



**Háskóla
Vestfirðja**
University Centre
of the Westfjords

Smart Shrinkage and Community Resilience in Coastal Communities

Raufarhöfn Case Study

Julius Mačiulaitis
Linda Ikstiņa
Nora Kiverjaka
Riikka Rintala
Karl Mihkel Vent
Alex Jones

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Executive Summary

This study delves into the impacts of urban shrinkage in Raufarhöfn, a small community in Iceland's Northeastern Region, highlighting the challenges and potential strategies for fostering community resilience. Raufarhöfn's decline, rooted in the collapse of the herring industry, mirrors the broader trend of population decline and economic downturn faced by many rural areas worldwide. Our research, centred on the Fragile Communities project, reveals critical insights into rural governance, community involvement, and adaptive strategies to mitigate shrinkage effects.

Introduction

World population is in a constant climb and it's being predicted that by the year 2100 it would be at 11 billion people, but there are regions where the population is rising rapidly and others where it's declining (Future Agenda, 2024). But there is a study that by the year 2100 97% of countries will have negative growth. Which will mean that there will be new challenges and a significant decrease in population (Alpañés, 2024). This report looks into Iceland's Northeastern Regions town called Raufarhöfn. It is located on the north-eastern side of the Melrakka plain, in Icelandic, Melrakkaslétta. The town is the northernmost urban centre in the country. Raufarhöfn stands in a depression in the landscape. The Melrakka plain surrounds the town on three sides.

In the period of 1876 - 1968 Iceland had its herring adventure, where the country was introduced to new fisheries technologies. Due to the arrival of Norwegians the scene rapidly expanded because they utilised immense land based nets in eastern Iceland. And new herring towns were created and locals found employment processing herring for Norwegians. Because the world wars fell into that period also meant that salted herring was becoming a vital food source for many European countries. When it wasn't salted, then the oil was extracted and was used in the chemical industry. Due to excessive catching in the year 1965 herring moved more east and overnight the east Iceland herring towns flourished and became new giants of the industry. By 1969 the herring didn't appear anymore and towns like

Raufarhöfn suffered a severe blow in the employment and economic sectors. Which led to the collapse of the economy (Síldarminjasafn Íslands, 2024).

In this report we focus on how the Fragile Communities project impacted Raufarhöfn and what this tells us about rural governance in Northern Iceland. For finding answers to this we have devised the following research aims to support it:

- 1) Assessing the impact of the Fragile Communities project;
- 2) Identifying the disconnect between top-down management of rural development and realities of policy for residents;
- 3) Identifying opportunities for improving community resilience in Raufarhöfn.

Terminology and themes

Urban and smart shrinkage

There isn't a difference if it's called declining growth, negative growth, urban decline, urban shrinkage, but the unifying factor is that the towns or regions population is in a decline. Administrative systems are traditionally oriented towards growth and due to that experts are unable to cope with the issues in a positive way. (Sousa & Pinho, 2015). The main problem is that it's hard to plan for shrinkage when the goal is to balance economic, social and environmental aspects (Slach et al., 2019). This is amplified in rural, or non-core regions. Smart shrinkage on the other hand is active planning and preparing for the circumstances a non-core region might face. That can entail loss of social infrastructure, services, fundings, decision-making power and population. Shrinkage is a wicked problem, where one factor causes the other and a snowball effect starts unravelling.

In Europe it has been a trend that many regions experience decline for various reasons like unemployment, demographic changes like ageing and lack of children and out-migration due to lacking jobs (Leick & Lang, 2018). These challenges need a different approach which represents a paradigm shift, where the goal is to manage decline using realistic strategies but not trying to resist it (Sousa & Pinho, 2015).

By adopting smart shrinkage strategies, regions can proactively address the population's decline. This can include repurposing abandoned infrastructure, promoting local culture and heritage, and thus enhancing the quality of life for the local residents (Hollander, 2020). Additionally, policies can be developed to support small rural communities which will support small businesses and attract remote workers which can mitigate some of the effects of out-migration (Tomaney et al., 2023).

Most important part about addressing urban shrinkage is to involve the local communities in the decision-making process. Because the biggest specialists of the region are the people who live there day to day, this gives the insurance that the strategies fill the specific needs and potentials of the region in question. Additionally, powerful local communities are key to a sustainable future, they are fundamental to ensuring long-term sustainability. Strong local communities foster resilience, innovation, which are essential for addressing challenges such as urban shrinkage. (Goodman, 2021)

Ultimately, while population decline poses significant challenges, smart shrinkage provides a framework to help combat challenges by turning them into opportunities for

sustainable development. The important thing is to focus on quality over quantity and find every region's strengths and weaknesses.

Drivers of urban shrinkage in Raufarhöfn

Drivers of urban shrinkage vary significantly for each town, resulting in a mixed picture of development trends. Even though they were prosperous in the past, as the globalisation of the world economy increased, these single-industry towns lacked the vitality and flexibility to face increasingly complex markets and gradually decayed. The reasons why towns show these varied development trends and why populations continue to move out remain uncertain.(Wang, Yang, & Qian, 2020) But for Raufarhöfn drivers of urban shrinkage are brought out in table 1.

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> ● Tourism attractions ● Ecological research ● Strong community (community spirit) ● Cultural heritage 	<ul style="list-style-type: none"> ● No public transport ● Lack of fishing quotas ● Lack of jobs ● Lack of housing ● Dilapidated infrastructure ● Seasonal dependency
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ● Expanding tourism ● RIF research centre development ● Whales, bird and seal watching tours ● Digital connectivity 	<ul style="list-style-type: none"> ● Without local business place don't have growth opportunities ● Depopulation ● Lack of kids ● Climate change ● Competition ● Economic uncertainty

Table 1. Raufarhöfn's strengths, weaknesses, opportunities and threats.

Place attachment

Social infrastructure, such as gathering places, cafes, bars, parks and community centres have a purpose in creating spaces for socialising and strengthening the community spirit (Tomaney et.al. 2023). Moral community is a term used to describe a sense of belonging, obligations and caring about and for others (Tomaney et.al. 2023). Very similarly like the attachment to a place.

Attachment to the community, people, also facilitates attachment to a place. According to attachment theory, connectedness between citizens shapes patterns of human development (Tomaney et.al. 2023). So to say attachments are steering social potentials. Social potentials like developing social infrastructure. In practice then, caring about a place and community as an idea and having strong emotions involved further the developmental potentials and successes of a place. It births commitment and then solutions to tackle urban shrinkage for example. Through these conclusions attachment to place is an essential part in enforcing smart shrinkage.

Community resilience

Just as Kokorsch (2022) explains, many Icelandic communities have been undergoing structural changes that build communities with resilience (Kokorsch & Stein 2022). Community resilience is the ability to adapt to changes such as economic, environmental, political and social, like urban shrinkage (Amundsen. 2012, Kokorsch. & Benediktsson 2018:1). This states that the community has resources to overcome such challenges and stresses, somewhat independently. Overcome stress, such as root shock. Root shock describes the end of a certain way of living, a detrimental change in socio-economic circumstances (Tomaney et.al. 2023). In the case of Iceland's rural towns, that could most commonly be a decline in fishing quotas or the privatisation of quotas (Kokorsch & Benediktsson. 2018:1). Root shock weakens, but also tests the community's resilience.

Methodology

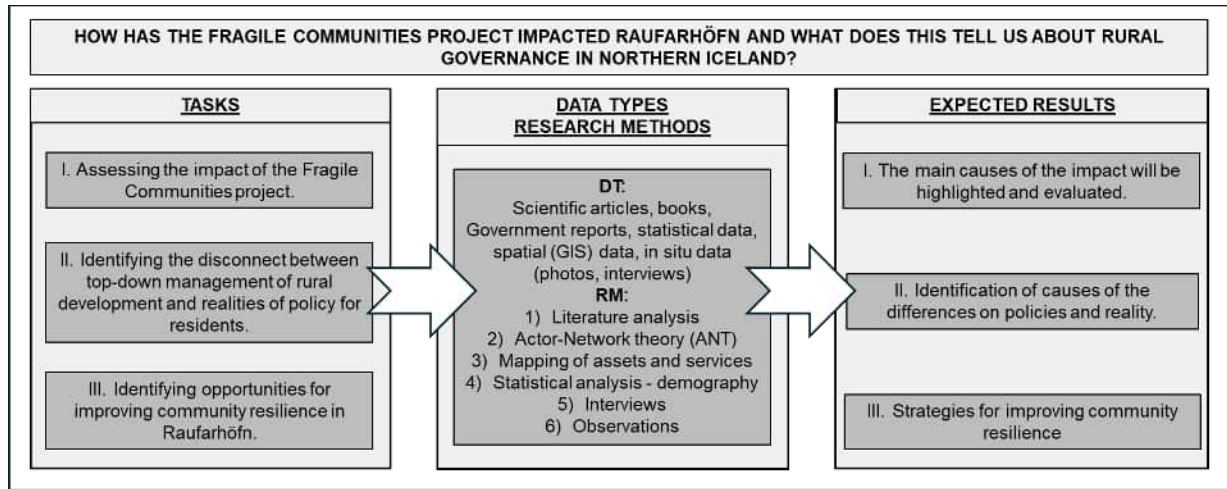


Fig. 2. Research methodological scheme.

Interviews

Interviews are a qualitative research technique employed to collect comprehensive information and insights from individuals. This approach involves direct, in-person interactions between the researcher and the participants, facilitating a thorough examination of their personal experiences, perceptions, and motivations. Through interviews we aim on gathering subjective knowledge and experiences from participants, to help us understand the community and its resilience in Raufarhöfn, topics invisible to us (Tuomi & Sarajärvi 2018). For the analysis of these interviews we used content analysis and ANT, which will be explained below. The use of content analysis provides us with a good base and opportunity for using other methods like ANT (Tuomi & Sarajärvi 2018). With content analysis, we left the observing of interviewees expressions, pauses and intricate gestures for less attention than the spoken answers. From the interviews mental, physical and audio notes were made, from which ANT was next employed.

The interviews were conducted freely. And because of this, we made a consecutive decision to not record the interviews, but rather to rely on our notes and memories from the most important discussions. With this free style though, it allowed the interviewees to feel more comfortable, our conversations being less confrontational and intimidating, but also providing interviewees time and space to present us with what they thought was of most importance. This also ties into the ethics of this research, as we as researchers want to stay consciously open to learning about Raufarhöfn and its social culture, allowing residents to touch on subject areas we might not have knowledge on (ALLEA 2023, Tuomi & Sarajärvi

2018). We had certain themes we always asked about, like how Raufarhöfn has changed during their stay there, the Byggðastofnun project, their hopes and dreams for the future of the town and how they relate to the governing of this by the Municipality and other higher up actors. We had in total 5 planned interviews. Other interviews were spontaneous and less formal. Meeting these interviewees out on the town, at the bar, the post office or at a presidential campaign tour for a casual conversation. During these conversations we scoped out their relations to Raufarhöfn, amongst their impressions on the town and plans for the day.

Actor-Network theory (ANT)

Actor-Network theory is a qualitative research technique. ANT focuses on the connections that are being made between human and non-human entities that are part of the issue at stake (Dankert 2012). ANT describes the processes between different heterogeneous actors which have been gathered in connections between the actors in the network (Tomazos & Murdy 2023). With this method it is easy to understand interviews' main topic and to compare the interpretations of different people's opinions. In this research ANT was a successful interview review tool to enrich interview content analysis. Information from interviews was written off with code words or simple, short sentences. After interviews were created 5 Actor-Network theory maps.

