Nordic Council of Ministers

Value Chains and Resilient Coastal Communities in the Nordic Atlantic

Contents

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Preface

In 2020 the Kingdom of Denmark took over the Chairmanship of the Nordic Council of Ministers. Its Chairmanship programme was presented as a joint programme among the three units of the Danish Kingdom: Denmark, Greenland, and the Faroes. As part of the common Chairmanship programme, Greenlandic research activity was divided into three research projects with a focus on sustainable coastal communities in the Nordic Atlantic. One project is about sustainable resource management of coastal communities fishing resources (NorSustain) and another about safety at sea with a focus on educating school children (NorSafe). The project presented in this report is developed under the title "Sustainable Value Chains in Nordic Coastal Communities" (NorValue).

Led by Ilisimatusarfik, a network involving researchers from the University of Akureyri, the Icelandic Regional Development Institute, University of the Faroe Islands, Nordland Research Institute and Roskilde University has contributed to the development of the project. This is our first report on our joint efforts to investigate sustainable value chains in Nordic coastal communities. It is expected to be followed up by another report.

Our approach is based on fieldwork in eight Nordic coastal communities in Greenland, Iceland, the Faroes, and Norway respectively. Fieldwork has been a challenging undertaking during a pandemic, and under major travel restrictions, but something that has also been instructive at the same time. Many thanks to our informants, our assistants and those who otherwise have been helpful in the process. Thanks for comments and reviews of previous drafts of the manuscript. Finally, we would like to thank the Danish Presidency of the Nordic Council of Ministers, and the Greenlandic Government in particular, for the financial support to do this project.

Gestur Hovgaard, Ilisimatusarfik

August 2022

Executive Summary

Gestur Hovgaard & Jørgen Ole Bærenholdt.

As part of the Kingdom of Denmark's program for the Nordic Council of Ministers for 2020, the Greenlandic government initiated a project with the desire for updated knowledge about Nordic fishing and coastal communities, i.e., common experiences in relation to the importance of the sea's resources, new business opportunities (especially in relation to the attachment of young people) and the need for a green and sustainable transition. A Nordic interdisciplinary research group has had the task of investigating these issues, the first results of which are available with this report on "Value Chains and Resilient Coastal Communities in the Nordic Atlantic".

Products from the sea, in the form of fish and marine mammals, have historically contributed to the development of global value chains which, together with transport systems and mobile practices, have linked markets, locations and people to one other. Value chains have been central to the social interaction that has created Nordic coastal communities over time. The concept of value chain is well known in the economic and sociological literature but is applied more broadly in this project. This means that we do not merely see value chains as a vertical flow of products, technologies, and people. We also view value chains as the interaction between "vertical" structures of goods and their intersections with "horizontal" and "political" structures, i.e., both through the public sector and through civil society. Value chains can be local, regional and/or national in nature. In the interaction between the vertical and horizontal structures, both redistribution of values and social integration / disintegration occur. It is a complex interplay that is further complicated by the fact that local communities not only supply goods and services but are also places for demand and consumption. In today's local community, these local and global value chains "meet" in new ways, when, for example, local producers meet tourists. To capture this complexity, we link value chains and sustainability to the concept of resilience. Resilience has gained great importance in recent years as a concept that furthers our understanding of how local communities are able to deal with periods of local stress and crisis. In this respect, today's Nordic coastal communities are affected by two further factors that cannot be avoided. One is the global climate crisis which, in addition to new and more extreme weather conditions, also poses fundamental social questions about mobility and infrastructure. Development of infrastructure and mobile practices have been central to the development of the value chains, welfare and ways of life that have constituted the development of coastal communities. The second relationship is the COVID-19 crisis and what we can learn from a sudden collapse in value chains and mobility.

The report covers the period from the year 2000 onwards, with case studies in eight selected Nordic coastal communities, with a focus on the critical conditions and processes that have contributed to their transformation and a special look at changes in business, demography, and governance structures. We ask in more detail what specifically has changed during this period, which value chains have today

become particularly important for coastal community development, as well as how this affects their sustainability and resilience.

In the report, we study coastal communities whose population has ranged between approximately 1000 and 2000 inhabitants in the past 20 years. From Greenland, we have selected the towns of Nanortalik and Narsaq in the South Greenlandic municipality of Kujalleq; from Iceland, the towns of Ólafsfjörður and Siglufjörður in the North Icelandic municipality of Fjallabyggð; from the Faroes, the municipalities of Tvøroyri and Vágur on the island of Suðuroy; and from Norway, we have chosen the municipalities of Vega and Lurøy on the Helgeland coast in the southern part of Northern Norway.

Some background characteristics, like the co-Nordic history, fishing dependency, or their status as peripheral coastal communities, are important for analysing across otherwise very different regional and national contexts. However, these are local communities with special conditions, circumstances, and development features, and in that sense each chapter in the report constitutes its own valuable description of local development over the past two decades. The chapters are descriptive in the presentation of the individual cases, to bring out local variations in the interaction between value chains and local resilience. From there, the comparative aim of the report develops an understanding of similarities and differences in processes and practices around value chains and institutional set-up across locations. It has provided the opportunity to uncover new trends and important issues in coastal community development.

The report shows that, in recent decades, Nordic coastal communities have undergone major changes in their industrial structures. The cornerstone of many local communities' development – locally based fishing and fish factories – has lost the importance it once had; indeed, in several places these activities have more or less disappeared. Although there are still what can be termed one-industry locations, there is a clear trend towards the coastal community's production life becoming increasingly diversified. In the current industrial transition, it is still predominantly value chains rooted in natural resources that dominate the local economies, particularly towards aquaculture. Tourism represents a further diversification in all our cases, and we see examples of development towards advanced production within the biotechnology field. In addition, there is a continued anchoring and development in household-based activities (local value chains), both as a continuation of traditional flexible households and as an element in tourism and small-scale production. Across the cases, place- and person-specific factors, and their links to locally oriented institutions are of great importance for the development of business life and resilience. If there is weak infrastructure and weak institutional arrangements, values - economic and social capital - are drained away from the local community.

In the conventional sense, most of our cases can be considered economic successes, with a high degree of resilience, but also cases with challenges. One challenge lies in the fact that when business ownership is located outside the local community, local dependence on global value chains increases, and the ability to absorb periods of crisis lessens. There is a complementary need for increased understanding of interactions among different industries, and how these relations might contribute to local resilience. Here are also challenges in finding solutions involving climate and

sustainability, e.g., the fact that many coastal industries depend heavily on the consumption of fossil energy.

Our results may also call into question some of the conventional truths about coastal community development. The coastal community populations are clearly declining, with increased ageing and a skewed gender balance. Our cases show that these declines occur even where there is economic success. You might say that the social structure of the coastal community itself is to some extent 'de-localized'. The mobility practices of the younger generation to move away for education, and then possibly not return, is well known. Many coastal communities are instead attracting people who have not been brought up locally. There are indications, however, that younger as well as older generations prefer to maintain ties with a coastal community and become a kind of non-permanent local, where it can be combined with work, leisure, entrepreneurship, or other vital interests. When houses are empty locally, it can of course be an expression of a problem, but it can also be an expression of the existence of economic and social resources that can contribute to new forms of local resilience. The question is whether the decline in population numbers and the trend to a non-permanent local settlement pattern can contribute to local resilience and sustainability.

Chapter 3: Structural changes and how they are perceived in two Icelandic towns

Grétar Þór Eyþórsson & Sigríður K. Þorgrímsdóttir

3.1 Introduction

In this chapter, we want to investigate the social and economic development in the two towns of Siglufjörður and Ólafsfjörður in north Iceland, primarily after the year 2000. We will look at how these two communities, which faced great changes when they were amalgamated as the municipality of Fjallabyggð in 2006, took different economic development trajectories. We will explore how the people of the two fishing towns managed to adapt to major changes initiated by the state authorities and later by private initiative through large investments in tourism and biotechnology. These changes occurred in the context of a road tunnel being constructed between the two towns in in 2010.

The key question is: Has the community created by the two towns demonstrated resilience in transforming from traditional Icelandic fishing towns into a community that is more characterised by tourism and the knowledge industry? Resilience is defined as "the capacity to cope with change and continue to develop" (Giacometti and Teräs, 2019, p. 11). A further definition talks about resilience as the ability of a local or regional community to recover from natural disasters, or to anticipate global trends that may present challenges to local industries, jobs and communities. These risks may include the automation and decarbonisation of the energy sector or, from a local perspective, trends such as an ageing population or demographic decline (Giacometti & Teräs, 2019). Some of these circumstances existed in Siglufjörður and Ólafsfjörður prior to 2000, even though the communities did not suffer from major problems. Saarinen and Gill (2019) point out that the specific contribution of the resilience idea is to focus attention on a systems or communities' capacity to absorb disturbance through reorganisation. Dredge (2019, p. 53) emphasises "...decoding the sustainability challenge into smaller adaptive actions that allow socio-ecological systems to rebalance and cope

organisation, learning, and adaptation. It sees socio-ecological-systems as having many possible functional states, and subject to natural variability, change, and unpredictability (Holling, 1996). For socio-ecological resilience, thresholds are paramount and, rather than being focused only on bounce-back, are concerned with increasing the likelihood that a socio-ecological-system does not breach thresholds that move it into an undesirable regime, especially one from which it may not be able to recover (Walker & Salt, 2006). In our study we shall focus on how these communities managed to adapt to the changes they went through with the decline of traditional fisheries and growth of tourism and innovation in biotechnology.

We use statistical information on the towns and the municipality from Hagstofa Íslands (Iceland Statistics) and Byggðastofnun (Institute for Regional Development). But the main empirical data we use to answer our questions is from an internet-survey conducted among approximately 300 people in February 2021. The focus was on how the people of the two towns perceived these developments.

3.1.1 Earlier research on the cases

There is a considerable amount of research on the socioeconomics of the towns of Siglufjörður and Ólafsfjörður and the municipality of Fjallabyggð. A general report on the social and economic life in Eyjafjörður region was published in 2002 (Jóhannesson, 2002). There are diverse data on both towns before the amalgamation in 2006. In particular, a socio-economic impact report was done on the planned road tunnel by Jóhannesson, Eythórsson and Ólafsson (2001).

A helpful book of the impact of the Héðinsfjörður road-tunnel was published in 2021 (Bjarnason & Stefánsson, 2010). This book includes chapters in which the tunnel is related to the municipal amalgamation (Eythórsson, 2010), traffic patterns (Heiðarsson et al., 2010) and tourism (Bjarnason & Huijbens, 2015).

In 2010 – 2011 a Nordic project, *Vestnorden Foresight 2030,* conducted a case study in Fjallabyggð and Borgarbyggð in Iceland, as well as communities in Greenland and the Faroes. In this project the focus was on the foresight of people in these communities. In the Icelandic cases, data was collected from focus groups (Eythórsson & Karlsson, 2011; Gløersen, 2012).

