

**ØF-notat 02/2012**

**Regional fact sheets  
- a “Brain Flow” report**

**Av**

**Atle Hauge**

# Østlandsforskning

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The report presents facts and information on the Norwegian County Hedmark. It has data on the county and four sub-regions, and covers area such as population, employment, education, economic structure etc. A part of the findings is informed by Richard Florida's theory of the Creative Class.

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## Preface

This report has been prepared for the Component 3A ‘Regional fact sheets’ of the so-called *Button-subproject*. This is a sub-project in the framework of the INTERREG IV C Mini Programme “Brain Flow”, with the full title “Towards tailored policy measures to attract and retain highly educated workers; “Pushing the right Button”.

This report has three main data sources. First there is a regional analysis based on a so called ‘foresight’ method. (For a short description of this type of planning method, see for example <http://www.foresightplanning.eu/>). This process included 994 people, six workshops and number of other meetings. The analysis was done by Eastern Norway Research Institute (ENRI (eng)/Østlandsforskning ØF (no)) and Norwegian Institute for Urban and Regional Research (NIBR) in close co-operation with Hedmark County Council. The second data source is an Interreg financed project - GRESS. And the third is data selected and analysed for this project. The source for these data is Statistics Norway (Statistisk Sentralbyrå - (SSB)). It is referred in the text and illustration where the data comes from.

The author wants to thank Interreg IV C for funding and the Button team for feedback, help and support. The findings and conclusion are the author's responsibility.

Hamar, February

  
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## Presentation of the region

Hedmark is a county located in the central eastern part of Norway. It has (1.1.2010??) 190 769 inhabitants spread over 27 398 square km (about the same size as Albania). This gives a density of just about 7 persons per sq. km compared to the national average of 15.

Hedmark County is located between Sør-Trøndelag county in the north and Akershus in the south, with a border to Sweden in the east. In west it borders to Oppland, and the border goes mostly through the lake Mjøsa. Oppland and Hedmark are the two only Norwegian counties without a direct access to the sea.

The regional economy has a larger share employed in the primary sector, agriculture and forestry, than the national average. When it comes to manufacturing, Hedmark is more or less on the national level. There are a few agglomerations of manufacturing businesses, but these are connected to the primary sector. The employment growth in Hedmark (like the rest of the Western economies) is primarily in the service sector, both public and private. We see a typical pattern where the bigger cities have a larger share of these jobs and serve a larger region.

Hedmark is a rather rural region. It is less urbanized than the national average, and the urban settlements are small in size.

**Table 1: Largest cities/villages in Hedmark**

	<i>Pop. 1.1.2008</i>
<b>Hamar</b>	29 808
<b>Elverum</b>	13 295
<b>Kongsvinger</b>	11 394
<b>Brumunddal</b>	8 866
<b>Moelv</b>	4 138
<b>Løten</b>	2 520
<b>Stange</b>	2 443
<b>Tynset</b>	2 416
<b>Innbygda</b>	2 304
<b>Skarnes</b>	2 210
<b>Rena</b>	2 054
<b>Flisa</b>	1 555
<b>Skotterud</b>	1 359
<b>Kirkenær</b>	1 225
<b>Våler</b>	1 176
<b>Koppang</b>	1 158

Hedmark has 23 municipalities and is divided into four regional planning regions:

**Fjellregionen (Mountain region);** with the municipalities Tynset, Alvdal, Os, Rendalen, Røros, Folldal and Tolga

**Sør-Østerdalsregionen;** with the municipalities Stor-Elvdal, Åmot, Elverum, Trysil and Engerdal

**Hamarregionen;** with the municipalities Løten, Stange, Ringsaker and Hamar

**Glåmdalsregionen;** Våler, Åsnes, Grue, Eidskog, Sør-Odal, Nord-Odal and Kongsvinger



Figure 1: Hedmark and municipalities

## Hamar region

Hamarregionen consists of Hamar, Ringsaker, Stange og Løten municipality. It is the most urban region in the county and has the largest city Hamar. This is both the regional centre and the administrative centre of the county. The population is in total 86 850 (1.1.2010), giving a density

about 32 persons per km<sup>2</sup> (Norwegian average is 15). The biggest municipality is Ringsaker with over 32 000 inhabitants. It is the most dynamic region in the county both when it comes to population growth and increase in workplaces.

### **Glåmdal region**

The Glåmdal region has 7 municipalities in the south of Hedmark. The largest, Kongsvinger is just shy of 18 000 people, the other six varies between 3870 and 7791. They are around the median for Norwegian municipalities. When it comes to inhabitants, it is a stable region. Glåmdalsregionen is a relatively large region with 53 168 inhabitants across 5 285 km<sup>2</sup>, giving 10 persons per sq. km.