Observations

The observation method is a high-quality in situ research technique. It gathers acquired emotions and impressions about the territory, which helps to describe the research place. The information obtained under this method relates to what is currently happening on the site and is not influenced by future intentions or the attitude of any particular person. This method is independent of the obtained by the interview method gained information (Malgorzata Ciesielska 2018). The absorption of the site is complemented by the images taken with the location in question and highlights the impressions of what has been observed.

Data analysis

Time series aerial photo analysis purpose of this study was to examine the historical changes in land cover (Olsen et.al. 2013). Today, land cover is principally altered by human activity, including agriculture, urbanisation and industrialization, mining, forest planting, and

harvesting (Dale et al. 2000; Turner et al. 2001). In our study case all changes are altered by human activity, urbanisation, industrialization, which is affected by the fishery industry.

Aerial photography was used to analyse urban territory changes from 1958 to 2023. The work used orthophoto map data from Google Maps latest orthophoto version and data from the Aerial Photo Gallery of Iceland. The satellite imagery and aerial photographs were acquired at different times, viewpoints, sensors, and altitudes. These images of the town point to the active changes over 65 years from which trends in the development and stagnation of the populated area can be determined once they have begun and their duration. Obtaining this type of data complements the identification of the urban territories and can get to know its historical events. By noticing changes in the territory, it is possible to determine its infrastructure planning tendencies and what sphere of employment prevails in the relevant place.

Research ethics

For this project we are following common guidelines of the European Code of Conduct for Research Integrity (ALLEA 2023). This includes taking into account our position as research students in Raufarhöfn as outsiders to the community, the nature of this research being ‘hit and run’ wherein there is little to no contribution to the community that we are researching (Graugaard 2020). Calling Raufarhöfn or any community fragile is of course debatable, and not a neutral stance in itself, but given it is the name of the Byggðastofnun project we are evaluating, we also use the terminology in our report, even though non-core region would for example be a more appropriate description (Leick & Lang 2018). Good research practices involve honesty as well as reliability, through fact checking but also presenting for example interviewees point of views truthfully (ALLEA 2023). Additionally cross-cutting respect is the foremost important (ALLEA 2023). Respecting citizens' space, willingness to talk, properties and home town amongst others. Understandably the place one grows up in and, or, lives in, holds significance to one and some sense of nostalgia and moral community develops. No matter how much a researcher digs into the tellings and theories of a place, the true value of actually being a part of the community, having that local identity, cannot be truly felt (Tomaney et.al. 2023).

Research limitations

Some limitations of this research include a very tight time frame, language barriers and the researchers positions as outliers in the community. The given time frame of the study was a limitation for data collection and data analysis. This research could benefit greatly from spending more time in the community and getting a better sense of the place, as this research is “hit and run”, where data is collected and the location left, not allowing time for the researcher to connect with the research community. Another limitation might have been the long holiday weekend during which this research was carried out. The town was very quiet and the harbour was closed. Language barrier was another limitation. While most people interviewed spoke English freely, some people only spoke Icelandic. Additionally, most information sources were in Icelandic. This presented a challenge as some information might have been missed. This also impacted the report writing as the process took longer in an already tight time frame. The final limitation is our position as outliers to the community. We can only form outside looking in perspective. Some people we met were unsure and reluctant to communicate. Essentially we noticed, the rumours to be true, that a certain group of the Raufarhöfn population is not reachable. They keep to their own, mingling with the rest of the community the minimal amount, though their view on the development of Raufarhöfn could've been valuable and different to those others.

Background of Raufarhöfn

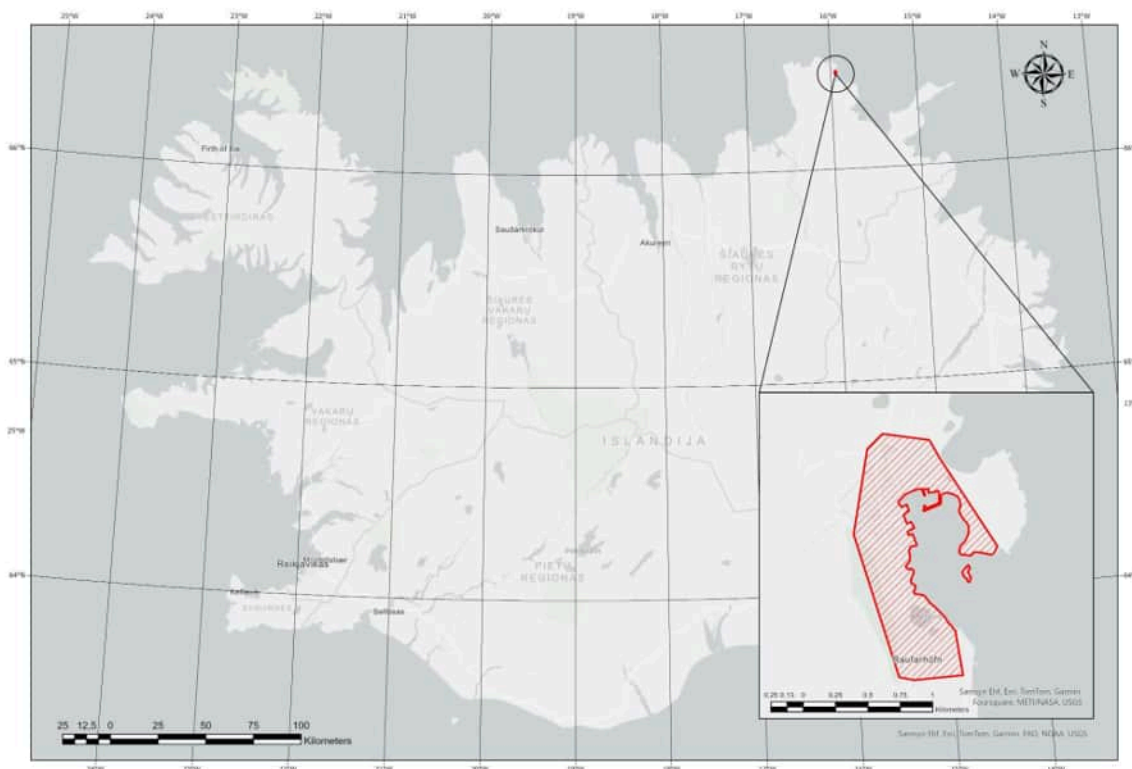


Fig. 1. Raufarhöfn location.

Raufarhöfn is located in northeastern Iceland and is the northernmost town in Iceland (Fig. 1). It is part of the Norðurþing municipality. The municipality centre of Húsavík is 130 km away, while the town of Akureyri is 222 km away. A rocky promontory protects the town's natural harbour. The coastline has a distinctive rocky headland, a channel separating the islet Hólmann and the Höfðann peninsula. The town's name is derived from this gap between the rocks meaning “crack harbour” (Nordurthing.is, n.d.). According to the Icelandic statistics website currently Raufarhöfn has about 183 inhabitants (Statice.is). The town’s population is in many ways linked to the fishing industry, fishing often being the main occupation in small coastal towns like Raufarhöfn.

The earliest mentions of Raufarhöfn can be found in Icelandic sagas. The town was usually mentioned in connection to trade. But only in 1833 Raufarhöfn became a licensed trading post. Important to mention two people, who did a great deal to the development of the town - two brothers by the names of Jón and Sveinn Einarsson. In 1896 they came to the town of Raufarhöfn and under the name of “Einarsson Brothers” they started fishing and shark hunting, they built a pier, where large sailing and coastal ships could load and unload. The

brothers also contributed a large sum of money to lay a phone line in 1916. In the summer of 1900 fishermen from Norway came to Raufarhöfn to fish herring. The Einarsson Brothers also soon turned to herring fishing and many herring smelting plants and factories were being built. Many people were needed to work in these factories, so the town's population grew. Similar to other coastal towns in Iceland, Raufarhöfn entered the herring era. By 1944 Raufarhöfn had become Iceland's second largest port for herring fishing and in 1945 an independent municipality (Nordurthing.is, n.d.).

However, these times didn't last. Due to overfishing and poor management the herring population disappeared and to cope with the situation different strategies were implemented. In Raufarhöfn these changes didn't go so well and in the 1970s the town experienced some major depopulation. In the span of almost 15 years the town lost 144 inhabitants, taking the population from 515 to 371 in 1992. The second wave of rapid depopulation came in 1999 and has lasted till about 2014 (Fig. 3). The town had lost its freezing plant, fish meal factory and a big portion of its fishing quotas. This led to many more people losing their jobs in the fishing sector and deciding to leave (Kokorsch, Benediktsson 2018).

With the rapid depopulation and financial struggles, the town had to make some tough decisions. In 2005 a decision to merge municipalities was made. Together with other small towns - Kopasker and Skinnastaður, and the town of Húsavík the municipality of Norðurþing was made. Being the biggest and most populated, Húsavík became the administrative centre of the municipality. Now the policymaking body is located 130 km away from the town of Raufarhöfn, which has presented the town with many challenges and disappointments. Many services in the town were cut back and moved to Húsavík (Kokorsch, Benediktsson 2018). Raufarhöfn, however, still has a school, which has 12 kids in total, including kindergarten. For older children there is online school for the moment, with a hope that they will get a teacher next year. A sports centre with a pool, sauna and a gym, health clinic, where doctors are available, as well as post, bank, and a bar.

Being so far removed from the governing body has had an impact on the town. To help the situation there have been some projects started in Raufarhöfn. In 2013 the Fragile Communities project was launched in Raufarhöfn (Byggdastofnun.is 2018). Additionally, there have been special community quotas given out, allowing 500 tons of fish to be caught every year to try and stabilise employment in fisheries (Kokorsch, Benediktsson 2018).

The population situation at the time of our research seems to have stabilised. In the last few years from 2020 to 2024 the population has actually increased by a handful of people. Nevertheless, the town still faces some population challenges like the disbalance of gender distribution of more men than women, as well as the ageing of population (Fig. 4) (Staticce.is).

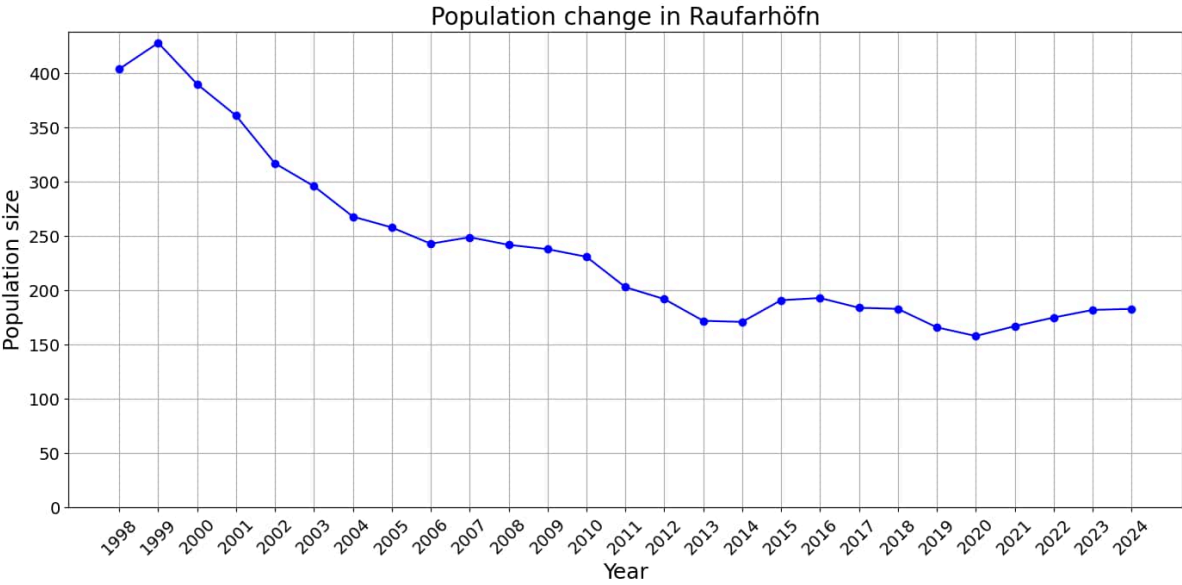


Fig. 3. Raufarhöfn population change chart.