These studies showed both the expected and experienced importance of the road tunnel between the towns. The Nordic study demonstrated great expectations and hopes among people for the tunnel project and the impact of

3.2 A socio-economic overview of the two fishing towns.

Icelanders have depended on their fisheries through the ages.[7] At first, fishing mostly met household needs, as the households were in the countryside, and primarily depended on subsistence agriculture, as well as the sale of wool and fish to Danish merchants. Villages were few and were mostly centred on Danish traders who had a monopoly on retail business in Iceland. Nevertheless, fishing was always important, and farmers were fishermen as well. Siglufjörður and Ólafsfjörður have been fishing towns. The natural surroundings are somewhat similar, with high, steep mountains which made travel by land difficult. The mountains fostered social isolation, even later in history when roads were built, and people stopped travelling by sea. Fishing and fish processing were the main forces creating villages, and later towns, in these places. Still, as will be discussed below, development in these two towns was somewhat different.

The natural surroundings with high, steep mountains have made travelling and infrastructure difficult in Siglufjörður and Ólafsfjörður. Here avalanche protection above Siglufjörður.

Siglufjörður received town status in 1918, but its history goes back further. It had been a fishing place for a long time, fishing shark, among other species, in the early days. There was no Danish merchant located in Siglufjörður during the monopoly period, which ended in 1788. Siglufjörður, with 160 inhabitants, received permission for a trading place in 1818. The first traders, until 1875, were Danish (Siglfirðingablaðið, 1998).

Siglufjörður is surrounded by high and steep mountains, with almost no lowlands. Because of its surroundings, Siglufjörður was isolated, if you wanted to go by land. Since it had a good natural harbour, it was easier to get there by sea. Herring fishing and processing, led by Norwegians, began before 1900. However, when we speak of *síldarárin*, the herring-period, we are referring to the late 1940s to the early 1960s. During this period, the population was growing quickly; in 1950, the town was the fifth largest in Iceland, with 3,100 inhabitants. There were numerous migrant workers of both sexes in the town, with a population which reached 10 thousand people at its peak. Herring was as much as 20% of all Icelandic fish exports at one point during *síldarárin*. Herring-processing, salting, and smelting led to a boom in building construction. With so many people in town, expansion in services, culture, and entertainment flourished. Stories about this period are still a part of local culture; every year, there is a well-attended festival in Siglufjörður in memory of the herring period.

In the sixties the herring disappeared, and depopulation began. Capelin fishing and smelting (loðna) were substituted, using the large herring buildings for processing. Fishing with trawlers started in Siglufjörður around 1970, which coincided with the fishing and processing of prawns. But population decline continued (Figure 3.1). No population growth occurred until 2006.

Ólafsfjörður received town status in 1945, but the village had been there since the late 1800s. The place was also based on fisheries, but with no natural harbour, so conditions were poorer than in Siglufjörður. The surroundings are also different, since there is some lowland around Ólafsfjörður town which was used for farming. There, as in other parts in Iceland, farmers traditionally depended on fisheries along with agriculture. They fished from both Siglufjörður and Eyjafjörður. Around 1900 the first shipowner settled in Ólafsfjörður and built up his fishing company. Fishing became the main industry in Ólafsfjörður. However, fishing was limited by the lack of a decent harbour. The Ólafsfjörður boats had to sail from elsewhere until the harbour in Ólafsfjörður was built up in the decade after 1943 (Olgeirsson, 1991).

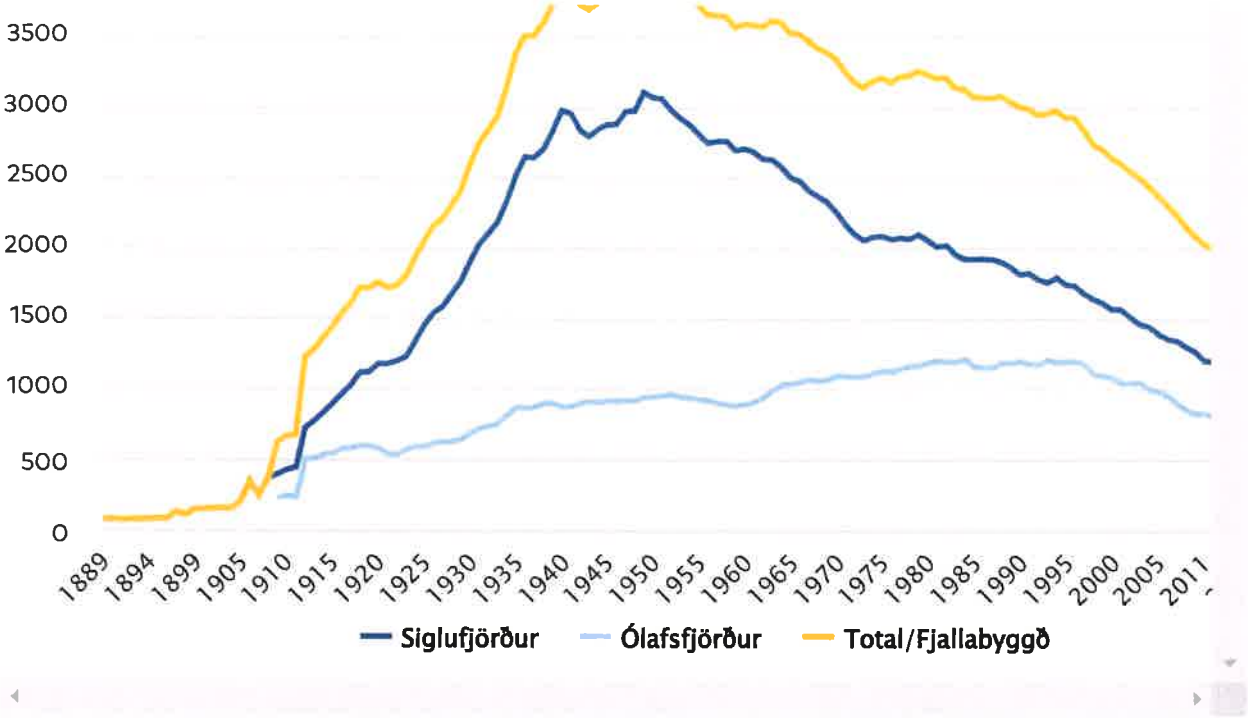

Figure 3.1: Population in Siglufjörður, Ólafsfjörður and (later) Fjallabyggð 1908-2021.

Source: Statistics Iceland (hagstofa.is).

Figure 3.1 clearly shows the impact of the herring-period in Siglufjörður, with its peak around 1950. The line for Ólafsfjörður is flat by comparison.

The year 1945 was, in many ways, a breaking point in the lives of the people of Ólafsfjörður. This was due to modernization in fish processing, with a fish processing factory with new technology, the new harbour, and the mechanisation of agriculture, which was still a considerable part of Ólafsfjörður's economic life (Olgeirsson 1991).

3.2.1 Changes in transportation

Both towns, surrounded by high and steep mountains, were isolated in the past. The towns had difficulty establishing good road connections to neighbouring communities. Before 1950 there were few roads in Iceland; the national 'circle road' for the country was by sea.

Map 3.1: Tröllaskagi peninsula and surroundings.

Source: Jóhannesson et al. 2001.

When the main 'road' was by sea, Siglufjörður was not more isolated than other towns in Iceland, perhaps less so because of the good harbour. When the ships/ferrys for passengers stopped sailing late in the sixties, social isolation began. Isolation occurred even though there was a road (Siglufjarðarskarð) built in 1946 because the road over the mountains was steep and rough, and open for just a few months a year. Another mountain road (Lágheiði) was built the year after, connecting Ólafsfjörður westwards. The first road tunnel to Siglufjörður, Strákagöng, an 800-metre-long tunnel, improved road connections in 1967 even though the road to Siglufjörður continued to be unstable and dangerous. In 1960 a rough road to Ólafsfjarðarmúli was opened, which made it possible to drive towards the southeast and to Akureyri, the biggest town and the service centre for north Iceland. This road was periodically closed due to frequent mud and snow slides. In 1991, the 3,4-km-long *Múlagöng* road tunnel to Ólafsfjarðarmúli southwards to Dalvík and Akureyri was opened. This new tunnel improved the situation for Ólafsfjörður, as residents were now able to

which was created from the amalgamation of Siglufjörður and Ólafsfjörður.

3.2.2 Fjallabyggð: the 2006 amalgamation and the 2010 road tunnel

Fjallabyggð has existed as a municipality since the amalgamation of Siglufjörður and Ólafsfjörður in 2006 (fjallabyggd.is). The precondition for the merger of the two fishing towns, which had always been isolated from one other, was the construction of the 11 km long Héðinsfjarðargöng road tunnel through the mountains between them. The *Héðinsfjarðargöng* road tunnel brought the towns much closer to each other, and the tunnel ended Siglufjörður's isolation. Since the autumn of 2010, the distance from Siglufjörður to Akureyri is only 77 kilometres, compared with as much as 192 kilometres before the tunnel. This is particularly important because Akureyri is the service centre of north Iceland. Even though the tunnel was not opened for traffic until October 2010, the amalgamation of the two municipalities occurred in 2006. The idea was to use the time to prepare for what was to come some years later (Eythórsson, 2010). The tunnel reduced the distance between Ólafsfjörður and Siglufjörður by 47 km for the summer, and by 217 km year around (Heiðarsson et al., 2010).

3.2.3 Demography

If we begin by looking at the population changes, we see a steep depopulation in both towns from 1981. However, the population has been stable since 2011, as shown in Figure 3.2. The depopulation in both towns stops at the same time as the tunnel opens and population has been stable since then.