### **Sør-Østerdalen**

Sør-Østerdalen (South Østerdalen) is five municipalities located east/ central in the county. Elverum has the most inhabitants with almost 20 000 inhabitants, while the others varies between 1 400 and 6 763. In other words, it is a very diverse region when it comes to the municipality size. Population has been relatively stable the last 30 years. In geographical size it is a large region, but it is sparsely populated. There are 34 995 inhabitants spread over 9 946 km<sup>2</sup> This gives a density 3,5 persons per km<sup>2</sup>.

### **Fjellregion**

Fjellregionen (translated to English would be the Mountain Region) has seven municipalities in the north of the Østerdalen valley: Rendalen, Tolga, Tynset, Alvdal, Folldal, Os in Hedmark and Røros from the neighbour county Sør-Trøndelag.

Røros had 1.1. 2010, 5576 inhabitants and is thus the municipality with the most people. Tynset on second place had 5490. The other municipalities have between 1600 and 2500 inhabitants. In other words, these are small municipalities even after a Norwegian standard. In total, the region experienced a loss in number of people of about 5 % since 1980. The region has about 21 000 inhabitants in total and the area is 11 400 km<sup>2</sup>. This gives a density of only 1,8 persons per km<sup>2</sup>, far below the national average on 15 and the county average on 7.

### **Summary**

Hedmark is compared to most of the other partners in the 'Brainlow' project, rather large when it comes to geographical area. However, it is sparsely populated.

There has been a small growth in inhabitants the last five years. This is primarily caused by immigration and not high birth rates. The growth is not evenly distributed across the county. It is the urban areas that attract the most people.

**Table 2: Key figures Hedmark - summary (source SSB and ØF)**

Variable	Hedmark	Source
Surface area in km <sup>2</sup>	27 398 km <sup>2</sup> (7,1% of NO)	Wikipedia
Population on Jan. 1 <sup>st</sup> .	194 113 (18,7% of no)	2011, SSB
- % pop. 0-19 years	24,4%	
- % pop. 20-64 years	56,9%	
- % pop. 65+ years	18,7%	
Population density in persons per km <sup>2</sup> on Jan. 1 <sup>st</sup> .	7 (NO = 15)	2011, SSB
Population growth, yearly avg. 2006-2010. Total and relative.	622,2 (0,33 %)	2011, SSB
Migration, yearly avg. 2006-2010. Total and relative.	996 (0.53%)	2011, SSB
GDP in mln. Euro.	N.A.	
- (per inhabitant) in euro.		
GDP growth, yearly avg. 2006-2010	N.A.	
Unemployment rate 2010	2,8 %	2011, SSB
Economic activity rate 2010.	Male 69,3%	2011, SSB
Total (15-74)	Female 63,4%	
Students	N.A.	
Educational level, persons with higher education (2010):	High ed (>4 yrs) 26307 (14%) High ed (<4 yrs) 5551 (3%)	2011, SSB

## Population

In the 'Button-project' application it is argued that the scarcity of highly educated workers is as one of the main challenges for European regions, at a time where this group is increasingly important as a condition for development. One of the main objectives is to gain insight into the processes which lead to out- and in-migration and retention of highly educated workers in their particular region and of the trends currently affecting the regional development.

In Norway, we see tendencies towards centralisation. In the last few decades it is the cities and larger urban regions have undergone the most positive development, both in terms of job creation and the number of inhabitants. This means that less central regions face immense challenges.

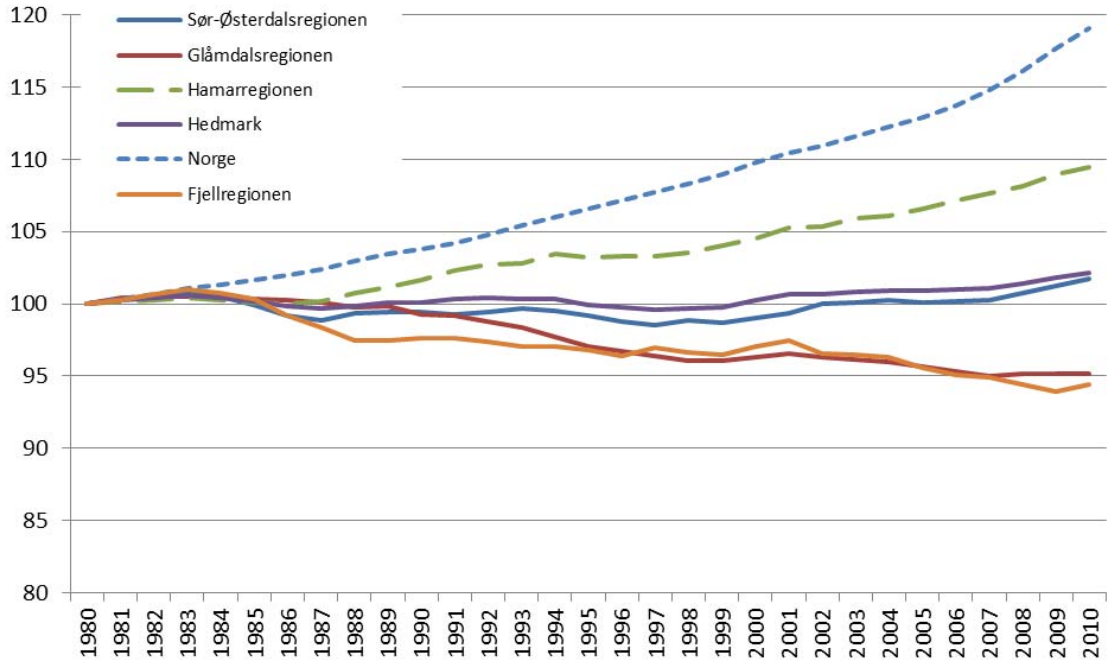
In table 3 we can see the main population development in Hedmark and its municipalities. Population growth is a result of a birth/dead ration and in/out migration patterns.

