

Borgir v/Norðurslóð, 600 Akureyri,
Tel +354 460-8900, Fax +354 460-8919
e-mail: rha@unak.is
Website: <http://www.rha.is>



NORTH ICELAND

Socioeconomic conditions for an aluminum plant in Eyjafjörður, Húsavík and Skagafjörður regions

- A baseline study of selected factors -

January 2006

Hjalti Jóhannesson
Jón Þorvaldur Heiðarsson
Kjartan Ólafsson
Valtýr Sigurbjarnarson

A report prepared for The Ministry of Industry and Commerce

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1 INTRODUCTION

This report contains a baseline study of selected social factors in three sub regions in North Iceland. This is a part of a project carried out for the Ministry of Industry and Commerce, describing and comparing three possible locations for an aluminum plant with a capacity of 250.000 tones per year. The three sub regions in question are located in North Iceland. They are from the west to the east: Skagafjörður region, Eyjafjörður region and Húsavík region. Each of these regions has its different qualifications to accommodate an industrial plant of this size. The purpose of this report is to present information about the social and economical conditions in each of these three regions with respect to the possible location of this industrial plant. The report will focus on the following as much as the availability of data allows:

- **Population**
 - Population development
 - Migration
 - Age and sex structure
- **Employment market**
 - Division by industries
 - Employment participation
 - Income
 - Changes in labor markets
- **Municipalities**
 - General overview and major fields of service
 - Cooperation of municipalities
- **Education**
 - Schools and number of students
- **Housing**
 - Supply
 - Price
 - Future prospects according to plans
- **Health service**
 - Hospitals
 - Health care
- **Business services and outsourcing**
- **Infrastructure**
 - Roads
 - Airports
 - Harbors
 - Utilities
 - Communications

This report does not cover factors such as electricity supply and harbors for the plants as these are dealt with in separate reports (see references). Generally, the approach is towards describing the present situation with the interest of possible investors in mind, instead of analyzing the possible effects on each of these three

regions. If and when a decision has been taken on locating the industrial initiative in one of these regions that effort will be a part of an environmental impact analysis (EIA). The order in which the three regions are described in the report is alphabetical. Icelandic place names and spelling are used in this report¹.

Data on population is as of December 1 2005 according to Statistics Iceland and for whole municipalities if not otherwise mentioned. In some cases population numbers refer to that of towns and villages which are parts of municipalities.

¹ There are special Icelandic characters such as Þ or þ the rune thorn which is the voiced "th" sound of thorn. Another common Icelandic character is Ð or ð the rune edth is the unvoiced "th" sound of this.

2 THE THREE REGIONS AT A GLANCE

In this chapter the three regions are described briefly with respect to the natural setting, the population number and general characteristics of the economy.

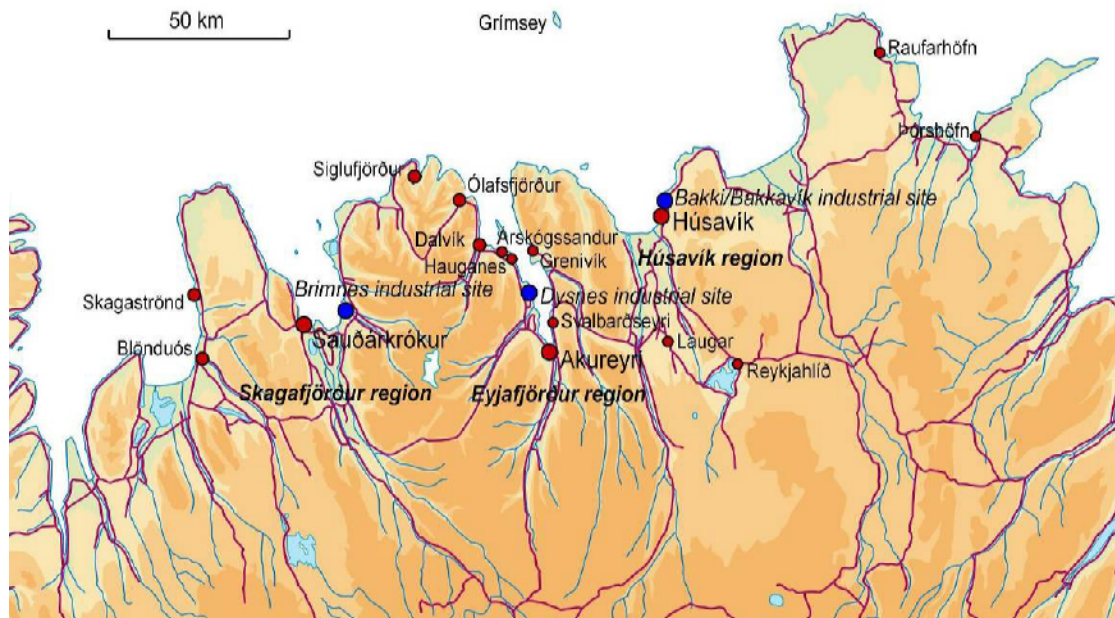


Figure 1. North Iceland, an overview

2.1 Eyjafjörður region

Eyjafjörður is an approximately 60 km long, deep fjord in the northern part of Iceland surrounded by mountain ridges, especially to the west, of up to 1,538 m above sea level. and generally characterized with a post-glacial landscape. Northernmost on the west coast is the village of Siglufjörður (pop. 1,352), and along the shore are Ólafsfjörður (pop. 946), and Dalvík (pop. 1,392). The fishing village of Grenivík (pop. 278), is towards the north on the east coast. Far in the north is the island of Grímsey² (pop. 102) and the island of Hrísey (pop. 174), helping to break the ocean waves and calm the waters in the fjord. At the south end of the fjord is the regional capital Akureyri³ (pop. 16,562). Note that all

² Grímsey island is outside commuting range from the industrial site Dysnes in Eyjafjörður and is thus omitted in chapters on population and labor markets.

³ This is the population number for the town of Akureyri. The municipality is a little larger since the island Hrísey is a part of the municipality with its 174 inhabitants.

these number refer to the population of towns and villages but not the surrounding rural areas. South of the fjord lies the deep valley of Eyjafjörður about 60 km long and south of it is the highland of Iceland. A river, named Eyjafjarðará, runs down the valley to the sea. The total size of the area is approx. 6,000 square kilometers; thereof grassy land is about 800 square kilometers.

In all the towns except for the Grenivík village houses are heated with geothermal water. The water is also used for multiple purposes, such as for heating greenhouses, buildings, outdoor swimming pools, aquaculture and sometimes even for melting snow of sidewalks, driveways and streets during winter. This complex utilization of geothermal and electric energy is a way to enhance the energy source's value while decreasing pollution in the atmosphere.



Photo: Árni Ólafsson

Figure 2. Eyjafjörður and Akureyri a view to the north.

Manufacturing, health services, education and social work and wholesale and retail trade are the main sources of employment in the Eyjafjörður region. In the Eyjafjörður region there are 10 municipalities⁴. The total population of the area

⁴ Including Grismey island located outside a commuting range from the industrial site Dysnes.

on the 1 Dec. 2005 was 23,362⁵ thereof 16,562 was living in the town of Akureyri⁶ or 71%. Akureyri was a manufacturing town in early and middle of the 20th century but in the last couple of decades the city's and the region's economy has moved towards tertiary activities of various kinds.

2.2 Húsavík region

The Húsavík region is in Northeast Iceland, a huge area stretching from the north coast and into the glaciers in the highland in the middle of Iceland. Húsavík⁷ (pop. 2,272) is the only town in the Húsavík region (pop. 3,906) and is located at the southeast shore of the Skjálfandi bay in the Northeast part of Iceland. The bay, originally created by glacial activity, has two major streams flowing into it: Skjálfandafljót, which is a glacier river and Laxá, which is a freshwater river. The river Laxá is famous for its salmon fishing and a part of the river is protected by the Ramsar Convention. The region of Lake Mývatn with its interesting geology and diverse animal life is nearby. The total size of the area is approx. 13,000 square kilometers.

The houses in Húsavík are heated with geothermal water. The water is used for multiple purposes, such as for heating greenhouses, buildings, swimming pools, aquaculture and sometimes even for melting snow of sidewalks, driveways and streets during winter. This complex utilization of geothermal and electric energy is a way to enhance the energy source's value while decreasing pollution in the atmosphere. There is abundant geothermal water in some parts of the region. Deistareykir area is one of these geothermal areas where this power source can be harnessed for the purposes of electricity production.

⁵ Including Grísmey island located outside a commuting range from the industrial site Dysnes.

⁶ The municipality Akureyri includes both the town Akureyri and the Hrísey island (pop. 174) due to amalgamation in 2004.

⁷ The population of the municipality Húsavík is a little higher, or 2,373 since a small rural community of ca. 100 inhabitants south of the town also belongs to the municipality (amalgamation in 2002).



Photo: Gunnar Jóhannesson

Figure 3. Húsavík and the Skjálfandi bay, seen to the west from the mountain Húsavíkurfjall by Húsavík

Fishing and fish processing are the main source of employment in Húsavík, but light industry and services to the surrounding farm area also contribute thereto. During recent years, jobs in Húsavík have increased much in tourism and public services. Húsavík Health Center is the town's biggest single employer. Source: www.atthing.is, Statistics Iceland.

2.3 Skagafjörður region

Skagafjörður is an approximately 40 km long, deep fjord in the northern part of Iceland, west of Eyjafjörður. In the fjord there are two islands, Drangey and Málmei. South of the fjord lies the valley of Skagafjörður about 50 km long and south of it is the highland of Iceland. Two glacial rivers, named Héraðsvötn, run down the valley and to the sea. The total size of the area is approx. 5,200 square kilometers thereof grassy land is about 1,000 square kilometers.



Photo: Mats Wibe Lund

Figure 4. Sauðárkrúkur and Skagafjörður a view to the north.

There are only two municipalities in Skagafjörður, the municipality Skagafjörður and the rural municipality Akrahreppur. The municipality's Skagafjörður largest town is Sauðárkrúkur (pop. 2,602) at the southwest coast of the fjord⁸. The municipality has three villages: Hofsóss (pop. 173) located in the middle of the east coast of the fjord, Hólar (pop. 99), in Hjaltadalur valley, that has through the centuries been one of Iceland's most renowned seats of education and culture, and Varmahlíð (pop. 138) farther south, a small centre of services for the rural community, is located by the highway between Akureyri and Reykjavík. The total population in the region is 4,335. Most of the houses in towns and villages are heated with geothermal water. The water is used for multiple purposes, such as for heating greenhouses, buildings, swimming pools, aquaculture and sometimes even for melting snow of sidewalks, driveways and streets during winter. This complex utilization of geothermal and electric energy is a way to enhance the energy source's value while decreasing pollution in the atmosphere.

Fishing and fish processing is the main source of employment in Sauðárkrúkur, but light industry and services to the surrounding farm area also provide a

⁸ The total population of the municipality Skagafjörður is 4,110.

considerable share of the employment. The number of jobs in Sauðárkrókur has grown most rapidly in public service during recent years. The Health Directorate in Sauðárkrókur is the town's biggest single employer, and approx. 400 students of the surrounding region's comprehensive secondary school contribute pleasantly to the local society in the wintertime. Source: www.skagafjordur.is/, 12.10.05 and Statistics Iceland.

3 MUNICIPAL STRUCTURE

Iceland has two government levels, the state and just under 100 local authorities. The entire country is divided into local authorities that manage their own affairs and have independent tax sources. Their right to self-governance is defined in the Constitution⁹. Elected local councils manage the affairs of the local authorities. They are e.g. responsible for education, social services, sports and recreation, cultural activities, infrastructure, planning, utilities, technical services, harbors and fire services.

The boundaries of many municipalities in Iceland were originally drawn around farming communities, and are unsuitable as local service units today. Many municipalities have been amalgamated over the last few years, reducing the total number from about 200 to just under 100. The main objective has been to develop structures that efficiently deliver local services and strengthen local power. The municipalities have gradually been taking on new functions, especially ones that were previously a shared responsibility of the state and local governments. Their tax income has been raised accordingly (Nýsir consulting services, 2002).

The main source of income for municipal governments in Iceland is the local income tax, which provided 61% of total municipal taxes in Iceland in 2004. Property tax contributed 11%, the Local Government Equalization Fund 8.5%, and other taxes and service fee 19.5%. In addition, municipalities collect various user and service charges such as for public utilities, harbors, kindergartens and sports facilities. The objective of the Local Government Equalization Fund is to reduce differences in tax income and service load, as well as to supplement school costs.

The municipal structure in the three regions studied here is relatively different from one region to the other. In Skagafjörður region all of the municipalities except one merged in 1998 so there are only two left (Grétar Þór Eypórsson and Hjalti Jóhannesson, 2002). In Eyjafjörður, however, there is Akureyri with 71% of the inhabitants and additional eight smaller municipalities within a commuting range from the industrial site Dysnes. Despite two elections on merging all of

⁹ See the Local Government Act: http://www.samband.is/files/{28810deb-e80d-4907-af7f-9d674901dc2c}_local_government_act.doc

the municipalities in the region they are still 9 today. A few mergers have however taken place in the past few years, mostly among the smaller municipalities. In the Húsavík region there is a similar pattern as in Eyjafjörður with Húsavík being the largest municipality of a total of 6 within a commuting range of the industrial site Bakki.

Because of this municipal pattern where only the larger municipalities are able to provide all of the services expected from municipalities, the smaller municipalities need to negotiate for cooperation on several services (see the list below). Such a system of cooperation is most advanced in Eyjafjörður region and Húsavík region. Since the merger in Skagafjörður in 1998 there is no need for extensive cooperation as there used to be. Cooperation between municipalities takes on various forms and there are not always as many municipalities participating. Sometimes there are only joint committees, in other cases there are jointly owned institutions with their boards of directors and thirdly service contracts have been made and in those cases one of the municipalities (usually the largest) provides the service and sells it to the other municipalities.

Providing services which fall into the following categories is the most important function of the municipalities:

- Social services
- Health services (however not hospitals)
- Pre primary- and compulsory education
- Culture issues
- Youth issues and recreation
- Fire departments and public safety
- Health inspection
- Planning and building authorities
- Traffic and transportation issues
- Environment issues
- Business development issues

The state also provides services which fall into the categories above, such as hospital services, road construction, public safety and environmental issues. How the responsibility is divided between the two government tiers is described in laws and regulations.

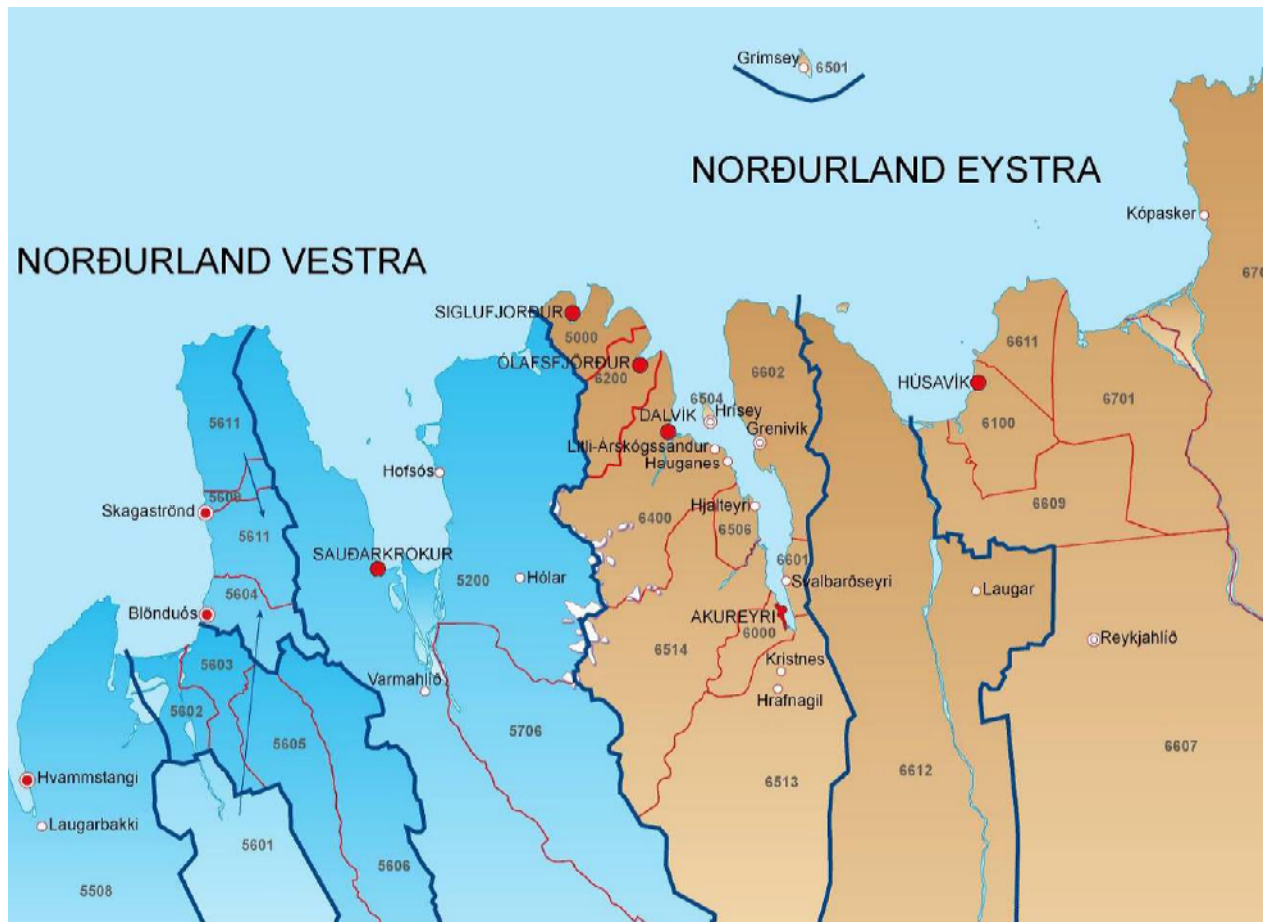
Below is a table giving an overview of the income and expenses of the three major municipalities in the three regions. Akureyri has the lowest per capita

income in total but a part of the explanation is lower income from the equalization fund. The greatest share of expenses is in the field of education. Akureyri has the least expenses in the field, probably due to economies of scale. There is a distinct difference in the expenses in social services with the service most developed in Akureyri.

Table 1. Tax income per capita of the three largest municipalities and expenses in the primary fields of service (ISK) 2003

Income and expenses (ISK)	Akureyri	Húsavík	Skagafjörður municipality
<i>Tax income per capita</i>			
Income tax	188,430	185,267	177,175
Property tax	25,779	20,597	22,639
Local Government Equalization Fund	29,515	59,109	74,674
Other taxes	6,794	10,775	4,362
Tax income per capita total	250,518	275,748	278,849
<i>Expenses in the following fields of service:</i>			
Education	131,284	146,326	168,419
Social services	28,741	15,915	17,989
Youth and recreation	30,953	30,162	36,943

Source: The association of local authorities in Iceland



(Source: www.felagsmalaraduneyti.is)

Figure 5. Municipalities in North Iceland

3.1 Eyjafjörður region

The Eyjafjörður region as it is defined here contains those municipalities which are within a 45 minutes driving distance from the industrial site Dysnes in 2012¹⁰. There are 9 municipalities in the Eyjafjörður region with the municipality Akureyri having 71% of the inhabitants. Below is a table outlining the primary facts about towns and villages in the region and relevant services for this project. The municipalities in the region are the following¹¹:

¹⁰ Construction of a road tunnel to the town of Siglufjörður will be finished in 2009.

¹¹ The island Grimsey is generally also considered a part of the Eyjafjörður region but is located outside a 45 minutes commuting distance from the industrial site Dysnes.

Table 2. Municipalities in the Eyjafjörður region

Municipality	Population 1 Dec 2005	ID of municipality (see Figure 5)
Siglufjörður	1,352	5000
Ólafsfjörður	946	6200
Dalvíkurbyggð	1,927	6400
Arnarneshreppur (location of Dysnes)	174	6506
Hörgárbyggð	399	6514
Akureyri	16,736	6000
Eyjafjarðarsveit	978	6513
Svalbarðsstrandarhreppur	382	6601
Grýtubakkahreppur	366	6602
Total	23,260	

(Source: Statistics Iceland, 2006)

Services in the Eyjafjörður region are varied; both provided by the municipality as well as private services. The most important services are described in more detail in chapters below; here a very general overview will be given, especially on recreational opportunities. Akureyri (www.akureyri.is) has much to offer in terms of recreation, such as one of the best skiing areas in Iceland and Iceland's center for winter sport (www.hlidarfjall.is), a skating hall, an indoor soccer field, a number of gymnasiums, two swimming pools, one of the a large outdoor pool (<http://www3.akureyri.is/daglegt-lif/utivist/sundlaug-akureyrar/>), an 18 hole golf course (<http://www.arcticopen.is/index.htm>), facilities for recreational boats, equestrian sport and more. The towns Dalvík (www.dalvik.is), Siglufjörður (www.siglo.is) and Ólafsfjörður have their own recreational facilities, e.g. swimming pools, golf courses, gymnasiums and facilities for recreational boats, equestrian sport and more. In Akureyri there is a wide range of shops and private services, probably more than the number of inhabitants indicates.

Table 3. Towns and villages in the Eyjafjörður region

Town/village	Pop. 1 Dec. 2005 (within towns and villages)	Dist. from Dysnes (km)	Drinking water	Geotherm. water	Hospital or health care	Harbor	Airport	Hotel
Akureyri	16,562	19	Yes	Yes, plenty	Plenty of spaces and most treatments available	9 m depth by harbor, length of harbor 80 m	Yes	975 beds
Dalvík	1,392	28	Yes	Yes, plenty	Health care and retirement home			12 beds
Siglufjörður	1,352	104	Yes, plenty	Yes	Health care, hospital and a retirement home	8 m depth by harbor, length of harbor 80 m	Yes	86 beds
Ólafsfjörður	946	42	Yes, plenty	Yes, plenty	Health care and retirement home			22 beds
Grenivík	278	57	Yes	Yes	Health care and a retirement home			
Svalbarðseyri	211	33	Yes	Yes				
Hrísey	174		Yes	Yes				6 beds
Hauganes	137	15	Yes	Yes				
Árskógssandur	130	16	Yes	Yes				
Hjalteyri	43	5	Yes	Yes				
Important locations outside the Eyjafjörður region:								
Reykjavík	114,800	397			Plenty of spaces and most treatments available	8 m depth by harbor, length of harbor 870 m	Yes	5,243 beds
Keflavík airport		441					Yes	
Egilsstaðir and Fellabær	2,304	284					Yes	245 beds
Reyðarfjörður	1,414	318				8 m depth by harbor, length of harbor 80 m		40 beds
Seyðisfjörður	731	311				A good ferry harbor		45 beds

3.1.1 Cooperation of municipalities in Eyjafjörður

Due to the high number of municipalities and the small size of the majority of them, a substantial system of cooperation has been elaborated in order to provide the various services municipalities are expected to provide.

