy sectors diversify, resulting in higher tax returns. Should national yachting ever suddenly reach volumes enough to carry a local marina, adaptive and dynamic strategies considering all involved stakeholders, ecological protection, and the local community are strongly recommended. Large investments intended to solely benefit from foreign vessels carry strong uncertainties and are not recommended.

Prospects for Marinas in Arctic and Subarctic Areas

In many remote coastal communities, smaller watercrafts of different kinds are used to commute between communities. Usually, they have nothing in common with vessels used by the long-distance cruising tourists. Availability of local facilities to secure and service visiting vessels is directly related to their importance for the area and can therefore be expected to vary greatly between locations. Arctic communities, especially those without alternative transport infrastructure, that adapt to private nautical tourists to any degree (and make it known) can expect a gain on economic opportunities but must consider associated, potentially irreversible, socio-cultural changes. Bearing the outcomes of the case study in mind, among offered opportunities with development towards private nautical tourism are: growth in importance and popularity of the area; chance for location branding; and, new market creation with additional economic income sources. Anticipated threats include, but are not limited to: uncontrollable development; stakeholder conflicts; competition with other locations within the marine vicinity; decrease in demand; climate uncertainties; and, environmental issues. Successful establishment of marinas in high-latitudes is believed to be slim and only more likely feasible in locations with affirmed gateway community character.

Recognizing the low number of existing *gateway tourism communities* throughout the polar regions underlines their significant importance for territorial development regarding private nautical tourism. Understanding and adapting to *gateway tourism* will play a magnified role in rural economic development and the race of importance, influence, and independence.

Arctic tourism will generally stay seasonally, especially in high-latitudes due to each season's weather and light characteristics. It is expected that the extent of local alteration caused by climate change will continue to be the most influential boundary for development. It is also hard to predict how private nautical tourist numbers and goals, perceptions, and motivations for visiting the Arctic and Subarctic will change over time, thus transforming the market. Due to the natural elements and limited accessibility it is highly unlikely that high-latitude sailing grounds ever reach private nautical tourist numbers similar to those of less demanding environments.

Closing Remarks

This thesis does not, of course, answer all questions regarding private nautical tourism in the Arctic and Subarctic. Additional in-depth studies similar to those conducted for cruise ship tourism with relevance to overall density and distribution of private nautical tourists (*e.g.* Arctic private nautical tourism hot-spots), their direct and indirect economic and socio-cultural impacts, tourists' behavioral patterns, as well as environmental impact studies could compliment this study. Of economic interest are, in particular, studies regarding cold-water yacht charter and combined forms of tourism *e.g.* yachting and hiking or skiing, yachting and photography, yachting and diving. Attention should also be paid to the technical evolution of any sector correlated to high-latitude cruising, which enabled this tourism sector in the first place.

The general approach of this thesis, in particular the SWOT analysis, proved to be very useful, and could generally be utilized in any study correlating science with management.

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Appendices

Appendix A

Q I: Questionnaire and Semi-open Interview, Visiting Yachts

Interview Number: Date_____

Semi-open Interview
Masters Thesis Material: Marina Ísafjörður

1. Nationality of Yacht: _____
2. Boat Type, Length, Draught, Width ____,_____,_____,_____
3. Crew number:
   a. Actual:
   b. Maximal Possible:
4. Travel Route
   a. Coming from: _____
   b. Leaving to: _____
5. Duration of stay in Ísafjörður / Westfjords: _____/_____

6. Expectations & Experience (What do they come for? What are their interests?):

   a. Expectations Town: _____
   _____
   b. Experience Town _____
   _____
   c. Expectation Harbor _____
   _____
   d. Experiences Harbor _____
   _____

7. Harbor Improvements?
   a. Current Style (Industrial Fishing Harbor)

   b. Marina (Yachting Infrastructure)

8. Special Needs & Preferences?

_____
_____
_____

9. Preparation for Trip (Route Planning, Safety, Technologies)

_____
_____
_____

10. Knowledge of Airport in Ísafjörður? Y / N

- Would the airport be used for crew exchange? Y / N
- Are you using it for crew exchange? Y/ N

Q II: Questionnaire, Local Yacht Owner

#

Questionnaire: Local Pleasure Craft or Sailing Vessel Owner

Are you happy with the current harbor facilities?
☐ Yes
☐ No

Would you prefer to have a fixed spot on the pier assigned to only your vessel?
☐ Yes
☐ Don't care
☐ No
☐ No opinion

Which harbor facilities do you use? Please list:

If you would be in charge of the harbor infrastructure and development, what would you like to change?
Please state with degree of importance (*e.g.* Change #1, high priority; Change #2, low priority)

Do you support harbor developments towards a marina?
☐ Yes
☐ No

Motivation: If yes, why? If not, why not?