**Table 3: Birth surplus and in/out migration in Hedmark and municipalities (source SSB and ØF).**

Hedmark County + municipalities	Population n 1.10. 2010	Changes quarter 4 2010	Birth surplus				Population growth		Population n 1.1.2011
			In-migration		Out-migration		Net In- migration	Population growth	
			Total	Foreign	Total	Abroad			
<b>Hedmark</b>	<b>191 465</b>	<b>-171</b>	<b>1 349</b>	<b>421</b>	<b>1 022</b>	<b>135</b>	<b>327</b>	<b>157</b>	<b>191 622</b>
Kongsvinger	17 414	-26	240	46	192	25	48	22	17 436
Hamar	28 595	-10	412	59	338	29	74	67	28 662
Ringsaker	32 757	1	386	73	297	9	89	85	32 842
Løten	7 327	-9	111	12	80	4	31	26	7 353
Stange	19 177	-6	228	40	243	8	-15	-23	19 154
Nord-Odal	5 116	-6	50	8	47	1	3	-3	5 113
Sør-Odal	7 810	-12	127	15	95	1	32	21	7 831
Eidskog	6 313	-9	57	13	63	12	-6	-14	6 299
Grue	5 040	-19	46	12	44	1	2	-16	5 024
Åsnes	7 596	-8	70	8	62	2	8	1	7 597
Våler	3 863	-4	64	7	41	1	23	19	3 882
Elverum	19 960	-5	194	28	171	16	23	19	19 979
Trysil	6 766	-12	56	21	60	6	-4	-12	6 754
Åmot	4 301	-	69	13	51	2	18	16	4 317
Stor-Elvdal	2 686	-12	30	19	36	4	-6	-21	2 665
Rendalen	1 981	-4	20	5	23	-	-3	-7	1 974
Engerdal	1 419	-9	16	4	14	1	2	-10	1 409
Tolga	1 690	-7	12	6	11	1	1	-6	1 684
Tynset	5 506	-5	53	19	58	10	-5	-11	5 495
Alvdal	2 453	-5	19	4	20	1	-1	-6	2 447
Folldal	1 664	-3	17	5	19	1	-2	-4	1 660
Os	2 031	-1	25	4	10	-	15	14	2 045

As the table shows, there are huge regional differences in population and population growth. To put it a bit blunt, the urban and central areas are the ones that attract people and the more rural and peripheral areas are struggling.

Below we see a figure that illustrates this.



**Figure 2 Population change; Norway, Hedmark and the four Hedmark regions**

The table shows a diversity among the regions and municipalities. It seems that it is the more urban and larger municipalities that functions as the growth engine when it comes to population growth. Without these regions Hedmark would have experienced a decline in residents. However, even the fastest growing region, Hamar-region, can not match the growth pace of the nation.

## **Regional economy, employment and transportation**

In this chapter we will go through the economic structures of the region, with a particular focus on knowledge intensive businesses. In addition we will look at the employment and how large share of the population that participates in the working force. In the end we will briefly go through the main transportation routes in the county.

### **Knowledge related business**

Hedmark is still one of the regions where agriculture is important, while manufacturing employment is on a national average. Hedmark economy is not particularly high tech intensive, and the knowledge intensive jobs are mainly found in the urban areas and are mostly related to service.

Below there is a table showing the share of high tech jobs in the different municipalities. We have used a definition used by the OECD, developed by the Milken Institute, Massachusetts (see <http://www.milkeninstitute.org/pdf/pittsburgh1106.pdf>)

Table 4: High Tech jobs, Hedmark municipality (source SSB and ØF)