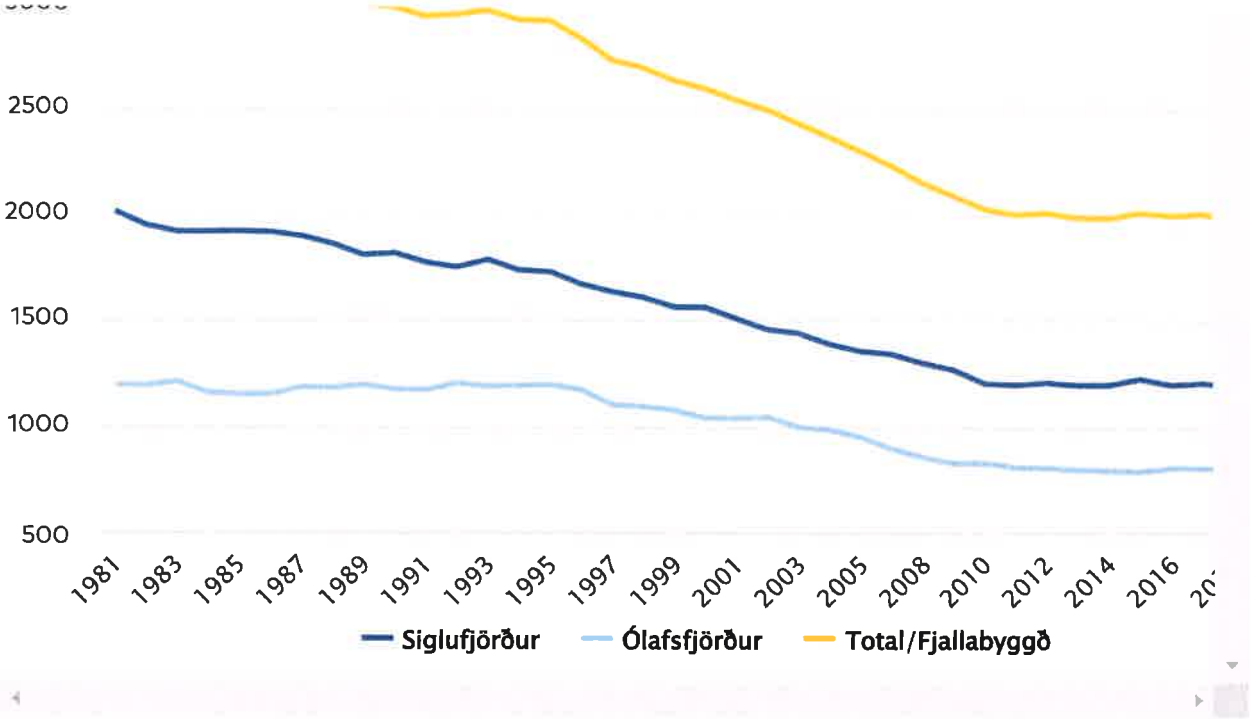

Figure 3.2: Population development in Fjallabyggð, Siglufjörður and Ólafsfjörður 1981-2020.

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

For the 1981-2020 period, the reduction in population is 37% in Fjallabyggð as a whole, with significantly more depopulation in Siglufjörður than in Ólafsfjörður (table 3.1).

	1981	2020	Number	Rate
Siglufjörður	2012	1185	-827	41,1%
Ólafsfjörður	1191	821	-370	31,1%
Total	3203	2006	-1197	37,4%

Table 3.1: Depopulation in Siglufjörður and Ólafsfjörður 1981-2020

Source: Statistics Iceland (hagstofa.is)

Population growth for the country for that same period was 58,8%, and for north-east Iceland 19,1%. The population decline for the two towns in our study, by comparison, is quite marked. Even by comparison with nearby towns such as

In Fjallabyggð, *birth surplus* has not been positive in the twenty years since the turn of the century.

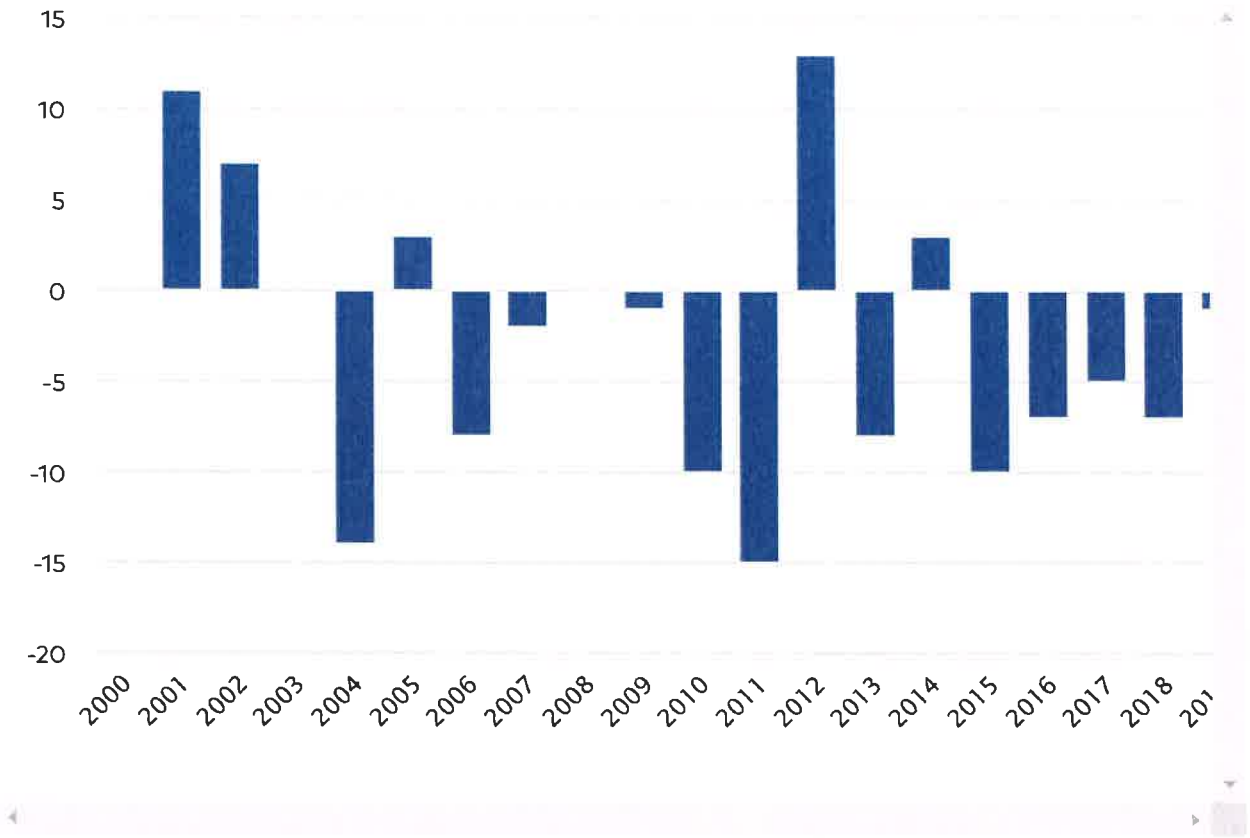

Figure 3.3: Birth surplus in Fjallabyggð 2000-2020.

Source: Statistics Iceland (hagstofa.is).

When we look at migration statistics (Figure 3.4), we see that domestic migration changed significantly with the Héðinsfjörður tunnel and its aftermath. In every year before 2009 the balance for the area enclosed by Fjallabyggð is negative, but we see a turn at that point where most years become positive.

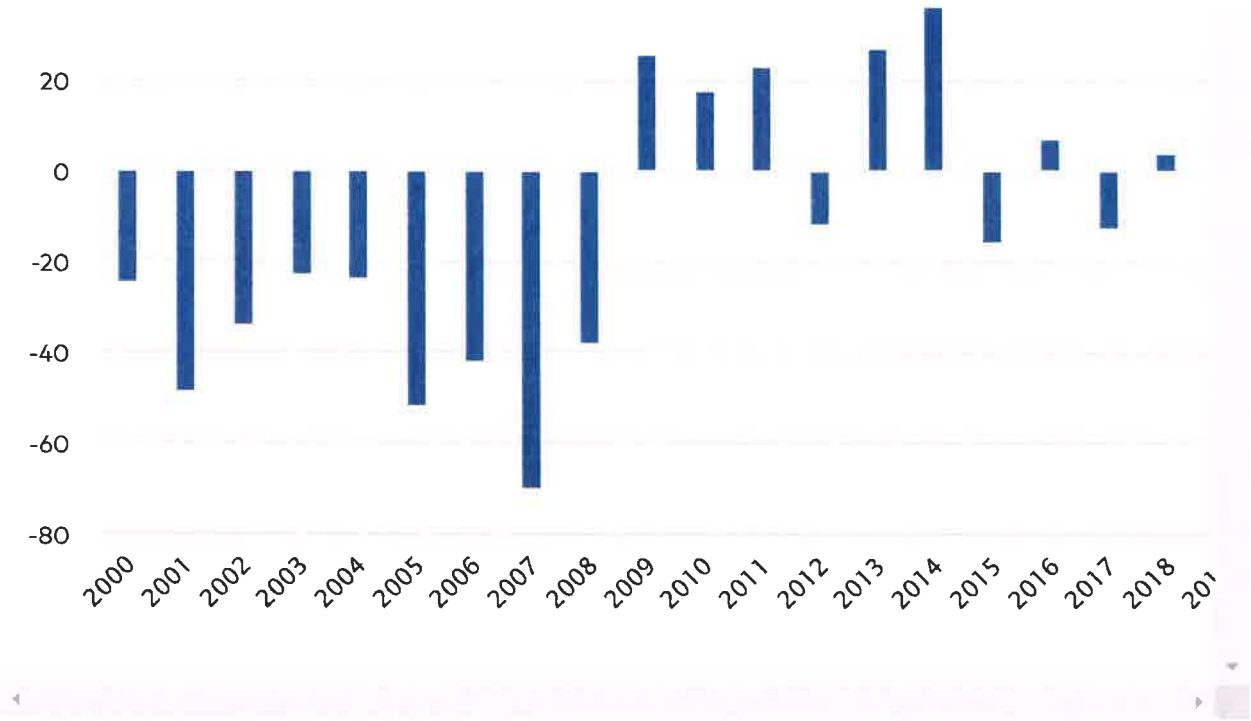

Figure 3.4: Net domestic migration in Fjallabyggð 2000-2020.

Source: Statistics Iceland (hagstofa.is).

Looking at international migration in Figure 3.6, we do not see equivalent changes before and after the tunnel. Still, in-migration is greater than out-migration after 2010. The larger numbers between 2006 and 2009 are due to foreign workers who came in with the Czech contractor firm Metrostav a.s. to build the tunnel, but moved out after the tunnel's completion.