Cooperation through a regional committee. In Eyjafjörður there is a regional committee (Héraðsnefnd Eyjafjarðar) and all of the municipalities are members. The committee's scope is small and the staff consists of a person in 0.6 man years. These are the common services: Civil Protection, building inspection (Akureyri has its own), the two high schools (municipalities run the buildings together with the state), vegetation conservation committee, Akureyri museum (Minjasafnið á Akureyri), nature protection committee, garbage disposal (Sorpeyðing Eyjafjarðar) and Eyjafjörður regional plan (the present plan was revised in 2002 and is valid until 2010).

Other municipal cooperation in Eyjafjörður include Akureyri Region Business Agency (Atvinnuþróunarfélag Eyjafjarðar), children protection committee, Hafnasamlag Norðurlands (running and owning the harbors in Grýtubakkahreppur, Svalbarðsstrandarhreppur, Akureyri, Hörgárbyggð and Arnarneshreppur), Hafnasamlag Eyjafjarðar (running and owning the harbors in Ólafsfjörður and Dalvíkurbyggð, music schools in Dalvík and Ólafsfjörður, the music school of Grýtubakkahreppur, Eyjafjarðarsveit, Hörgárbyggð and Arnarneshreppur, the compulsory school Þelamerkurskóli (run by Hörgárbyggð and Arnarneshreppur)

Cooperation outside Eyjafjörður is primarily on local health inspection (Heilbrigðiseftirlit Norðurlands eystra) in Eyjafjörður and Húsavík regions and on a market office for tourism in North Iceland (Markaðsskrifstofa ferðamála á Norðurlandi).

Service contracts. The services other municipalities buy from Akureyri via contracts is the public library, a fire brigade (a number of municipalities in Akureyri's vicinity), the Akureyri and Eyjafjörður archives, counseling to the compulsory schools, children protection and social services, joint children protection committee and service to the elderly.

3.2 Húsavík region

There are six municipalities in the Húsavík region with the municipality Húsavík being the largest with 2,373 inhabitants. As in the case of Eyjafjörður the region is defined as those municipalities which are within a commuting distance of 45 minutes from the Bakki industrial site by Húsavík town.

Below are the municipalities in the Húsavík region and the number of inhabitants 1 Dec. 2005.

Table 4. Municipalities in the Húsavík region

Municipality	Population 1 Dec. 2005	ID of municipality (see Figure 5)
Húsavík	2,373	6100
Þingeyjarsveit	686	6612
Skútustaðahreppur	428	6607
Aðaldælahreppur	256	6609
Tjörneshreppur	63	6611
Kelduneshreppur	100	6701
Total	3,906	

(Source: Statistics Iceland, 2006)

Húsavík (www.husavik.is) has much to offer in terms of recreation, such as a good outdoor swimming pool, a large sports hall, skiing area, facilities for recreational boats and equestrian sport, and areas for outdoor life in general. One of the attractions of the regions is the river Laxá which runs from Lake Mývatn to Skjálfaflói 3-4 km south of the town. The river is one of the most popular salmon rivers in the country. The relatively short distance to Akureyri makes more special services accessible. In the southern part of the region there is a variety of recreational opportunities and outdoor life. The best known is the lake Mývatn area, one of the most popular destinations by tourists in Iceland. There are vast opportunities in that area. In Laugar and Stórutjarnir there are good swimming pools.

Tourism has been growing in the last few years, especially in connection with whale watching tours on Skjálfaflói-bay from Húsavík harbor on traditional renovated fishing boats. Hvalamiðstöðin - The Húsavík Whale Centre, (founded in 1998) is Iceland's only centre dedicated to the study and appreciation of these mammals. A new exhibition opened in 2002 which offers information, skeletons

and skulls of whales and other items which educate about the species of whales in Icelandic waters and the history of whaling around Iceland.

Below there is a table outlining the primary facts about the municipalities and some relevant services in the context of this project.

Table 5. Towns and villages in the Húsavík region

Town/village	Population 1 Dec. 2005 (within towns and villages)	Dist. from Bakka- vík (km)	Drinking water	Geo- therm. water	Hospital or health care	Harbor	Air- port	Hotel
Húsavík	2,272	3	Yes	Yes plenty	Health care, hospital and a retirement home	8-12 m depth by harbor, length of harbor 150 m	Yes	97 beds
Laugar	110	41	Yes	Yes	Health care	No		
Reykjahlíð	208	57	Yes	Yes plenty	Health care	No	Small	98 beds
Important locations outside the Húsavík region:								
Akureyri	16,562	91	Yes	Yes plenty	Plenty of spaces and most treatments available	9 m depth by harbor, length of harbor 80 m	Yes	975 beds
Reykjavík	114,800	444	Yes plenty	Yes plenty	Plenty of spaces and most treatments available	8 m depth by harbor, length of harbor 870 m	Yes	5,243 beds
Keflavík airport		523					Yes	
Egilsstaðir and Fellabær	2,304	220	Yes	Yes			Yes	245 beds
Reyðarfjörður	1,414	414	Yes	Yes		8 m depth by harbor, length of harbor 80 m		40 beds
Seyðisfjörður	731	407				A good ferry harbor		45 beds

There is a lot of accommodation available in Þingeyjarsýslur region and additional to the number in the table above there are ca. 560 beds within commuting distance from the industrial site Bakki north of Húsavík. Additionally there are some 30 houses of different sizes with considerable space for accommodation. (Source: Icelandic Tourist Board, 2005)

3.2.1 Cooperation of municipalities in Húsavík region

The regional committee (Héraðsnefnd Þingeyinga) runs several joint tasks with all the municipalities being members. The cooperation which is run by the committee is the following: a civil protection committee, the building inspection, social services and counseling to the compulsory schools, service to the disabled, a nature conservation committee and museums in the region.

Some of the other cooperation in the region includes the Húsavík region business agency, fire brigades, Hvammur the elderly home in Húsavík and Fræþing Húsavík Academic Center (Fræðslumiðstöð Þingeyinga). A few compulsory schools in the region and in the Þingeyjarsýslur region are run jointly by small municipalities.

3.3 Skagafjörður region

The Skagafjörður region is defined here as those municipalities that are located within a 45 minutes commuting distance from the industrial site Brimnes. In Skagafjörður there are two municipalities, Sveitarfélagið Skagafjörður and Akrahreppur.

Three towns are just outside the edge of the defined commuting distance, i.e. Siglufjörður to the northeast and Blönduós and Skagaströnd, to the west of Skagafjörður region. A better road over the mountain between the regions will make commuting between the Skagafjörður region and the towns Blönduós and Skagaströnd easier but distances will however not change much.

Table 6. Municipalities in the Skagafjörður region

Municipality	Population 1 Dec. 2005	ID of municipality (see Figure 5)
Sveitarfélagið Skagafjörður	4,110	5200
Akrahreppur	225	5706
Total	4,335	

(Source: Statistics Iceland, 2006)

Varied services for the inhabitants and visitors are available in the Skagafjörður region with most of the concentration in its principal town Sauðárkrókur (www.skagafjordur.is). As in Akureyri and Húsavík, there is a good skiing area close to the town. A good outdoor swimming pool exists both in Sauðárkrókur town and in the village in Varmahlíð 26 km distance. The sports hall is large, there is a new outdoor sports facility, among the best in the country and generally

the sports facilities are excellent. The type of recreation Skagafjörður is the most famous for is equestrian sports.

Table 7. Towns and villages in the Skagafjörður region and vicinity

Town/village	Pop. 1 Dec. 2005 (within towns and villages)	Dist. from Brimnes (km)	Drinking water	Geo-therm. water	Hospital or health care	Harbor	Air-port	Hotel
Sauðárkrúkur	2,602	26	Yes, but often not enough	Yes plenty	Health care, hospital and retirement home	6 m depth by harbor, length of harbor 145 m	Yes	21 beds
Varmahlíð	138	48	Yes, but often not enough	Yes				38 beds
Hólar	99	15	Yes, but environment unsatisfying	Yes plenty				
Hofsós	173	19	Yes	No, but a newly found source		4 m depth by harbor, length of harbor 140 m		41 beds
Towns outside a 45 minutes commuting range:								
Siglufjörður *	1,352	78	Yes plenty	Yes	Health care, hospital and retirement home	8 m depth by harbor, length of harbor 80 m	Yes	86 beds
Blönduós *	837	70	Yes plenty	Yes plenty	Health care, hospital and retirement home	5 m depth by harbor, length of harbor 50 m	Yes	73 beds
Skagaströnd *	545	75	Yes	no	Retirement home	6 m depth by harbor, length of harbor 80 m		Some

There are a total of 452 beds in Skagafjörður

(Source: Línuhönnun, 2005, Statistics Iceland 2006)

Important locations outside the Skagafjörður region								
Akureyri	16,562	115	Yes	Yes, plenty	Plenty of spaces and most treatments available	9 m depth by harbor, length of harbor 80 m	Yes	975 beds
Reykjavík	114,800	333	Yes, plenty	Yes, plenty	Plenty of spaces and most treatments available	8 m depth by harbor, length of harbor 870 m	Yes	5,243 beds
Keflavík airport		383				no	Yes	
Egilsstaðir and Fellabær	2,304	380				no	Yes	245 beds
Reyðarfjörður	1,413	414				8 m depth by harbor, length of harbor 80 m	no	40 beds
Seyðisfjörður	731	407				A good ferry harbor	no	45 beds

3.3.1 Cooperation of municipalities in Skagafjörður region

As described in the beginning of this chapter, little cooperation between municipalities is needed due to their merger in 1998. Now there are only two municipalities instead of 12 previously in 1997, i.e. the municipality Skagafjörður (Sveitarfélagið Skagafjörður) with 4,110 inhabitants and Akrahreppur with 225 inhabitants. This clearly indicates that municipal services in the region are mainly provided by the municipality Skagafjörður.

The farm Brimnes, where the industrial site in Skagafjörður is located within the boundaries of Sveitarfélagið Skagafjörður and therefore the potential investor only has to deal with that municipality.

4 POPULATION DEVELOPMENT

In this chapter the population development, migration and the sex- and age structure of the three regions will be discussed briefly. As previously, the regions are defined as being within a commuting distance of 45 minutes from industrial sites. Commuting distance is discussed further in chapter 5.

The total population of Iceland Dec. 1 2005 is 299,404 with an annual increase of 1,1% a year. An important fact about the general development of the population in Iceland is a declining birth rate which was in 2004 2.0, i.e. lower than the 2.1 needed to maintain the population size. Another factor is smaller families and ageing population. The general trend of migration to the capital region from other regions in the country has been of concern due to its magnitude. In the capital region there live 187,000 or 62,5% of Icelanders. In the capital region and an area within a 45 minutes driving distance there live some three quarters of the total.

The specific population development taking place in most regions outside this area is net out-migration, an imbalance in the number of males and females and a skewed age pyramid. In the context of this study these issues are more pronounced in the Húsavík region and the Skagafjörður region than in the Eyjafjörður region.

4.1 Eyjafjörður region

A total of 23,260 persons were living in the Eyjafjörður region 1 Dec. 2005 in 9 municipalities. The regional capital Akureyri had 16,736 inhabitants or 71% of the total¹².

Since 1990 there has been a population increase of 7,4% in the region as a whole. There is however a noticeable difference between the performances of municipalities as the figure below indicates. Akureyri and its neighboring municipalities are experiencing more positive development than especially the more specialized fishing villages in the northwest part of the Eyjafjörður region. The growth in Akureyri's neighboring municipalities is probably driven by the positive development of the town and a survey from the University of Akureyri Research

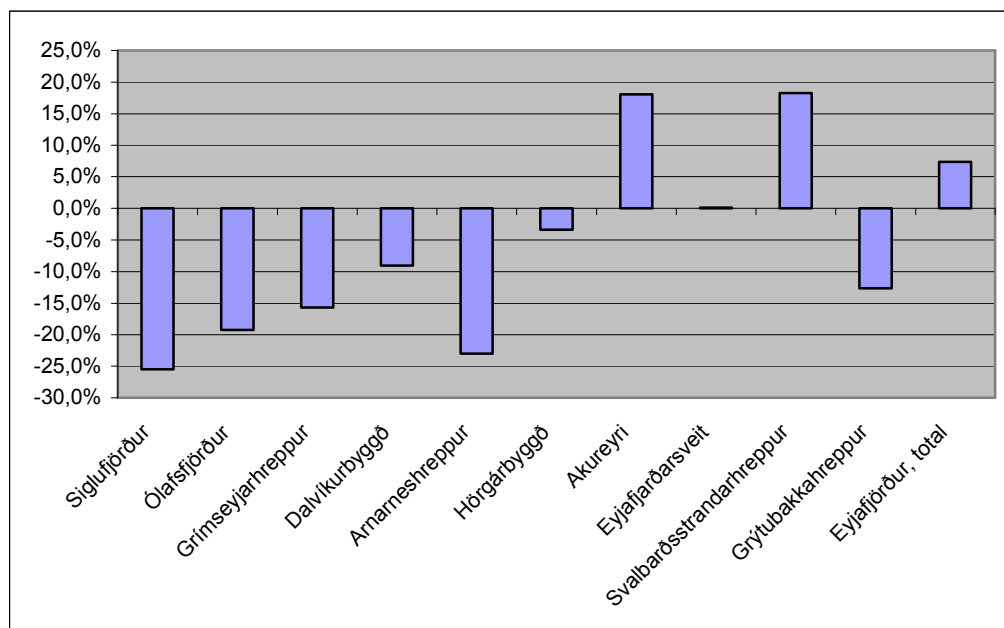
¹² The municipality Akureyri includes the island Hrisey.

Institute, carried out in 2004, shows that up to 7 out of 10 inhabitants in these municipalities commute to Akureyri for work (University of Akureyri Research Institute, 2004 unpublished data).

Table 8. The percentage of inhabitants 18-80 years old in municipalities in Eyjafjörður who work in Akureyri

Municipality	%
Grímsey	1.0
Dalvík	7.5
Siglufjörður	7.7
Ólafsfjörður	8.3
Grýtubakkahreppur	33.3
Hörgárbyggð	45.5
Svalbarðsstrandarhreppur	56.8
Eyjafjarðarsveit	61.5
Arnarneshreppur	72.7
Akureyri	96.1

(Source: University of Akureyri Research Institute, 2004 unpublished data)

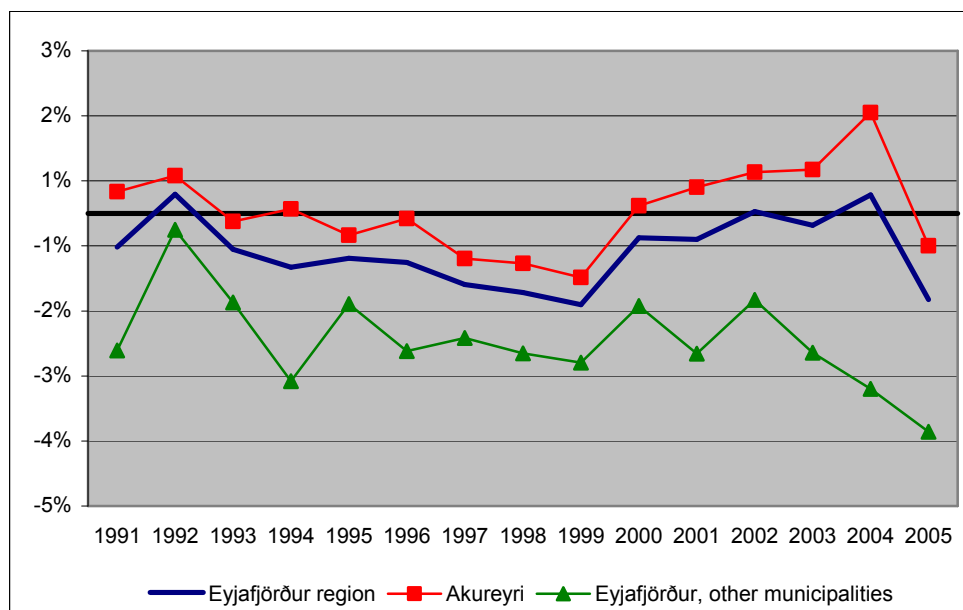


(Source: Statistics Iceland, 2005)

Figure 6. Municipalities in the Eyjafjörður region population change 1990 - 2005

The population development of the region has for the past few years been close to the national average as the figure below indicates. There is a huge difference

between the town Akureyri and other municipalities within the region, especially during the past few years.

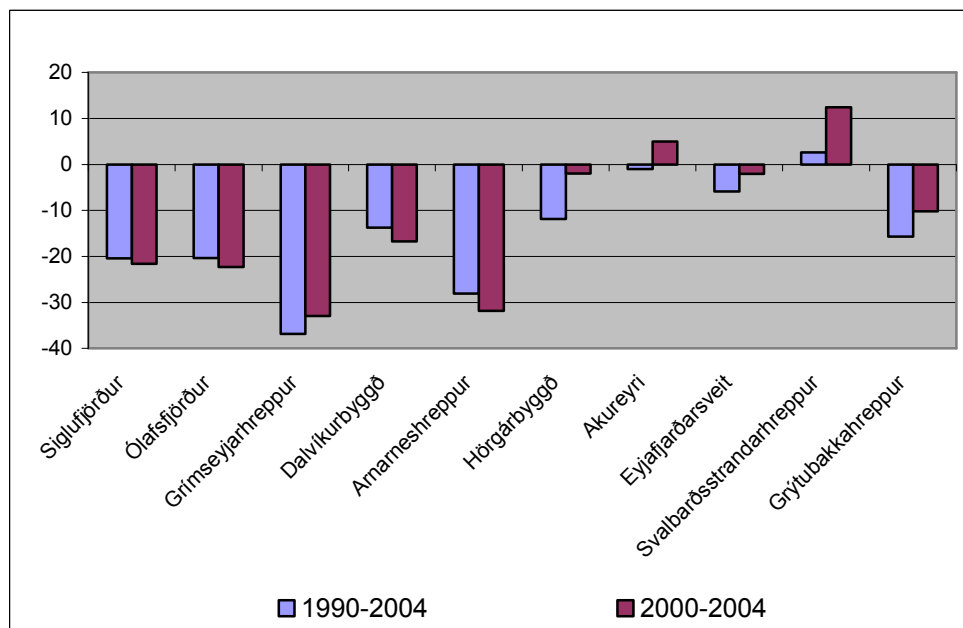


(Source: Statistics Iceland, 2005)

Figure 7. Eyjafjörður region, population change over the previous year, difference from the national average (% points)

In comparison with other regions outside the capital area and its immediate surroundings, the Eyjafjörður region has been performing relatively well in terms of regional development as expressed by population development. The average population growth in Iceland in the period 1990-2004 was 1.0% but in the capital region it was 1.7%.

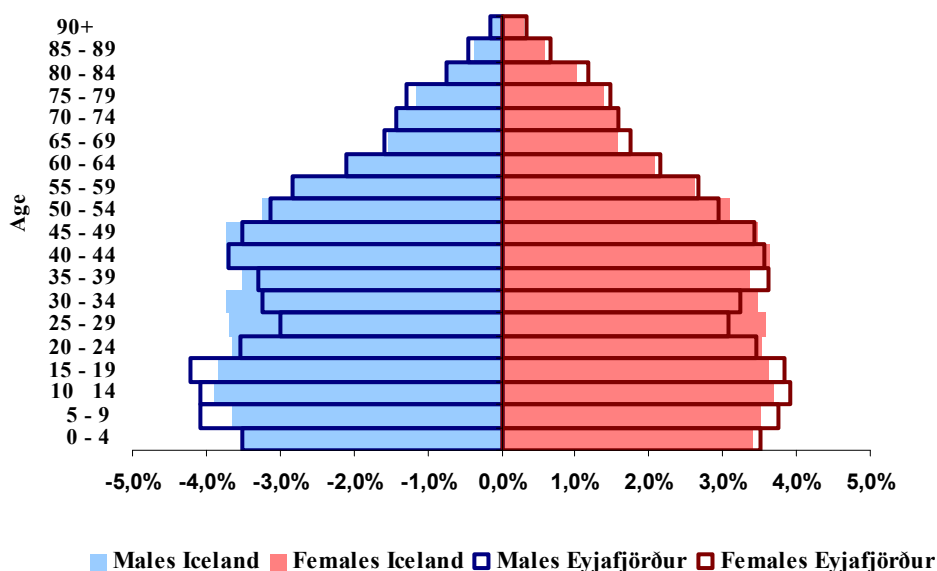
In the period 1990-2004 eight out of nine municipalities in the region experienced net out-migration. Svalbarðsstrandarhreppur, Akureyri's next neighbor to the east was the only municipality which experienced in-migration. For the period 2000-2004 the situation had changed somewhat to the better, Akureyri has managed better to hold on to its population during the period and so do clearly the smaller municipalities surrounding the town. The town and these municipalities are increasingly developing more along a similar path and they have clearly become a common labor market.



(Source: Statistics Iceland, 2006)

Figure 8. Eyjafjörður, average net-migration per 1,000 inhabitants

A population pyramid for the Eyjafjörður region shows signs of net-out migration. There are relatively fewer in the age group 20-39 years old, the age group most active in migration movements. A large share of these young people has probably moved either to the capital region or abroad to study and some will return if the right opportunities await them in the region.