Municipality	Share high tech jobs	National ranking (among municipalities)	<b>The high tech sector includes the following sectors:</b> <ul style="list-style-type: none"> <li>• Pharmaceutical and Medicine</li> <li>• Manufacturing</li> <li>• Commercial and Service Industry Machinery Manufacturing</li> <li>• Communications Equipment Manufacturing</li> <li>• Audio and Video Equipment Manufacturing</li> <li>• Semiconductor and Other Electronic Component Manufacturing</li> <li>• Nav/Measuring/Medical/Control Instruments Manufacturing</li> <li>• Manufacturing and Reproducing Magnetic and Optical Media</li> <li>• Aerospace Products and Parts Manufacturing</li> <li>• Medical Equipment and Supplies Manufacturing</li> <li>• Software Publishers</li> <li>• Telecommunications</li> <li>• Internet Service Providers, Web Search Portals, and Data Processing Services</li> <li>• Architectural, Engineering and Related Services</li> <li>• Computer Systems Design and Related Services</li> <li>• Medical and Diagnostic Laboratories</li> <li>• Space Research and Technology</li> </ul>
Kongsvinger	3,8 %	54	
Hamar	3,9 %	52	
Ringsaker	1,8 %	128	
Løten	0,6 %	269	
Stange	1,6 %	144	
Nord-Odal	0,2 %	386	
Sør-Odal	1,2 %	191	
Eidskog	0,6 %	284	
Grue	0,6 %	268	
Åsnes	1,2 %	198	
Våler	0,4 %	311	
Elverum	4,1 %	48	
Trysil	0,9 %	229	
Åmot	0,5 %	307	
Stor-Elvdal	0,0 %	405	
Rendalen	0,2 %	372	
Engerdal	0,3 %	350	
Tolga	1,0 %	220	
Tynset	1,5 %	164	
Alvdal	0,6 %	281	
Folldal	2,3 %	104	
Os	2,7 %	78	

None of the Hedmark municipalities are among the highest ranked Norwegian when it comes to share of high-tech occupation. Only one is ranked in the top fifty (Elverum), and three more (Hamar, Kongsvinger and Os) in the top hundred. There are a total of 430 municipalities in Norway, and there are 12 Hedmark municipalities that are below the national median when it comes to high tech jobs.

## Unemployment

There has been a high activity in the Norwegian economy the last few years, and the unemployment rate is very low compared to most other European countries. Keeping the unemployment rate low is a one of the key goals shared by most political parties. Hedmark also enjoys low unemployment rates. In several municipalities we can see that less than two percent of the labour force is out of work. There are some regional differences, but in general the rates are low. For many businesses this can result in pressures on wages and difficulties finding skilled staff.



**Table 5: Unemployment Norway, Hedmark and municipalities (source SSB and ØF)**

<b>Unemployment</b>						
	2005	2006	2007	2008	2009	2010
<b>Norway</b>	3,5	2,6	1,9	1,7	2,7	2,9
<b>Hedmark</b>	3,2	2,7	2,0	1,8	2,8	2,8
<b>Kongsvinger</b>	4,4	3,8	2,8	2,4	3,5	3,6
<b>Hamar</b>	2,9	2,5	1,9	1,8	2,7	2,5
<b>Ringsaker</b>	2,9	2,3	1,8	1,8	2,7	2,8
<b>Løten</b>	2,6	2,1	1,5	1,5	2,7	2,5
<b>Stange</b>	2,9	2,6	1,9	1,9	2,8	2,9
<b>Nord-Odal</b>	2,9	2,4	2,0	1,6	2,8	2,8
<b>Sør-Odal</b>	3,4	3	1,8	1,4	3,1	3,3
<b>Eidskog</b>	4	3	2,6	2,4	4,2	4,3
<b>Grue</b>	4	3,6	3,3	2,8	2,8	2,6
<b>Åsnes</b>	4,3	3,6	2,4	2,3	3,5	3,3
<b>Våler (Hedm.)</b>	4,3	3,8	3	2,3	3,9	3,5
<b>Elverum</b>	3,1	2,5	1,9	1,7	2,4	2,5
<b>Trysil</b>	4,2	3,1	2,4	1,9	3,1	3,3
<b>Åmot</b>	4,7	3,3	2,6	2,4	2,8	2,9
<b>Stor-Elvdal</b>	3,4	2,3	2	2	2,5	2,4
<b>Rendalen</b>	1,9	1,6	1,6	1,1	1,7	2
<b>Engerdal</b>	1,6	1,4	1,1	1,2	1,4	1,1
<b>Tolga</b>	2,5	1,7	1,1	0,7	1,1	1,1
<b>Tynset</b>	1,9	2	1,2	1,1	1,2	1,5
<b>Alvdal</b>	1,5	1,2	0,8	0,7	1,1	1,5
<b>Folldal</b>	2,4	1,7	1,5	1,8	2,8	2,4
<b>Os (Hedm.)</b>	2,4	1,6	0,8	1,1	2,1	1,7

There was a slight increase in the unemployment rates after the financial crisis of 2008, but most local economies recovered fast.

In addition, there are a high level of employment. A large share of both men and women are employed. Maybe a bit tabloid, but a recent article in the New York Times claims that the prosperity is not to be found in the Norway's oil revenues, but rather in the high level of working women ([http://www.nytimes.com/2011/06/29/world/europe/29iht-letter29.html?\\_r=3&pagewanted=1](http://www.nytimes.com/2011/06/29/world/europe/29iht-letter29.html?_r=3&pagewanted=1)).