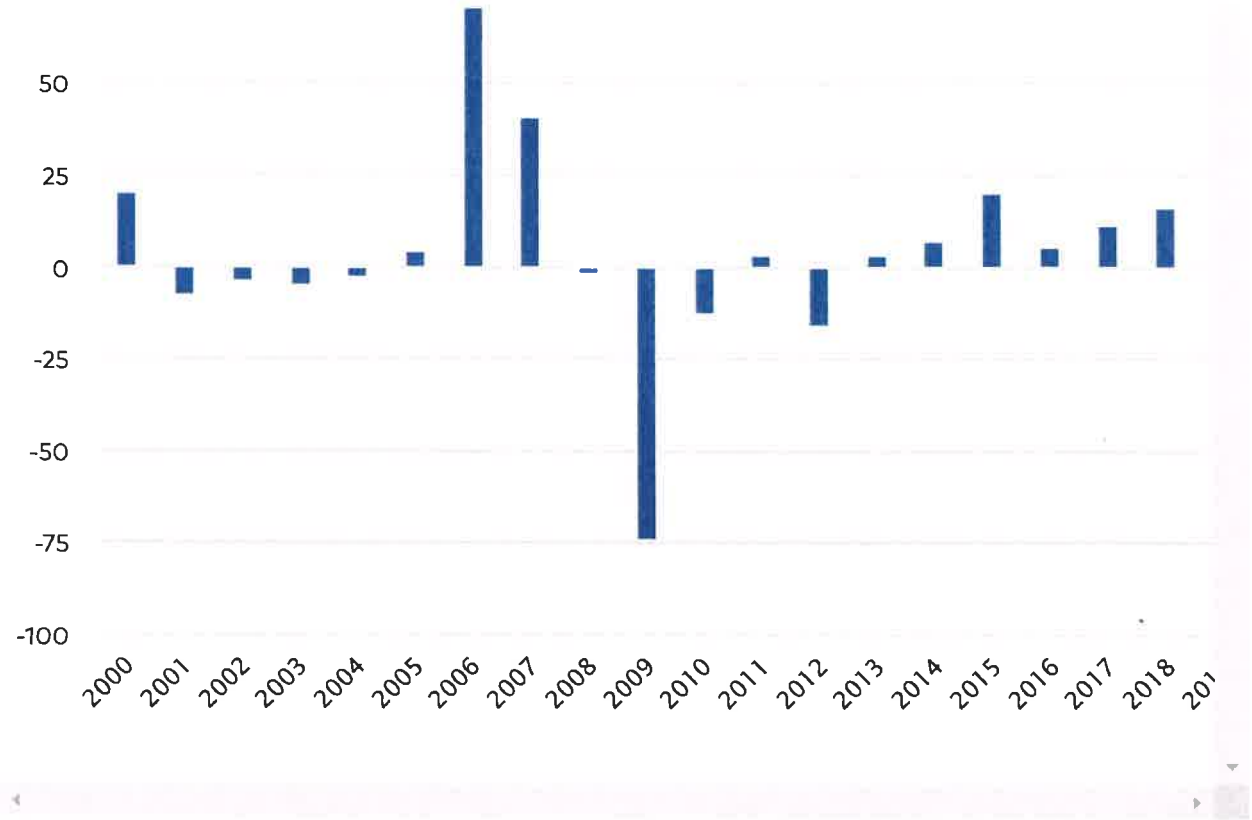

Figure 3.5: Net international migration in Fjallabyggð 2000-2020.

Source: Statistics Iceland (hagstofa.is).

3.2.4 Gender and age structure

As Figure 3.6 shows, there have been more men than women in Siglufjörður and Ólafsfjörður. After 2010 this changed, and there has been a better gender balance for a decade. Several explanations can be suggested. Many of the new jobs in the service, tourism and education sectors in the new municipality of Fjallabyggð were attractive to women. The tunnel and the newly amalgamated municipality may also have contributed to a more family friendly community than before.

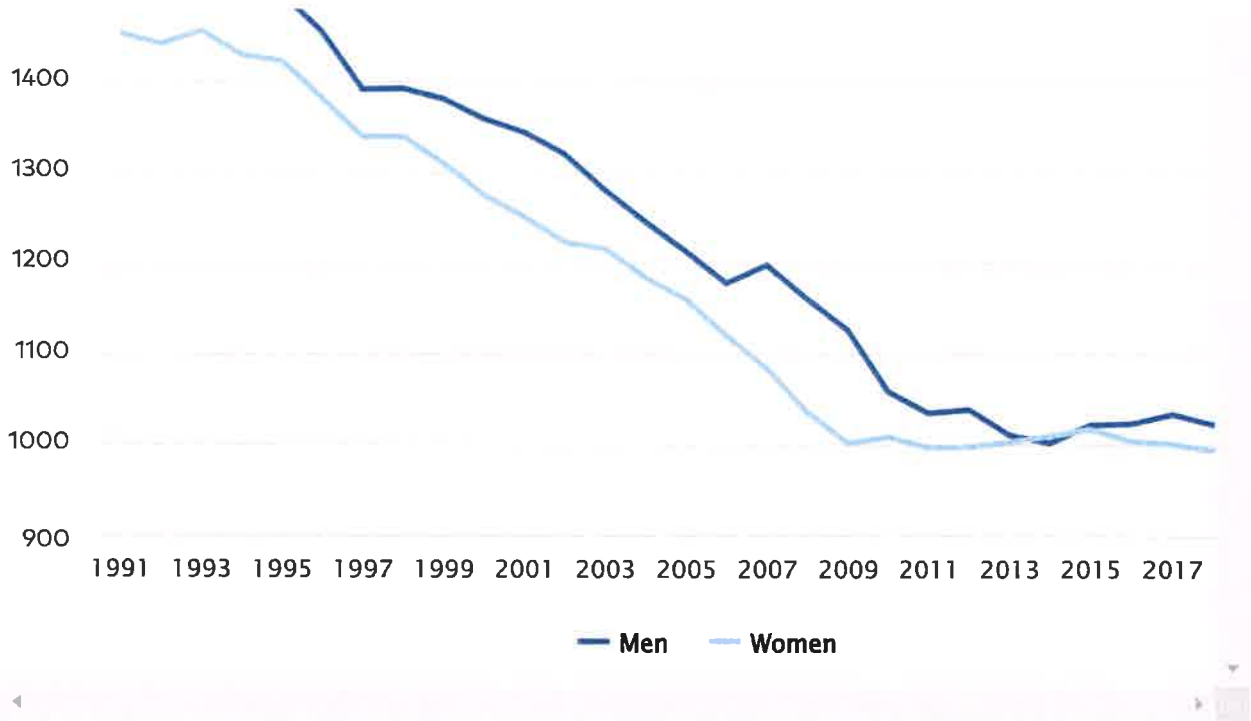

Figure 3.6: Number of men and women in Fjallabyggð municipality 1991-2020

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

As shown in Figure 3.7, the population in Fjallabyggð is ageing. The share of people 60 years and older in the population has almost doubled, from 17% to over 30%. At the same time the share of young people (0-19) has declined from around 33% in 1991 to 21% today.

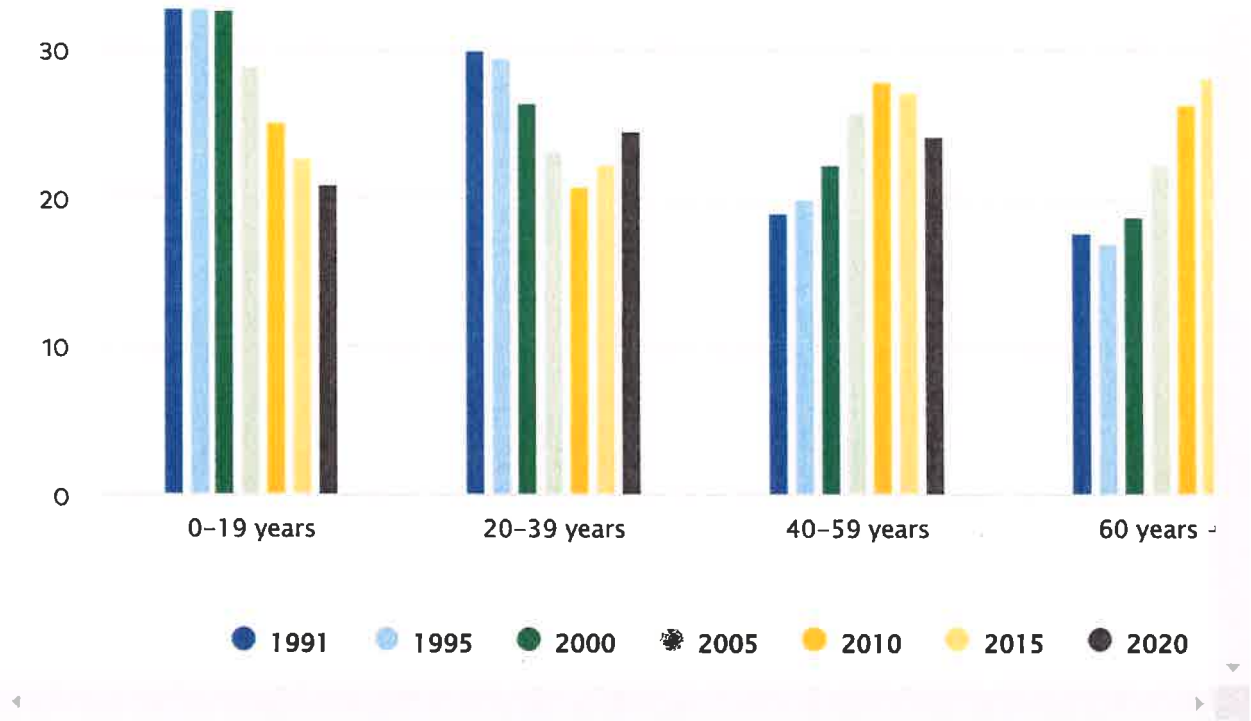

Figure 3.7: People in Fjallabyggð by age 1991 – 2020.

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

Looking at the population trees for both towns we see that from the year 2000 until today there is a proportional decrease in the youngest groups (0-19), while we see proportional increases in the older groups (60+). This trend is quite similar in both Siglufjörður and Ólafsfjörður, as well as the country as a whole.