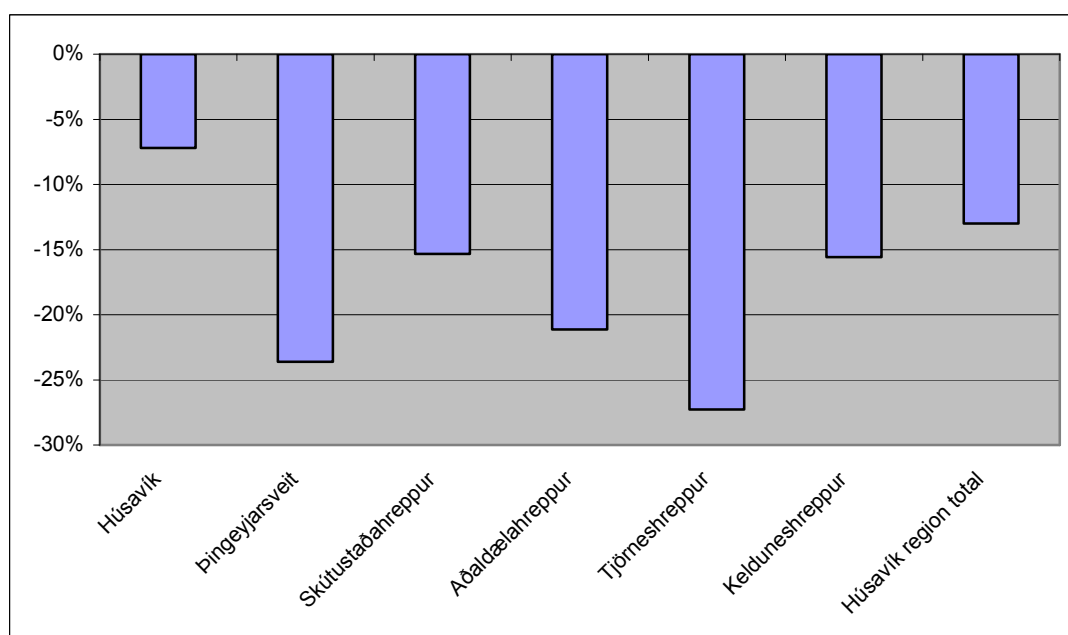


(Source: Statistics Iceland, 2006)

Figure 9. Eyjafjörður region, sex and age structure 1 December 2005

4.2 Húsavík region

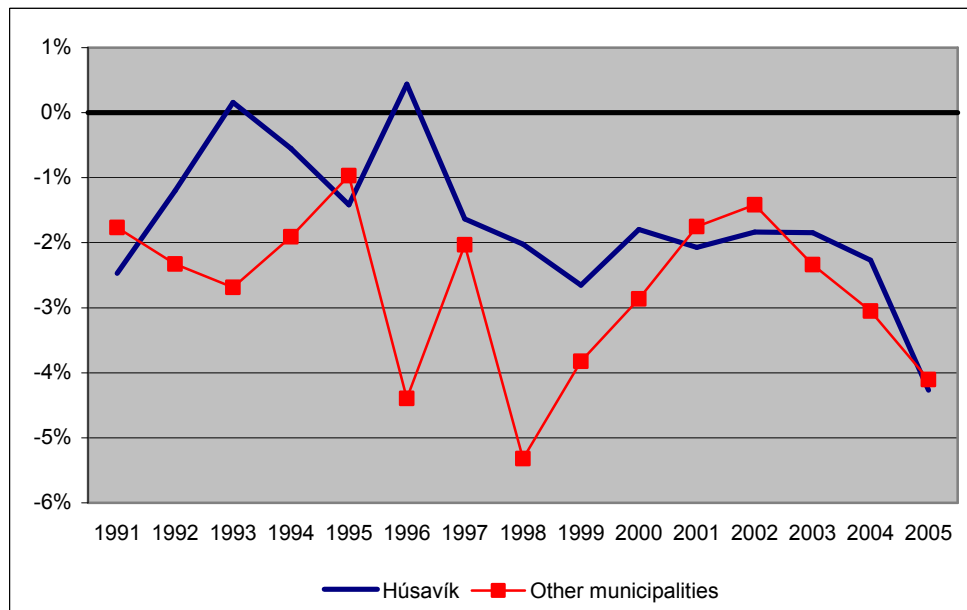
Here we define the Húsavík region as the town Húsavík and municipalities in the region within a 45 minutes driving distance from the town or more precisely the industrial site at Bakki, a total of 6 municipalities. In the region there were 3,906 inhabitants 1 Dec. 2005. The area has experienced a negative population development during the past few years, a decrease of just under 600 persons or 13% during the period 1990-2004. Of individual municipalities, not surprisingly, the town Húsavík has had the lowest population decline in the region (-7%) during the period 1990-2004.



(Source: Statistics Iceland, 2006)

Figure 10. Municipalities in the Húsavík region population change 1990 - 2005

Since 1991, the region has experienced less population growth than the Icelandic average and as the figure below indicates the development has been turning to the worse in the second half of the period.

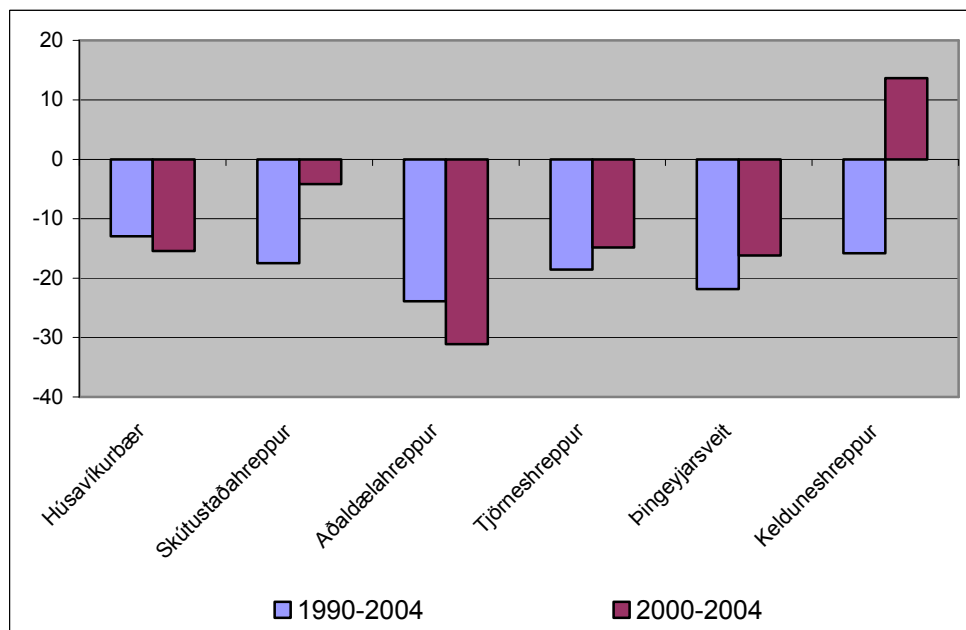


(Source: Statistics Iceland, 2006)

Figure 11. The Húsavík region, population change over the previous year, difference from the national average (% points)

There is a some difference in the development between Húsavík and other municipalities in the region. This difference is however not as striking as in the Eyjafjörður region.

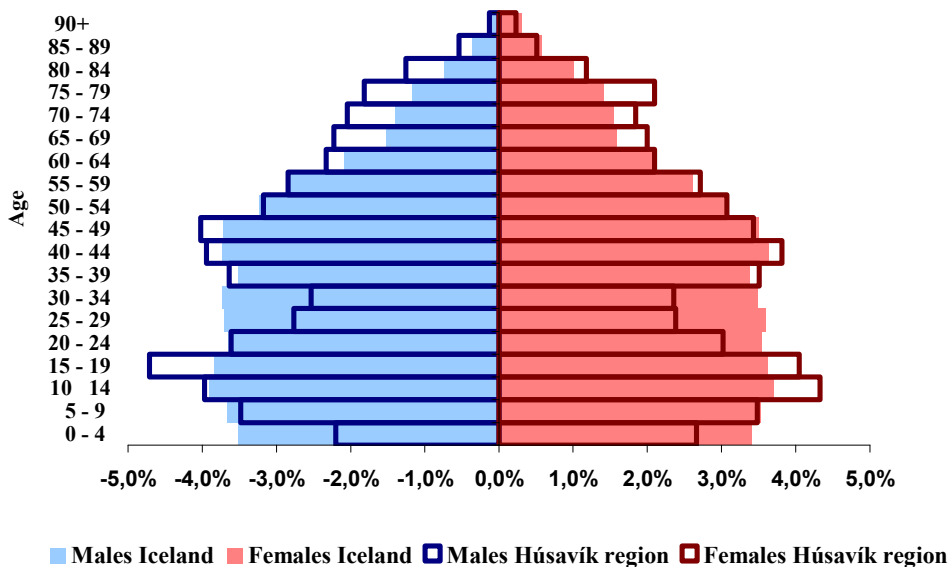
In the period 1990-2004 all of the municipalities in the Húsavík region experienced net out-migration on average. There is relatively little difference between the municipalities. In the period 2000-2004 the situation is a little better and one of the municipalities experiences net in-migration.



(Source: Statistics Iceland, 2005)

Figure 12. Húsavík region, average net-migration per 1,000 inhabitants

The age pyramid for the Húsavík region shows clear signs of net out-migration for a considerable period of time. This can be marked by the relative lack of young adults, 20-34 years of age.



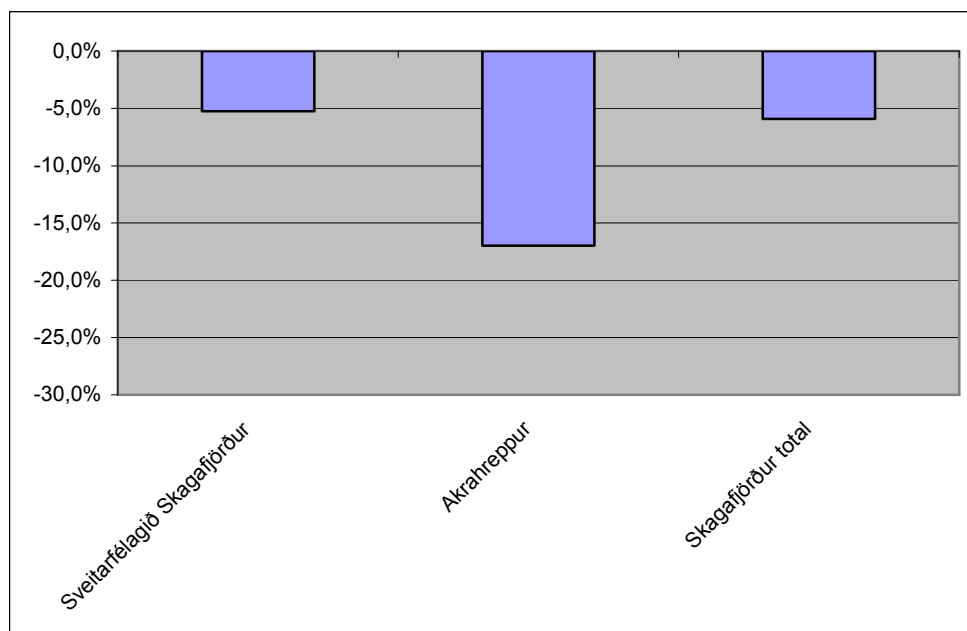
(Source: Statistics Iceland, 2006)

Figure 13. Húsavík region, sex and age structure 1 December 2005

4.3 Skagafjörður region

A total of 4,335 inhabitants lived in the Skagafjörður region on 1 Dec. 2005. In 1998 all of the municipalities in Skagafjörður, except for one small farming community (Akrahreppur, pop. 225), merged¹³. The population development in this small municipality has been much more negative than in the region as a whole (-17% versus -5.9%).

Three towns, Blönduós (pop. 837), Siglufjörður (pop. 1,352) and Skagaströnd (pop. 545) are located just outside the 45 minutes commuting distance, or in 70, 78 and 75 km distance respectively from the industrial site Brimnes in the Skagafjörður region. The Skagafjörður region including these three towns had a population of 7,069 1 Dec. 2005.

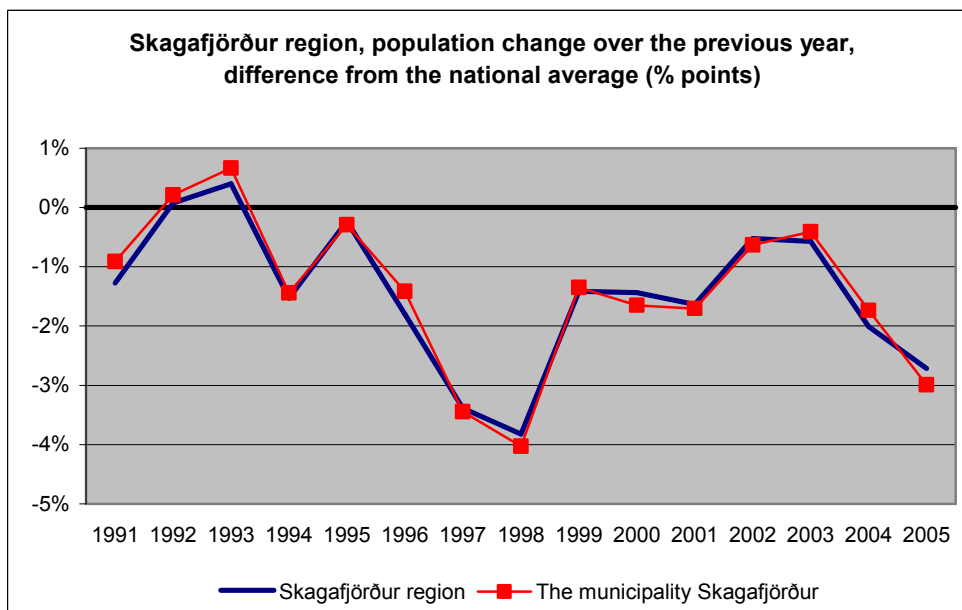


(Source: Statistics Iceland, 2006)

Figure 14. Municipalities in the Skagafjörður region population change 1990 - 2005

In the Skagafjörður region there has been much fluctuation in the population development during the past 15 years as the figure below clearly shows.

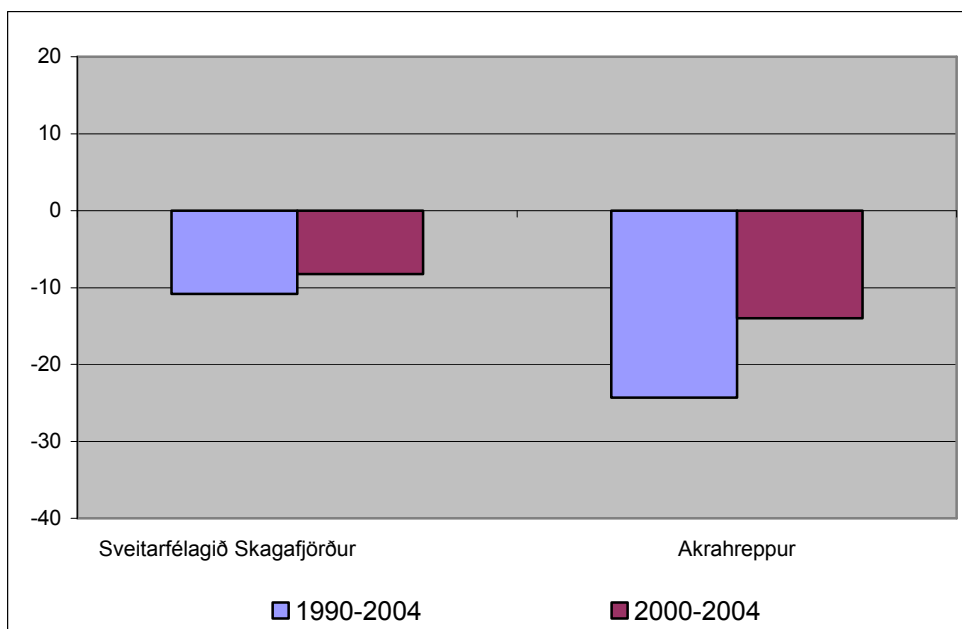
¹³ Prior to 1998 there were 12 municipalities in the Skagafjörður region, the smallest with mere 45 inhabitants.



(Source: Statistics Iceland, 2006)

Figure 15. Skagafjörður region, population change over the previous year, difference from the national average (% points)

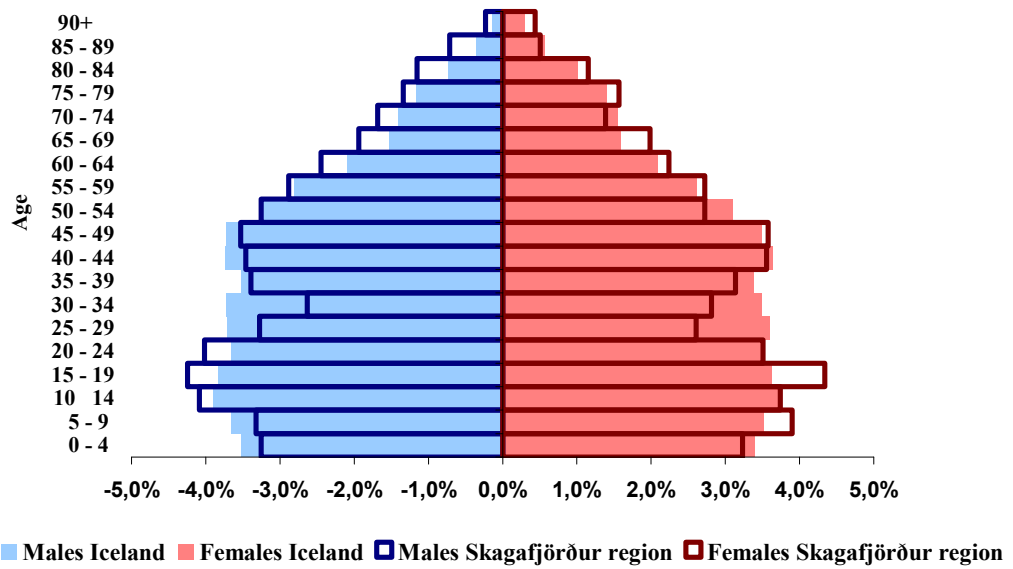
Both of the municipalities in the region experienced net out-migration in the periods 1990-2004 and 2000-2004. In the latter period this was however less pronounced.



(Source: Statistics Iceland, 2005)

Figure 16. Skagafjörður region, average net-migration per 1000 inhabitants

As for the two other regions in North Iceland studied here, the age pyramid for the region shows clear signs of net out-migration with a relative lack of young adults 25-34 years of age.



(Source: Statistics Iceland, 2006)

Figure 17. Skagafjörður region, sex and age structure 1 December 2005

5 LABOR MARKET

In the chapter the labor market in the three regions is described with the available data from Statistic Iceland, Directorate of Labor and the Director of Internal Revenue as well as some data gathered by the University of Akureyri Research Institute. Most of the data on labor market statistics gathered and issued by Statistics Iceland is not available for smaller geographical units such as the three regions studied here. Finally there is a discussion on the effects of distance on commuting behavior.

5.1 The size of the labor force and labor participation

Statistics Iceland do not publish data on labor force activity for individual regions in Iceland. However this data is published for the capital region and other regions outside the capital area as a whole. According to a large survey carried out by the University of Akureyri Research Institute (2002) activity rates in different regions appear to be very similar. According to the data from Statistics Iceland the activity rates outside the capital area are slightly higher, or 81.2% compared with 80.4% in the capital region in 2004.

Table 9. Labor force activity outside the capital region and potential size of the labor force for the three regions by age groups

	16-74 years	16-24 years	25-54 years	55-74 years
Labor force activity rates in regions outside the capital region in 2004	81%	74%	91%	63%
<i>Population in 2004</i>	<i>16-74 years</i>	<i>16-24 years</i>	<i>25-54 years</i>	<i>55-74 years</i>
<i>Eyjafjörður region</i>	16,343	3,436	9,247	3,660
<i>Húsavík region</i>	2,736	520	1,509	707
<i>Skagafjörður region</i>	3,008	614	1,645	749
<i>Approximate potential labor force</i>	<i>16-74 years</i>	<i>16-24 years</i>	<i>25-54 years</i>	<i>55-74 years</i>
<i>Eyjafjörður region</i>	13,271	2,529	8,369	2,320
<i>Húsavík region</i>	2,222	383	1,366	448
<i>Skagafjörður region</i>	2,442	452	1,489	475

(Source: Statistics Iceland, 2005 and 2006)

By using age specific activity rates for all regions outside the capital area the approximate potential size of the labor force in different age groups in the three regions can be calculated as Table 9 shows.

Note that here only the population for the regions within 45 minutes driving distance from the industrial sites is used (approx. 68 km). In Eyjafjörður region there are nine municipalities, in Húsavík region six municipalities and two in the Skagafjörður region (see chapters 3.1, 3.2 and 3.3). Note also that a share of the labor force only works part time.

There is however some flexibility in the size of labor markets even if the commuting range is defined here as 45 minutes. In the cases of Skagafjörður and Húsavík regions longer commuting distances could enlarge the labor market considerably. There are three towns, Blönduós, Skagaströnd and Siglufjörður with a total of around 2,800 inhabitants just outside this 45 min. range from the industrial site Brimnes in Skagafjörður. Also, with a proposed tunnel through the mountain just east of Akureyri (Vaðlaheiði) and other proposed road shortenings between Akureyri and Húsavík, Akureyri's labor pool is just outside this range from the industrial site in Bakki by Húsavík. There is probably a "backup labor force" available in areas outside this limit since a small portion of the labor force in these areas will probably be willing to commute over longer distances. This is probably most important for the site in Bakki by Húsavík due to the size of the labor force in Akureyri. See a discussion about commuting distances in chapter 5.6.

5.2 The education level of the labor force

Data on education levels by regions is not readily available from official sources. However this data is sometimes available as background variables in various surveys. Statistically significant results can however not be obtained from surveys based on simple random samples for the whole of Iceland as these do not provide the sufficient number of responses for the Skagafjörður and Húsavík regions. Some level of comparison can however be established by combining data from four surveys carried out in the years 2002-2005 by the University of Akureyri Research Institute where each survey was aimed at the areas in question. It should be noted however that this method could to some extent be vulnerable to systematic errors due to definition and measurement errors. Random errors are however greatly reduced by using this method and it is by far the most accurate indicator of the education level in the regions.

Table 10. Education levels in the three regions

Highest education level finished	Iceland	Eyjafljörður region	Húsavík region	Skagafjörður region
Compulsory education or less	45	42	43	33
Secondary and upper secondary	35	36	44	47
University	20	22	13	20
Total	100	100	100	100
<i>Number of responses (n)</i>	1.333	758	123	297

(Source: University of Akureyri Research Institute, unpublished data)

According to this data the education level in the Eyjafljörður region is closest to the national average. Skagafjörður has a little lower share of persons with a university degree than Akureyri but the share of those holding a university degree is lowest in the Húsavík region. In fact that is similar to regions where primary production such as agriculture and fisheries have traditionally been the backbone of the economy. Also, one has to keep in mind that the different age structure of the regions plays a large role as well as migration between regions.