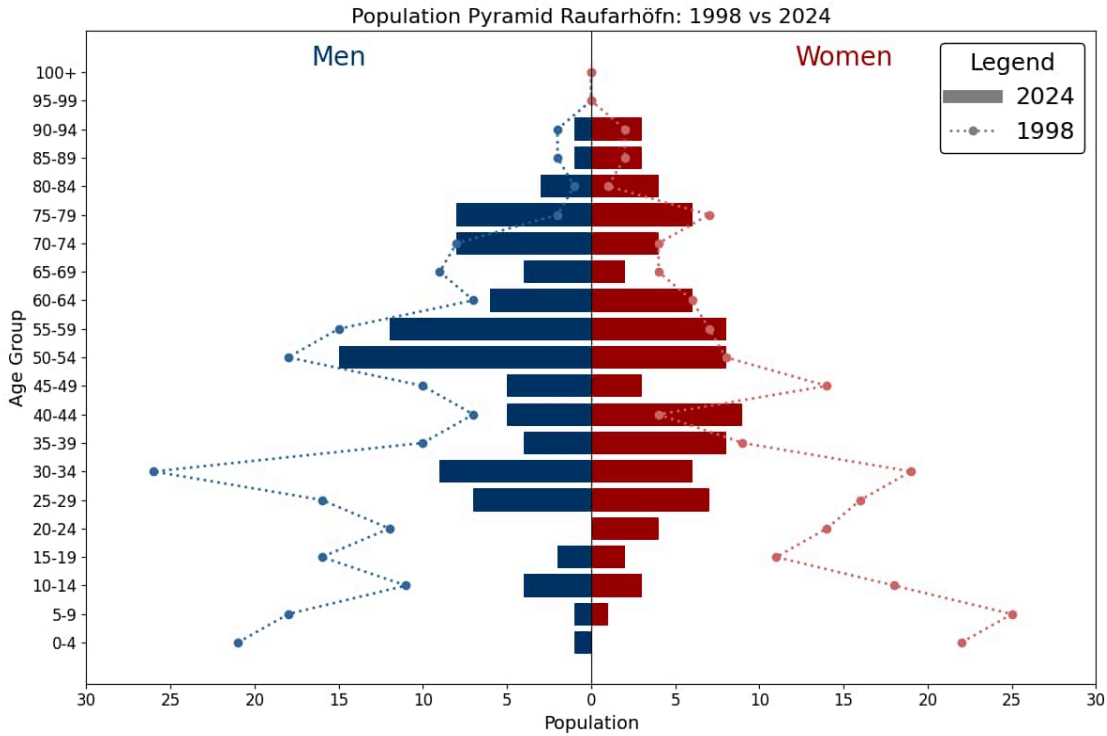


Fig. 4. Raufarhöfn demographic pyramid.

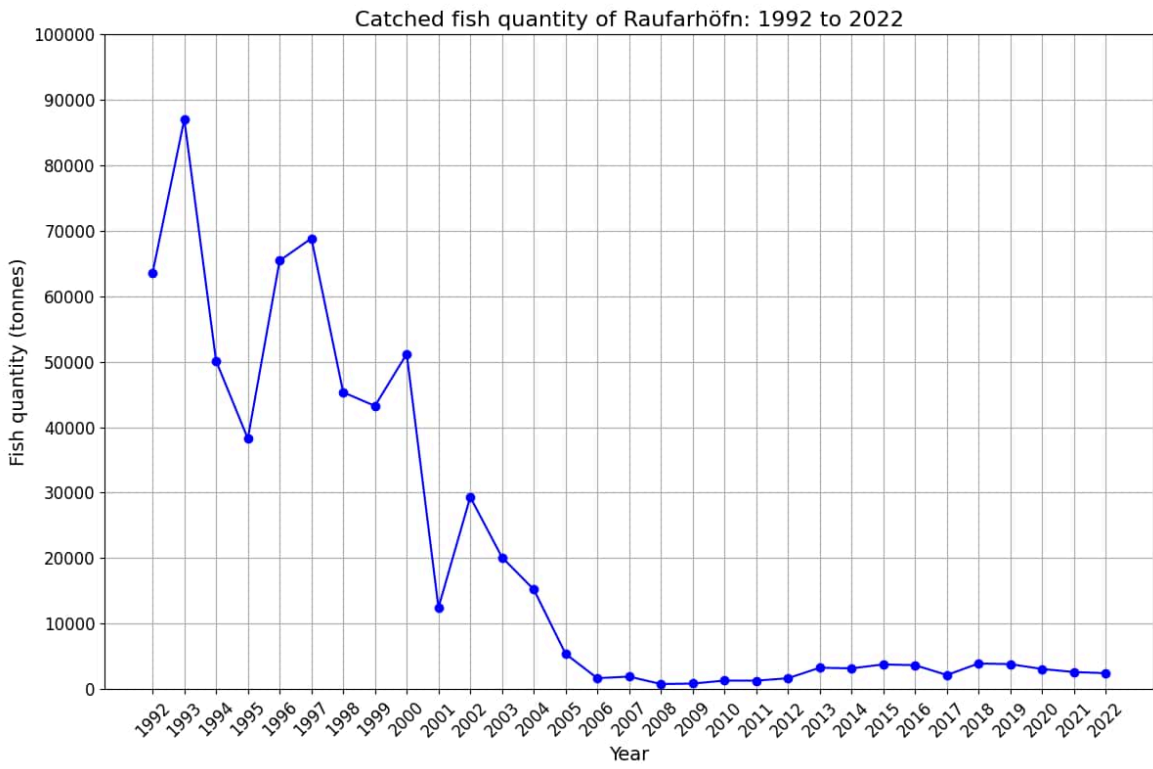


Fig. 5. Raufarhöfn caught fish quantities from 1992 to 2022.

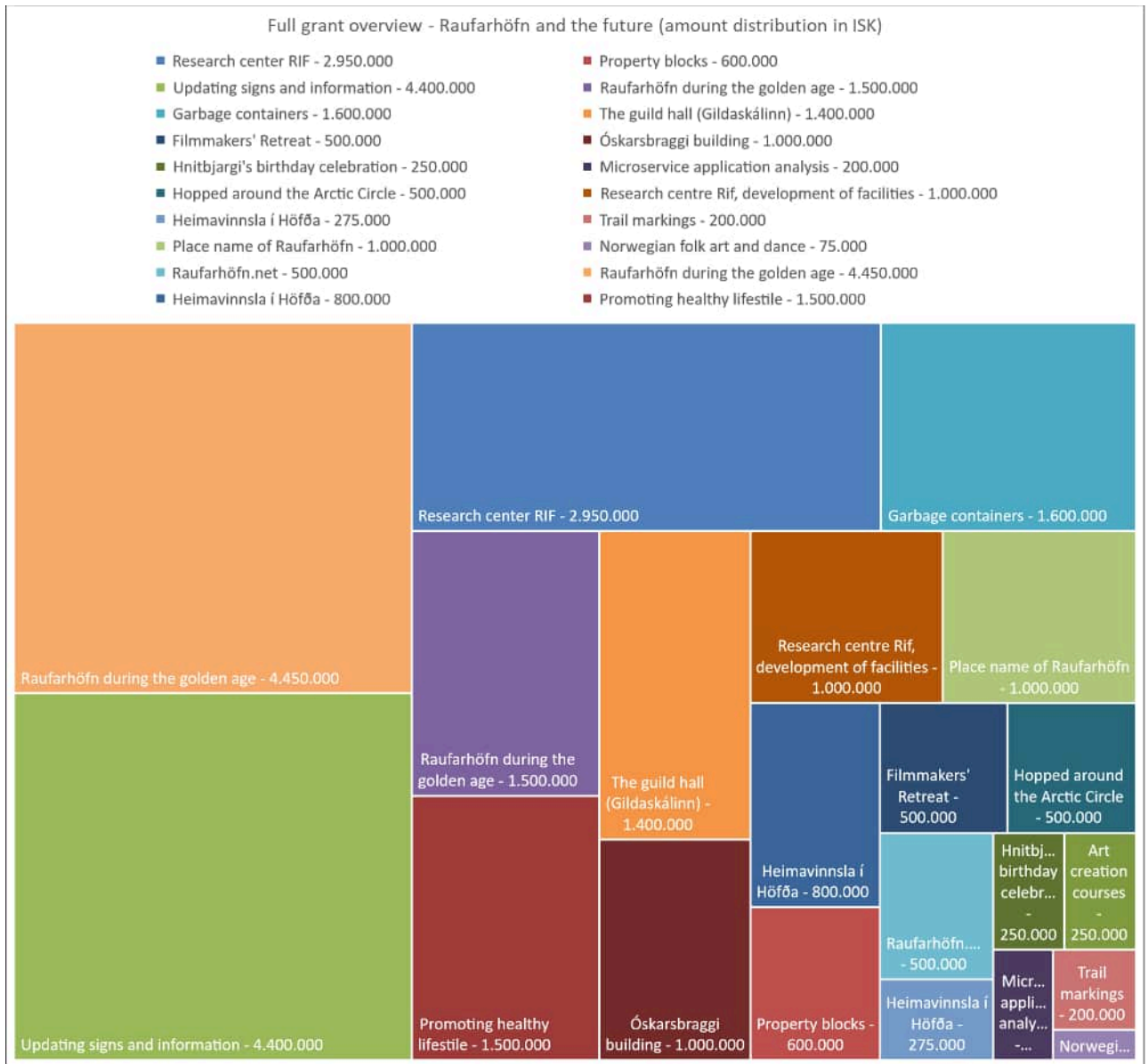


Fig. 6. Full grant overview.