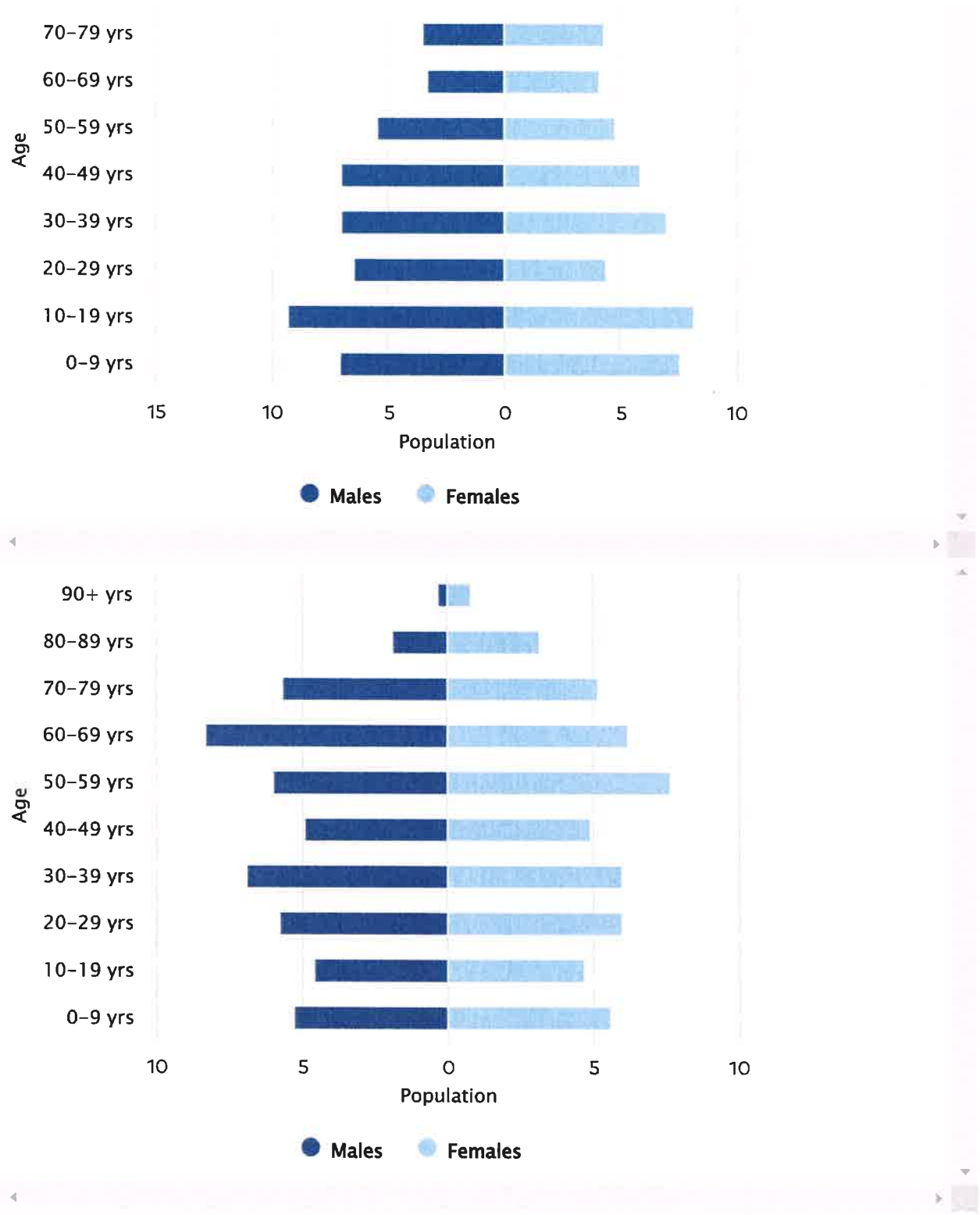

Figure 3.8a: The population tree for Siglufjörður 2000.

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

Figure 3.8b: The population tree for Siglufjörður 2020.

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

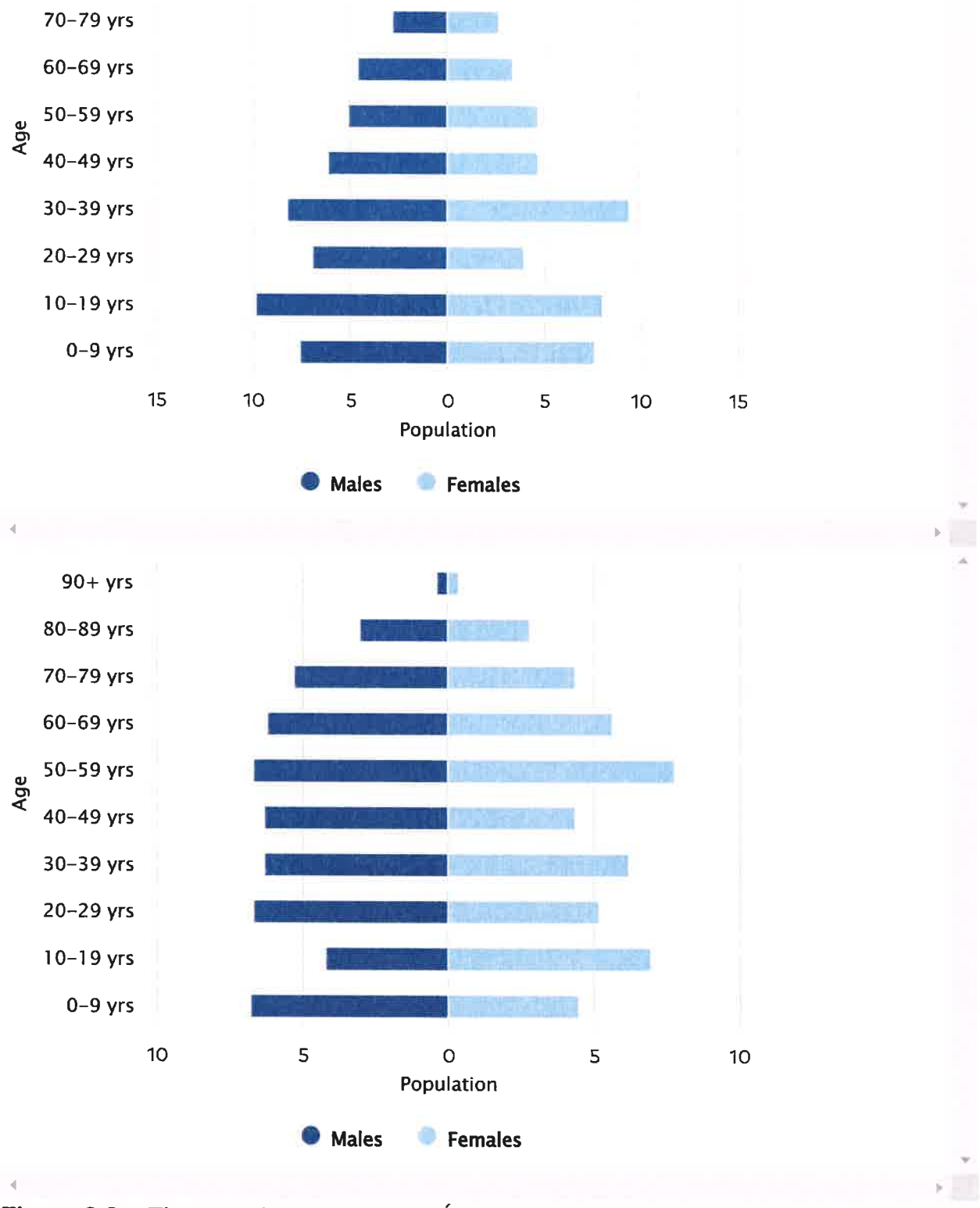

Figure 3.9a: The population tree for Ólafsfjörður 2000.

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

Figure 3.9b: The population tree for Ólafsfjörður 2020.

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

After the amalgamation of the two municipalities in 2006, and especially the opening of the tunnel in 2010, the economies of the two towns began to develop with different trajectories. The new connection between Siglufjörður and Ólafsfjörður, and onwards to Akureyri, not only diminished Siglufjörður's isolation but also opened access to Akureyri, by far the most populated town in north Iceland. This meant people from Siglufjörður had more numerous and diverse services, now only one hour away by automobile.

A study from 2010, right before the opening of the Héðinsfjarðargöng road tunnel, shows that 60% of the respondents in Siglufjörður were predicting increased visits to obtain services in Akureyri (Heiðarsson et al., 2010, p. 27). A study from 2018 shows that 28% of people in Fjallabyggð seek services, like shopping, culture, hobbies, education, health, public services and banking, in Akureyri, and 12% seek the same services from Reykjavik. Thirty-two percent used local services in Siglufjörður and 20% in Ólafsfjörður. The services people were especially seeking outside their hometowns were education, cultural events, inexpensive grocery stores, as well as pharmacies and bakeries (Þórðardóttir, 2018).

The most dramatic change in Siglufjörður after the road tunnel opened was probably that people were more willing to visit the town because of improved access. At the same time, tourism in Siglufjörður expanded quite quickly. More hotels and restaurants opened, and visits increased. The Herring Museum, which opened in 1994, became very popular (see sildin.is). Tourism was estimated to have doubled between 2010 and 2015 (Bjarnason & Huijbens, 2015). An important Figure in the new investments was Róbert Guðfinnsson, a former fish-quota owner who made substantial investments in hotels, restaurants, and biotechnology. As a consequence, the value chain has become quite different.

The fishing community of Siglufjörður is today a city where culture, tourism and biotechnology have gained great importance.

Photo: Grétar Þór Eyþórsson.

Ólafsfjörður was not so fortunate. In many ways, the town became a "drive through" on the way between Siglufjörður and Akureyri. Nevertheless, the location of Tröllaskagi Upper-Secondary School, which services both towns, was created in Ólafsfjörður in 2010 (see mtr.is). With almost 500 students,[8] the school has increased economic diversity in the town. Still, Ólafsfjörður is primarily a fishing town, while things have changed more dramatically in Siglufjörður.

Still primarily a fishing community, education and tourism are of great importance to today's Ólafsfjörður.

Photo: Grétar Þór Eyþórsson.

Data on the municipality's economic structure, measured by taxable wages and salaries classified by economic activity is shown in Figure 3.10. Here we see very clearly the great transformation of Fjallabyggð as a whole, from a fishing town to a more diverse service- and knowledge-based community with rapidly growing tourism. The changes are clearest between 2008 and 2018, a period which runs from the point just before the opening of the tunnel to the point just before the COVID-19 pandemic. The 2020 data captures the impact of the COVID-19 pandemic.

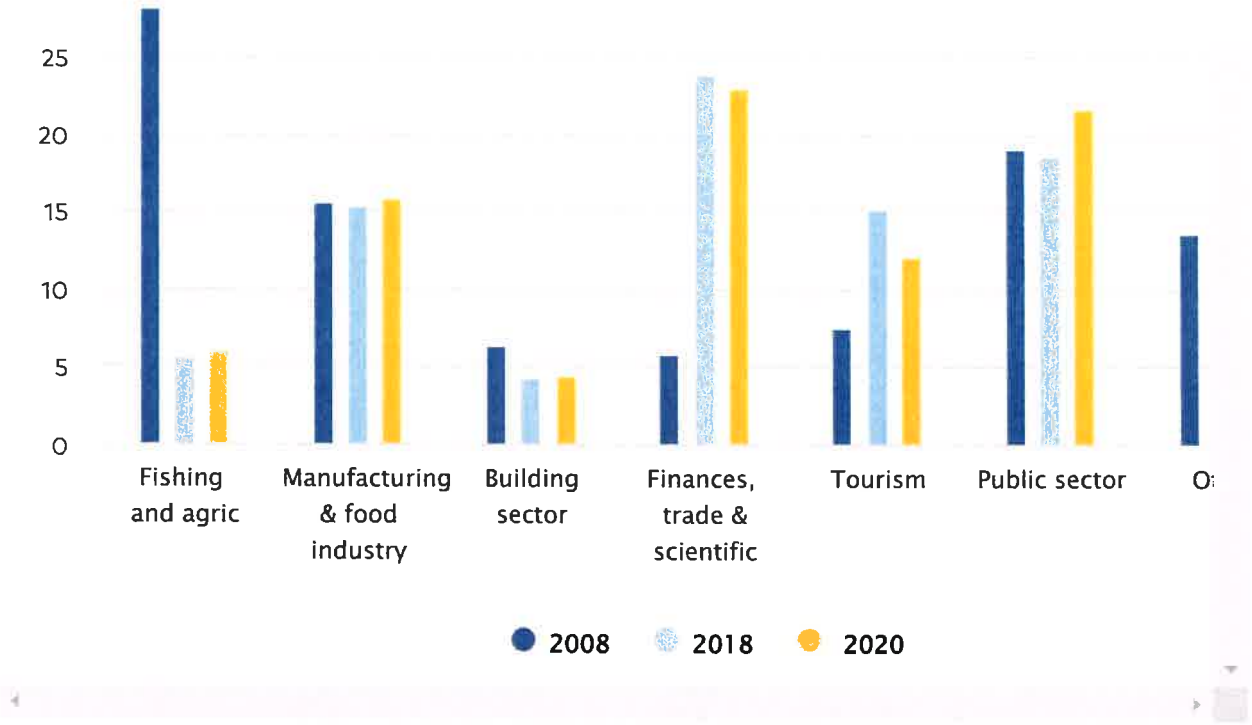

Figure 3.10: Economic structure in Fjallabyggð 2008-2020. (Taxable wages in millions ISK).