5.3 The structure of the labor market and employment

The structure of the economy in the three regions can be seen in the table below, as measured by the number of employed persons by primary job in different sectors. There is apparent some difference between the regions which is then analyzed separately for each region below. When mentioning particular companies and their sizes it is just meant to give an indication of size or a particular development.

Table 11. The number and share of employed persons by industries in 2003 in the three regions

Industry	Eyja- fjörður	%	Húsavík region	%	Skaga- fjörður region	%
Agriculture, hunting, forestry	447	4%	230	10%	253	10%
Fishing	940	8%	132	6%	129	5%
Mining	4	0%	48	2%	0	0%
Manufacturing	2,256	18%	388	16%	364	15%
(There of fish processing)	728	6%	200	9%	89	4%
Electricity and water supply	98	1%	23	1%	22	1%
Construction	822	7%	130	6%	237	10%
Wholesale, retail trade and repairs	1,242	10%	168	7%	233	10%
Hotels and restaurants	464	4%	77	3%	42	2%
Transport and communications	559	4%	117	5%	99	4%
Financial intermediation	291	2%	47	2%	47	2%
Real estate and business activities	616	5%	76	3%	100	4%
Public administration, social security	964	8%	239	10%	293	12%
Education	941	8%	144	6%	182	7%
Health services, social work	1,564	12%	241	10%	270	11%
Other public services, culture etc.	556	4%	66	3%	72	3%
Other services and n.s.	36	0%	26	1%	1	0%
Total	12,528	100%	2,352	100%	2,433	100%

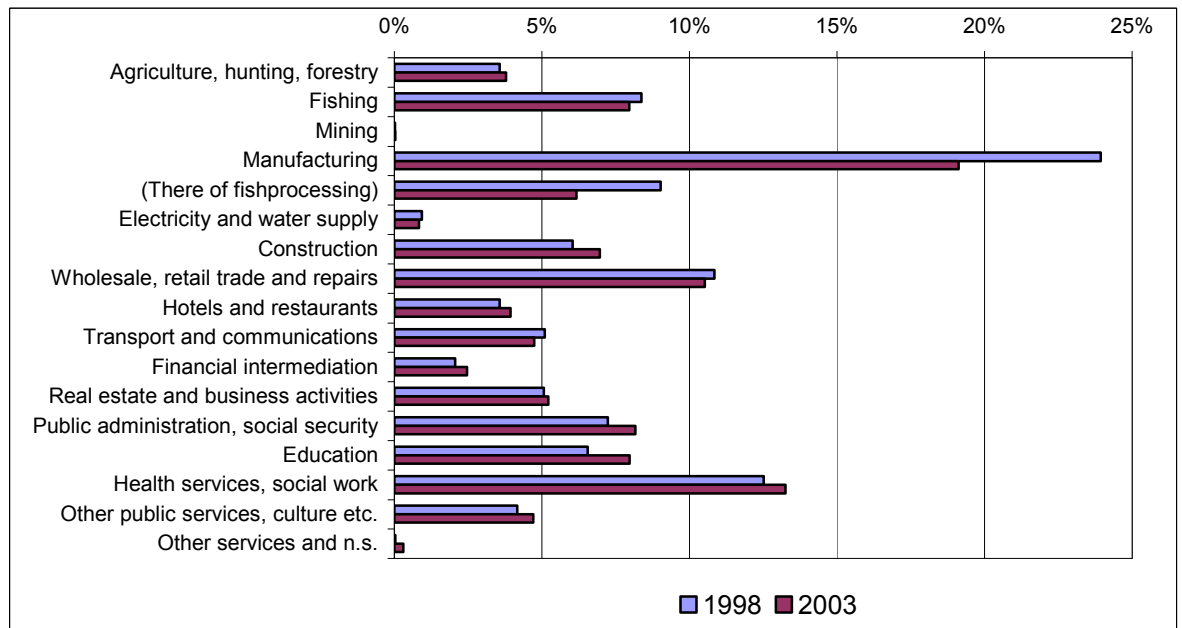
(Source: Statistics Iceland, 2005)

What is the most striking in the table above is in fact the difference of the three regions' size. For particular industries the number of employed persons can be 6-8 times larger in Eyjafjörður is than in the other two regions. To a larger extent this applies to industries in the tertiary sector.

5.3.1 Eyjafjörður region

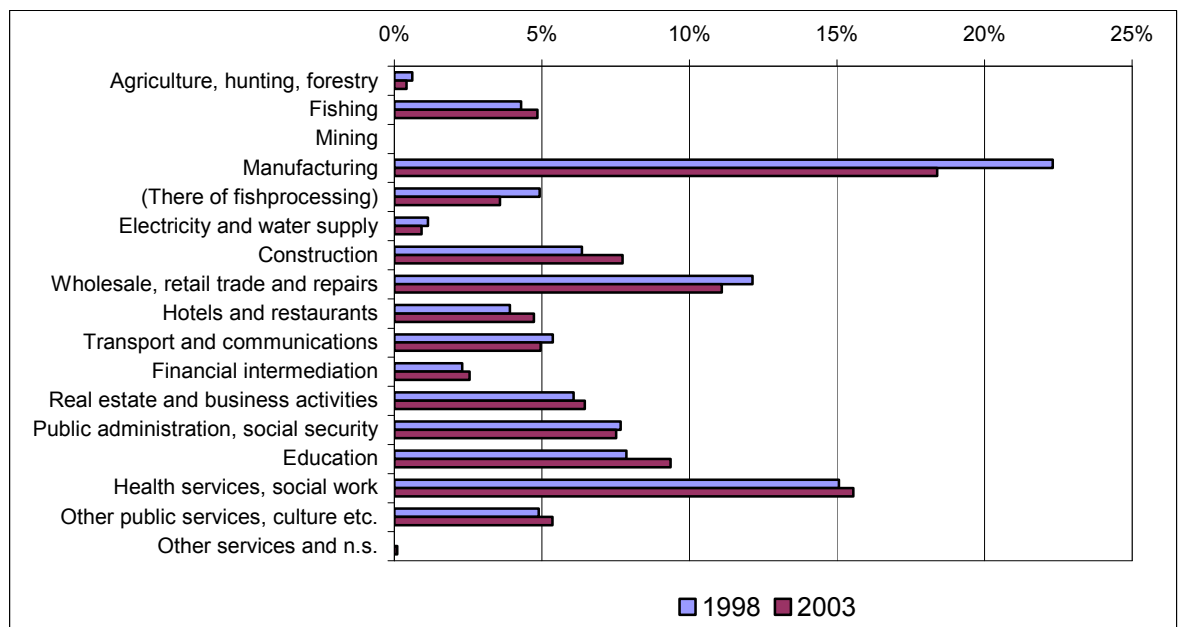
The main changes that are apparent in the employment market in the Eyjafjörður region between 1998 and 2003 is the relative downswing in manufacturing and increase in jobs in the tertiary sector. This is of course a common phenomenon among most western countries. Akureyri used to be termed a manufacturing city with concentration on textiles industry, fish processing and various small scale manufacturing in the food sector as well as other sectors. During the last two decades of the 20th century this industry gradually decreased in. Before, there used to work a substantial share of the workforce. Therefore Akureyri has a tradition for manufacturing but this has of course changed during this structural change. However there are still important manufacturing industries in Akureyri, even on a national scale, such as in ship maintenance and metal industry. In Akureyri there are important fishing companies on an Icelandic scale. In fact, two of them are among the largest in Iceland. One of those, Samherji has grown very

rapidly and had in 2003 some 706 man-years in Iceland and operation abroad in five countries with a similar scope.



(Source: Statistics Iceland, 2005)

Figure 18. Eyjafjörður, employed persons by industries 1998 and 2003



(Source: Statistics Iceland, 2005)

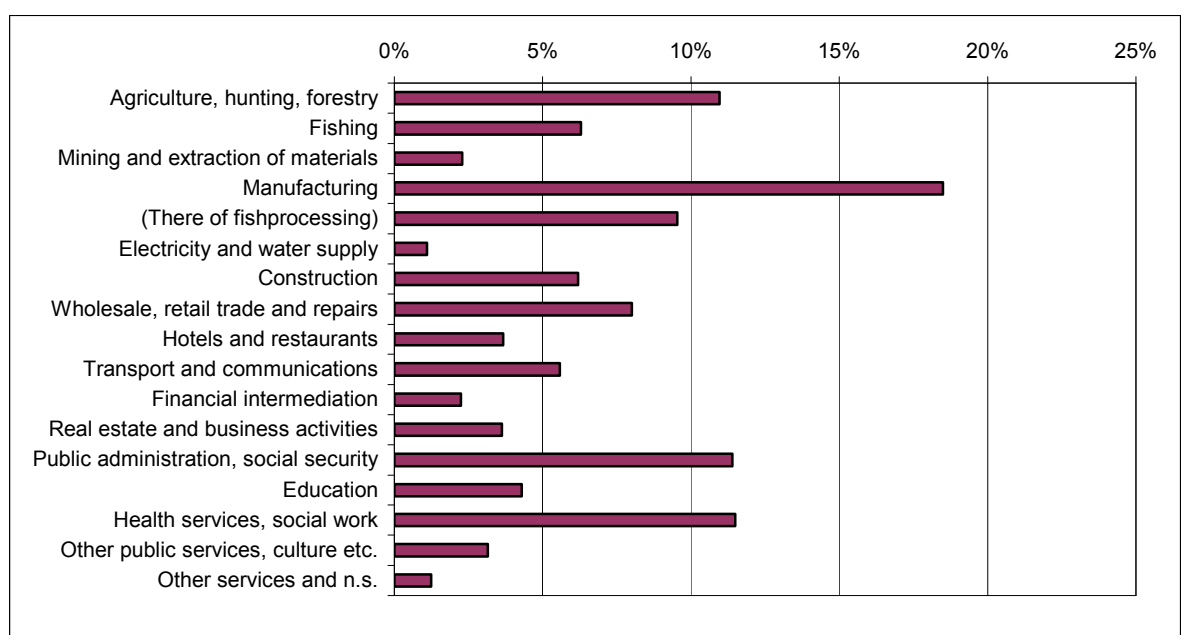
Figure 19. Akureyri, employed persons by industries 1998 and 2003

One of the most valuable additions to the employment market in Akureyri is the University of Akureyri, established in 1987. In the fall of that year, permanent staff consisted of only 4 persons and a total of 50 students were enrolled (Hjalti

Jóhannesson and Stefán G. Jónsson, 1993). The growth of the university has been very swift indeed. Today enrolled students are around 1,470 and permanent staff is 177 (Háskólinn á Akureyri, 2005).

5.3.2 Húsavík region

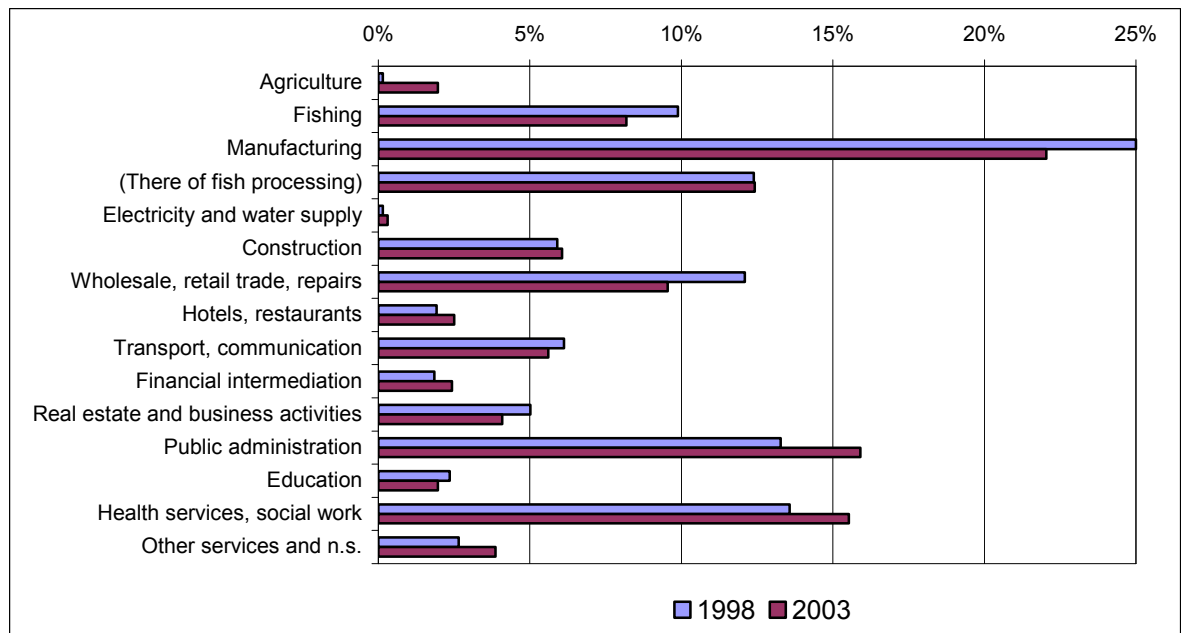
Due to a merger of municipalities in the western part of the region, comparable data on employment structure was not available for the region between the years 1998-2003. Húsavík has in many ways followed a similar path as has Akureyri and the Eyjafjörður region with a relative decline in manufacturing while various services have accounted for a larger and larger share of the workforce.



(Source: Statistics Iceland, 2005)

Figure 20. Húsavík region, employed persons by industries 2003

This development is very apparent for Húsavík and it is interesting that public administration has become the second largest employer in the town after manufacturing (including fish processing).



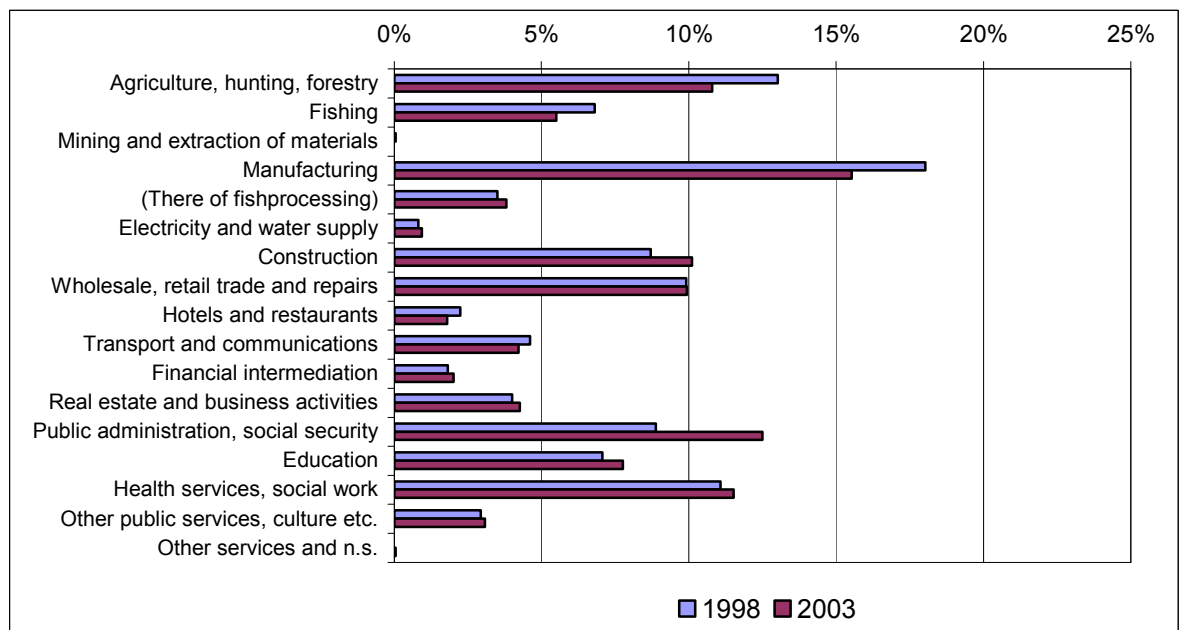
(Source: Statistics Iceland, 2005)

Figure 21. Húsavík, employed persons by industries 1998 and 2003

Húsavík has not experienced a similar employment growth in education as has Akureyri. The growth in Húsavík is particularly seen in public administration and health services. Also tourism has been expanding in the area and most of that development has been around whale watching. Húsavík has in recent years turned into the whale watching centre in Iceland and there is a whale museum in the town. The Húsavík region also has many tourist hot spots like Lake Mývatn, Dettifoss and Goðafoss waterfalls and this location has been utilized for developing the tourist service.

5.3.3 Skagafjörður region

In the Skagafjörður region a similar development can be seen as in its neighboring regions to the east. A relative decline in the number of workers in the traditional industries, i.e. agriculture, fishing and manufacturing. However there has been an increase in the tertiary sector, notably in public administration. There have e.g. been relocated government jobs to the regional centre Sauðárkrúkur from the capital region which this relative increase can probably be contributed to.



(Source: Statistics Iceland, 2005)

Figure 22. Skagafjörður, employed persons by industries 1998 and 2003

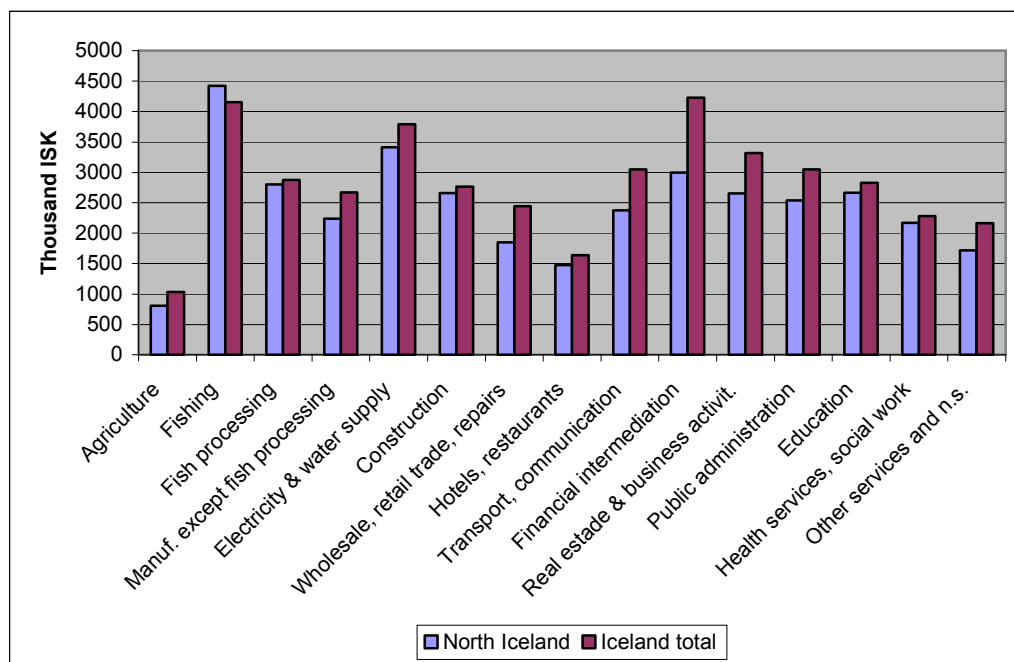
A strong cooperative (Kaupfélag Skagafirðinga: KS) is run in the Skagafjörður district. KS is a key player in food processing in the district with its main operations in Sauðárkrókur. The cooperative runs a slaughterhouse, a meat processing branch, and a dairy. It is also involved in processing of various marine products, retail, various services and transportation. The number of employees at KS is just under 500 in various industries (Source: www.ks.is; 06.11.05). As in Eyjafjörður region there has been an increase in the number of jobs in higher education and research and this development is seen in Hólar in the eastern part of the region, the Hólar university is in a rural setting and has grown remarkably in the past few years as numbers of inhabitants in the place indicate, but it has increased by 50% since year 2000. The number of students is around 100.

5.4 Average income per employee and income per tax payer

The picture below depicts the average income per employee¹⁴. As many employees do not work full time this does not mean income for a full job. To find income for a full job the numbers given here should probably be divided by 0.85-0.90 in most cases. In other words this means that the average employee is

¹⁴ The currency exchange rate 20 November 2005 was USD = 61.87 ISK

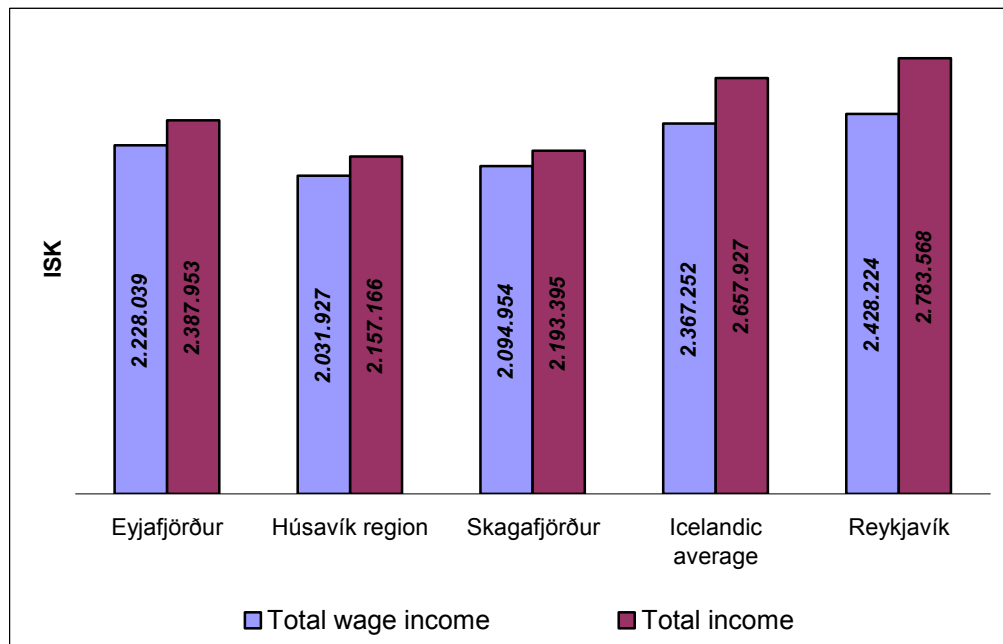
working 85-90% of a full job in most cases. The numbers are divided in west and east part of North Iceland. Eyjafjörður and Húsavík region are located in Northeast Iceland. Skagafjörður is located in Northwest Iceland.