## Participation in the workforce - share of the total population 2009

Hedmark			Norway		
<b>Male</b>	15-74 yrs	69,3	<b>Male</b>	15-74 yrs	72,4
	15-19 yrs	33		15-19 yrs	36,1
	20-24 yrs	68,2		20-24 yrs	70,5
	25-39 yrs	82,8		25-39 yrs	84,2
	40-54 yrs	83,9		40-54 yrs	85,5
	55-66 yrs	68,7		55-66 yrs	70,6
	67-74 yrs	26,6		67-74 yrs	26,9
<b>Female</b>	15-74 yrs	63,4	<b>Female</b>	15-74 yrs	67
	15-19 yrs	36,2		15-19 yrs	40,3
	20-24 yrs	67,5		20-24 yrs	69,4
	25-39 yrs	78,6		25-39 yrs	79,3
	40-54 yrs	80,3		40-54 yrs	81,9
	55-66 yrs	57,8		55-66 yrs	60,9
	67-74 yrs	12,3		67-74 yrs	14

## Transportation

Hedmark has a long railway tradition, and the first rail between Hamar to Elverum was opened in 1862. Later this was extended north, and in 1880 this was joined with the Oslo railway giving rail transportation all the way to Trondheim. The largest city, Hamar is located 125 km north of Oslo. Today, there are hourly departures to the capital and the main airport, Gardermoen. Table 5 shows the travel time by car between the cities around lake Mjøsa; Lillehammer and Gjøvik in Oppland County and Hamar and Elverum in Hamar. The table also shows how long it takes to the main airport and Oslo.

Three main road goes in the North South direction in the country. The one with the heaviest traffic follow the east side of Mjøsa and continues to Lillehammer and follows the Gudbrandsdalen. A part of this is currently undergoing an upgrade to motor way standard. This is a part of one of the most

important routes between Oslo and Trondheim. Another important north - south route more or less parallel this, but through an other valley - Østerdalen.

**Table 4: Travel time by car between the largest cities around lake Mjøsa, Gardermoen and Oslo (source ØF 2010)**

	Lillehammer	Gjøvik	Hamar	Elverum	Gardemoen	Oslo
Lillehammer		00:45	00:58	01:29	02:12	02:43
Gjøvik	00:43		00:53	01:23	01:41	02:09
Hamar	00:57	00:53		00:33	01:26	01:55
Elverum	01:24	01:23	00:33		01:37	02:06
Gardemoen	02:12	01:41	01:26	01:37		
Oslo	02:43	02:09	01:55	02:06		

Elverum and Kongsvinger are joined by Rv. 2. The second most important border crossing (when it comes to traffic) between Norway and Sweden is also in Hedmark. This is Morokulien, about 40 minutes drive east of Kongsvinger (39km). (source Hedmark (2011-09-26) <http://snl.no/Hedmark>)



## Labour force

More and more analysis on regional development share a similar conclusion; human capital propels regional development and prosperity. The knowledge and creativity of people enable some places and regions to do better than others. The education and skill level of the population are thus increasingly important.

### Creative class in Hedmark

Richard Florida's (2002, 2005, 2008) approach to regional development might be a valuable analytic tool for the 'Button project'. Florida has made a great impact with his theories on Creative Class, both in academia and among policy makers and planners. He argues that places and regions with a high fraction of talented and creative people – the Creative Class – have a much greater chance of succeeding in competition with other regions. The commonality within this group is that members' contribution consists mainly of cognitive labour and problem solving. In other words, they get paid to think. He argues that creativity is found in different industries, and what one actually does is more important than the industry in which one works. Thus, the Creative Class is a diverse group, and Florida includes in it traditional human capital-intensive positions, such as managers, scientists, architects and consultants, as well as more artistic professions. For Florida, the local musician is just as important for regional development as the bank manager.

One of the main implications of the Creative Class theory is that regional development should shift the focus from business' climate to people's climate. Florida argues that people, and in particular the Creative Class, increasingly are looking for interesting places and not jobs when they move. Jobs on the other hand, are increasingly pursuing these people. To put it bluntly, jobs follow people, not the other way around.

The creative class is divided in three major groups; 1) Creative Core (scientists, engineers, architects, physicians, college professors, etc.) 2) Creative Professionals (business and finance professionals, legal professionals etc.) 3) Bohemians (writers, photographers, musicians and the like). We have mapped all the three groups of the Creative Class in Hedmark and compared it to national rankings.