Source: Icelandic Regional Development Institute (byggdastofnun.is) & Statistics Iceland (hagstofa.is).

3.3.1 Fisheries

Siglufjörður, a town of about 1300 people, and Ólafsfjörður, a town of about 1100 people, were both quite traditional fishing communities, prior to amalgamation. Both had experienced job reductions in the fishery sector before amalgamation, mostly due to increased fish processing aboard trawlers, as well as the fishing quota system, which permitted sales and transfers of quota among municipalities and regions (Bjarnason & Stefánsson, 2010; Eythórsson, 2010).

Fisheries remain important in many communities in northeast Iceland, even though the number of jobs in the sector is declining. Allocated quota is much higher in Ólafsfjörður than in Siglufjörður (see Figure 3.11). Fish landings, on the other hand, are much higher in Siglufjörður (see Figure 3.12), as Siglufjörður has a large port for offloading. Still, most of the catch is transported by trucks to fishing plants in other parts of Iceland, often in southwest Iceland.

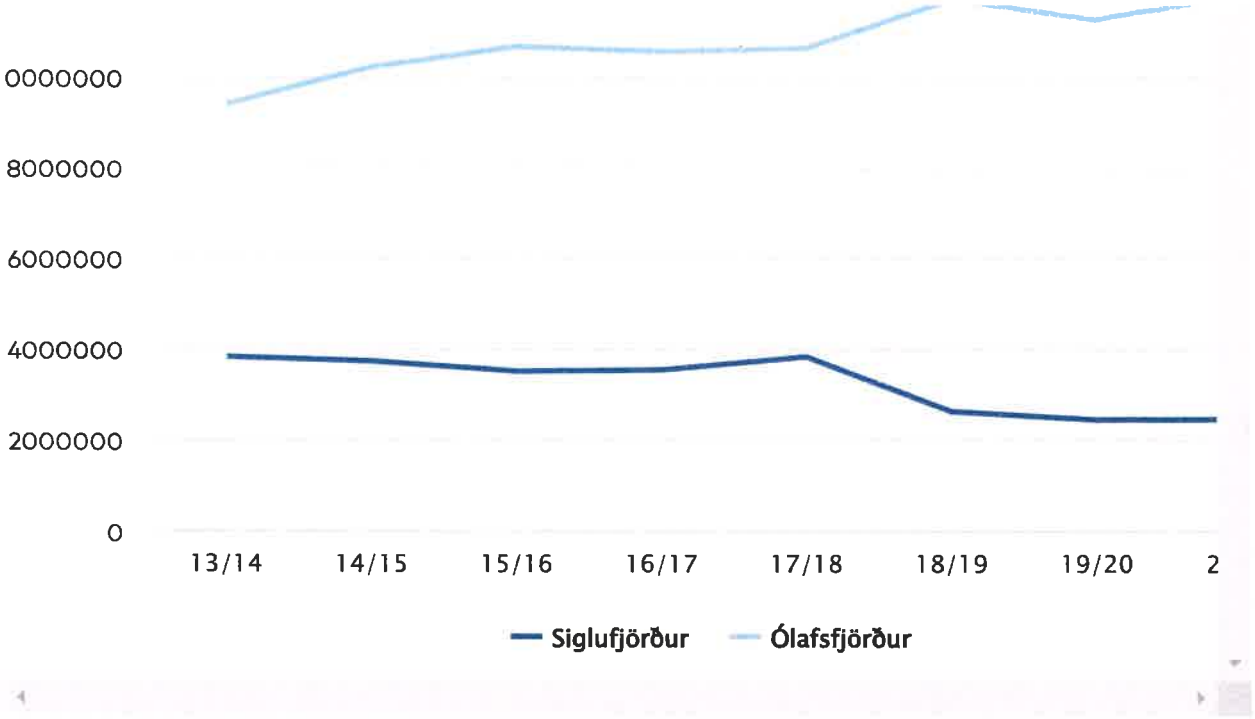

Figure 3.11: Allocated cod quota in kilos in Siglufjörður and Ólafsfjörður 2013/2014 to 2019 to 2020.

Source: Icelandic Directorate of Fisheries (fiskistofa.is).

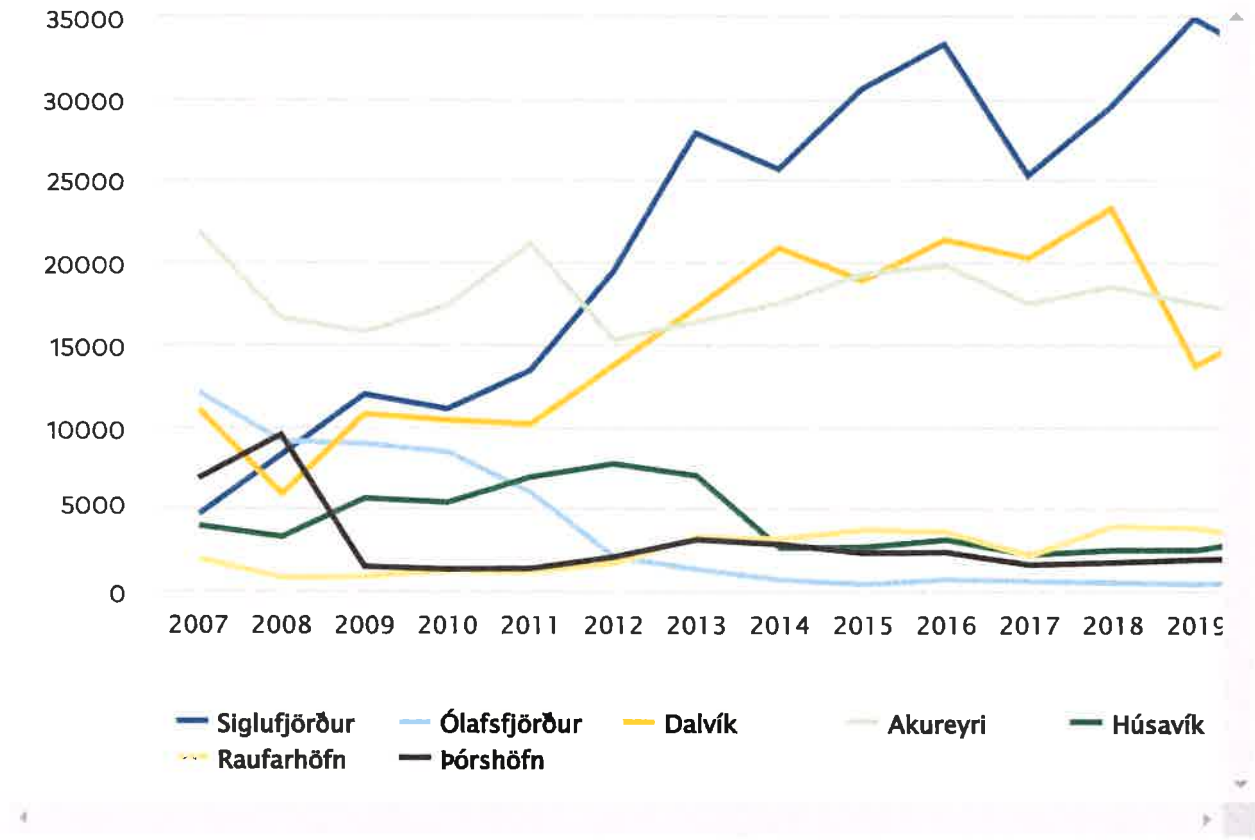

Figure 3.12: Catches in species other than pelagics – biggest landing ports in Northeast Iceland (2007-2018).

The total income from fishing in northeast Iceland shrank by 30% between the years 2008 and 2017, as did jobs in the fishing industry (Einarsdóttir et al. 2019). Still, the fishing industry remains important in the northeast region. Additionally, the average salaries in all sectors in Fjallabyggð were 5,5 million ISK in 2018, while the country average was around 6 million ISK. That leaves Fjallabyggð 10% under the country average in general (www.hagstofa.is).

3.3.2 Tourism

Tourism in Fjallabyggð increased dramatically in the years after the opening of the road tunnel in 2010. As mentioned above, a wealthy individual returned to Siglufjörður with funds gained from the sale of fish quotas, and began to invest, along with others, in hotels, restaurants and biotechnology. This individual is estimated to have invested 5 to 6 billion ISK, primarily in the Siglufjörður economy (the equivalent of 33 to 40 million Euros). Ólafsfjörður was far less affected by this private investment.

A study of the number of foreign tourists in Siglufjörður from 2004 to 2018 demonstrates major growth in the number of tourists over this period, especially from May to September (Guðmundsson, 2019). For example, the number of tourists in July grew from about 4.000 to 23.000 over the period from 2004 to 2018.

Generally, foreign tourism in Iceland expanded dramatically in the twenty-first century, by 655% between 2004 and 2018.[9] At the same time, expansion in Fjallabyggð was more than 750% (Guðmundsson, 2019, p. 18). The tunnel, and investments in tourism in Siglufjörður, are the primary factors behind the local expansion.

3.3.3 Biotechnology

The biotechnology company Genis was established by Róbert Guðfinnsson in 2005. The company, operating in Siglufjörður, is a limited liability company and produces therapeutic chitin derivatives (chitin-based products derived from the North Atlantic shrimp exoskeleton). As described on its website, the company is "pioneering the development of therapeutic chitin derivatives ... by providing effective therapeutic solutions across a number of inflammatory diseases ... also developing a number of orthobiologic applications that are based on the regenerative tissue and osteogenic activities and anti-bacterial properties of chitin derivatives."[10] Today, 17 people work at Genis, many of them young,

Benecta is a part of Genis. Benecta's natural food supplements and medicines are aimed at fighting ageing problems, like stiffness, lethargy and pain. The products are made from chemicals extracted from shrimp exoskeletons. Benecta Osis helps with menstrual cramps and endometriosis.