(Source: Statistics Iceland, 2005)

Figure 23. Average income per employee

Another way to look at wages is through the taxation system. The figure below shows the average income per tax payer in the three regions in 2004 compared to the Icelandic average and Reykjavík city. Here income is divided into both total income and wage income. As can be seen from the figure, income is higher in Reykjavík and in Iceland in general than in the three regions studied here. This is more pronounced in the case of total income than wage income. The difference is income derived from capital assets which has a higher share of income among residents of the capital region than the regions studied here. Of the three regions the wages are a little higher in Eyjafjörður regions than in the other two.



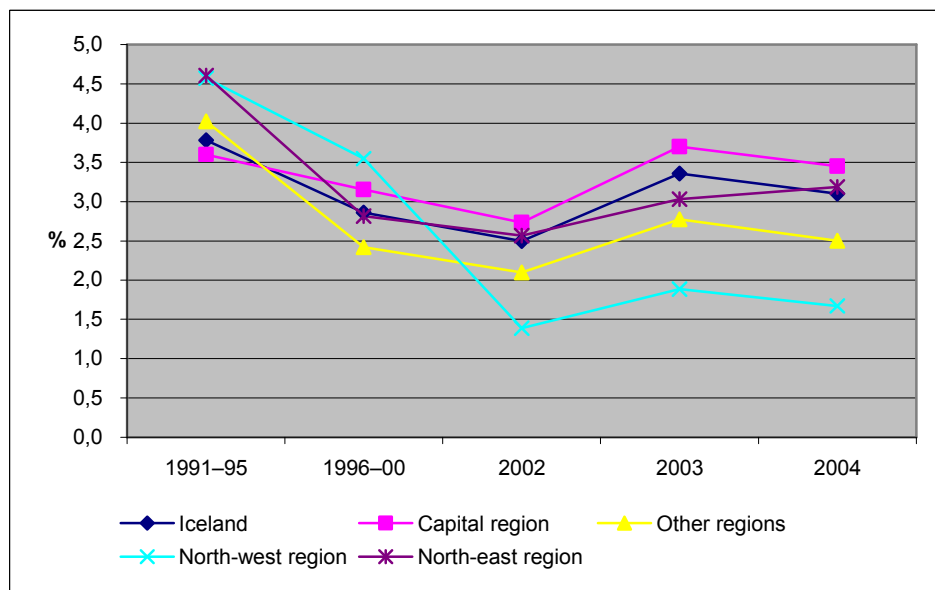
(Source: Directorate of Internal Revenues, 2005)

Figure 24. Total income and total wage income per tax payer by regions 2004

5.5 Unemployment

The Directorate of Labor (Vinnumálastofnun, www.vinnumalastofnun.is) collects and publishes data on registered unemployment both in actual numbers and as a percentage of the estimated number of man-years by regions. This data is available for each of eight regions in Iceland¹⁵

¹⁵ The regions are the same as the constituencies that were used for electing the Icelandic parliament 1959-2003.



(Source: Directorate of Labour)

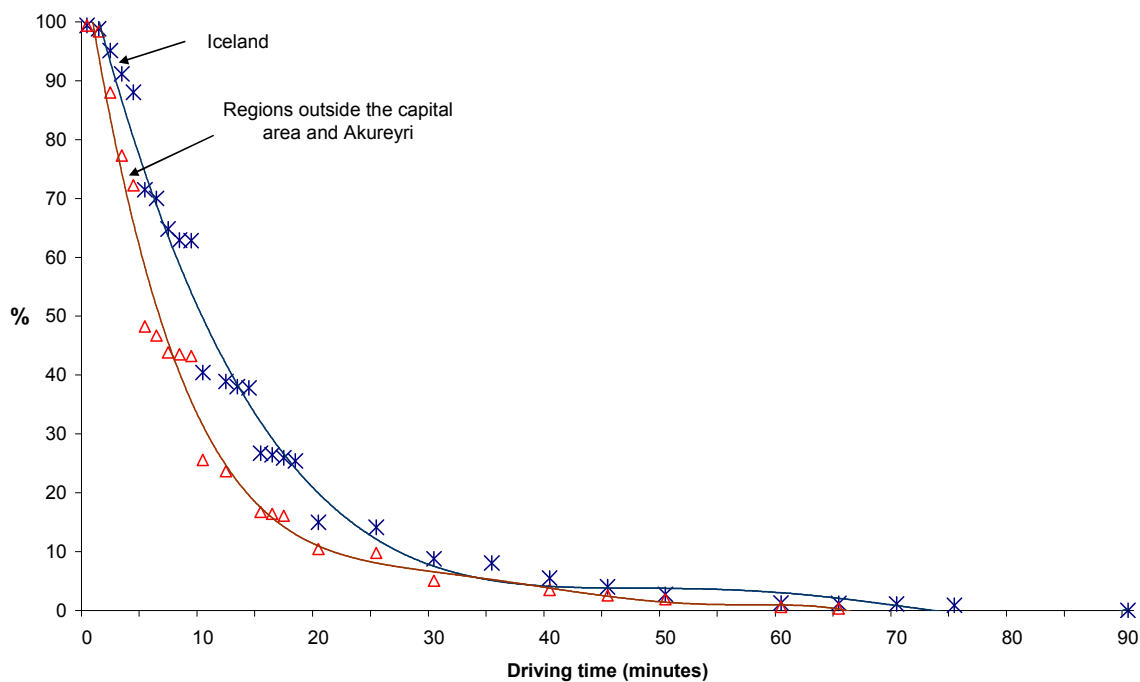
Figure 25. Registered unemployment as percentage of estimated number of man-years by regions, 1991-2002

Skagafjörður belongs to the North-west region which shows the greatest change in unemployment of the regions in the comparison above. This change in unemployment has to be put into context with out-migration from the region. Both Eyjafjörður and the Húsavík area belong to the Northeast region which has generally had unemployment levels similar to the national level. During the period 1991-95 there was relatively high unemployment in the area mainly due to great structural changes in the economy with a downturn in traditional industries such as the textiles manufacturing in Akureyri.

5.6 Distances and their effects on commuting and labor markets

Regarding distances from proposed industrial sites, i.e. Dysnes in Eyjafjörður, Brimnes in Skagafjörður and Bakki north of Húsavík, we refer to the summary tables in the chapter on municipalities (see page 9). A few aspects of the infrastructure, which are important for a manufacturing firm of this scale are summarized in these tables to ease an overview and a quick comparison between these three regions. The distance for daily commuting is in the context of this report 45 minutes one way or approximately a 68 km radius from the industrial sites, given that the average speed is 90 km/h which is the same as is the speed limit in Iceland. In research projects in the context of the European spatial planning observation network, ESPON (www.espon.lu) the commuting distance

has been defined as 45 minutes. The same has been done in recent Icelandic studies in the field (Hjalti Jóhannesson and Jón Þorvaldur Heiðarsson, 2005 and Jón Þorvaldur Heiðarsson and Valtýr Sigurbjarnarson, 2005). A research carried out by University of Akureyri Research Institute in 2002 indicates that approximately 10% of the population commutes to work 31 minutes or more (Hjalti Jóhannesson and Kjartan Ólafsson, 2004).



(Source: Kjartan Ólafsson, 2005)

Figure 26. An estimation of the effects of distance on commuting in a survey on travel behavior of Icelanders in 2002

The figure above shows how commuting decreases with increased distance. According to this, there are fewer who commute in regions outside the capital region, especially over shorter distances. However, the share of commuters driving 30-40 minutes is equally large in both regions (Kjartan Ólafsson, 2005 and Hjalti Jóhannesson and Kjartan Ólafsson, 2004).

6 HOUSING

6.1 Price of housing

The housing price in the three regions has developed in the same direction during the last years. The price per square meter last 12 months can be seen on the next picture. The price per square meter in single family houses and apartments in houses with two or more apartments are so close that it is mixed together in each area. This price information is limited to apartments built in 1951 or later.

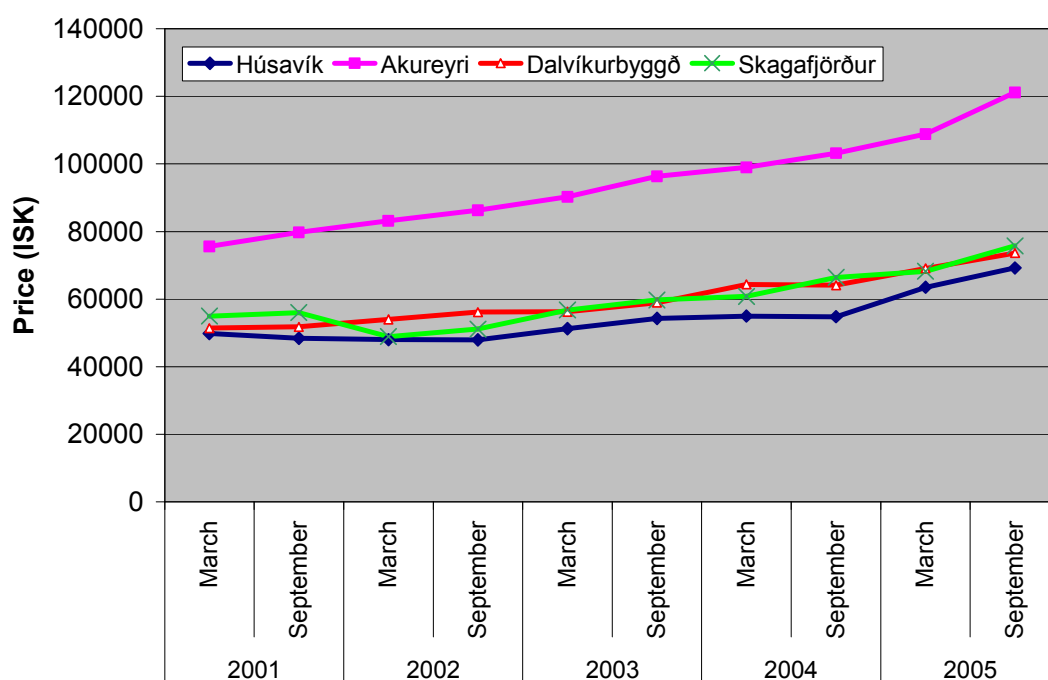


Figure 27 Price per square meter in all apartments during the last 12 months

As can be seen on the picture the price in three of the regions is more or less the same. The price in Akureyri is completely different. The difference in the period April 2000 – March 2001 appears to be around 45%. That is, the price in Akureyri is 45% higher than in the other three regions. During the last period (Oct. 2004–Sept. 2005) the difference is around 65% and 70% in the predicted values. It seems, in other words, as the gap in price between Akureyri and its three neighbor areas is increasing. It is also interesting to see how rapidly the prices rose in last year or so.

6.2 Eyjafjörður region

6.2.1 The quantity of apartments and its utilization

In next table the quantity of apartments can be seen in the Eyjafjörður region. The utilization of these apartments can be seen as well as the number of square meters per inhabitant¹⁶.

Table 12. Size and number of apartments in the Eyjafjörður region

Regions	Inhabitants 1 Dec. 2004	Number of apartments	Area of apartments (m ²)	Average size of apartment (m ²)	Area per inhabitant (m ²)
Akureyri (the town)	16,279	7,018	776,940	111	47.7
Dalvíkurbyggð	1,946	691	91,631	133	47.1
Ólafsfjörður	980	409	52,021	127	53.1
Siglufjörður	1,386	652	83,812	129	60.5
Akureyri's surroundings (5 small farming municipalities)	2,324	832	122,692	148	52.8
Hrísey island (a part of the Akureyri municipality)	171	108	14,262	132	83.4
Eyjafjörður region total	23,086	9,710	1,141,358	117.5	49.4

Source: Land Registry of Iceland and Statistics Iceland

The area per inhabitant in Akureyri (47.7 m²) is very close to the average in the whole of Iceland. It can therefore be concluded that if this ratio is much higher than 50 m² in the towns, the apartments in that region are underutilized. It is more difficult to say something about the countryside since apartments are usually larger there. It is clear that apartments in Siglufjörður and Hrísey island¹⁷ are underutilized.

6.2.2 Quantity of commercial real estate

In the Eyjafjörður region the quantity of commercial real estate can be seen in next table. The condition of housing built before 1980 is in some cases bad.

¹⁶ Note that information on number of inhabitants is here provided for 1 Dec. 2004 since the information on housing is provided for 31 Dec. 2004 by the Land Registry of Iceland.

¹⁷ Hrísey island is a part of the municipality Akureyri since an amalgamation of the municipalities in 2004.

Table 13. Type and quantity of commercial realestate in Eyjafjörður region

Type of housing	Akureyri	Akureyri surround- ings	Dalvíkur- byggð	Ólafs- fjörður	Siglu- fjörður	Total
Shops and offices built 1980 or later	54,651	9,339	1,917	1,818	842	68,567
Shops and offices built before 1980	61,925	2,459	5,000	3,665	8,921	81,970
Industry housing built 1980 or later	61,310	5,712	23,533	4,780	11,840	107,175
Industry housing built before 1980	74,290	9,691	11,905	12,630	24,517	133,033
Warehouses built 1980 or later	8,283	841	649	879	849	11,501
Warehouses built before 1980	24,123	2,589	3,717	1,003	9,521	40,953
Healthcare and hospitals	14,844	0	730	2,104	?	17,678
Schools	42,737	3,493	4,968	2,235	2,268	55,701
Gymnasiums	23,428	3,223	589	1,512	1,452	30,204
Eyjafjörður region total	365,591	37,347	53,008	30,626	60,210	546,782

6.2.3 Supply of housing

A real estate agent in Akureyri was interviewed on the markets in Dalvíkurbyggð and Ólafsfjörður, located 44 and 62 km from Akureyri respectively. Both of these municipalities are located in the Eyjafjörður region. Some months and years ago there was lot of supply of houses in Dalvíkurbyggð. Much more than was the demand. During the last months this has changed. The supply is going down and the demand is going up. It is not difficult any more to sell houses in Dalvíkurbyggð. In the next table the number of sales contracts can be seen during the past few years in Dalvíkurbyggð.

Table 14. Number of sales contracts in Dalvíkurbyggð municipality 2000-2005

Year	Number of contracts
2000	20
2001	20
2002	17
2003	29
2004	33
2005 (1q-3q)	34

Source: Land Registry of Iceland

The situation in Ólafsfjörður is more difficult to handle. According to the same real estate agent the market there is more closed and few houses are publicly for

sale. It has though not been difficult to buy houses there as the population has been going down resulting in more supply than demand.

The situation in Siglufjörður is more or less the same as in Ólafsfjörður. The market is rather closed and few houses publicly for sale. The only agent found which deals with houses in Siglufjörður informed that the price there has been going up in last months and years. Mainly due to interest from people living in Reykjavik to own a house in Siglufjörður as a second home.

The market for houses in Akureyri has been very lively during the last months and years. The demand is high and the supply it not enough. The price has gone rapidly up. In next table the number of sales contracts can be seen during the past few years in Akureyri.

Table 15. Number of sales contracts in Akureyri 2000-2005

Year	Number of contracts
2000	393
2001	331
2002	326
2003	345
2004	450
2005 (1q-3q)	525

Source: Land Registry of Iceland

Regarding commercial real estate it seems that both demand and supply are rather low, the market is at least not lively but in equilibrium and not difficult to sell what comes in.

6.2.4 Future housing areas

Akureyri: Building sites for 640 apartments have been sold where construction has not yet begun. Another lots for 200 apartments will be available during the next year. In the next few years lots for 1,600 apartments will become available.

Akureyri surrounding municipalities: In the municipalities Svalbarðsstrandarhreppur, Eyjafjarðarsveit, Hörgárbyggð and Arnarneshreppur lots for 23 apartments have been sold where construction has not yet begun. Lots for 45 apartments will become available next year. In coming years it is likely that a plenty of lots will be available in these municipalities as it is becoming very popular to live in the vicinity of Akureyri.

Dalvíkurbyggð: No information.

Ólafsfjörður: Lots for 5 apartments are for sale. Lots for 12 apartments will probably be ready 2007.

Siglufjörður: No information

6.3 Húsavík region

6.3.1 The quantity of apartments and its utilization

In next table the quantity of apartments can be seen in the Húsavík region. The utilization of these apartments can be seen as well as the number of square meters per inhabitant¹⁸.

Table 16. Size and number of apartments in the Húsavík region

Regions	Inhabitants 1 Dec. 2004	Number of apartments	Area of apartments (m ²)	Average size of apartment (m ²)	Area per inhabitant (m ²)
Húsavík (the whole municipality)	2,426	902	120,375	134	49.6
Húsavík surroundings (3 farming municipalities)	432	212	29,585	140	68.5
Þingeyjarsveit and Mývatn	1,135	480	70,717	147	62.3
Húsavík region total	3,993	1,594	220,678	138.4	55.3

Reference: Land Registry of Iceland and Statistics Iceland

The area per inhabitant in Iceland is very close to 47.7 m² (the same as in Akureyri). It can therefore be concluded that if this ratio is much higher than 50 m² in the towns the apartments in that area are underutilized. It is more difficult to speculate about the countryside since apartments are usually larger there. It seems though that apartments in the Húsavík surroundings and Þingeyjarsveit and at Mývatn are underutilized.

6.3.2 Quantity of commercial real estate

The quantity of commercial real estate in the Húsavík region can be seen in next table. The condition of housing built before 1980 can in some cases be bad.

¹⁸ Note that information on number of inhabitants is here provided for 1 Dec. 2004 since the information on housing is provided for 31 Dec. 2004 by the Land Registry of Iceland.

Table 17. Type and quantity of commercial realstate in Húsavík region

Type of housing	Húsavík	Húsavík's surround- ings	Pingeyjar- sveit and Mývatn	Total
Shops and offices built 1980 or later	2,353	154	3,606	6,113
Shops and offices built before 1980	14,501	705	3,976	19,182
Industry housing built 1980 or later	11,281	1,178	2,572	15,031
Industry housing built before 1980	15,183	840	4,381	20,404
Warehouses built 1980 or later	1,189	437	910	2,536
Warehouses built before 1980	4,383	143	3,784	8,31
Healthcare and hospitals	1,858	0	0	1,858
Schools	4,684	?	1,867	6,551
Gymnasium	2,447	0	2,457	4,904
Húsavík region total	57,879	3,457	23,553	84,889

6.3.3 Supply of housing

Two real estate agents were interviewed in Húsavík. Both told the same story. The situation on the housing market is quite good, it is easy to sell houses and the demand is good. The supply is slowly decreasing. The expectation of aluminum plant and a tunnel through Vaðlaheiði mountain may have already affected the price in some way. Other explanations could be general increases in house prices and lower interest rates. In next table the number of sales contracts can be seen during the last years in Húsavík.

Table 18. Number of sales contracts in Húsavík 2000-2005

Year	Number of contracts
2000	23
2001	24
2002	25
2003	33
2004	34
2005 (1q-3q)	40

Source: Land Registry of Iceland

Regarding commercial real estate the market seems to be in quite a good equilibrium but not lively. If something, the supply of better housing could be better.

6.3.4 Future housing areas

Húsavík: Lots for 30 apartments are ready for sale. Lots for 300 apartments are being planned and will be ready in the next year or 2007, depending on the need.

Húsavík surroundings: In Aðaldælahreppur, lots for 23 apartments are ready for sale. No information was given by the municipalities Tjörneshreppur and Kelduneshreppur.

At Lake Mývatn (Skútustaðahreppur): Lots for 20 apartments will be available in next year.

Þingeyjarsveit: No information.

6.4 Skagafjörður region

6.4.1 The quantity of apartments and its utilization

In next table the quantity of apartments can be seen in the Skagafjörður region. The utilization of these apartments can be seen as well as the number of square meters per inhabitant¹⁹.

Table 19. Size and number of apartments in the Skagafjörður region

Regions	Inhabitants 1 Dec. 2004	Number of apartments	Area of apartments (m ²)	Average size of apartment (m ²)	Area per inhabitant (m ²)
Sauðárkrókur (the town)	2,627	993	125,678	127	47.8
Sauðárkrókur surroundings (Skagafjörður region except Sauðárkrókur)	1,729	841	103,546	123	59.9
Siglufjörður	1,386	652	83,812	129	60.5
Blönduós-Skagatrönd and Skagabyggð	1,580	651	82,091	126	52.0
Skagafjörður region total	7,322	3,137	395,127	126	54.0

Source: Land Registry of Iceland and Statistics Iceland

¹⁹ Note that information on number of inhabitants is here provided for 1 Dec. 2004 since the information on housing is provided for 31 Dec. 2004 by the Land Registry of Iceland.

The area per inhabitant in Iceland is very close to 47.7 m² (the same as in Akureyri). It can therefore be concluded that if this ratio is much higher than 50 m² in the towns the apartments in that area are underutilized. It is more difficult to say about the countryside, apartments are usually larger there. As mentioned before it is clear that apartments in Siglufjörður are underutilized. It is difficult to say about the countryside as the ratio is not higher than 60.

6.4.2 Quantity of commercial real estate

The quantity of commercial real estate in the Skagafjörður region can be seen in next table. The condition of the housing which was built before 1980 can in some cases be bad.

Table 20. Type and quantity of commercial realestate in Skagafjörður region

Type of housing	Skaga- fjörður	Siglu- fjörður	Blönduós Skagaströnd and Skagabyggð	Total
Shops and offices built 1980 or later	9,948	842	3,721	14,511
Shops and offices built before 1980	8,543	8,921	7,689	25,153
Industry housing built 1980 or later	27,354	11,840	7,805	46,999
Industry housing built before 1980	27,404	24,517	26,937	78,858
Warehouses built 1980 or later	2,571	849	1,001	4,421
Warehouses built before 1980	3,982	9,521	6,230	19,733
Healthcare and hospitals	5,444	?	3,921	9,365
Schools	15,305	2,268	1,377	18,950
Gymnasium	4,072	1,452	1,215	6,739
Skagafjörður region total	104,623	60,210	59,896	224,729

6.4.3 Supply of housing

According to a real estate agent in Skagafjörður the situation there is quite good, the demand is good but the supply is rather low. These months it seems to be more difficult to get smaller apartments than the larger ones. In the next table the number of sales contracts can be seen last years in Skagafjörður.

Table 21. Number of sales contracts in Skagafjörður 2000-2005

Year	Number of contracts
2000	42
2001	39
2002	26
2003	36
2004	52
2005 (1q-3q)	71

Source: Land Registry of Iceland

Commercial real estate is difficult to find on the public market. According to one real estate agent in Skagafjörður they hardly notice any supply or demand.