Would you be willing to pay higher harbor fees after development?
☐ Yes
☐ No

Appendix B

Table 6: Services provided in Ísafjörður. After: Jónsson et al. (2009)

Service Group	Provider
Information Service	Tourist Information, Environmental Agency Information Center, RÚV (National News Broadcast)
Public Service	Pósturinn (Icelandic Post Service), Landsbankinn (bank), Íslandsbanki (bank), TM (insurance), Sjóvá (insurance), VÍS (insurance), police station, fire station
Shops	Variety of shops including clothing, books, magazines, music records, office supplies, handcrafts, toys, jewelry, optics, kitchen supplies, furniture, electrics and electronics, telecommunication, computer and software, beauty & care, hairdressers, sport supplies, flowers, hardware store (Húsasmiðjan), musical instruments
Restaurants & Café's	Víð Póllinn (Hotel Ísafjörður), Edinborg, Tjöruhúsið, Húsið, Bræðraborg Café, Café Ísól, Thai Koon
General Food Service	Hamraborg, Subway, Krílið, N1, Gamla Bakariíð (old bakery), Bakarinn (bakery)
Groceries	Samkaup, Bónus, N1, Hamraborg,
Gas Station	N1, Olís, Orkan, fuel services for boats in the harbor
Health Care	Regional hospital and health care center, private medical practices, dentist, physiotherapists, pharmacy
Educational Institutions	2 kindergartens, elementary school, high school, music school, center for adult education, University center
Local Government Offices	Municipal office, district commissioner, tax office, customs, National Marine Traffic Authority
Government Institutions, others	National Marine Institute, Environmental Agency
Accommodation	Hotel: Hótel Ísafjörður, Hótel Edda (summer only); camping ground: Tungudalur and Hótel Edda; guesthouses: Gamla Gistihúsið, Litla Gistihúsið, Bændahöllin, Húsið (Koddin), Gistiheimili Áslaugar; vacation houses/apartments: Kvennabrekka, Massi, GentleSpaceApartments, and private market
Transportation	Daily public transport with buses in Ísafjarðabær district, airport shuttle, 5 Taxis, during summertime bus services

	from Reykjavík and Akureyri to Ísafjörður
Tourism Services	Car rental, scooter rental, bike rental, campground, recreational boat pier, local tourism companies (see section tourism Ísafjörður)

Table 7: Amenities provided in Ísafjörður. After: Jónsson et al. (2009)

Amenities	
Sport	Soccer field, gym, indoor swimming pool, golf course, alpine ski area, cross-country ski area, kayak, sailing, surfing Events: cross-country ski race (Fossavatnsgangan), Triathlon, half-marathon (Óshlíðarhlaup), senior soccer tournament (Stóra Púkamótið), swamp soccer championship; national competitions: Soccer, Volleyball, Handball, Basketball
Religion	Lutheran Church, Catholic Church, Pentecostal church (hvítasunnan kirkja), Bahaí community, Sokka Gakkai (Buddhists), Jehova's witnesses
Cultural Center	Edinborgarhúsíð (theater, handicraft workshops, arts)
Culture, general	Maritime Heritage Museum, Photo gallery, accordion collection, model ship collection, comedy theater, choirs, music hall, various clubs, amateur theater group, 3 botanical gardens, library
Festivals	Ski week (Skíðavikan), music festivals (Aldrei fór ég suður, við djúpið), theater festival (Act Alone), cultural festival (Vetrarnætur)
Nature	Tungudalur forest, town shoreline, Hornstrandir, horse back riding, hiking, kayaking, sailing

Table 8: Existing marine based service infrastructure in Ísafjörður. Overview. Author's observation.

Marine Based Sector	Company
Engine & Machinery Service	Frystikerfi ltd, Þrimur ltd, Gummibátarþjónusta
Metal Works	Vélsmiðja Ísafjarðar, 3x Technologies, Þristur, Skipanaust
Timber Works	Spýtan ltd, Trésmiður ltd.
Glas Fiber Works	Bjarni Baldursson
Electricity	Straumur, Rafskaut ltd, Þóllurin
Electronics	Særaf ltd., Rafskaut ltd.
Fittings	Ellingsen, Þristur
Paint	Málningarbuð Ísafirði, Húsasmiðjan
Safety equipment	Gummibátarþjónusta
Ropes	Fjarðanet (Hampidjan), Ellingsen
Oils, liquids	N1, Ólis
Portable Crane	Laugi ltd.
Land Based Storage	Þrimur ltd.
Flags	Fámasmíðjan

Table 9: Directly private nautical tourism related services offered in Ísafjörður. Overview. Author's observation.

Directly Related Services	Company
Cleaners	Efnalauginn Albert, Massi
Catering	Muurikka, Tjöruhusið, Víð Póllurinn (hotel Ísafjörður)
Shower	Sundlaug Ísafjðrður (swimmingpool)
Car Rental	Hertz, Avis, Bílaleiga Akureyrar, Thrifty, Europcar
Aviation	Air Iceland

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