3.4 Changing Viewpoints in Siglufjörður and Ólafsfjörður

Due to the COVID-19 situation in Iceland since March 2020, we decided to collect data from the people of Siglufjörður and Ólafsfjörður through a combined mail and telephone survey. Until the spring of 2021, the pandemic did not allow any interviewing visits to the two towns. Focus groups meetings have also been impossible. The survey was conducted in February 2021 by the University of Akureyri Research Centre (RHA). A total random sample of 600 was drawn from both towns in order to get data to compare views between the towns. Out of the 600 people selected, a total of 298 participated (49,7%). The survey primarily focused on the situation in the period between 2000–2005 and today.

3.4.1 The regulatory impact: Inputs from the state affecting development

The Icelandic state has done three significant things to encourage development in the communities: a) build the road tunnel between the towns, which opened in 2010; b) facilitate the amalgamation of the municipalities of Ólafsfjörður and Siglufjörður in 2006; and c) create the state-run upper-secondary school in Ólafsfjörður in 2010. The tunnel can be seen as a prerequisite to the other measures, since the amalgamation could not have taken place without it, and the isolation of Siglufjörður couldn't have been reduced without it. The results from the survey show us the importance of all this in the eyes of the people, with little difference apparent between the towns.

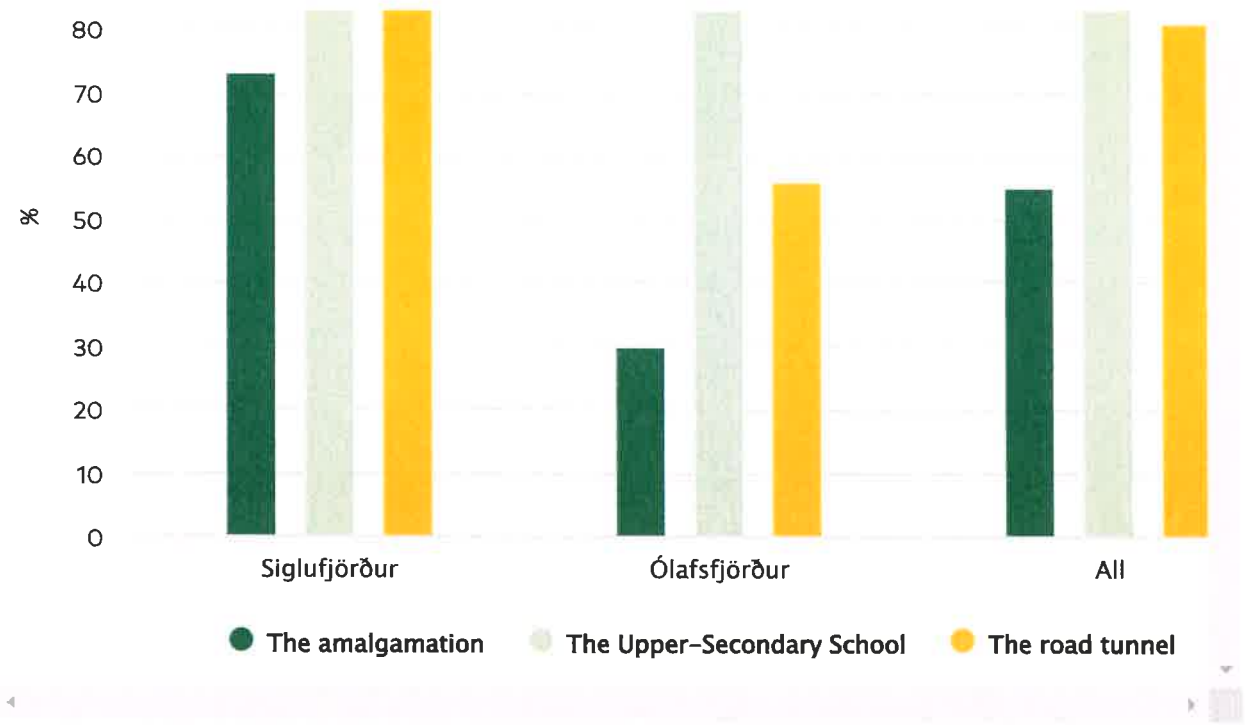

Figure 3.13: "The emergence of the amalgamation/school/tunnel has had positive effects in my town". Percent who totally agreed or agreed.

The upper-secondary school is seen as a positive input to the communities. The tunnel is also viewed positively, but less so in Ólafsfjörður. The tunnel, which diminished the geographic isolation of Siglufjörður, and was more vital for development there. This we see in Figure 3.14. The amalgamation of the two municipalities is generally seen as a positive input (55%), but the people of Ólafsfjörður are much less satisfied with this step (30%). The survey indicates that the people of Ólafsfjörður feel that specific services in their town have declined in their part of the municipality. How municipal services worsened in Ólafsfjörður but not in Siglufjörður, must be examined further.

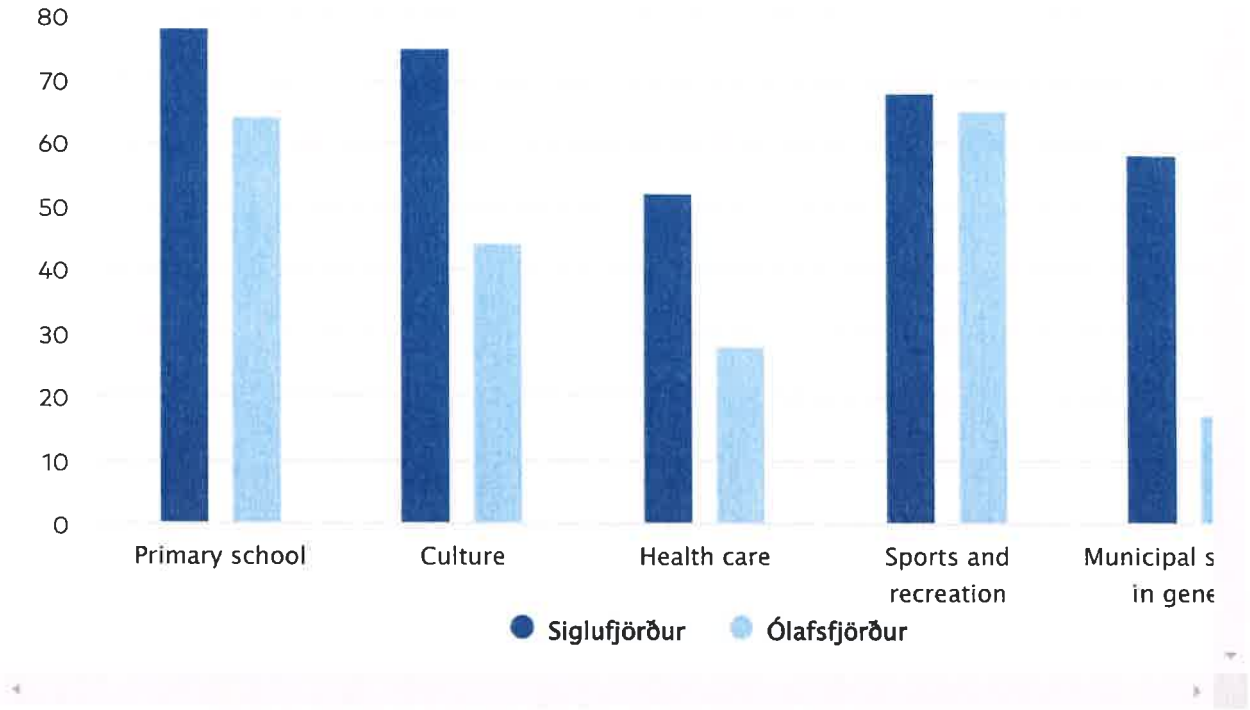

Figure 3.14: People in Siglufjörður and Ólafsfjörður believing that selected municipal services have developed positively for the last two decades in percentages.

3.4.2 Changes in economic life

Diversity in economic life during this transformation period is something we asked about in the survey. Responses varied both between the towns and among age groups. As figure 3.16 shows, only 13% in Ólafsfjörður agreed that the economic life was more diverse than before, while this proportion was 68% among the respondents living in Siglufjörður. Younger people generally see more diversity. In the youngest group (35 years and younger), almost two thirds or 64% believe that economic life is more diverse than before, while we see a linear decline down to 34% for the oldest group.

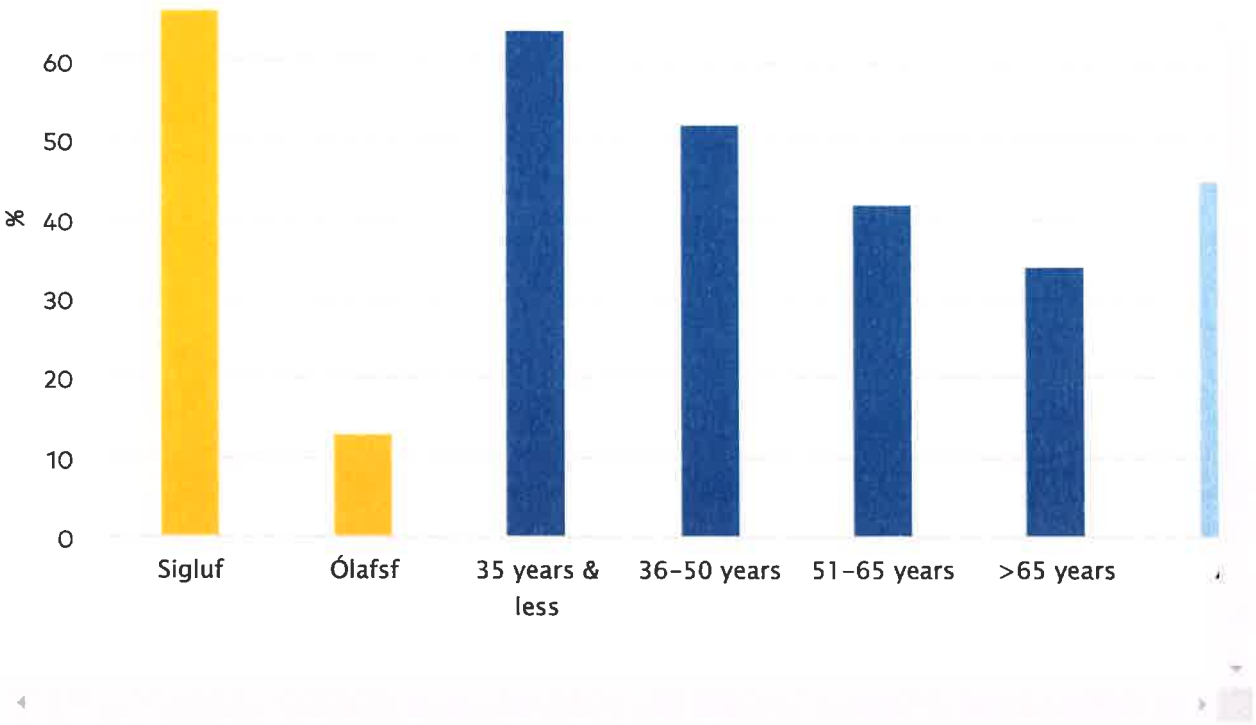

Figure 3.15: The economic life in my town is much more diverse than it was before, by town and age. Percent who totally agreed or agreed.