6.4.4 Future housing areas

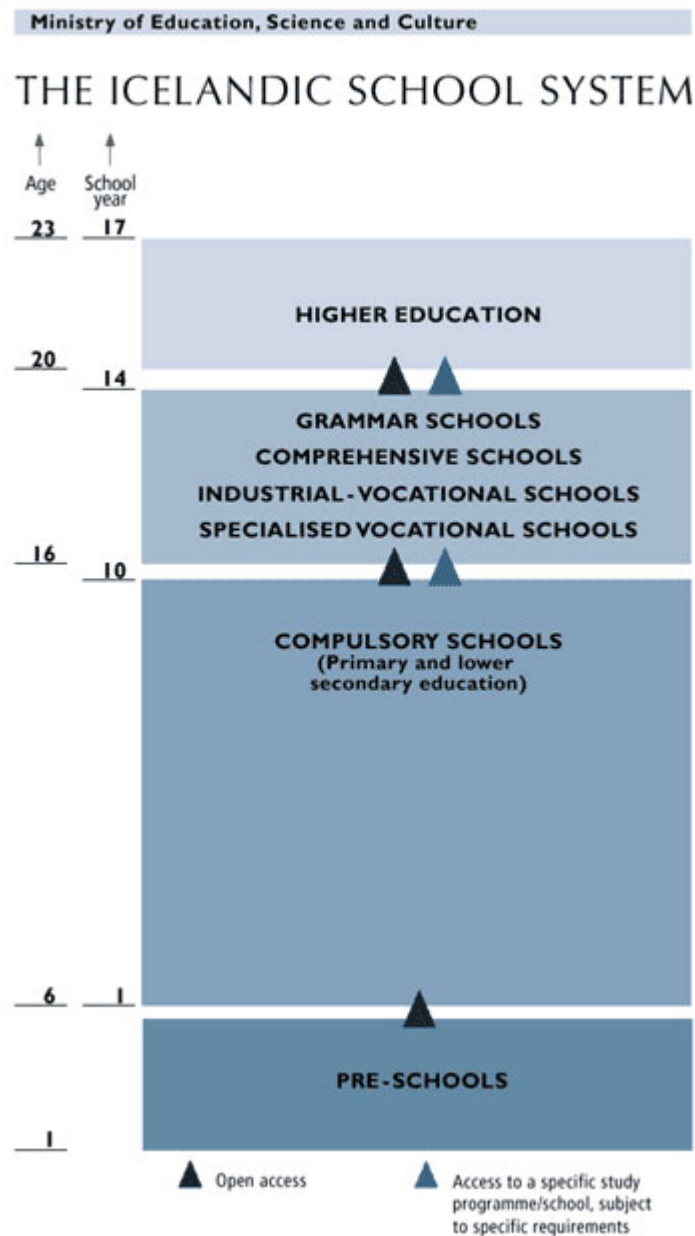
Skagafjörður (Sauðárkrókur and surroundings): Lots for 150 apartments are for sale or will be soon if needed. In the next years lots for additional 360 apartments will be available if needed.

Blönduós: Lots for more than 10 apartments will be available in just a few weeks or months. There is plenty of land to develop so many lots could be offered in coming years if needed.

Siglufjörður, Skagaströnd (Höfðahreppur) and Skagabyggð: No information.

7 EDUCATION

The first level of education in Iceland is preschools, usually age 2-5 even though younger children are admitted in some cases. The compulsory school has the duration of 10 years is for the age group 6-15 years. The high school (or the Icelandic equivalent) is usually four years (16-19 years). Therefore at age 20 one can attend university in Iceland. The figure below describes the system:



(Source: Ministry of Education, Science and Culture, 2005)

Figure 28. The Icelandic school system

The preschools and compulsory schools are run by the municipalities and the high schools and the universities are run by the state. When living in a particular municipality inhabitants are usually required to send their children to a school in that particular municipality. Some compulsory schools are run by more than one municipality in cases where the municipalities are very small.

7.1 Eyjafjörður region

In the Eyjafjörður region there are schools on all levels from pre-school to a university. Akureyri has a long history as an important education centre both regionally as well as nationally. Akureyri has long been called a “school city”.

7.1.1 Pre-primary institutions

In the region there are 24 preschools with a total of 1,350 children of the age 1-5 years. Not all institutions however accept children under 2 years of age. The table below shows the number of institutions and number of children in 2004.

Table 22. Number of children and preschools in the Eyjafjörður region 2004

	Children	Preschools
Siglufjörður	65	1
Ólafsfjörður	55	1
Dalvíkurbyggð	112	4
Hörgárbyggð	19	1
Akureyri	1,000	14
Eyjafjarðarsveit	55	1
Svalbarðsstrandarhreppur	15	1
Grýtubakkahreppur	32	1
	1,353	24

(Source: Statistics Iceland, 2005)

7.1.2 Compulsory schools

There were a total of 18 compulsory schools in the Eyjafjörður region in 2004 as the table below shows. Since then, the small school Húsabakkaskóli has been merged with the neighboring school Dalvíkurskóli. The support system for the schools is mostly provided by the municipality of Akureyri and the Faculty of education at the University of Akureyri. Also there is a special support system run by Dalvíkurbyggð, Ólafsfjörður and Siglufjörður.

Table 23 Number of compulsory schools and pupils in the Eyjafjörður region 2004

School	Pupils	Grades	Municipality
Grunnskóli Siglufjarðar	209	1-10	Siglufjörður
Barnaskóli Ólafsfjarðar	103	1-7	Ólafsfjörður
Árskógarskóli	48	1-8	Dalvíkurbyggð
Dalvíkurskóli	248		Dalvíkurbyggð
Húsabakkaskóli	40	1-7	Dalvíkurbyggð
Grunnskólinn í Grímsey	12	1-8	Grímseyjarhreppur
Grunnskólinn í Hrísey	28	1-10	Akureyri
Belamerkurskóli	100	1-10	Hörgárbyggð and Arnarneshreppur
Brekkuskóli	572	1-10	Akureyri
Giljaskóli	406	1-10	Akureyri
Glerárskóli	426	1-10	Akureyri
Hlíðarskóli	15	1-10	Akureyri
Lundarskóli	530	1-10	Akureyri
Oddeyrarskóli	217	1-10	Akureyri
Síðuskóli	452	1-10	Akureyri
Hrafnagilsskóli	203	1-10	Eyjafjarðarsveit
Valsárskóli	65	1-10	Svalbarðsstrandarhreppur
Grenivíkurskóli	56	1-10	Grýtubakkahreppur
Eyjafjörður total	3,730		

(Source: Statistics Iceland, 2005)

There has been a slight increase in the number of pupils in the compulsory schools in the Eyjafjörður region, or 1,3% since 2001. This increase is however very unevenly distributed over the region. The increase is primarily in Akureyri and its adjacent small municipalities (see the chapter on population development) while the number in more distant municipalities is decreasing.

7.1.3 High schools

There are two high schools located in the Eyjafjörður region, i.e. Menntaskólinn á Akureyri, MA (Akureyri Junior College) and Verkmenntaskólinn á Akureyri, VMA (the Comprehensive and Junior Technical College).

Akureyri Junior College (MA) is among Iceland's oldest and renowned educational establishments, founded in 1880 and moved to Akureyri from a neighboring countryside in 1902. Several buildings have been built since then including the last addition; a well-equipped library and an assembly hall seating 600-700 persons. A new student hostel was opened in 2003, providing accommodation for over two hundred students from both the high schools in Akureyri. The number of students is around 660 each year. (Source: www.ma.is)

The Comprehensive and Junior Technical College VMA was established in 1984. Students were initially 780 but presently they are just over 1800. Thereof 600-700 students pursue distance learning at the school each year. The school is a pioneer in that field in Iceland. (Source: www.vma.is)

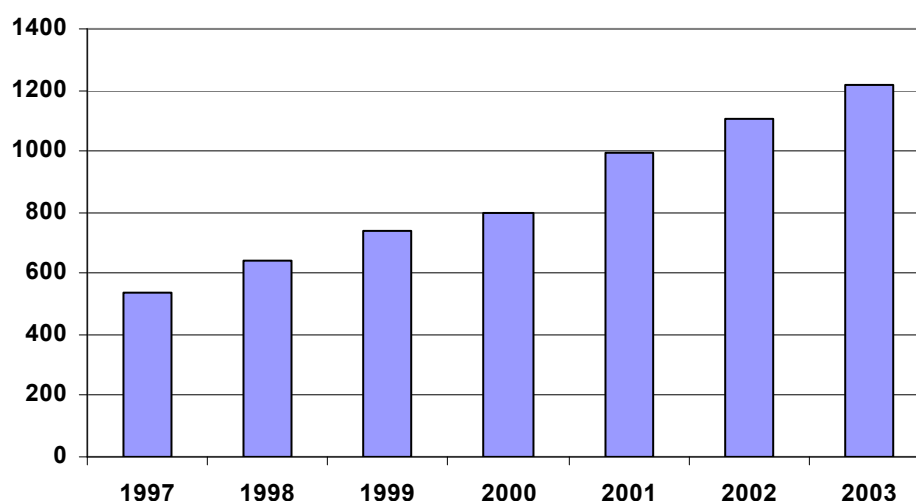
7.1.4 Universities

The University of Akureyri was established in 1987. In the fall of that year, permanent staff consisted of only 4 persons and a total of 50 students were enrolled. The growth of the university has been very swift indeed. Today the number of students is around 1.470 and the employees are some 390.

In recent years there has been a huge increase in the supply of educational opportunities in Icelandic society and this has probably also increased interest both among employers and the employed to make use of these opportunities.

In the fall of 2004 enrolled students in the upper secondary and tertiary level education were more than ever with a total of 40.497 (Statistics Iceland, 2005). In the upper secondary level there were 24.220 and in the tertiary level 16.277. Since 1997 the increase on the upper secondary level is 19,8% and in the tertiary level 92%. Females constitute a bigger percentage of the student population, or 57,3%. Distance learning is becoming ever more common, some 12% attend their studies that way.

In Northeast Iceland there are around 2,000 students attending schools on the upper secondary level and that number has been relatively constant since 1997. Students attending tertiary education (university) were just over 1,200 in 2003. (Source: Statistics Iceland)



(Source: Statistics Iceland, 2005)

Figure 29 Students in Northeast Iceland 1997-2003 attending university

As the picture above clearly shows (Statistics Iceland, 2005) there has been a huge growth in university enrollment in this part of the country, no less than 127% during this 6 years period. This is undoubtedly one of the major changes that have taken place in the region and the University of Akureyri is the main reason for this change. Since its establishment in 1987 the number of students has grown rapidly and new faculties have been established. There are six faculties at the university; education, information technology, health sciences, management, natural resource sciences and social sciences and law²⁰. The most faculty with the most students is the Faculty of education and the most recent faculty is the Faculty of social sciences and law. The number of enrolled students 2004-2005 is about 1,400.

Table 24. Number of students enrolled at the University of Akureyri 2004-2005

Faculties	Students in situ	Distance learning	Total
Natural resource sciences	70	40	110
Law and social sciences	170		170
Health sciences	174	126	300
Education	300	220	520
Management	70	200	270
Information technology	32		32
Total	816	586	1,402

(Source: the University of Akureyri, 2005)

²⁰ A decision has been taken to decrease the number of faculties to four. It is primarily an administrative change that will not affect the supply or diversity of education.

The University of Akureyri has indeed been a very important factor in the development of the Eyjafjörður region during the past years.

7.1.5 Other schools

The Akureyri School of Visual Arts (Myndlistaskólinn á Akureyri) is classified as a special school or as a university in the databank of Statistics Iceland. It has some 270 students enrolled and that number has doubled since 1997. It is an independent institution supported by the municipality of Akureyri and the Icelandic state. The school was founded in 1974 and its aim is to provide its students with education and training in a wide variety of art subjects. It is the aim of the school to encourage the students to explore a wide range of techniques and experiences to help shape their own, personal artistic vision. (Source: www.myndak.is)

A music school (Tónlistarskólinn á Akureyri), established in 1946, is located in Akureyri and in the school year 2004-2005 there were 457 students enrolled there. The school offers education for all age groups but its teachers also provide teaching in music preschool at Akureyri's compulsory schools. The school is one of Iceland's oldest and largest institutions of its kind. (Source: www.tonak.is)

7.2 Húsavík region

In the Húsavík region there are schools up to the upper secondary level but the closeness of the region to Akureyri makes the University of Akureyri accessible for the inhabitants and a tunnel through the Vaðlaheiði mountain will make this an acceptable commuting distance of around 45 minutes (see the chapter on road infrastructure).

7.2.1 Pre-primary institutions

In the Húsavík region there were 9 preschools with 256 children of the age 1-5 years in 2004 as can be seen from the table below.

Table 25. Number of children and preschools in the Húsavík region in 2004

	Children	Preschools
Húsavíkurbær	144	2
Skútustaðahreppur	17	1
Aðaldælahreppur	14	1
Þingeyjarsveit	25	2
Öxarfjarðahreppur	15	1
Raufarhafnarhreppur	9	1
Þórshafnarhreppur	32	1
	256	9

(Source: Statistics Iceland, 2005)

7.2.2 Compulsory schools

In the Húsavík region there is one school run by more than one municipality, i.e. Hafralækjarskóli some 20 km south of Húsavík town. The support system for the schools is run jointly by the municipalities in Þingeyjarsýslur (Húsavík region).

Table 26. Number of compulsory schools and pupils in the Húsavík region 2004

School	Pupils	Grades	Municipality
Borgarhólsskóli	387	1-10	Húsavík
Stórutjarnaskóli	58	1-10	Þingeyjarsveit
Grunnskólinn Skútustaðahreppi	78	1-10	Skútustaðahreppur
Litlulaugaskóli	46	1-10	Þingeyjarsveit
Hafralækjarskóli	82	1-10	Þingeyjarsveit, Húsavík and Tjörneshreppur
Öxarfjarðarskóli	72	1-10	Öxarfjarðahreppur
Grunnskóli Raufarhafnar	45	1-10	Raufarhafnarhreppur
Grunnskóli Svalbarðshrepps	11	1-8	Svalbarðshreppur
Grunnskólinn á Þórshöfn	62	1-10	Þórshafnarhreppur
	841		

(Source: Statistics Iceland, 2005)

The number of pupils has been decreasing during the past few years, or around 6,5% or 58 since 2001. This is most apparent in the farming communities, but in absolute numbers the most decrease has been in Húsavík itself, 49 students in this period.

7.2.3 High schools

In the Húsavík region there are two high schools. One is located in Húsavík, Framhaldsskólinn á Húsavík (Húsavík Junior College), established in 1987 and the number of students is around 150-180. The other high school in the region, Framhaldsskólinn á Laugum is located in Laugar, 39 km from Húsavík. The high

school in Laugar is a boarding school and the number of students is around 100. In spite of being in a farming community the location in Laugar offers amenities such as a well equipped sports hall and a new outdoor swimming pool heated with geothermal water.

7.3 Skagafjörður region

In the Skagafjörður region there are educational institutions from kindergarten to a university college.

7.3.1 Pre-primary institutions

In the Skagafjörður region there are three pre-primary institutions in five locations. There are two in Sauðárkrókur, one in Varmahlíð close to highway 1 between Akureyri and Reykjavík. In the eastern part of the region there are pre-primary institutions in four locations. Three of them are within the Skagafjörður municipality, in the Hofsós village, in Hólar (the university college) and in the farming community Fljót the most eastern part of the municipality. In Siglufjörður there is one preschool. All of these preschools admit children 1-5 years of age. The preschools in Sauðárkrókur only have a short waiting list, otherwise the capacity is enough for the present number of inhabitants.

Table 27. Number of children and pre-primary institutions in the Skagafjörður region 2004

	Children	Preschools
Sauðárkrókur	164	2
Varmahlíð	50	1
Tröllaborg (Hofsós, Hólar, Sólgarðar)	44	3
Siglufjörður	65	1
	323	7

(Source: Statistics Iceland, 2005)

7.3.2 Compulsory schools

There are six compulsory schools in the region. Four of them are run by the Skagafjörður municipality, one by the small independent rural community Akrahreppur and one by the town Siglufjörður in the far eastern part of the region.

Table 28 Number of compulsory schools and pupils in the Skagafjörður region 2004

School	Pupils	Grades
Árskóli	460	1-10
Grunnskólinn að Hólum	29	1-8
Grunnskólinn Hofsósi	49	1-10
Varmahlíðarskóli	111	1-10
Grunnskóli Akrahrepps	19	1-7
Grunnskóli Siglufjarðar	209	1-10
Skagafjörður region total	877	

(Source: Statistics Iceland, 2005)

Since 2001 the number of students has been decreasing by 61 or 6,5%. This is particularly noticeable in the farming communities

7.3.3 High schools

There is one high school in Sauðárkrókur, Fjölbrautaskóli Norðurlands vestra, FNV, with 416 students. Run jointly by the state and the municipalities in the Northwest region. The school was established 25 years ago. The facilities are very good, both for studies and leisure, such as sports. In the school there is a dormitory for some 150 students.

7.3.4 University

The Hólar University College is located in the Skagafjörður region, The university is a research-, development and educational institute run by the Ministry of Agriculture and is one of two schools of agriculture and land-based industries in Iceland. The university aims to enhance the economic and social development of rural areas by vocational education in land-based industries such as aquaculture, horse breeding and rural tourism. Even if the university is located in Skagafjörður district it is servicing the country as a whole. However, the institute frequently works on research and development projects in its home region. The number of students at Hólar University College is around 100, thereof 68 in situ and the remainder in distance learning. In the school year 2004-2005 the number of students was 80-90.

8 HEALTH SERVICES

The Ministry of Health and Social Security in Iceland was established in on January 1st 1970 in accordance with Act no. 73/1969. The ministry has the responsibility for administration and policy making of health and social security issues in Iceland as prescribed by law, regulations and other directives. Among the issues that the ministry deals with are:

- Public health
- Patient rights
- Operation of hospitals, health centers and other providers of service
- Promotion of information technology in the health services in Iceland
- Social security

The health sector is regulated according to the Health Service Act of 1990 by which all inhabitants have right of access to the best possible health service at any given time for the protection of their mental, social and physical health. The main objective of the Act on the Rights of Patients of 1997 is to ensure that there is no discrimination against patients on grounds of gender, religion, beliefs, nationality, race, skin color, financial status, family relation or status in other respect. According to the Act on Social Security of 1993 the social security system comprises insurances such as pension insurance, occupational injury insurance, health insurance and maternity insurance.

The health service in Iceland is primarily financed by central government. Financing is mainly based on taxes or 85% and 15% is fee for service.

The country is divided into health care regions, each with their own primary health care centre, some of which are run jointly with the local community hospital. The primary health care centers have the responsibility for general treatment and care, examination, home nursing as well as preventive measures such as family planning, maternity care, child health care and school health care.

Hospitals in Iceland may be ranked as specialized teaching hospitals, general hospitals and community hospitals. Hospitalization is free of charge. The specialized hospitals perform most operations and procedures in all specialist medical fields. Source: www.ministryofhealth.is, visited 13.10.05 and 5.11.05.

The health care centers are classified into H, H1 and H2 and the service levels are different:

H a nurse and a medical doctor visits on a regular basis

H1 at least one doctor, a nurse and other staff according to a regulation

H2 at least two doctors, nurses and other staff according to a regulation.

8.1 Eyjafjörður region

8.1.1 Hospitals

The FSA University Hospital - Regional Hospital, Akureyri, established in 1873, is an integral part of the Icelandic Health System and the largest hospital outside the Reykjavik area. It is a general regional hospital providing high-quality specialized services to the people living in the North of Iceland. The hospital has diverse and well-equipped clinical wards and several technologically advanced laboratory units. It is the principal undergraduate nurse-training centre in the region and provides training for undergraduate medical students.

The hospital is divided into departments specializing in specific fields and with their support units. The hospital serves primarily three functions:

- To be a general hospital for Akureyri and neighboring communities.
- To be a specialized hospital for North Iceland and partially East Iceland.
- To be the country's main reserve hospital outside the capital region with relation to civil protection.

The number of employers at FSA is generally around 650, approximately 490 man-years, thereof 50 doctors. The total capacity of FSA is 184 patients. The total size of FSA's facilities is ca. 25 thousand square meters. Source: www.fsa.is, visited 12.10.05.

8.1.2 Health care

The health care region of Akureyri consists of Akureyri and the city's neighboring communities. The Akureyri Primary Health Care Centre provides medical-, nursing-, and public health services outside the hospitals in Akureyri and its vicinity, with the exception of a few factors seen to by other bodies. The centre is run by the municipality.

In Grenivík village there is a H centre which is administered from the centre in Akureyri.

In Dalvík village there is a H2 health care centre with two medical doctors, nurses and other staff

In Ólafsfjörður village there is a H1 health care centre with one doctor, a nurse and other staff. Source: www.akureyri.is, visited 13.10.05 and http://www.akureyri.is/media/vefmyndir/akureyri/pdf/HAK_enska.pdf.

The Siglufjörður health centre (SFHC) is an integral part of the Icelandic Health System. The staff at the SFHC provides general reception to patients, both acute and by an appointment, homecare, nursing, mother- and infant care, and health care services for the people in the municipality. It is divided into a hospital department and a health care department. The number of employers at SFHC is generally around 75 in approximately 55 man-years. The total capacity of SFHC is 40 patients, thereof 12 in the hospital department and 28 in the nursing department. The total size of SFHC's facilities is ca. 2.200 square meters.

8.1.3 Elderly homes

In Akureyri there are four elderly homes with a total of 195 inhabitants, run by the municipality. Capacity is increasing so that some 60 new spaces in a nursing department will be available in 2006. The staff consists of some 250 persons in 175 full positions.

There are three additional elderly homes, Dalbær in Dalvík, Hornbrekka in Ólafsfjörður and Grenilundur in Grenivík. In Siglufjörður there is Skálahlíð for 41 inhabitants run by the municipality. The organization of this institution is different from what is common in Iceland for elderly homes. The home is built as rental units with 19 single person dwellings and 11 two person dwellings.

8.2 Húsavík region

8.2.1 Hospitals and health care

The staff at Húsavík Health Center (HHC) provides general reception to patients, both acute and by an appointment, homecare, nursing, mother- and infant care, and health care services at the local elementary-, middle-, and high school. In addition HHC provides EMT (Emergency Medical Technicians)

service and premium service of various specialized doctors and nurses. HHC is an integral part of the Icelandic Health System.