Table 5: The Creative Class in Hedmark (source SSB and ØF)

Kommune	Creative Class total	National ranking Creative Class	Creative Core	National ranking creative core	Creative professionals	National ranking Creative professionals	Bohemians	National ranking Bohemians
0402 Kongsvinger	33,6 %	85	8,2 %	59	24,4 %	123	1,0 %	57
0403 Hamar	44,8 %	17	12,1 %	16	31,1 %	18	1,7 %	8
0412 Ringsaker	28,3 %	185	5,4 %	157	22,3 %	206	0,6 %	158
0415 Løten	29,0 %	164	6,3 %	115	22,2 %	215	0,5 %	194
0417 Stange	33,2 %	88	8,0 %	63	24,6 %	116	0,6 %	167
0418 Nord-Odal	24,2 %	311	4,7 %	210	19,4 %	344	0,2 %	386
0419 Sør-Odal	26,5 %	235	5,7 %	143	20,3 %	297	0,5 %	190
0420 Eidskog	22,7 %	361	3,6 %	301	18,8 %	366	0,3 %	305
0423 Grue	23,6 %	338	3,0 %	356	19,6 %	334	1,0 %	44
0425 Åsnes	24,0 %	319	3,9 %	269	19,6 %	330	0,5 %	192
0426 Våler	21,7 %	388	4,0 %	255	17,4 %	406	0,4 %	293
0427 Elverum	35,0 %	70	6,9 %	90	26,9 %	70	1,2 %	20
0428 Trysil	23,4 %	346	4,2 %	245	18,0 %	394	1,2 %	21
0429 Åmot	23,6 %	336	4,7 %	205	18,4 %	383	0,4 %	247
0430 Stor-Elvdal	28,8 %	169	7,7 %	69	20,6 %	285	0,5 %	202
0432 Rendalen	22,0 %	381	3,2 %	338	18,2 %	389	0,6 %	165
0434 Engerdal	23,5 %	342	3,3 %	335	19,6 %	332	0,7 %	134
0436 Tolga	31,6 %	118	4,8 %	199	26,3 %	85	0,4 %	265
0437 Tynset	31,5 %	120	6,8 %	96	24,3 %	127	0,4 %	297
0438 Alvdal	23,8 %	327	5,0 %	187	18,3 %	388	0,5 %	189
0439 Follidal	25,1 %	283	3,9 %	270	20,8 %	280	0,4 %	275
0441 Os	26,9 %	222	4,4 %	230	21,7 %	238	0,9 %	69

Hamar has relatively large share of the creative class, and is the only municipality that scores higher than the national average which is 38%.

### Education level and the 'talent index'

The know-how of the people is one of the major assets of a region. This normally measured and operationalised as level of education; in other words, human capital.

**Table 6: Education level Hedmark and Norway (2010)**

	Hedmark		Norway	
	Total	Percent	Total	Percent
Primary School	54839	28,70 %	1090905	22,50 %
High School	65320	34,20 %	1583736	32,60 %
Higher education Short (< 4yrs)	26307	13,80 %	782284	16,10 %
Higher education long (> 4 yrs)	5551	2,90 %	249906	5,10 %
N.A. and no education	5238	2,70 %	231019	4,70 %

The educational level in Hedmark is a bit lower than the national average. In particular there are few with longer high education on masters and PhD level. Some of this can be explained by the economic structure of the county with few jobs in the high tech sector. On the other hand, table 7 shows that there are large regional variations.

Even though educational level has shortcoming and has been criticised, it is a good way to quantify the amount of knowledge in a region. However, to broaden the picture somehow, we have used a talent index in the table below. We have employed Tinagli's definition and methods (2009)<sup>1</sup>. The talent index is calculated through three different measures: the Creative Class, the Human Capital Index, that is the share of population with a University degree; and the Human Capital, represented by the share of population longer high education. The results are shown in the first column. The two columns to the right show the education level. The Norwegian average on short high education is almost 28% and long high education almost 7 % (SSB 2010). This means that the educational level is a bit lower in Hedmark.

<sup>1</sup> This formula has been used:  $V_{ij} = \frac{X_{ij} - Min_j}{Max_j - Min_j}$

Where  $V_{ij}$  is the standardized value of municipality  $i$  on indicator  $j$ ,  $X_{ij}$  is the actual value reported by municipality  $i$  on indicator  $j$ ,  $Min_j$  is the minimum value registered among all municipalities for indicator  $j$  and  $Max_j$  is the maximum value registered for indicator. The resulting figures are values in the 0-1 range, where 1 corresponds to the best performing region and zero to the worst performing one.

**Table 7: Talent index and educational level in Hedmark municipalities (source SSB and ØF)**

Municipality	National ranking talent index	Share of the population (25-64 yrs) with short (<4 yrs) high education.	Share of the population (25-64 yrs) with long (> 4 yrs) high education.
Kongsvinger	150	22,5 %	5,0 %
Hamar	16	36,3 %	10,2 %
Ringsaker	200	23,5 %	4,4 %
Løten	214	22,6 %	4,1 %
Stange	94	27,5 %	5,5 %
Nord-Odal	399	16,8 %	2,6 %
Sør-Odal	336	18,2 %	3,5 %
Eidskog	406	16,7 %	2,4 %
Grue	362	21,0 %	2,5 %
Åsnes	352	20,7 %	2,6 %
Våler (Hedm.)	395	19,2 %	2,6 %
Elverum	58	31,3 %	6,6 %
Trysil	355	20,8 %	3,2 %
Åmot	257	23,6 %	4,6 %
Stor-Elvdal	154	23,6 %	6,4 %
Rendalen	283	24,3 %	3,9 %
Engerdal	332	22,4 %	2,4 %
Tolga	64	30,9 %	7,2 %
Tynset	71	30,3 %	6,8 %
Alvdal	211	26,0 %	4,7 %
Folldal	208	25,4 %	4,4 %
Os (Hedm.)	141	28,9 %	4,6 %