An open-ended question on economic development was also asked in the survey. This was an attempt to probe issues which were not pre-defined by the research team. After doing content analysis on the open-ended answers to identify the main issues mentioned, we got the following results, here presented by respondent´s residence and by age.

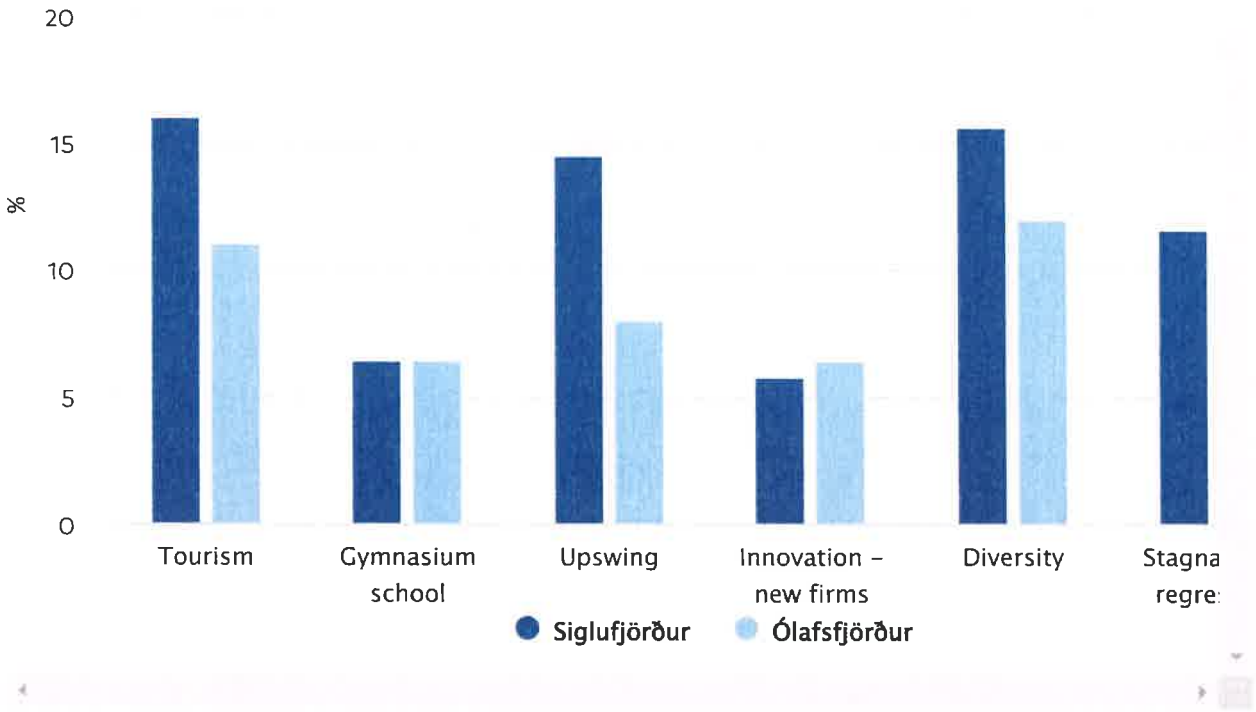

Figure 3.16: „What words come first to your mind when you think about the economic development in your town for the last 10–15 years or so"? By town. Open-ended answers classified with content analysis.

Looking at the results by residence in Siglufjörður or Ólafsfjörður, we see a clear pattern. In Siglufjörður, people perceive significantly more *upswing* in the economic life and *diversity* as well. Not surprisingly, *tourism* is frequently mentioned. By contrast, we see a far higher percentage in Ólafsfjörður mentioning *stagnation or regression* as a first response to describe development for the last 10 to 15 years or so. Different development patterns between the two towns are recognised by the people in this survey.

Analysing the data by age we see even more interesting trends. The youngest group participating in the survey (35 years and younger) differs significantly from the older ones in their views of economic development over the last 10 to 15 years. Firstly, they mention the *gymnasium school* more frequently than the others; secondly, they mention *diversity* much more frequently than the others; thirdly, they mention *innovation and new firms* more frequently than the others; and finally, they do not see *stagnation or regression* nearly as much as the older respondents do. In other words, the younger people tend to see things related to the transformation of economic life more positively than older people (Figure 3.18). All these differences are evident in Figure 3.18, where we see open-ended answers after categorization by content analysis.

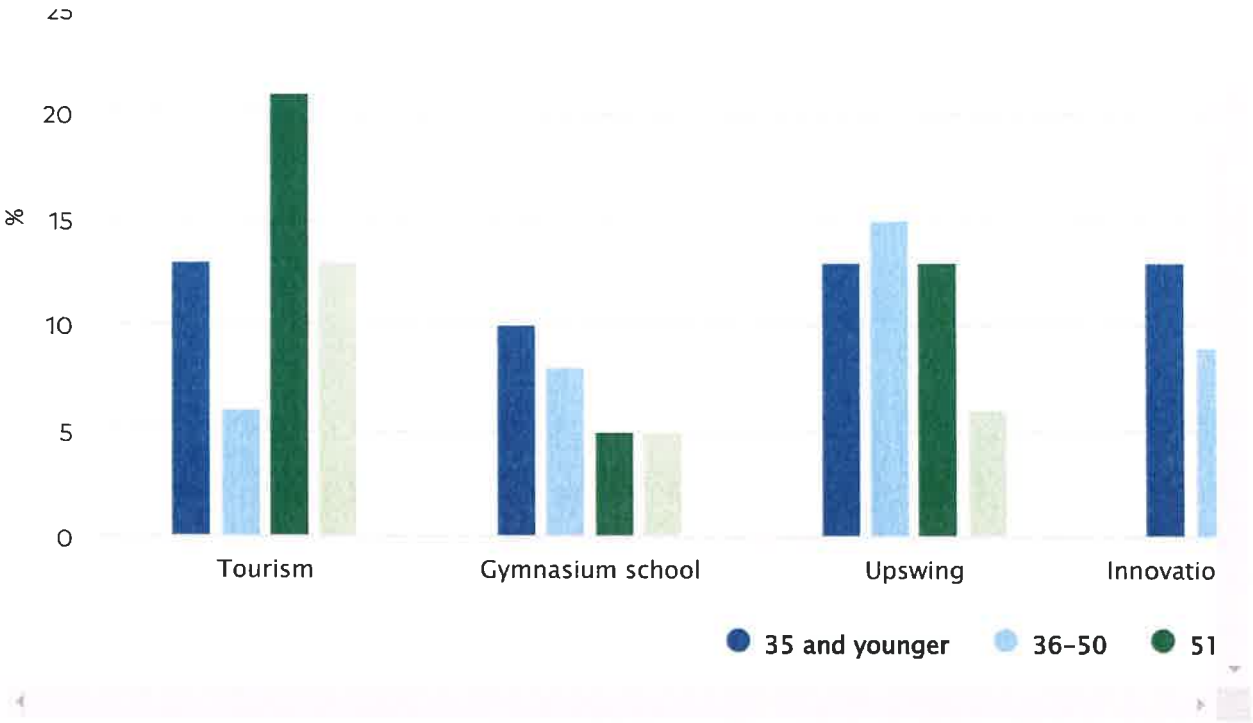

Figure 3.17: „What words come first to your mind when you think about the economic development in your town for the last 10–15 Years or so"? By age. Open-ended answers classified with content analysis.

One could say that the attitudes of the younger people indicate that the communities of Siglufjörður and Ólafsfjörður are resilient in the way that the changes are viewed, where the disappearance of jobs in the primary sector is not seen as stagnation or even regression. Age seems to be very important in the community´s ability to adapt to the changes. That is very important since the future is in the hands of the young. We have to bear in mind that the community is ageing, as seen in Figure 4, with the age-group 0–19 declining, but 60+ is on the rise. But then again, the 20–39 group is also growing somewhat, and it is an important age group, since they are the ones raising families.

"Gender" is not associated with any significant differences in these perceptions. Also, those with university education mentioned tourism, innovation, and diversity more frequently than the less educated, while the less educated mentioned stagnation and regression.

3.5 Comparing the two towns

The socio-economic changes in the municipality of Fjallabyggð, containing the two towns Siglufjörður and Ólafsfjörður, have primarily been created by the national government. A state-built road tunnel connecting the towns, financial support for the amalgamation of the municipalities and the foundation of the

also has invested significantly in biotechnology companies such as Benecta and Genis. Siglufjörður and even Ólafsfjörður, to some extent, have been transformed from traditional fishing towns to communities with much more mixed economic lives. The value chains have changed in the municipality of Fjallabyggð as a whole, but particularly in Siglufjörður, where both tourism and biotechnology have become a significant part of economic life. The value chains have changed less in Ólafsfjörður, but the upper secondary school located there brought new jobs into the community. Today 29 people are employed at the school and more young people are being educated. That of course is a significant change of the value chain in the town.

Before 2000, the decline of fishing and fish processing led to depopulation and ageing communities. The fishery decline, and associated demographic changes, were the main reasons for state involvement in financing the road tunnel. In a parliamentary resolution on a policy for rural and regional development from 1999, it was argued that the premises for positive development and growth were safe and effective road communications and stronger municipalities (Alþingi, 1999). Shortly after, a decision on the road tunnel project in Fjallabyggð was made. The input of a private investor, Róbert Guðfinnsson, also plays an important role. All those financial decisions and actions weigh heavily in building resilience in those two communities, especially in Siglufjörður. It also raises the question of what would have happened without these external inputs. The growth in the new sectors meant that both skilled and unskilled workers had to be recruited externally, and a local workforce willing to make adjustments was required. This seems to have succeeded. Would the people in those two towns, facing depopulation and an ageing community, have had the strength to adapt and go further on their own?

How have the people in the two towns adapted to what has happened after 2005? We have shown that Siglufjörður and Ólafsfjörður have followed somewhat different trajectories. People in Ólafsfjörður are not as happy with the economic changes. In the survey we see more positive viewpoints among the people in Siglufjörður. Further, people in both towns agreeing with the statement that conflicts and disputes between people in the two towns do exist. That is of course something that might threaten a positive development towards a better community in Fjallabyggð. We also see – not surprisingly – more optimistic views among the younger people in the survey. That shows us how necessary it is for every community to have more equal distribution of age groups.

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About this publication

Value Chains and Resilient Coastal Communities in the Nordic Atlantic

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Cover photo: Julien Lebel
Picture of the Vega archipelago (Nordland, Norway), a cluster of more than 6,000 islands and islets that has been included on the UNESCO World Heritage list in 2004.

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