There are doctors on call all day, every day to handle both acute patients as well as any/all accidents that require immediate medical attention. Various specialized doctors visit the Center on weekly basis.

The HHC and its smaller facilities at Laugar and at Lake Mývatn, and at Kópasker, Raufarhöfn and Þórshöfn serve the counties within Þingeyjarsýslur as well as students and tourists in the area.

The number of employers at HHC is generally around 160 or approximately 100 man-years. The total capacity of HHC is 44 patients, and 50 in an elderly home. The total size of HHC's facilities is ca. 9 thousand square meters.

Source: www.heilhus.is, visited 14.10.05.

The accessibility to health care in Húsavík is generally good and additional specialized service is generally easily accessible in the Akureyri regional hospital (FSA).

8.2.2 Elderly homes

An elderly home (Hvammur) in Húsavík for 50 inhabitants.

8.3 Skagafjörður region

8.3.1 Hospitals and health care

The Skagafjörður Health Center (SHC) is divided into a hospital department and a health care department. The Skagafjörður Hospital (SH) in Sauðárkrókur, established in 1907, is now a part of SCH and an integral part of the Icelandic Health System. It is a regional hospital providing service to the people living in the Skagafjörður area. The hospital has diverse well-equipped clinical wards and several technologically advanced laboratory units.

The staff at SHC provides general reception to patients, both acute and by an appointment, homecare, nursing, mother- and infant care, and health care services at the local elementary-, middle-, and high school. In addition HHC provides EMT (Emergency Medical Technicians) service and premium service of various specialized doctors and nurses.

There are doctors on call all day, every day to handle both acute patients as well as all accidents that require immediate medical attention. Various specialized doctors visit the Center on a weekly basis.

The SHC and its smaller facility at Hofsós serve the counties within Skagafjörður as well as students and tourists in the area.

The number of employers at SHC is generally around 150 in approximately 115 man-years. The total capacity of SHC is 73 patients, and 10 in an elderly home.

Source: www.hskrokur.is

The Siglufjörður health centre (SFHC) is an integral part of the Icelandic Health System. The staff at the SFHC provides general reception to patients, both acute and by an appointment, homecare, nursing, mother- and infant care, and health care services for the people in the municipality. It is divided into a hospital department and a health care department. The number of employers at SFHC is generally around 75 in approximately 55 man-years. The total capacity of SFHC is 40 patients, thereof 12 in the hospital department and 28 in the nursing department. The total size of SFHC's facilities is ca. 2.200 square meters.

8.3.2 Elderly homes

There is an elderly home, Skálahlíð, in Siglufjörður for 41 inhabitants run by the municipality. The organization of this institution is different from what is common in Iceland for elderly homes. The home is built as rental units with 19 single person dwellings and 11 two person dwellings.

9 BUSINESS SERVICES AND OUTSOURCING

The chapter gives only a very concise overview of the major business services that are available in the regions. Apart from what is mentioned here, the capital area has the most services to offer. Many of the companies operating in the three regions do so in cooperation with larger companies in the capital region or are subsidiaries. There are however examples of national companies based in North Iceland. This list of companies primarily serves to provide a basic comparison of the three regions in this regard and probably some firms or functions are missing from the list.

Some companies are introduced in the subchapter on the Eyjafjörður region and are thus described more thoroughly there than in the other two subchapters.

9.1 Eyjafjörður region

Due to its relative size and the function of Akureyri as the main service center in North Iceland, clearly the most diverse business services are to be found in the Eyjafjörður region. Below is a list of the majority of these services in the region. It is quite possible that some functions are missing from the list but this is primarily meant to give an overview of the supply.

9.1.1 Accounting

Various accounting firms are located in Akureyri. These are e.g. divisions of the international firms, such as Deloitte with 6-7 employees, KPMG with 15 (and 2 in Dalvík), PricewaterHouseCoopers with 9. The largest firm in the business in Akureyri is however Grófargil with 22 employees. Apart from these, there are numerous smaller firms and individuals in the business.

9.1.2 Computer services

Computer services in the region have been growing. Many of the companies operating in the field are divisions of larger companies based in Reykjavík or vice versa. A number of companies are operating in the field of computer service, such as hosting. The largest of these in the area is Þekking www.thekking.is and Skýrr www.skyrr.is with some 27-28 in this type of service and 14 employees respectively. There are at least three smaller companies with some 5-10 employees in the field.

In the field of software development there are several companies operating. The largest is TM software <http://www.t.is/> with some 30 employees, Hugar www.hugar.is has a staff of 10-12, the previously mentioned Þekking has 5 and various small companies and individuals are operating in the field.

The third aspect of the computer services is specialized computer software and hardware retailers. At the moment, there at least 7-8 retailers in the field in Akureyri.

9.1.3 Customer service

There is a relatively large call center run in Akureyri by the company Já which runs the Icelandic telephone directory (http://www.simaskra.is/about_us). However, this kind of operation is clearly not constrained by geographical boundaries.

9.1.4 Engineering

A number of engineering companies and architecture offices are operating in Akureyri. These offices are often operating as a part of larger companies generally based in the Reykjavík region or as a part of a network of engineering offices.

The largest engineering office in Akureyri is Raftákn with a staff of some 13, specializing in the field of electric engineering (www.raftakn.is). Two other large engineering offices with a staff of some 10 each are operated in Akureyri; Verkfræðistofa Norðurlands (www.vn.is) and VST (www.vst.is). The latter is a subsidiary of a national company with a staff of some 160. The other engineering offices have a staff of 1-7 and as previously said, they are usually a part of larger units operated nationally.

The architecture offices are generally smaller with a staff of 1-7 but often a part of larger units.

9.1.5 Human resources

There are various firms operating in this field in Eyjafjörður. The most important is IMG (www.img.is). Operating units within IMG are Gallup Iceland (the market leader in opinion polls and market research), IMG Ráðgjöf (management

consultancy and strategic planning), IMG Management Training, and IMG Mannafli - Liðsauki (employment agencies).

Other companies (2-3) operate in computer training. In the field of continuous education operates the company Símei www.simey.is (Eyjafjörður centre for continuous education) offering a wide range of courses.

9.1.6 Maintenance and janitorial service

The principal company in this field is ISS Iceland (www.issworld.com and www.iss.is) a branch of the international firm with some 140 on the payroll in Akureyri.

9.1.7 Manufacturing

There are a number of firms in the field of metal industry which is probably of the most interest in the context of this study. The largest firms have a number of employees in the range of 30-100. Many smaller firms are also operating in the field. There is a tradition for metal industry and ship building in Akureyri. A number of large and small building contractors operate in Eyjafjörður.

9.1.8 Material management

A number of companies are in the field of material management in the region. These are branches the largest transportation companies in Iceland, Eimskip www.eimskip.is and Landflutningar Samskip www.samskip.is with a staff of 40 and 60 respectively in the region. These two large companies have a great capacity and ability to adapt to changes in demand. Other important companies that have their domicile in Akureyri are Air Iceland, www.airiceland.is the largest domestic air carrier and the Icelandic Bus company <http://english.sba.is/>, one of Iceland's largest bus companies operating some 60 coaches.

9.1.9 Sales and marketing

In the region there are two companies specializing in the field of public relations.

9.1.10 Administration functions

In the field of publishing and printing there has been much concentration with one company, Ásprent Stíll being by far the largest.

The security firm Securitas is operating in Akureyri offering a wide range of companies its service. Another firm in the same field is Öryggismiðstöð Norðurlands.

9.2 Húsavík region

9.2.1 Accounting

A company, which is a part of PricewaterHouseCoopers is operating in Húsavík with 3 employees. The company can use in its advantage the close ties to other companies belonging to the same group either in Reykjavík or Akureyri. In addition there are a number of other small companies in this field.

9.2.2 Computer services

There are companies in computer service in Húsavík, e.g. the company Anza (www.anza.is), which operates in various locations in Iceland but has its headquarters in Reykjavík. There are more small firms in Húsavík offering computer service.

9.2.3 Customer service

There don't seem to be any companies operating in this field in the region. However, this kind of operation is clearly not constrained by geographical boundaries. However it seems apparent that it will be easy of outsource various customer service e.g. due to the proximity of Akureyri.

9.2.4 Engineering

Tækniþing is a company offering general engineering service in Húsavík and it is easy to obtain various services in the field from Akureyri and in fact there is considerable cooperation between these towns in the field.

9.2.5 Human resources

A personnel management service is not operated in Húsavík. However there is offered continuous education in Húsavík by Fræþing (www.fraething.is) offering a wide range of courses.

9.2.6 Maintenance and janitorial service

The security firm Securitas offers service in Húsavík.

9.2.7 Manufacturing

There is a relatively large company in metal industry and repair in Húsavík. Furthermore there are a number of building contractors operating in the region.

9.2.8 Material management

The same companies as were mentioned in the description of Eyjafjörður operate in Húsavík.

9.2.9 Sales and marketing

In Húsavík there operates a firm specializing in publishing and delivering of printed material for both firms and individuals.

9.2.10 Administration functions

In Húsavík there operates a small firm which specializes in publishing, and delivering of printed material.

9.3 Skagafjörður region

9.3.1 Accounting

Companies in accounting operate in Sauðárkrókur; a company which is apart of Deloitte and a company which is a part of KPMG group. The companies can use in its advantage the close ties to other companies belonging to the same group, e.g. in Akureyri or Reykjavík. In addition there are a few smaller companies and individuals in the field.

9.3.2 Computer services

The company Skýrr (www.skyrr.is) operates in Sauðárkrókur but has headquarters in Reykjavík. A number of smaller companies and individuals also offer computer service.

9.3.3 Customer service

There is a specialized service in Sauðárkrókur as a part of the State Fund for Real Estate. A call center is however not operated in the region. This kind of operation is however clearly not constrained by geographical boundaries.

9.3.4 Engineering

There is a general engineering office in Sauðárkókur and it is easy to obtain such a service from either Akureyri or Reykjavík.

9.3.5 Human resources

A specialized personnel management firm is not operated in Sauðárkrókur. However there is offered continuous education in the region by Farskóli Norðurlands vestra.

9.3.6 Maintenance and janitorial service

ISS Iceland offers services in Sauðárkrókur.

9.3.7 Manufacturing

There are companies in metal industry in Sauðárkrókur and there is a number of building contractors in the region.

9.3.8 Material management

All the major transportation companies in Iceland operate in Skagafjörður region.

9.3.9 Sales and marketing

In Sauðárkrókur there is a company specializing in publishing, printing and delivering of various printed material for individuals, companies and organizations.

9.3.10 Administration functions

A small company specializing in publishing and printing operates in Sauðárkrókur.

10 INFRASTRUCTURE

In the chapter the major types of infrastructure in the three regions is described. The road network is described most thoroughly since its development is vital for the development and size of the plant's labor market. Other types of infrastructure will be described in more general terms.

10.1 Roads

10.1.1 An overview of the road system

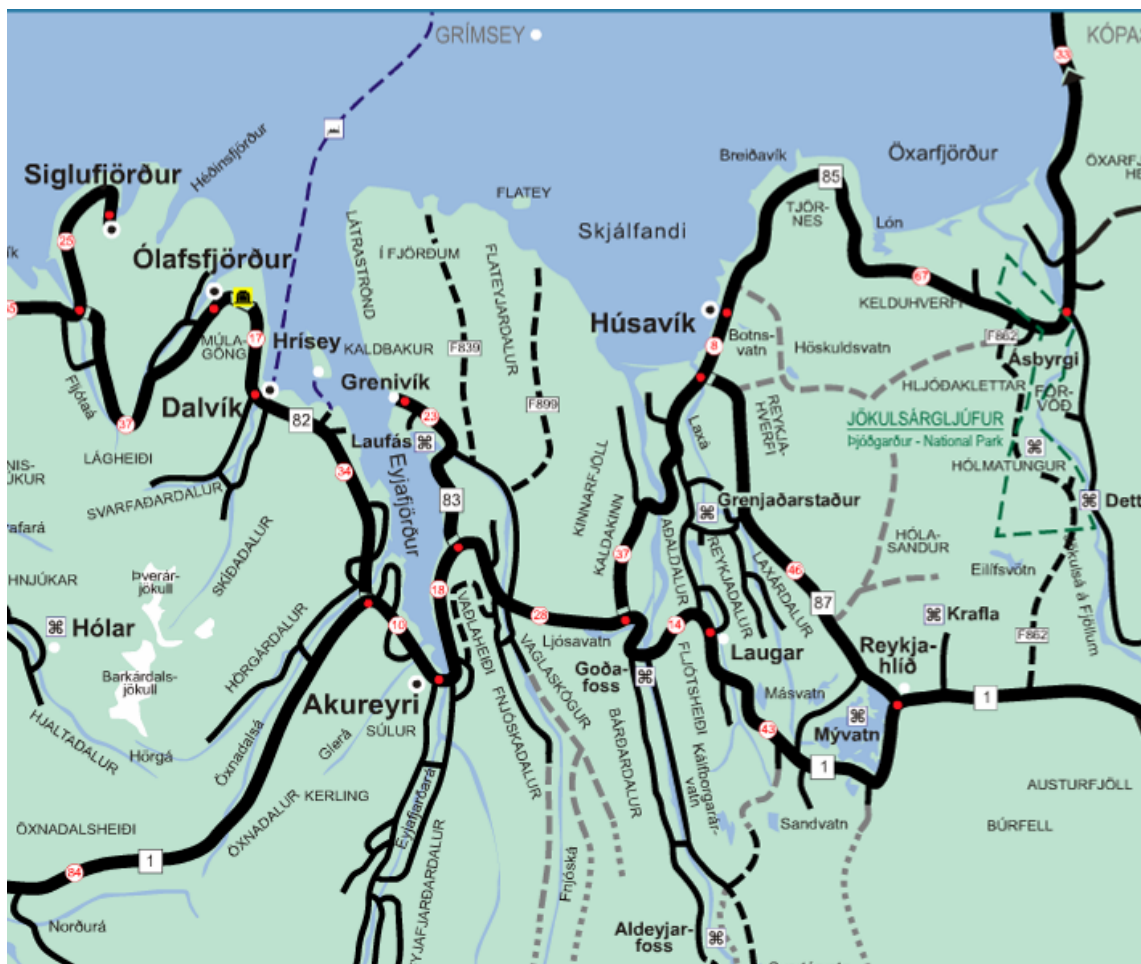
The following maps (Icelandic Road Administration, 2005) show the state of the road network in the three regions studied in this report.



(Source: Icelandic Road Administration, 2005)

Figure 30. The road network in Skagafjörður region and Northwest Iceland

The Ring road, highway 1 passes through all the regions and it passes through Akureyri as the map below shows. There are possibilities to shorten the road by approx. 20 km by re-routing it south of Blönduós (some 15 km) and south of Varmahlíð (some 4 km). Furthermore there have been talks about shortening the distance between Akureyri and the regions east of it to Reykjavík by as much as 85 km by building a highway over the highland (Hjalti Jóhannesson, 2002)



(Source: Icelandic Road Administration, 2005)

Figure 31 The road network in Eyjafjörður and Húsavík regions in Northeast Iceland

10.1.2 Proposed road projects

Several road projects are planned in the region. Some of them, especially road tunnels will change to a great deal the possibilities to commute to work over larger geographical areas. In this way the employment market around some of the industrial sites will become larger and more diverse. The same goes for services; they will be easier to reach for both individuals and companies as a result of these road projects.

10.1.3 Eyjafjörður region

In the Eyjafjörður region there are primarily three projects that are very important in this context.

The first project is a road tunnel between Siglufjörður and Ólafsfjörður villages. This project will be open for bids by contractors in the winter of 2005-2006 and it is expected that work will commence in the summer of 2006 and finish in the winter 2009-2010. With this tunnel there will be a good all-year connection between the two towns. The distance separating the towns will be 15 km instead of 62 km now with an old road only passable during the summer, the present winter distance is no less than 234 km! This project will actually move Siglufjörður with its 1.400 inhabitants into the labor market in Eyjafjörður. The distance between Siglufjörður and the Dysnes industrial site will be 57 km. The socioeconomic impacts of this tunnel project were studied in 2001, as a part of an environmental impact assessment. One of the major conclusions was that such a shortening of distances from Siglufjörður to the Eyjafjörður region will have very positive impacts of Eyjafjörður region's development and e.g. enlarge the labor market in the region and stimulate increased diversification (Hjalti Jóhannesson et al., 2001).

The other major project is a road tunnel through the Vaðlaheiði mountain east of Akureyri. Greið leið²¹ is a private company which was established to prepare and carry out the necessary research for this project. According to the project's plan it is expected that work will commence in 2008 and finish in 2011. The project will at least partly be financed by road tolls according to these plans. If this project materializes the Vaðlaheiði tunnel will shorten the distance between Akureyri and Húsavík by 16 km. The distance Akureyri – Húsavík will thus be about 75 km. This is obviously a key project for the industrial site in Bakki north of Húsavík, since Akureyri will be close to the maximum commuting distance from Bakki. A further shortening of distances between the two regions is possible be 1) re-routing the road when replacing an old bridge, shortening by 3 km and 2) re-routing the road just east of the Vaðlaheiði tunnel, shortening by 2 km. Thus, Akureyri will almost be within the commuting distance from Bakki with some 70 km separating the two places.

²¹ Loosely translated: "Easy route"

The third project is the renewal of highway 1 in Norðurárdalur in the Skagafjörður region (described later) which is on the route between Akureyri and Reykjavík where most of the goods and passengers are transported to and from the region.

10.1.4 Húsavík region

Work on the renewal and paving of the road between Húsavík and Lake Mývatn has already started. According to a national transport plan this project will be finished in 2010. This will not shorten the distance between Húsavík and Lake Mývatn but it will make the route safer and easier to travel.

At present a new bridge is being built over the river Laxá just south of Húsavík. There will however be no shortening of distances but the new bridge will increase traffic safety by phasing out an old and dangerous single lane bridge.

Another important renewal of a bridge in this area is a bridge over the Skjálfandafljót river. The current bridge is old and has weight limits of 10 tons per axle in stead of the common 11,5 tons per axle, therefore the heaviest trucks have to choose a little longer route between Akureyri and Húsavík. According to the national transport plan the bridge will be renewed between 2011 and 2014 (Alþingi, 2003). Exact timing is not available at this moment, neither has the exact location of the bridge been decided. Depending upon that decision, it is not clear what will be the shortening of distances, but it could be around 2 km.

Note also the plans about the Vaðlaheiði tunnel that will shorten the road distance to Akureyri by 16 km making the distance 75 km. Additional shortening of 2 km is possible just east of the proposed Vaðlaheiði tunnel. Thus along with a new bridge over Skjálfandafljót river the distance between Húsavík and Akureyri will be a mere 70 km.

A large scale project is planned on the road connecting the three villages; Kópasker, Raufarhöfn and Þórshöfn in the far northeast region. This work will be carried out during the period 2007-2014 and will shorten greatly distances in the region and replace old and insufficient road connections in the area. This project will however not affect to any extent a possible manufacturing firm at Bakki location since the distances from the northeast region will be too great for daily commuting.

10.1.5 Skagafjörður region

In the Skagafjörður region there are primarily two road projects that will affect a location of a manufacturing firm.

One of them is so-called Þverárfjallsvegur shortening distances over the mountains between Skagafjörður and Húnaflói regions (west of the Skagafjörður region). This road construction which has been carried out in several phases will be finished in 2007-2008. This will shorten the distances between Sauðárkrókur the regional centre and the villages on the other side of the mountain, Bönduós and Skagaströnd, by 33 and 46 km respectively, compared with the present route, highway 1. This will shorten the distance between Sauðárkrókur and Reykjavík by some 33 km. Ever more of the traffic between Sauðárkrókur and the northern part of the Skagafjörður region towards regions to the west is via this road.

Highway 1 in Norðurárdalur a part of the road between the Skagafjörður region and Eyjafjörður region will be renewed during the next few years and is expected to finish in 2008. This project will phase out an old and dangerous road with four single lane bridges, sharp curves and blind hills. Traffic safety will increase to a great deal and there will be some shortening of distances to Akureyri.

10.2 Airports

Air transport is an important way of public transportation in Iceland, especially in regions outside 3-4 hours driving distance from the capital region. In the context of this study this is especially important for the Eyjafjörður and Húsavík regions.

10.2.1 Eyjafjörður region

The airport in Akureyri is 1,940 m long and 45 m wide and is the primary airport in North-Iceland. It is one of three reserve airports in Iceland for international flights. For domestic flights the airport has the most traffic outside Reykjavík airport. On a daily basis there are 5-9 flights between Akureyri and Reykjavík. Also there are flights to Grímsey island, Þórshöfn village and Vopnafjörður village. An airport in the region without scheduled flights is in Siglufjörður village (Flugfélag Íslands, 2005; Hjalti Jóhannesson, 2002). Akureyri is the center for ambulance flights in regions outside Reykjavík. There is huge interest in the region to extend the airport so that more types of passenger jets will be able to use the airport but this has yet not materialized in the transportation plans of the government.

10.2.2 Húsavík region

There is an airport 10 km south of Húsavík, however there is not scheduled flight from the airport anymore. Instead the inhabitants in the region use the Akureyri airport and there are more frequent flights available than previously from Húsavík. Other airport in the Húsavík region is by Lake Mývatn.

10.2.3 Skagafjörður region

In Sauðárkrókur there is an airport with a scheduled flight usually two times a day. Due to ever shorter driving distance to Reykjavík (290 km) this flight is becoming less and less used. Another airport in the area is in Siglufjörður, however with no scheduled flights.

10.3 Harbors

There are numerous harbors in the area, most of them within the Eyjafjörður region. Here, only the major existing cargo harbors will be mentioned. In recent years the importance of sea transportation in Iceland has become less in the sense that most import and export takes place in the capital region and then transported with trucks to and from other regions.

10.3.1 Eyjafjörður region

Most of the present harbor facilities in the Eyjafjörður region are run by the inter-municipal cooperation Hafnasamlag Norðurlands www.port.is. There is a cargo port facility at Akureyri, the regional hub for Eimskip shipping company, which can handle most project related traffic, if needed. The main cargo quays are 80 m long with 9 m depth and 140 m long with a 9 m depth. Cargo facilities are also at Dalvík. In Siglufjörður there is a good harbor with 8 m depth and the length of quay 80 m. Akureyri cargo harbor can be used for general transport of goods, e.g. during the construction phase of a plant, but not as a harbor for the plant during its operating period. A new harbor has to be built in Dysnes for that purpose.