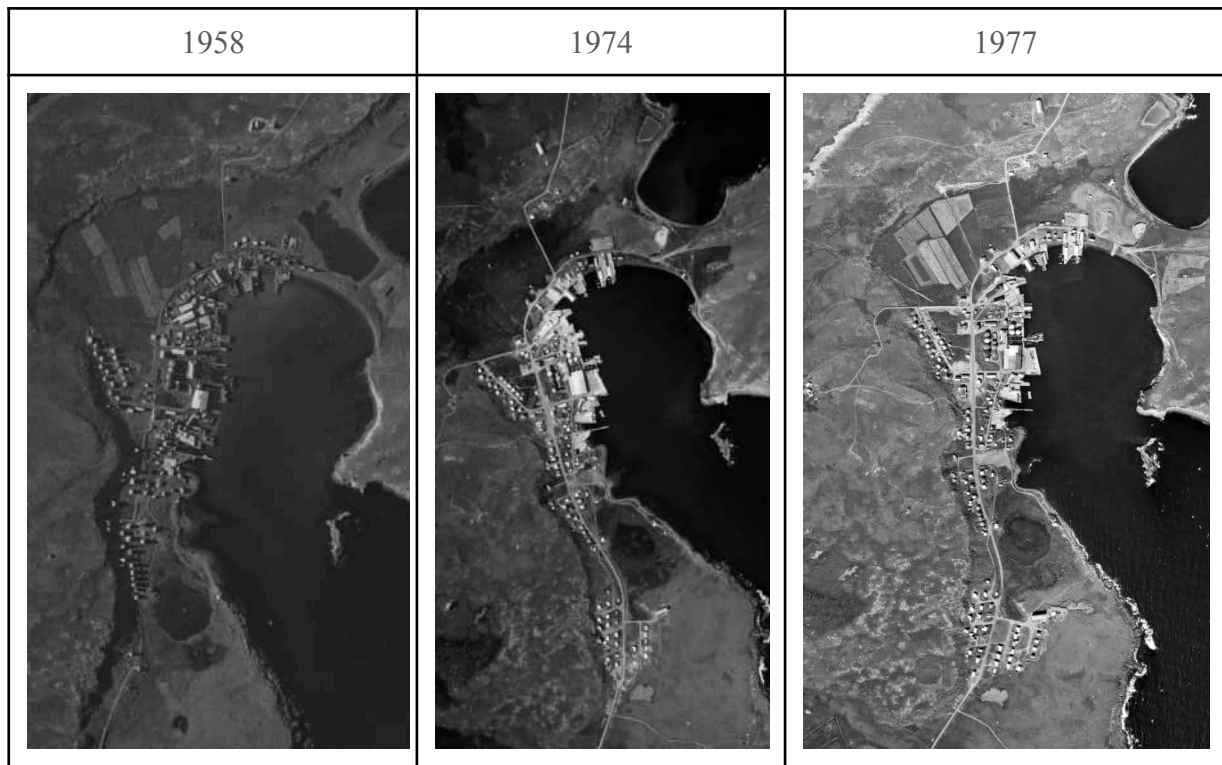


Table 2. Overview of Raufarhöfn 1958, 1974 and 1977 (Source: Aerial Photo Gallery of Iceland)

A significant observation from comparing the area's changes is the evident development of the port infrastructure between 1958 and 1974. This development is characterised by the expansion of the port's territory, particularly in the northern and western directions. This expansion suggests increased maritime activity and the growing importance of the port as a commercial hub. Over the 16 years, the southern part of the area witnessed the construction of approximately 25 new buildings, including the current school. This substantial increase in residential structures indicates a surge in population and a corresponding demand for housing. The expansion of the inhabited area, driven by new building projects, further highlights the growing demand for residential spaces.

An examination of the orthophoto images reveals the renovation of the road infrastructure's surface. This improvement in the road network suggests an effort to enhance transportation efficiency and accommodate the increasing traffic volume associated with the port's development and residential growth. The undeveloped area in the northern part of the town exhibits characteristics that suggest its past utilisation for agricultural purposes. These indicators include the visible field divisions and colour variations, which could be attributed to the type of land cultivation practices employed.

The 1977 orthophoto map further demonstrates the ongoing expansion trend,

particularly in the southern part. This expansion is marked by the construction of a new row of houses on the eastern side, indicating a continued demand for residential spaces. Additionally, the construction of the current swimming pool building in 1977 suggests the development of recreational facilities to cater to the growing population's needs.

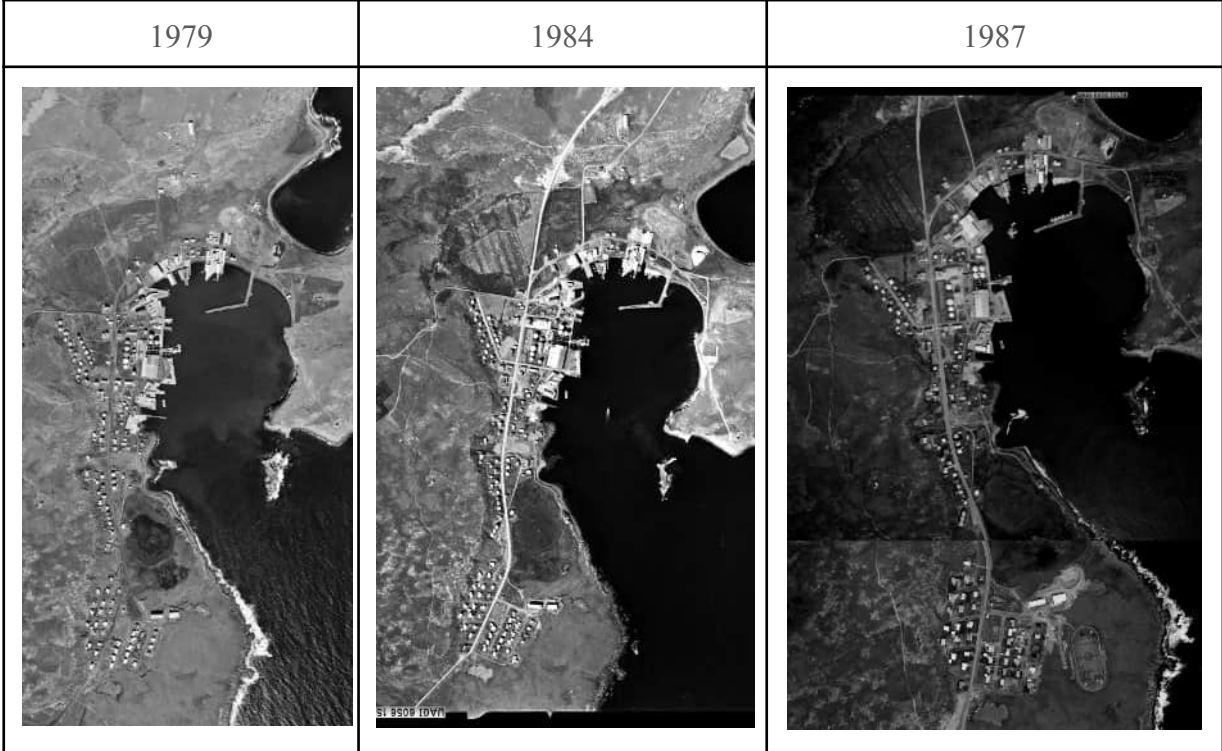


Table 3. Overview of Raufarhöfn 1979, 1984 and 1987 (Source: Aerial Photo Gallery of Iceland)

A significant addition to the port infrastructure is evident when comparing the orthophoto maps from 1977 and 1979. The 1979 map depicts an L-shaped pier that was not present previously. This expansion of the docking area suggests an intensification of port activity. The development in Raufarhöfn's southern area continued beyond 1977.

Around 1987, a large stadium was added to the existing sports and recreation complex. The construction of this stadium indicates a growing popularity of active lifestyles in Raufarhöfn. It suggests resident interest in sports and physical activity, as well as the local government's commitment to promoting a healthy lifestyle. The construction of the current apartment building in Raufarhöfn was underway in 1979. In the middle part of Raufarhöfn, the 1984 map reveals the construction of the town's post office and bank building. This addition to the town's infrastructure suggests a growing need for financial and communication services, likely driven by the town's ongoing development. By comparing the orthophoto maps from 1977 and 1979, it can be concluded that Raufarhöfn experienced rapid

development during this two-year period, and all these changes indicate all points towards the town's growth and increasing resident well-being.




1997	2003	2023
		

Table 4. Overview of Raufarhöfn 1997, 2003, 2023 (Source: Aerial Photo Gallery of Iceland and Google Maps)

Following 1997, a noticeable decrease in building density can be observed in the coastal territory of Raufarhöfn. This change aligns with the sharp decline in the fishing industry, which is attributed to a reduction in annual catch quotas. The decrease in building density suggests a reduced demand for housing and commercial spaces in the coastal areas. This decline likely reflects the economic downturn associated with the fishing industry's struggles. As fishing activities diminished, the need for related infrastructure and support services also decreased.

The combination of reduced employment opportunities has resulted in a state of stagnation in Raufarhöfn. The lack of new building construction and infrastructure further underscores this stagnant phase in the past 26 years period. The absence of new housing or commercial developments indicates that the town's economy is not expanding.

Tourist Attractions and important assets of Raufarhöfn

Ecology and landscape in Raufarhöfn

Raufarhöfn, located on the edge of the Arctic Circle, lies within Melrakkaslétta in northeast Iceland, which is the northernmost area of the country. The natural environment and biodiversity of the area reflect its northern location, making it the most arctic of all the lowland regions in Iceland (Jóhannsdóttir et al. 2014). Melrakkaslétta, is a lowland region on a peninsula flanked by two expansive fjords: Öxarfjörður to the west and Þistilfjörður to the east. It lies on the eastern boundary of Iceland's northern volcanic zone. Raufarhöfn is situated in an area where the older, less permeable bedrock in the northeastern part leads to the formation of numerous freshwater lakes, ponds, and rivers that extend from the coast further inland (Jóhannsdóttir et al. 2014). The northern coastline of Melrakkaslétta, is defined by gravel banks gently sloping and rich in algae. These banks are divided into multiple open and land-locked bays, inlets, salt marshes, and brackish lagoons, which connect with freshwater lakes and rivers extending further inland (Munda 2000).

The Arctic setting, combined with the coastal terrain and diverse wetlands, fosters a unique natural habitat for plant and animal life. The area's vegetation is influenced by its low average summer temperatures and high humidity from fog, with plants of arctic origin being prevalent (Steindórrsson 1941). Lichen-rich heathland is frequently found. Within the region, the Arctic Fox (*Vulpes Lagopus*) stands as the sole indigenous species. The American Mink (*Neogale Vison*) also established a colony on the peninsula. The area around Raufarhöfn is home to a large number of birds, which have excellent habitat due to the nutrient build-up on the coast. Due to the small human population, passive use of territory, the general ecological situation is quite good and stable.

As previously stated, Raufarhöfn is situated within a depression in the terrain, with the Melrakka plain enveloping the town on three sides (Fig. 7). The spatial structure of the landscape is quite complex due to the expressive relief forms on the horizon and in the immediate environment and the forms of the coastal zone, manifesting a strong visual aesthetic value.



Fig. 7. Raufarhöfn landscape (Source: Wikipedia Raufarhöfn).

Rannsóknastöðin, RIF



RIF Logo (Source: rifresearch.is n.d.)

Rannsóknastöðin, RIF field station, celebrated its 10 year birthday on May 23rd of 2024 (rifresearch.is n.d.). RIF is operated by the Northeast Iceland Nature Research Centre, whilst being supported by the Ministry for the Environment and Natural Resources of Iceland and the Norðurþing Municipality, which Raufarhöfn is a part of (rifresearch.is n.d.). The establishment of RIF was funded by the Byggðastofnun Fragile Communities project in Raufarhöfn (Attachment 1). RIF Field station focuses on researching the exceptional nature and wildlife in Melrakkaslétta in northeastern Iceland, which Raufarhöfn is also part of. Research topics focus on bird life, hydrology, arctic ecosystems and climate change impacts (rifresearch.is n.d.). Additionally RIF works with promoting arctic research, education of the public, like local and global community, as well as aims to support the local communities with sustainable tourism etc. (rifresearch.is n.d.).

Currently RIF has one employee, but co-operates with national and international research groups, having international projects ongoing during the summer, with residencies in

Raufarhöfn (rifresearch.is n.d.). This is an important part of furthering the global aims of RIF, such as spreading information and promoting arctic research.

The Arctic Henge

In the last few years, the small town of Raufarhöfn has seen more and more tourists venturing out to this remote part of Iceland (Nordurthing.is. 2020). The biggest tourist attraction to the town of Raufarhöfn is the Arctic henge or also known as Heimskautsgerðir. It is a stone construction located close to the town of Raufarhöfn. The project was started in 1998 by local hotel owner Erlingur Thoroddsen, who wished to attract tourists to the area (Northiceland.is. n.d). The artist behind this structure is Haukur Halldórsson and the idea is to use the midnight sun and endless plains of the peninsula to create a sculpture where light and shadow create an impressive vision. The model is based on a poem of Völuspá. Work on the project began in 2003 and currently is still ongoing. The project receives funding from different public funds such as Tourism Development Fund, Development Fund of the North East and the municipality of Norðurþing and others. The project is estimated to attract tourists to the areas as well as to create job opportunities (Ssne.is. 2023). Currently the work on the project has slowed, mostly due to the passing of the man who came up with the idea, there have also been some uncertainties about the financing of the project.