As the table shows, there are large differences between the Hedmark municipalities when it comes education. Most municipalities are over the national median, and only five are in the top hundred. Hamar has a relatively high score, number 16 in the country.



## **Brain drain / Brain gain**

The main objective of the 'Button project' is to deliver "tailor made policy options for every region based on a profound understanding of attraction, retention and expulsion of highly educated people". Unfortunately, Norway has no data on the educational level of people moving in and out of the region. However, by looking at the migration pattern, educational level and business structure we can get an illustration of recent trends.

Table 9 show the migration pattern of Hedmark. In total there are more people moving in than leaving the county, but there are variations between the municipalities.

**Table 8: Brain drain/gain - net migration. Hedmark and municipalities, year 2010 (source SSB and ØF)**

Hedmark County + municipa- lities	Populatio n 1.10. 2010	Net migration	In-migration	
			Total	Foreign
<b>Hedmark</b>	<b>191 465</b>	<b>327</b>	<b>1 349</b>	<b>421</b>
Kongsvinger	17 414	48	240	46
Hamar	28 595	74	412	59
Ringsaker	32 757	89	386	73
Løten	7 327	31	111	12
Stange	19 177	-15	228	40
Nord-Odal	5 116	3	50	8
Sør-Odal	7 810	32	127	15
Eidskog	6 313	-6	57	13
Grue	5 040	2	46	12
Åsnes	7 596	8	70	8
Våler	3 863	23	64	7
Elverum	19 960	23	194	28
Trysil	6 766	-4	56	21
Åmot	4 301	18	69	13
Stor-Elvdal	2 686	-6	30	19
Rendalen	1 981	-3	20	5
Engerdal	1 419	2	16	4
Tolga	1 690	1	12	6
Tynset	5 506	-5	53	19
Alvdal	2 453	-1	19	4
Folldal	1 664	-2	17	5
Os	2 031	15	25	4

If we look at the foreign immigration more in detail, there are regional variations here too. However, we see a somewhat different picture than with most of the other factors. For examples, that some of the smaller municipalities have a relatively large share of immigrants.

**Table 9: Population, immigrants and background Hedmark, year 2009 (source SSB and ØF)**

born in Norway / foreign born		Immigrants share of the population			
Municipality	total	Europe except Turkey, North-America, Oceania	Africa, Asia incl Turkey, Latin-America	Total share immigrants	Share immigrants National ranking <sup>2</sup>
Kongsvinger	17 326	3,5 %	3,8 %	7,3 %	69
Hamar	28 211	3,2 %	3,6 %	6,9 %	98
Ringsaker	32 402	1,4 %	2,7 %	4,0 %	290
Løten	7 255	1,7 %	2,1 %	3,8 %	298
Stange	18 982	1,7 %	3,3 %	5,0 %	211
Nord-Odal	5 098	0,9 %	1,5 %	2,4 %	399
Sør-Odal	7 795	0,8 %	2,1 %	2,9 %	370
Eidskog	6 394	1,7 %	3,4 %	5,2 %	198
Grue	5 080	1,2 %	3,0 %	4,2 %	278
Åsnes	7 610	1,1 %	2,4 %	3,5 %	326
Våler (Hedm.)	3 869	0,9 %	2,4 %	3,3 %	340
Elverum	19 687	2,4 %	3,1 %	5,4 %	175
Trysil	6 749	0,9 %	4,8 %	5,6 %	162
Åmot	4 280	1,0 %	3,7 %	4,7 %	238
Stor-Elvdal	2 689	2,1 %	3,4 %	5,5 %	169
Rendalen	2 014	0,5 %	1,6 %	2,1 %	409
Engerdal	1 436	0,8 %	4,4 %	5,2 %	191
Tolga	1 678	2,3 %	4,5 %	6,8 %	102
Tynset	5 400	1,9 %	2,9 %	4,8 %	232
Alvdal	2 399	0,6 %	2,5 %	3,0 %	363
Folldal	1 671	1,0 %	1,8 %	2,8 %	378
Os (Hedm.)	2 046	0,7 %	4,7 %	5,4 %	180

Immigration is a hot topic in most European and Western countries. There are heated debates on how many immigrants that should be allowed into the different countries. At the same time we see an intensified international competition for talented people. Countries and regions struggle to get well educated and skilled persons because these are important in a knowledge economy. Below, in table 12, there is an overview of immigrants and educational level. Unfortunately the numbers are ten years old, no newer data is available. Since 2001, there are more immigrants coming from European countries. The regulation has been changed within the EU/EEA region so it is easier to find jobs and get working permits within the region. Nevertheless, the table shows some interesting trends when it comes to different immigration group's tendencies towards investing in higher education.