10.3.2 Húsavík region

The harbor in Húsavík has recently been extended and now has a maximum 12 m depth by harbor and the length of quay is 150 m. With the improvement the harbor can host vessels up to 170 m long, with a draught of 10 m and 20.000 dwt (Hönnun, 2005). This extended quay can be seen on Figure 3. Húsavík cargo harbor can be used for general transport of goods, e.g. during the construction phase of a plant. Furthermore it is believed that it can be used as a harbor for the plant during its operating period.

10.3.3 Skagafjörður region

Sauðárkrókur's cargo harbor has 7,5 m depth and the length of quay is 130 m. A closed area for containers of approx. 18.000 square meters is at the harbor. Sauðárkrókur's cargo harbor can be used for general transport of goods, e.g. during the construction phase of a plant, but not as a harbor for the plant during its operating period. A new harbor has to be built in Brimnes for that purpose.

10.4 Utilities

The major utilities described here are water supply, geothermal water supply and electricity supply. In recent years there has been a tendency for larger units in this field which supply all three types mentioned above. They are owned by municipalities or the Icelandic state.

10.4.1 Eyjafjörður region

The Akureyri municipal power and water company (Norðurorka www.no.is) is the primary provider of utilities service in Eyjafjörður. The company is owned by Akureyri municipality. The number of users of geothermal water are just over 18,000 and users of water and electricity are 16,000 and 17,000 respectively.

10.4.2 Húsavík region

Húsavík energy (Orkuveita Húsavíkur www.oh.is) is owned by Húsavík municipality and provides geothermal water, electricity and potable water to the residents of the municipality.

10.4.3 Skagafjörður region

Skagafjarðarveitur is a company owned by the municipality Skagafjörður and provides the inhabitants of Skagafjörður with geothermal water and potable water.

10.5 Telecommunications

The telecommunications system in Iceland has been privatized. There are several companies in the field but two of them are largest, Og Vodafone and Iceland Telecom (Síminn). Iceland has among the best to offer in terms of telecommunications. All three regions are relatively well covered in terms of telecommunications. In general, communications systems are of good quality in the regions and they are continuously improving. The distance to an optical fiber is shortest in Dysnes and Bakki.

All three regions are relatively well covered by mobile phone networks. Below are maps showing the coverage of the GSM networks of Iceland Telecom (www.siminn.is) and Og Vodafone (www.vodafone.is). The coverage is relatively good in all three regions by both companies.

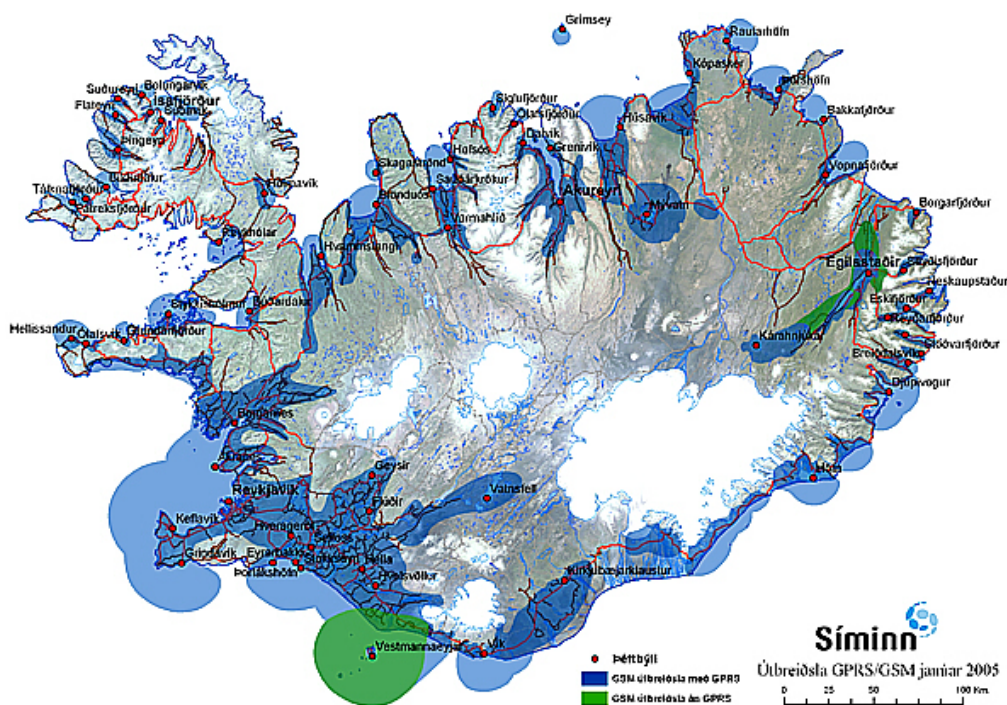


Figure 32. The coverage of the GSM network of telecommunications company Iceland Telecom (Síminn)



Figure 33. The coverage of the GSM network of telecommunications company Og Vodafone

11 ATTITUDES TOWARDS ALUMINUM PLANTS AND ENERGY-INTENSIVE INDUSTRIES IN THE EYJAFJÖRÐUR, HÚSAVÍK AND SKAGAFJÖRÐUR REGIONS

11.1 Introduction

In the past years several surveys have measured public attitudes towards aluminum plants and/or energy-intensive industries in North-Iceland. Below is a short summary of the main findings of these surveys and a brief discussion of some of the basic preconditions that have to be kept in mind when these findings are interpreted and compared.

The general idea of performing surveys is to use information obtained from a subset (a sample) of a larger group (the population). The information obtained from the sample are then used to make estimates of the characteristics of that larger group (i.e. the population). When assessing the quality of information obtained from survey research it is necessary to differentiate between two types of errors. One is systematic errors (or bias) which results from the research design and can cause the results to be systematically skewed in one way or the other. As the source of systematic errors is the research design it can not be accurately assessed without rather extensive information on the survey process. The other is random error which is caused by a chance variation between samples. The random error is a direct function of the sample size and can be estimated and controlled for by statistical techniques. The main rule is that the random error is not affected by the proportion between the sample size and the population size.

11.2 Available surveys

Measurements on public attitudes towards aluminum plants and/or energy-intensive industries in North-Iceland have been included in surveys by two parties. One is IMG Gallup which has been the largest opinion poll, social- and market research company in Iceland, and the leading company in this field in the country for many years. The other is the University of Akureyri Research Institute (UARI) which is one of the leading social science research institutes in Iceland. Data-collection has therefore been in the hands of both respectable and able parties.

Table 29 shows an overview of surveys conducted in the years 2002-2005 which ask in one way or another about support for aluminum plants and/or energy-intensive industries in North Iceland. As can be seen only one of the surveys covers the whole area but in terms of the number of respondents and response rate it should give a rather accurate estimate at least in terms of random errors. However it is also useful to look at the findings of the other surveys and such comparison should give some indication of possible systematic errors due to for example wording of questions as there is not a complete consistency in the questions used.

Table 29. An overview of recent surveys, number of respondents and response rate

No	Researcher	Time of measurement	Number of respondents	Response rate	Eyjafjörður region	Only Akureyri	Húsavík region	Skagafjörður region
1	IMG Gallup	February 2005	1.641	71,7%	x	x	x	x
2	UARI	October 2004	712	75,0%	x	x	-	-
3	IMG Gallup	October 2004	619	65,0%	(x)	x	-	-
4	UARI	September 2004	364	72,0%	-	-	x	-
5	UARI	April 2002	441	65,0%	-	x	-	-

11.2.1 IMG Gallup February 2005 (1)

This survey (Gallup, 2005) is the only one covering the whole of North-Iceland. It is in fact three surveys executed at the same time in the three areas in question. The survey used the following questions:

Are you for or against the building of an aluminum plant in...

... the vicinity of Akureyri? (for respondents in the Eyjafjörður area, n=790)

... the vicinity of Húsavík? (for respondents in the Húsavík area, n=436)

... Skagafjörður? (for respondents in the Skagafjörður area, n=415)

It is to some extent questionable to use the wording “in the vicinity of Akureyri” as this gives room for speculations as to the exact location of the possible future plant. However, as the Dysnes site has for many years been mentioned in

connection with the possible location of energy-intensive industries in Eyjafjörður it is likely that most respondents were answering the question with that in mind. The wording used for Eyjafjörður is unfortunate however since it does not specify that the plant is actually located in Eyjafjörður as both Húsavík and Skagafjörður for example could be said to be located “in the vicinity of Akureyri”. The same applies to Húsavík. The wording “in the vicinity of Húsavík” could mean different things to different people but would probably not be thought to include the site at Dysnes. As in the Eyjafjörður region, the location at Bakki has been mentioned several times and is probably what most respondents have had in mind when they answered the question. When it comes to Skagafjörður, the question states precisely that it is referring to a plant in Skagafjörður. This is positive as there had been some mentioning in the public debate of the possible location of industry of some sort just west of Skagafjörður (between Blönduós and Skagaströnd) and thus in the vicinity of Sauðárkrúkur. However as the question ruled out that possibility most respondents in Skagafjörður were probably thinking of a plant located at or near Brimnes.

A second issue concerning the questions is the general problem of asking about attitudes towards some possible future situation. Thus it is not clear to what extent the respondents have the necessary information to make up their mind towards the possible location of aluminum plant in or near their community. The possibility of this resulting in systematic error of some kind is however greatly reduced by the fact that aluminum plants in general and the new aluminum plant currently under construction in Reyðarfjörður have been in the public debate and received considerable media attention. Thus there are no less than 343 articles or stories in *Morgunblaðið*²² which mention the word aluminum plant in the period from January 2004 to December 2005.

The sample size of the survey is more than sufficient to keep the random error at a level somewhere between 2-5 percentage points for all three areas. So, apart from the two possible sources of systematic error mentioned here, which moreover seem to be minor, the Gallup survey of February 2005 has to be

²² Morgunblaðið is the second largest daily newspaper in Iceland and number one in terms of subscriptions. For comparison it could be mentioned that some 2.600 articles mention the word “minister”.

considered a rather good measurement of the attitudes of the general public in the Eyjafjörður, Húsavík and Skagafjörður regions towards the building up of an aluminum plant in or near their own community.

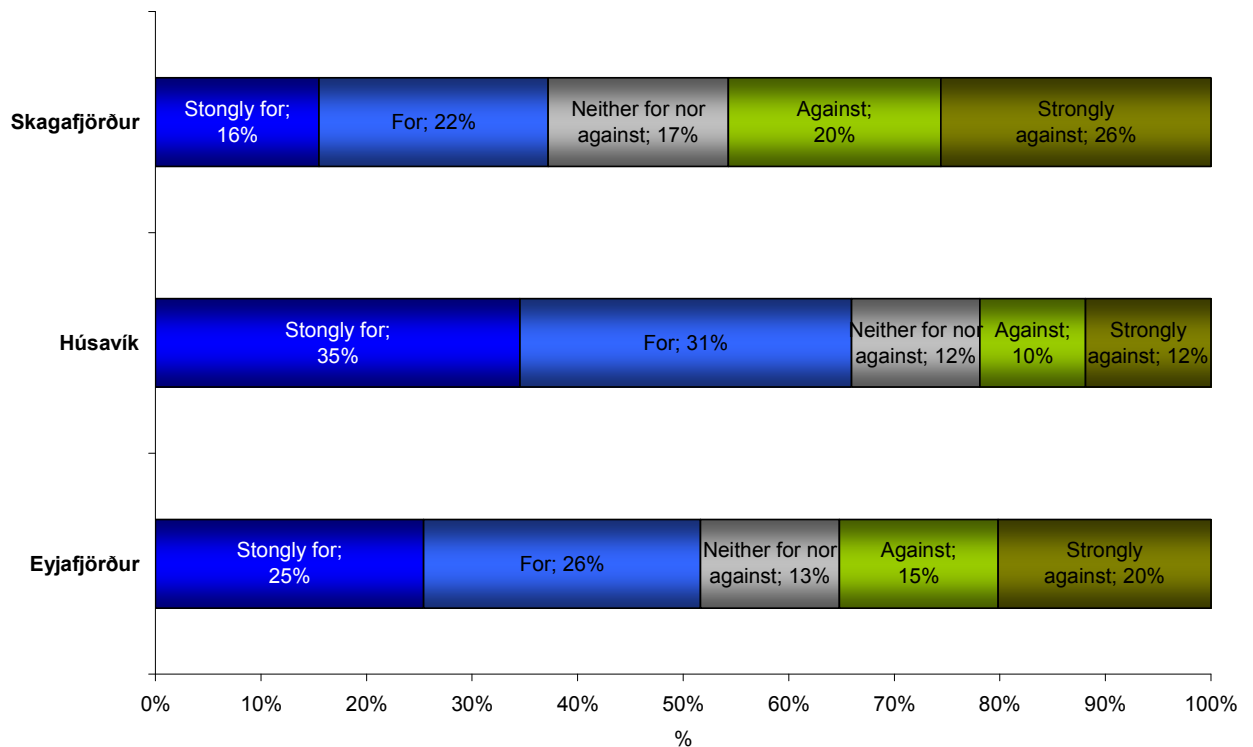


Figure 34. Are you for or against the building up of an aluminum plant in...

The survey shows that the public attitude towards the building up of an aluminum plant is most favorable in the Húsavík area where 66% in total are positive towards an aluminum plant in or near their community. Eyjafjörður comes next with some 51% in favor and the smallest support is to be found in Skagafjörður where some 38% are in favor. The difference between the areas is in all instances statistically significant. As for difference within subgroups the general picture is that men are more supportive than are women; there is more support in the 25-34 year category than in others and the youngest age category (16-24) is least supportive and finally people who hold a university degree are less supportive in general than others.

11.2.2 UARI October 2004 (2)

The University of Akureyri Research Institute asked respondents in the Eyjafjörður area about their attitudes towards the building up of a large industrial plant in Eyjafjörður in general in a survey in October 2004. What is interesting

about this survey is that it used a stratified random sample which enables comparison between all ten municipalities in Eyjafjörður which a simple random sample does not allow. The survey used the following question:

Are you for or against the building up of a large industrial plant in Eyjafjörður?

Compared to the Gallup survey of 2005 this survey is decisive about the location being in Eyjafjörður which to most people would probably mean the Dysnes site. The question does not ask about attitudes towards an aluminum plant in particular but towards a large industrial plant in general, however taking into consideration the public debate it is likely that many respondents will have answered the question with an aluminum plant in mind.

Looking at the whole of Eyjafjörður (including the municipality of Siglufjörður) some 62% are in favor of a large industrial plant being located in Eyjafjörður. This is a significantly higher figure than the 51% found in the Gallup survey in February 2005 but the difference is most likely due to the difference in the questions. So, looking at these figures some ten percent of the population in Eyjafjörður are in favor of large industrial plants but not necessarily of an aluminum plant.

As mentioned before it is interesting to look more closely at the geographical differences between the municipalities in Eyjafjörður. The municipalities are listed in a geographical order in Figure 35 with Siglufjörður in the north-west corner of the fjord at the top of the figure. Then the municipalities come one by one south to Eyjafjarðarsveit in the south and then on to Grýtubakkahreppur at the north-east corner of the fjord. Moreover the municipalities are marked with a letter which indicates the economic profile of the municipalities as a fishing village (F), an agricultural area (A) or as the service centre Akureyri (S). Looking at attitudes in relation to geographical distances from the site at Dysnes (in Arnarneshreppur) there does not seem to be a clear pattern. The pattern seems to be more related to the economical profile of the municipalities with fishing villages showing the strongest support while agricultural areas are less supportive. Thus the support is strongest in Ólafsfjörður where almost 90% are in favor of a large industrial plant being located in Eyjafjörður while the least support is to be found in Eyjafjarðarsveit (25 km and more from the Dysnes site in the bottom of the fjord) where only about 35% are in favor.

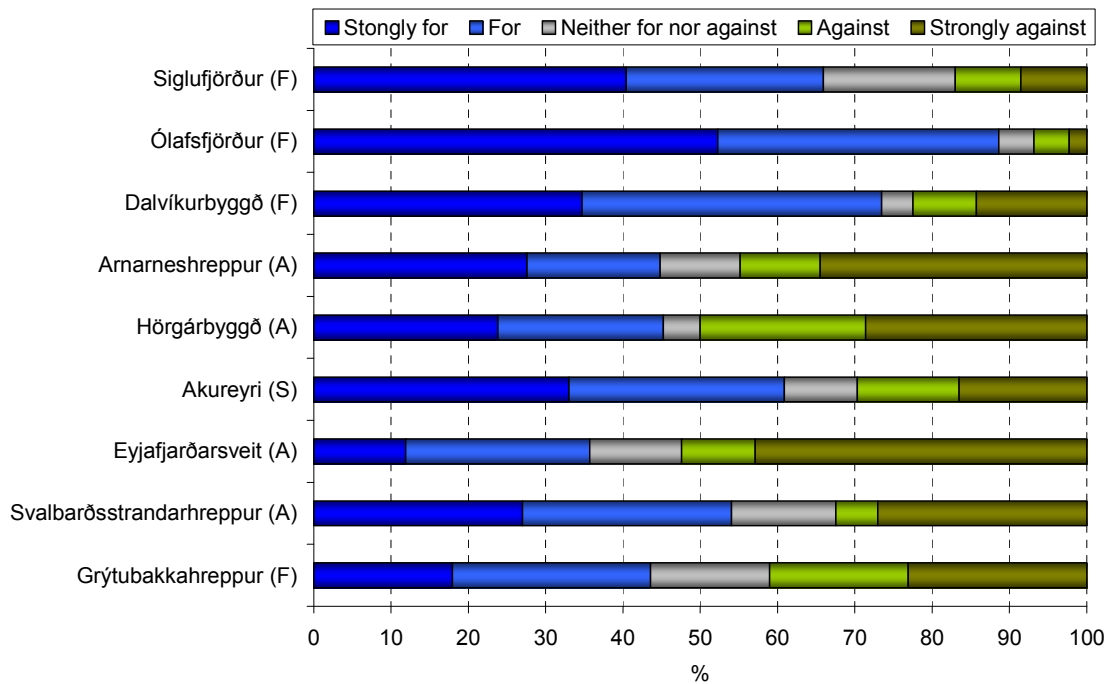


Figure 35. Are you for or against the building up of a large industrial plant in Eyjafjörður?

11.2.3 IMG Gallup October 2004 (3)

At almost the same time as the UARI asked respondents in the whole of Eyjafjörður about their attitudes towards a large industrial plant being located in Eyjafjörður, IMG Gallup asked respondents in Akureyri and neighboring communities about the same. The survey used the following question:

Are you for or against the building of a large industrial plant in Eyjafjörður?

The survey found that about 66% of respondents in Akureyri were in favor of a large industrial plant being located in Eyjafjörður which is almost identical to the 61% figure found in the UARI survey at the same time. The Gallup survey moreover confirms the lack of support in the agricultural areas surrounding Akureyri as the survey included the postal codes 600, 601 and 603 where codes 600 and 603 are for Akureyri and 601 is for the adjacent agricultural areas where support turned out to be only 39%.

11.2.4 UARI September 2004 (4)

The UARI asked respondents in the Húsavík area about attitudes towards the building up of an aluminum plant or other such industries near Húsavík in September 2004 (see Hjördís Sigursteinsdóttir, 2004). The survey covered more or less the same area as the IMG Gallup survey for the Húsavík region in 2005 and used the following question:

Are you for or against the building of an aluminum plant or other such industries at Húsavík?

The question is a bit more decisive about the location than the IMG Gallup survey in 2005 as it specified that the plant should be located at Húsavík (not just in the vicinity) but not in the town itself though. The wording rather implied a location some several hundred meters or so or even a couple of kilometers. The question does however not rule out the possibility of something else than an aluminum plant. Thus, as in the Eyjafjörður area, the support found in this survey is a bit stronger than in the IMG Gallup survey in 2005 and some 75% of the respondents say that they are in favor of the building of an aluminum plant or other such industries at Húsavík, compared to the 66% support for an aluminum plant in the IMG Gallup survey, about half a year later. This survey moreover confirms the difference between the Húsavík and Eyjafjörður regions as 75% of the respondents in the Húsavík area are in favor of the building of an aluminum plant or other such industries at Húsavík compared to the 62% support found in the Eyjafjörður survey conducted almost at the same time and using a similar question.

11.2.5 UARI April 2002 (5)

The last survey looked at here is a survey conducted by the UARI amongst respondents in Akureyri in April 2002 (see, Björk Sigurgeirsdóttir, 2002). This survey is interesting as it can provide some estimate on the stability of the attitudes towards aluminum plants as well as an indication of the effect of asking directly about an aluminum plant or giving an alternative of some other energy-intensive industry as well. The question used in this survey was:

If it should happen how favorable or unfavorable are you towards the idea of building an aluminum plant in Eyjafjörður?

The question is thus decisive in asking directly about an aluminum plant and its location in Eyjafjörður. The results are exactly the same as for Akureyri in 2005;

both surveys find that 51% of the respondents are in favor of an aluminum plant being built in Eyjafjörður.

11.2.6 Conclusion

Several conclusions can be drawn from looking at the combined results from these five surveys (see Table 30). Firstly there seems to be a clear difference between the three main areas in North-Iceland where the support for building up energy-intensive industries is strongest in the Húsavík region but weakest in the Skagafjörður region and with Eyjafjörður in-between. Secondly when asked specifically about aluminum plants respondents are less supportive than when asked about energy-intensive industries in general or alternatively about an aluminum plant or other such energy intensive industries. Yet in all instances support is greater than the opposition and in most cases it seems to be correct to talk about an overwhelming support for the building up of energy-intensive industries.

Table 30. Support for aluminum plant or energy intensive industries in North-Iceland

No	Researcher	Question used	Eyjafjörður region	Only Akureyri	Húsavík region	Skagafjörður region
1	IMG Gallup	Are you for or against the building of an aluminum plant in/at Akureyri/Húsavík/Skagafjörður	52%	51%	66%	37%
2	UARI	Are you for or against the building up of a large industrial plant in Eyjafjörður?	62%	61%		
3	IMG Gallup	Are you for or against the building of a large industrial plant in Eyjafjörður?		66%		
4	UARI	Are you for or against the building of an aluminum plant or other such industries at Húsavík			75%	
5	UARI	If it should happen how favorable or unfavorable are you towards the idea of building an aluminum plant in Eyjafjörður?		51%		

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