Beside the Arctic Henge, other tourist attractions are the lighthouse and guided hiking trails around the town. The town, however, lacks any museums or restaurants, except for one restaurant/café at the Nordljós hotel, that would catch the tourists and make them spend more time and money in town.

Raufarhöfn is also part of the Arctic Coast Way - a route made to bring more people to the remote places of Iceland. It was opened in 2019 and covers 900 km of Iceland's north (arcticcoastway.is).

Byggðastofnun

The Icelandic Regional Development Institute or Byggðastofnun is state-owned and is supervised by the Minister of Infrastructure. The aims of Byggðastofnun are to empower opportunities for work and residency equally around Iceland. Having a project called “Fragile Communities” powered by the thoughts of smart shrinkage. Although being a governmental project, the approach is bottom-up focused, where the involvement of residents and

communal hope is crucial (Browne 2019). There seems to be a disconnect with rural Iceland and the government, where these fragile communities are left out of decision-making (Browne 2019). This is acknowledged by the project, and they are making efforts to strengthen the communication bonds between private and public institutions, says Kristján Halldórsson, a specialist for the developmental division of the Fragile Communities project (Browne 2019). Kristján admits seeing a positive change regarding attention towards rural communities from the Parliament and ministries (Browne 2019).

In practice the focus falls on empowering rural, fragile communities, whilst providing them with tools and guidance for development. The institute works with projects, giving each fragile community a few years of attention. Byggðastofnun provides the chosen communities with funds, curated for different sectors, such as innovations, website management, research centres, recycling, hiking trails and information boards for example (Byggðastofnun.is).

Raufarhöfn and the future

As one of our research aims is to assess the impact of the fragile communities' project, we wanted to assess what impact the grants had and how some of the projects are looking today as a few years have passed since they were distributed. A table with all the grants and the information about them we were able to gather through internet research or observations is in the attachments of this report (Attachment 1).

From 2014 to 2017 Byggðastofnun had a project focusing on Raufarhöfn. The project was called Raufarhöfn and the future, or in Icelandic, Raufarhöfn og framtíðin. In total the fragile communities project gave out 21 grants to Raufarhöfn (Byggðastofnun.is. n.d.). The grants were given out over a few years from 2014 to 2017. In total almost 25 000 000 ISK was distributed for different projects (Fig. 6). To receive the grants applicants had to follow certain criteria based on which their application was evaluated. The highest scoring applicants received funding for their project. The evaluation criteria were:

- The project has to fit well with the message from the residents assembly and the fragile communities goals;
- The result has to be useful to as many people as possible;
- The project cannot cause interference with competition;
- The project should create employment, preferably long term/year round;

- Success is likely and knowledge/experience is available;
- Market and operational assumptions should be credible;
- Raufarhöfn should benefit primarily;
- The project should encourage cooperation and solidarity;
- The grant has to have an impact on the progress of a project (Nordurthing.is 2017).

After looking over the grants we were able to conclude that there was some success to the fragile communities' project, however, there were a few grants which did not succeed, or we were not able to find any information on them today, leading us to believe that they were not successful.

By far the biggest success of the fragile communities grant funds have been the creation of research station RIF. The centre not only gives the opportunity to carry out important research about the unique ecosystem of the peninsula, but also attracts students, scientists and even artists to the town. In addition, there were facilities made for the needs of RIF scientists in the local school for processing samples and data. These facilities are also used by the students in the school to learn about environmental and nature sciences.

Other successful results have been seen, like the gym equipment at the sport centre from the promotion of healthy lifestyle grants, the placing of place names into the Landmæringa Iceland database, renovations on the Óskarsbraggi and Gildaskálinn buildings and placing of signs that tells about the town's history. There were also projects that were somewhat successful, like forming a hiking trail along the top of the town and by the coastline. However, the trail does not connect to the Arctic henge as was stated in the grant. The trail is also poorly marked.

Some projects have taken a long time, for example, the project titled Raufarhöfn during the golden age. The plan was to create a museum displaying the town's history in the old fish oil tanks. For now, there is still no museum in town, but we were told that there are plans to install doors in the old tanks this summer.

On some projects we could not find any information online or from the people in town, like the project about an app that would gather services available in the area. There is also a project in which an evaluation of property was supposed to be made, but we could not find such a block. We could not find the 12 themed songs about each month in Raufarhöfn's history either. And some projects seem to have stopped functioning, like the Raufarhöfn.net

website in which a gallery is supposed to be and the route in the Wapp walking app, which is no longer available.

Observing Raufarhöfn

Observation in this research is used to determine who and how the available public space is used. Public space is an environment we share with strangers, people outside our immediate communities (Lipovská & Štěpánková 2013). We did the observations in two different ways- locally while being in the same place in our group's residence at Guest house "The Nest" and moving by walking or driving with a car. Using the observational method, within the group we learned and appreciated the external image of the environment, public space and the town overall.

On arrival at Raufarhöfn, we got our first impressions as we drove down the main street (Aðalbraut) to get to the Guest house "The Nest". Using Aðalbraut Street, on which the largest traffic movement is taking place, you can get to the main sights - Arctic Henge, and the lighthouse. The place was very quiet on arrival and gave the impression it wasn't full of residents. Arriving for the holidays, before Pentecost day, many residents had left the town or enjoyed the holidays without going outside, as evidenced by the high number of personal cars outside private homes.



Fig.8. Main street (Aðalbraut) of Raufarhöfn.

Group of buildings

Paying attention to the buildings during the observation process, both locally from the guest house and during the walks, we spotted many uninhabited, abandoned buildings that evidence a potential decline in the population and former industries. This doesn't make an impression, homeowners would be interested in improving the visual image or not have enough finances to repair them (Fig. 9). The windows of the guest house overlook the fishing and industrial buildings, where much activity took place in the middle of the week (Fig. 10).



Fig.9. Abandoned buildings



Fig.10. Industrial buildings

In the town there are two charging points for electric cars - outside a Community building and hotel (Fig. 11). The harbour area, with its small fishing vessels, looked tended,

and from there was a beautiful view of the town, especially the church. The day we left Raufarhöfn we were taken on a small tour. One of the stops was a specially designed bird watching station, with a beautiful view of the coast and bird nesting grounds. The place described people's close connection to nature (Fig. 12).



Fig.11. Electric car charging points



Fig.12. Bird watching station

Sport facilities

Raufarhöfn has sport-directed activities, which are located near the elementary school. They have outdoor facilities like basketball, cage football and an outside football field and a spacious playground (Fig.13). Between resident houses is located a frisbee golf course. According to a local tourism map it is possible to borrow frisbee golf discs at 2 locations-market and Municipal office. Near the elementary school is located a swimming pool with a sports hall and gym. The working hours are limited because of celebration days at a time

when we're visiting Raufarhöfn. According to the information provided by the sports centre, electronic entry cards have been created for the complex, which can also be used outside the official working hours, but this was limited to gym equipment, no pool, and sauna. For seniors and the disabled, they are free. Also sports centres offer free admission for children under 16 when accompanied by a paying adult. The costs shall be covered by the municipality.



Fig.13. Playground between school and sport centre

Tourism infrastructure and activity in Raufarhöfn

During our observation walks around Raufarhöfn we also observed infrastructure material specifically intended for tourism was displayed in the vicinity of the town. Recreational hiking trails are assessed as a low-difficulty route. Nature trail pavement is not specifically treated or marked, but it did not make it difficult to navigate the trail route. We observed that the trail once had explanatory additional elements, but they no longer provided the necessary information (Fig. 14). The hiking trail starts from the end of Ásgata Street, which leads along horse pastures, the coast, and the harbour, to the lighthouse located on the Hofbinn Peninsula.



Fig.14. Information table on a hiking trail

During a study of the town locally from the guest house, you could observe the movement of the traveller's cars, which initially led to Arctic Henge, then to the yellow lighthouse. After viewing the largest sights, the travellers return to the town's populous area. There are no cafes in the town, so most often cars stop outside a local shop, campside or at a hotel if they are for one. Around 5 more people have stayed in the guest house without us during our stay, suggesting that accommodation in the town is in demand and necessary. Exploring the content of our guest house review book we collected information from which countries tourists have chosen to visit this town. A total of 30 countries were counted. The furthest route that several travellers have scaled is from Australia. Records from Germany, Italy, the USA, Australia, and France were the most common.



Fig.15. Guest house "The Nest"

The town has an info centre that has the option of renting bicycles for recreational purposes. As we took a walk around the town, we noticed that images of explanatory stories and historical facts had been posted, suggesting that locals were proud of its history and thus represented its image to others. The images on the information desk are positioned depending on where the event occurred (Fig.16). As a town guest, this was very helpful for understanding the meaning of the place.



Fig.16. Tourism infrastructure in Raufarhöfn.

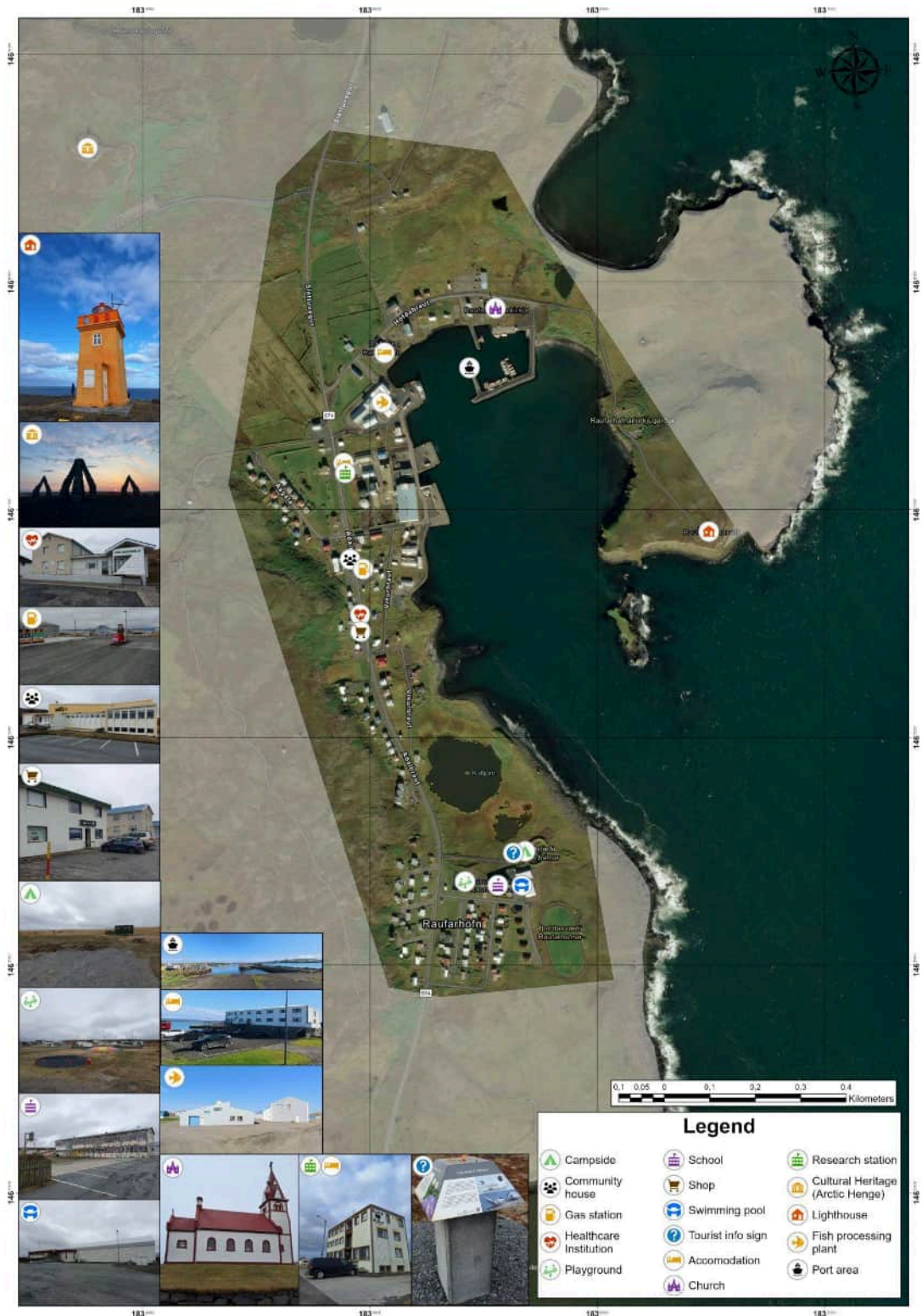


Fig. 17. Map of Raufarhön points of interest

Results

Interview discussion:

Prior to arriving to Raufarhöfn we had many preconceived notions of what we might discover there. Its designation as a Fragile Community and receipt of the endogenous funding schemes therein, as well as its history of decline from the collapse of herring stocks to the catastrophic loss of its fishing quotas all painted several strokes of pessimistic expectation in our minds (Kokorsch & Benediktsson, 2018:2). Having received their last grant from the Fragile Communities project in 2017, several years had now passed and we were curious to find out if it had been in any way effective (Kokorsch & Stein, 2022)

Crossing the vast Melrakkaslétta and leaving the mountains behind as we drove further North we really got a sense of Raufarhöfn's remoteness, being 130 km from the region's service centre Húsavík and 205 km from Northern Iceland's capital of Akureyri. Nonetheless, as the sky opens up and the tundra reaches on and over the horizon, the unique character of the landscape makes itself known. Over the plain and along the coast we finally come to Raufarhöfn. On our way to the guest house on the other side of town we saw almost no one, and a mix of housing, but most of it was fairly run down. It should be noted that we arrived on a bank holiday weekend and so, as we were later told, many residents were out of town. Over the course of the next four days, through collecting a combination of primary and secondary data, we would learn the story of this community, the challenges they face, and how they might overcome them.

With three initial contacts we were able to arrange meetings on every day of the trip, and through an iterative research process more meetings were added, as well as additional unplanned conversations with a few people we met around the town. With background research and contextual knowledge of the community we had a line of enquiry that led to natural questions that investigated the current state of community resilience.

Namely we were interested in discovering the fate of the Fragile Communities project, it being 6 years since the last grant was given to the community: How did it go? Was it well managed? Has it had any positive impact on the community? What happens next?

Secondly, we were interested in how the community was working in a practical sense: What were the resources available? How is the community fishing quota working out? How important is tourism to the area? What is the housing situation? What are people doing for work?

Finally, we wanted to learn about what makes Raufarhöfn the community it is now, and what it might be in the future: What did people like about living there? How is the community spirit? What will happen if the school is lost? How do they get to a stable population? What do they want to see change?

Over the four days spent in Raufarhöfn we were welcomed into living rooms, kitchens, community centres, service centres, guest houses, hotels, and farms by a number of incredibly kind and passionate people. A former principal of the school, a development officer and farmer, a local author, an Arctic research scientist, and a community representative, all helped to inform our research and eventually, through our conversations, weaved a complex narrative of community history, politics and resilience.

While some opinions naturally differed, and the limitations of our project mean the project is certainly not representative of the whole picture, several core themes and important topics were raised in almost all our conversations, and thus, provide data in line with our research aims. For clarity and structure, we have broken these core themes into sections below for discussion.

The Fishery

Since most of the fishing quotas were sold on the basis of a broken promise in 1998, Raufarhöfn has suffered its heaviest outmigration – a loss of 60% of the population between 1998 and 2014 (Kokorsch & Benediktsson, 2018:2). Now Raufarhöfn's fishery relies on the community quota (500 tonnes), as part of the Fragile Communities project (Byggðastofnun, n.d). On paper this sounds like it could be helpful in bringing stability to the community. From our first interview with a local author, we learned that the community quote is far from providing much to the community itself.

GPG Seafood is the one large scale fish processor in Raufarhöfn. Based in Húsavík, we were told that the owner simply takes advantage of Raufarhöfn to access the 500 tonnes of

community quota there. Even so, one would think that the fish processing plant would provide jobs for the community, which it does – approximately 28-30 according to three of our informants. However, while this looks good in statistics, the real picture shows a lack of meaningful work for the community. We heard from almost everyone we spoke to about how the owner has set up on-site dormitories for the employees, most of whom are migrant workers receiving low wages. They will work for a certain period, usually 10 months, spend as little money as possible, and then take their earnings home with them. Many of the people we spoke to in Raufarhöfn said they saw very little of them, apart from a few at the gym or swimming pool and occasionally visiting the shop, but despite lots of invites, never at community events. We were told this was further exacerbated by a strong language barrier with most workers not speaking Icelandic or English. Unfortunately, the fish factory wasn't open during our stay and so we were not able to investigate this further by meeting the workers. This would be essential to explore this issue further. Despite this limitation, it's very clear that the situation for the migrant workers represents a distinct lack of community belonging which is a barrier to development of the town. If the workers had more cohesion with the long-term residents and felt a stronger sense of belonging, this could lead to some wanting to stay for longer, starting families (crucially bringing kids into the school) or even just contributing more to the local economy.

Furthermore, one informant from the SSNE (Northeast Iceland Development Fund) discussed the quota with us. The issue with the mandated community quota is that, while it guarantees catch to be landed in Raufarhöfn, there is absolutely no requirement for mandatory commitments to be made to the community. While the privatisation of fisheries has been largely disastrous for small fishing communities (Olson 2011), some piecemeal consolation is seen when large fishing businesses do contribute more than just jobs to the residents in the way of contributions to town infrastructure or sports equipment for example (not discounting malpractice and lobbying of politicians) (Fontaine 2019). This may be a form of appeasement to local communities but nonetheless, nothing is forcing companies to give back to the communities that allow them to make such vast profits. Such is the case with the community quota that has very limited criteria for applicants hoping to win the bid. A successful bid mostly just needs to provide stable jobs and maximise efficiency by utilising tools and infrastructure to fish with the greatest success (Byggðastofnun, n.d). Our informant stated that they were trying to get the criteria changed so that private fishing companies would be required to contribute something to the community, whether that's in giving funds for

development projects or donating to the school for example. With the quota application opening again on 28.5.24 there was concern felt by several of our informants that the current owner would continue the same business practice, and little would change. With this in mind, several informants expressed that fishing was no longer a pillar of the community and they now look more to tourism and home working as a path to a sustainable future.

Tourism

Tourism arrived to Raufarhöfn much later than the rest of the country, its remoteness and lack of publicity have not encouraged quite so many tourists to venture off the ring road in the same way as they do for Siglufjörður or Húsavík. However, the number of visitors has been steadily increasing and thanks to a lot of domestic tourism during the Covid-19 pandemic, Raufarhöfn was more firmly placed on the map. The people we spoke to in Raufarhöfn expressed the natural beauty of the area which, as for many communities in Iceland, is a strong asset. From casual conversations with a few tourists, we could gather that it seemed to be more intrepid travellers that ventured this far North, at least at this time of year.

However, the main reason people came to visit the town was to see the Arctic Henge. The Arctic Henge plays on a mythological symbolism that is embedded in the landscape, and the promontory point on which it sits allows for a dynamic interaction between light, land, sky, and sculpture. All our informants were very positive about the project but admitted that it was progressing too slowly, having been under construction for over 10 years now. Little by little it does progress though, and we were told about the many events that had taken place there already like weddings on the Viking Rock concert planned for September of this year. The problem with the Arctic Henge though is that many travellers come to see it and then leave again, indeed two of the tourists we spoke to had only happened on Raufarhöfn by chance when intending to visit the Arctic Henge.

Our informants told us about the lack of services and businesses that meant many tourists have no reason to stay. The campsite and hotel see quite a lot of business, but there's no public toilets, cafes, restaurants or museums, and just one town shop with limited opening hours. What they want to see happen is reasons for the tourists to stay longer, to spend money, and to support new businesses that capitalise on this, which in turn brings new residents to the town. A variety of ideas were mentioned by our informants such as kayaking, boat tours and

better hiking trails. We also discussed projects that are in development such as repurposing the herring oil tanks near the harbour into a creative space that could be multifunctional to provide a variety of services to tourists, from a café to a gallery. We learned that this is a project being led by a filmmaker, and if plans go ahead, doors and electricity will be added to one of the tanks this summer. Repurposing of cultural sites can often be a successful strategy for revitalising community economies while maintaining sites that are important to place attachment for residents (Kampfner 2021). The oil tanks, with their central location next to the main street could be a great opportunity for creating a space that encourages tourists to stop, as well as creating a new space in Raufarhöfn that could facilitate creativity and social activity.

The Landscape

In all our conversations with people in Raufarhöfn, the landscape and sense of place framed many topics. The uniqueness of the land and ecology have an important part in the narrative of the town. The significance of the ecology of Raufarhöfn's surrounding landscape is exemplified by the presence of RIF, the Arctic research field station. In an interview with the lead researcher and manager of RIF, we learned about how the station works as described earlier in this report. We also learned about how the landscape has influenced development, with several sheep farms surrounding Raufarhöfn, as well as Eider duck colonies providing income with their valuable down feathers left in nests. A common theme brought up by our informants was the tranquillity and peace that Raufarhöfn provided. With the recent eruptions in Grindavík (Bjarnason & Bubola 2024), one of our informants considered safety from natural disasters being a reason to move to Raufarhöfn. Access to nature has been widely reported to improve mental and physical wellbeing (Miles 2022) and from our interviews it was clear that Raufarhöfn's surrounding landscape was incredibly important to the residents.

The Community

As a community that has borne the brunt of several harsh blows, the people we met in Raufarhöfn inspired optimism and courage in the face of incredibly difficult challenges. Through our time spent with the community we were quick to learn that Raufarhöfn exists because of the kind of people that live there.

In practical terms, as stated by one of our informants, Raufarhöfn has everything a town needs: shop, health clinic, ambulance, fire department, search and rescue, post office,

hotels, bank, swimming pool, gym, outdoor recreation areas, community centre and bar. All of a person's primary needs can be met with the services available in the town, with a few exceptions such as serious medical care. The only threat to this fully functioning society is loss of population. Opening hours are limited for some services which helps to split the workload between the limited staff, while most of the people we met were working in multiple roles to make sure everything that needs to be done is being done. We were told that this creates a close knit, supportive community where everyone can help out. While most of our informants rightly took pride in caring for their community, this puts a lot of pressure on those carrying out this labour, and means if you were to lose one person, it could be a collapse of many of the services at once. For example, one of our informants was an administrator at the health clinic, a paramedic, ran the community centre, and represented the town at municipality meetings, as well as being a mother of two. This is the case for many people in Raufarhöfn, where the needs of a town are being met thanks to the labour of a limited number of hardworking individuals. The unbalanced burden is exacerbated by a municipal government that seems to neglect the community that carries it.

From everyone we spoke to we heard about this neglect. The constant nagging required to get the municipality to provide even the smallest things. Five emails sent just to even get a response when asking to get the school repainted, requests to build houses denied, an elderly lady falling and injuring herself on broken pavement that had been requested to be fixed multiple times. As the town representative told us, they spend so much time just trying to be heard, but the municipal office is 130 km away in Húsavík. The power dynamic follows the macro trends we see across Iceland; the amalgamation of municipalities (Kokorsch & Benediktsson 2018) and expanding urbanisation as metropolitan and micropolitan areas soak up immigrants from rural areas (Bjarnason et al. 2021). This manifests in the feelings expressed by our informants, and the realities for their community. We heard multiple times how the municipal office sees Raufarhöfn as just an extra expense, and how they have money for 'stupid' projects elsewhere but when Raufarhöfn desperately needs investment they must beg and beg.

This issue is exemplified in the case of Raufarhöfn's school, which the central government seems desperate to close due to the small number of students (Erlendsdóttir 2024). The school is expensive to run but is essential to stabilising the population of the town. If there were no school, all the young families would have to move away and the population

would continue to decline. Maintaining the school and having more kids attend is a priority for many of the people that we spoke to. This could be achieved with revitalisation of the community's economy through tourism and home working, as well as a more holistic fisheries management. For now the school seems to be looking more optimistic, something that was not even considered 5-10 years ago according to one of our informants. With a new teacher starting in the Autumn, the elementary schoolers will be able to have in class lessons instead of distance learning.

Finally, another barrier to sustainability in Raufarhöfn is housing. We were told that at least 30 houses were second homes, some of them not even used for holidays, passed down through inheritance taking up space that could be used by people that want to live in Raufarhöfn full-time. Being private property, the people we spoke to felt there was little they could do to overcome this issue, and specifically noted that current tax laws encourage second-home ownership. They cited second-home legislation in other countries, such as increased tax and the recent legislation in Reykjavik that limits residential buildings being used as guesthouse businesses (Bjarkason 2024). Many of our informants expressed the affordability of life in Raufarhöfn, especially with the price of houses making mortgage burdens much lighter. We were told this affords a better standard of living than in the city where there is less of a healthy work-life balance. A few of our informants recognised the desire to move out of more urbanised areas of the country, especially in light of Grindavík's evacuation and felt this represented an opportunity for population growth.

Thanks to the kindness and generosity of Raufarhöfn's residents we were able to learn a lot from the community during our short stay. Identifying key challenges the community is facing as well as the opportunities for overcoming them.

Interviews through ANT

We have gathered and grouped our interview data using Actor-Network theory (ANT). ANT can monitor the highlights discussed in each interview. Each coded actor has its own explanatory windows, which are like a concept, or ideas that each actor is responsible for. Some ideas involve several actors. The thickness of the lines that link actors to ideas or concepts marks the dominance of the subject in the interview and its significance is marked by the current challenges. Pedro's interview was dominated by nature conservation, as it is a huge part of the town but also his work. The shortage of people is acute in all ANT, but Pedro

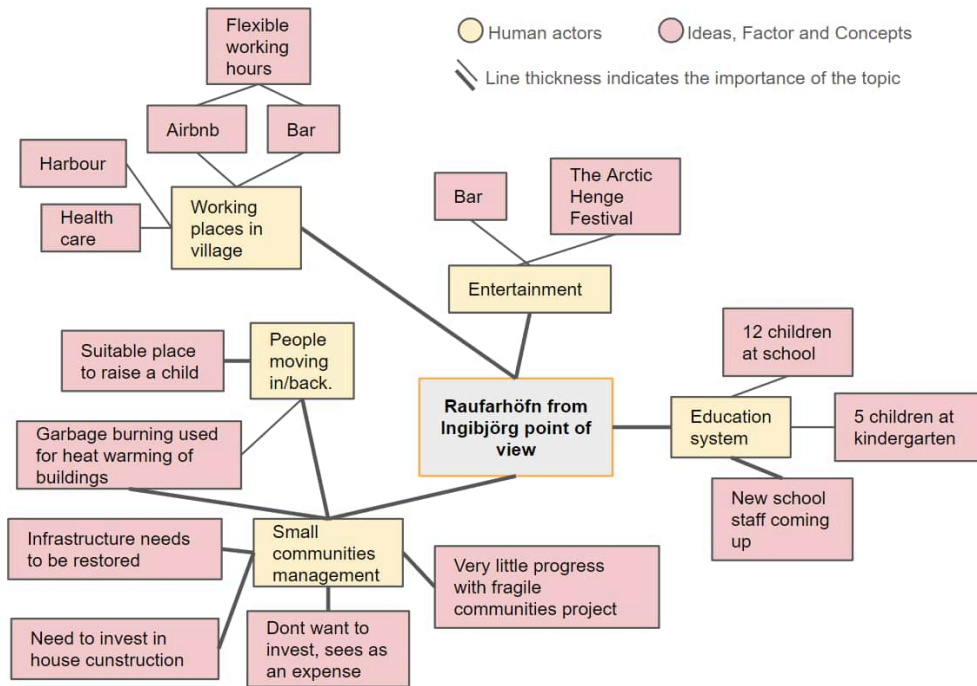


Fig.19. Ingibjörg point of view

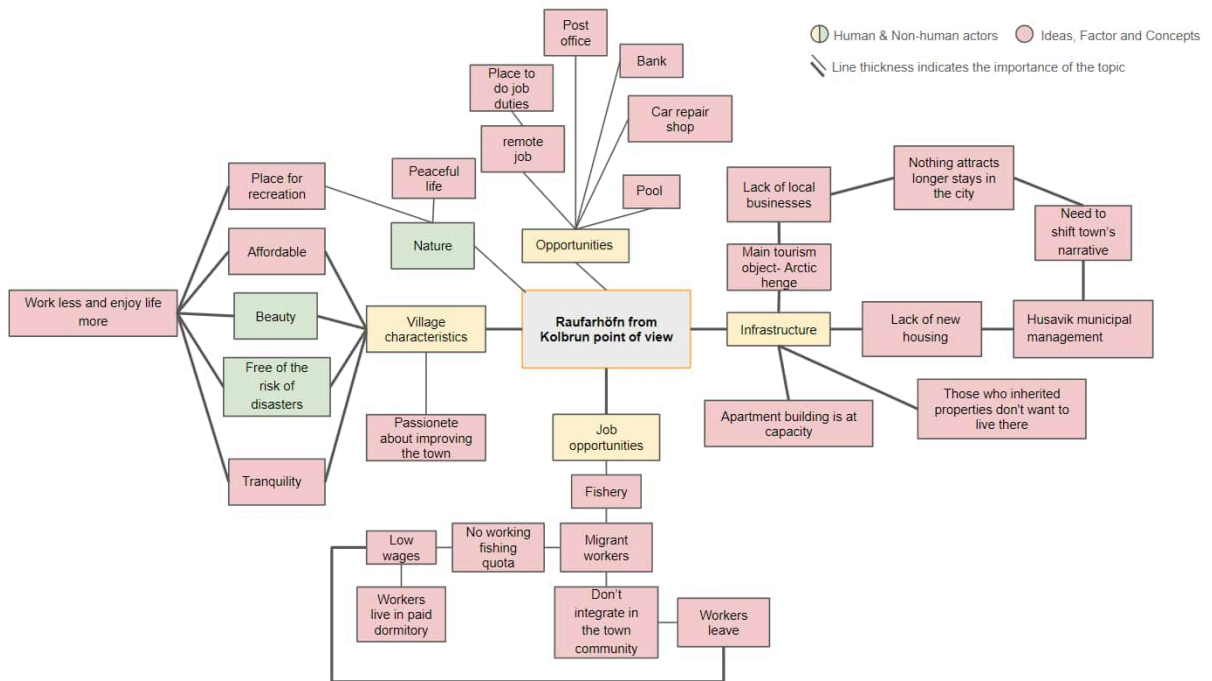


Fig.20. Kolbrun point of view

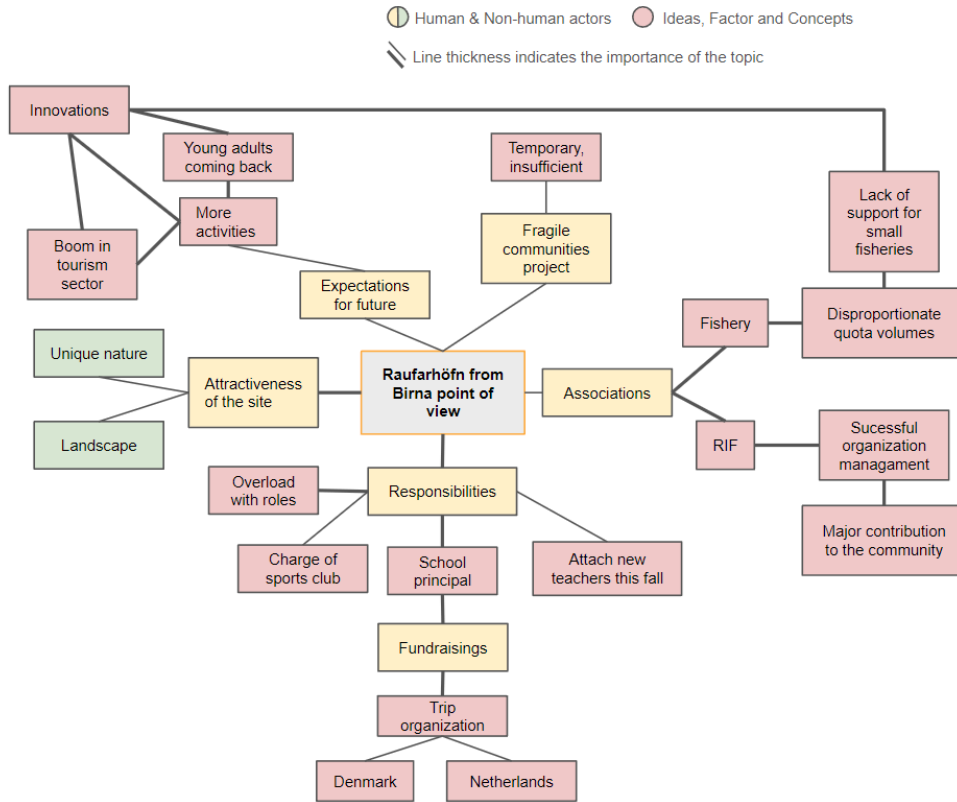


Fig.21. Birna point of view

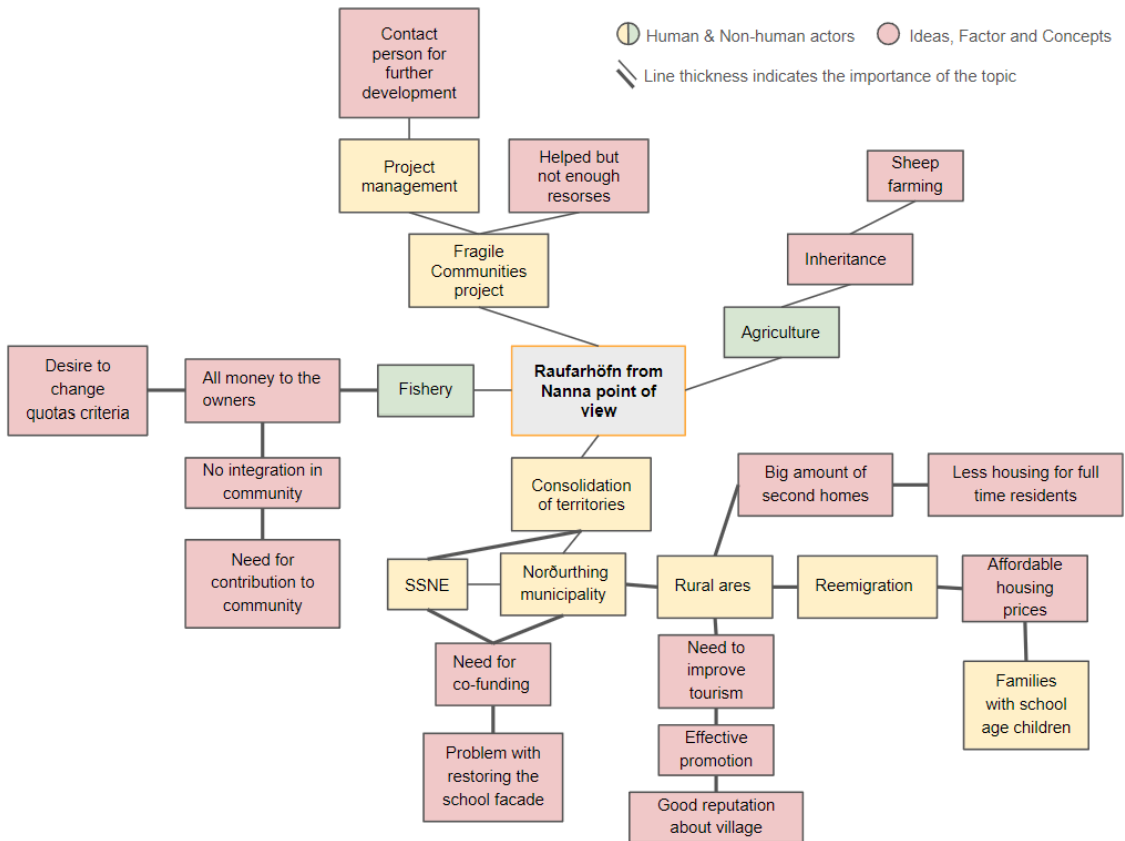


Fig.22. Nanna's point of view

Analysis

In the case of Raufarhöfn urban shrinkage has been prevalent, although the population curve has turned to a rise since 2020 (Fig. 3). Simultaneously moral community and resilience is visible in Raufarhöfn. This is based on the interviews with residents, through our observations and data analysis. Raufarhöfn, being a small scale town, a non-core region, even fragile, they face a multitude of issues. Through the merging of municipalities, becoming a part of Norðurþing, losing authority and governing over their own services, then being located elsewhere like Húsavík, and decline in fishing quotas (Fig. 5) causes loss of social infrastructure (Tomaney et.al. 2023). Loss of social infrastructure on the other hand causes inequality and root shock (Tomaney et.al. 2023). To persevere through this, the community creates its own strength. Moral community and resilience acts as a spinal cord towards positive development. Obligation to place is seen in locals' job descriptions, as having many roles within the same community. Involving strong attachments to Raufarhöfn as a place, and loyalty as well as obligations to keep the social infrastructure alive. It also requires a lot of appeals and “nagging” towards Norðurþing for issues to be addressed and resources given. Which translates as fighting for equality, like the building and maintaining of services, infrastructure and resilience. These efforts coming from community resilience are indeed extremely necessary and appreciated. In the next chapter we will introduce some recommendations for smart shrinkage concluded by the interviewees and us, and supported by literature.

For the future of Raufarhöfn

We identified some key directions on which the town could focus to grow its population and improve their overall well-being. For the most part these recommendations come from people of the town. During the interview process we noticed some topics repeating, which then hold the most significance.

Recommendations

Improving the sense of community belonging to migrant workers.

The current situation of on site dormitories for workers at the fish factory represents a distinct barrier to population development in Raufarhöfn. Encouraging housing across the town will help to improve community cohesion. This could also involve community-building activities, cultural exchange programs, and language classes to bridge gaps and create a more inclusive environment.

Tourism.

Develop eco-tourism initiatives like guided tours that highlight Raufarhöfn's natural landscapes, including bird watching, hiking, and Northern Lights viewing. This can be supplemented with eco-friendly accommodations like cabins or campsites.

The Arctic Henge tourist attraction should be more closely linked to the town of Raufarhöfn through advertising, so that tourists not only come to the Arctic Henge, but also stay in the town and visit its surroundings. For this purpose, it is necessary to develop the tourism infrastructure, to ensure amenities for the visitors. A tourism feasibility study could help with this. In addition, it is recommended to create a tourist promotion advertisement for the town.

Science.

The RIF Research Station is an attraction with great scientific potential, which can attract scientists from all over the world to conduct a wide range of scientific research on the Melrakkaslétta Peninsula. With good encouragement from the government or international organisations that care about scientific development, the RIF research station can become an important core of Arctic research in a global context. This would require conducting a feasibility study and then submitting applications with possibilities to various scientific organisations, universities, etc. The town of Raufarhöfn is an excellent location for this, its remoteness allowing immediate exploration of many natural processes. Governmental and other financial grants for research projects would make it possible for scientists to live in the town of Raufarhöfn with their families, strengthening science, which as an investment is important for the whole country's development.

Community quota adaptation to encourage more support for the community.

Revise fishing quotas to favour small-scale local fishers, ensuring sustainable practices and that more profits remain within the community. Implement a community-managed fishing area where local stakeholders decide on the quota distribution.

Social and physical infrastructure

For Raufarhöfn's growth and ensuring services, they would benefit from young families moving in and a higher fertility rate, to boost the school system and other local job opportunities. The community is also in want of a restaurant or local cafe. More work opportunities would bring more citizens and that would ease the load per citizen, as now most people work multiple jobs. For new residents additional housing should be provided.

Need for Improved relations between residents and municipal government.

Open communication channels, regular town hall meetings, and participatory decision-making processes are recommended to ensure that residents feel heard and valued in the governance of their town.

Conclusions

We have seen how neglect of central governance has real impacts on the livelihood of Raufarhöfn's residents and identified a real need for a balance between autonomy and support. The residents are more than capable of managing the town themselves, but not without much needed funding and support. The relationship of hostility from these power structures needs to be reframed to improve collaboration. Part of this challenge is exploring the benefits that small rural communities bring to nations, and why constant growth and urbanisation might not always be the best strategy for development.

Rapidly decreasing workplaces lead to depopulation, which leads to merging of municipalities. This distance from the place of power has left the town feeling unheard and unseen. Living far from the administrative and economic hubs, residents often feel neglected and ignored. Policies impacting their lives are decided with minimal input from them, fostering a sense of invisibility and silence. This physical and political separation from decision-makers has led to a disconnect, making it difficult for the town to effectively voice its needs and concerns.

Projects like Fragile communities are just a band-aid in long standing issues. These kinds of projects do not offer long term solutions or even long term support to small towns. Even though the fragile communities projects idea is to help start new projects in the community they often require more support to keep going. Additionally these projects can put a lot of strain on the people in the community as they are left to sort through paperwork and such, while some might lack the skill to do so.

Our time spent in Raufarhöfn has been insightful in the context of smart shrinkage and community resilience. It seems to take a community that has stood on the precipice of collapse to teach us about what it takes to keep running. To make sure the kids can go to school and have an education, learn to swim, and play, to make sure the elderly and sick are cared for, to make sure the bills can be paid, or packages shipped, to make sure the school gets painted, or the pavements repaired, and how to begin slowly but surely to correct the course of the ship. Raufarhöfn's story shows that shrinking small communities are in danger if the population falls below the bare minimum to keep things going. But they have also shown us that a very small number of people are capable of doing exactly that.

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Attachments

Attachment 1. Table of the grants

Project name	Project description	Project results
Research station RIF	Grant will be used for the preparation of the Research station RIF.	RIF center is currently active and working.
Property blocks	Evaluation of the block at Aðalbraut 85-87. Needs a lot of repairs, so it's important to know the costs when presenting this option to potential investors.	We could not find the block on map or in town. This street only goes up to 69.
Updating signs and information	Grant money will be used for updating signs in the town with information about the history, place names and more. Putting up welcome signs at the entrances to the town and making sure that hiking trails on the Plain are marked and hiking trails will be marked.	There are a few signs with information about the history of town visible at different locations in town. The hiking trail was not marked and no signs visible. There is a welcome sign by the side of the road.
Raufarhöfn during the golden age	Money will be used to make twelve historical signs about the town. Each sign is to describe important events in each month. Additionally, video materials would be recorded in the lighthouse. These signs are intended to become part of a larger exhibit if successful.	No such signs that we saw. All signs in town were about history or nature, but none were dedicated to a specific month.
Garbage containers	The grant was applied for to make a new container area by the harbor that would replace the container area in town.	Big garbage collection site by the harbour

The guild hall (Gildaskálinn)	A grant was applied for to renovate a historic building, the Gildisskállan in Raufarhöfn	Building has been renovated
Filmmakers' Retreat	Grant money would go to a project to build marketing material and organization for a "retreat" here in Raufarhöfn for filmmakers.	No information about the retreat online, but according to interviews the retreat is tended towards artists and takes place in one of the renovated buildings every year.
Óskarsbraggi building	The grant money will be used to renovate a historic building Óskarsstöðin Raufarhöfn.	The building has been renovated.
Hnitbjargi's birthday celebration	The grant money would go towards preparation and planning of the 50th anniversary of Hnitbjargi	There were announcements about an event on the towns facebook as well as the municipalities website. This leads us to believe that the event took place.
Microservice application analysis	grant was applied for to analyze needs, design, draw and prepare the creation of an app. The applet is intended to offer consumers the opportunity to submit suggestions regarding companies they use for services	No information
Hopped around the Arctic Circle	The grant money will be put towards a project whose goal is to create a route to be uploaded on Wappu.	Could not find the route on the app. And the app itself looks like it hasn't been updated in a while and is only

		available on older versions of android.
Research station RIF, development of facilities	The goal of the project is to build a research facility for the basic processing of samples and data, which will be useful for the researchers who are conducting research on the Melrakka plain under the auspices of the RIF research station. The intention is to build the facility to Raufarhofn Primary School in consultation with the school administrators and the education committee of the Norðurþing. The facility will therefore also be useful for teachers and students	The school building houses a small lab for very basic processing of data and samples. The facilities are used by scientists and students from the school
Homeprocessed in Höfða	The end goal is to process meat products and sell them directly from the farm. The plan is to build a smokehouse. For now, the plan is to design a website where it would be possible to follow everything that goes on in the farm.	No information
Trail markings	Grant money will be used to mark and improve a walking path from Heimskautsgerðin on Melrakkaás to a path above the town of Raufarhöfn	There is a trail that leads above the town, but unfortunately it does not connect to the Arctic henge. The trail also has next to no markings, however it is still easy to follow.
Place name of Raufarhöfn	Grant money is to be used to put place names in Landmæringa Iceland's database	The name of the town has been in the database since 2014, but many names (like the pond names and others) have been registered in 2017. A

		few names were registered in 2019.
Norwegian folk art and dance	The grant money is to be used to introduce Norwegian folk music and dance to kids in school as well as the general public in the peninsula/municipality.	No information
Raufarhöfn.net	The grant money is to be used to organise and better document the photo gallery on Raufarhöfn.net.	The website seems to not function quite right. However, there is a gallery of pictures.
Raufarhöfn during the golden age	The goal is to create a museum about the town's history. Museum would include information about herrings and the creation of Raufarhöfn as well as models of the town. This project would create a cultural center in town. The project is supposed to renovate the old fish oil house.	No museum in town. However there is progress on the old fish oil tanks. There are plans to put in doors this summer and to connect electricity.
Homeprocessed in Höfða	Grant money is meant to be used to purchase processing and packaging machinery for a home smokery	No information
Promoting healthy lifestyle	Grant money is to be used to purchase equipment and do work on the building that houses the gym. Idea is that the gym is accessible to anyone.	There is a gym with a variety of equipment accessible in the sports center.
Art creation courses	Grant is to be used to make promotional material for art studio and art classes in town	In connection with the artists retreat there seems to be some activity in this regard, however I could not find any information about this online.