<sup>2</sup> Norway has 430 municipalities. The number refer to the national ranking among all 430 municipalities.

**Table 10: Educational level immigrants 2001 (source SSB)**

Category immigration, and background	Total	Precent					
		N.A.	No education	Primary School	High School-	Higher education, short	Higher education, long
<b>Norway</b>	<b>3 571 207</b>	<b>2,1</b>	<b>0,3</b>	<b>20,7</b>	<b>55,2</b>	<b>17,1</b>	<b>4,7</b>
Of this							
Immigrants	228 487	20,1	1,7	14,2	40,8	16,5	6,6
1. generation immigrants	218 512	20,8	1,8	14,0	39,8	16,8	6,8
Born in Norway, two foreign parents	9 975	5,5	0,1	17,1	63,7	10,9	2,7
Rest of the population	3 342 720	0,9	0,2	21,1	56,2	17,1	4,6
<b>Of the Immigrant population</b>							
Western countries	82 798	17,5	0,5	13,1	36,0	23,0	9,9
Non-western Countries	145 689	21,6	2,5	14,8	43,6	12,8	4,7
1. generation from non-Western countries	138 327	22,4	2,6	14,6	42,4	13,1	4,9
Born in Norway by two foreign, non-Western parents	7 362	6,2	0,1	19,0	66,1	7,4	1,3

## **Regional attractiveness**

The concept of attractiveness is complex; it means different things for different people, and can even change for the individual during different life phases. Attraction can be related to work opportunities, safe and healthy environment for families with children, the housing market, outdoor activities, the presence of a certain business environment or just simply the cultural identity of the person involved. In the following chapter there will be an assessment of a few of these attractions, starting with opportunity for outdoor activities.

### **Accessibility of outdoor activities**

In a survey done by Norwegian Statistic, were people asked how close they were to different amenities. The geographical scale of this survey does not go all the way to counties. The measure is Eastern Norway (without Oslo and Akershus), meaning Hedmark and the neighbour counties to the west and south. It is safe to assume that the access for Hedmark is quite similar to the one in the table. The structure and geography of the counties are to some extent similar.

**Table 11: Access to amenities, in percent**

	Norway	Eastern Norway	Norway	Eastern Norway	Norway	Eastern Norway	Norway	Eastern Norway
	1997	1997	2001	2001	2004	2004	2007	2007
<b>Living 4 km or less away</b>								
Lighted track	53	60	59	58	53	52	46	54
Alpine skiing	13	12	10	11	14	13	12	11
Swimming pool	55	47	50	53	57	54	48	48
Outdoor swimming	50	51	51	52	50	52	47	47
Sports hall	57	52	62	62	64	64	61	58
Sports stadium	70	66	75	77	77	77	74	72
Ice rink	N.A	N.A	N.A	N.A	N.A	N.A	23	28
Tennis court	37	36	37	39	39	36	36	32
Golf court	12	8	13	19	14	18	17	16
Shooting	28	30	28	21	25	21	21	22
Senior centre	70	68	67	66	66	63	0	0
Youth club	62	57	58	61	64	63	57	53
Restaurant, cafe	64	59	64	66	71	69	65	62
Primary school	80	74	83	81	86	84	81	78
Library	67	64	66	65	70	66	61	60
Movies	45	46	46	45	45	42	41	41
Grocery	86	84	84	84	88	86	N.A	N.A
Shopping centre	58	54	54	56	61	60	N.A	N.A
Community building	0	0	0	70	0	72	69	63

The offer of the different amenities in Eastern Norway is in most cases in line with the offer nationally. However, it is not enough to have the offer close by if you do not use it. Table 13 is based on the same survey, and measures how much the different amenities are used.

Tabell 12: Participation in out door activities in percent, survey (source SSB)

Share participated in different activities	Norway	Eastern Norway
Hiking, one day	77	76
XC skiing, one day	43	41
Multiple days skiing or hiking	15	12
Alpine skiing	20	18
Outdoor skating	5	4
Climbing or glacier trekking	4	4
Dog sledge and ski kiting	2	3
Snow mobile	6	6
Day trip rowing/canoeing	17	18
Daytrip on boat	36	33
Multiple day trip boat	10	10
Rafting, kayaking	2	1
Fishing trip	43	42
Out door swimming	63	64
Suntanned	58	58
Daytrip off road biking	41	43
Multiple days off road biking	1	1
Short walk	80	78
Berries/mushroom picking	35	34
Hunting	8	11
Horseback riding	5	4
Population	2138	571

The activity level in the Eastern parts of Norway is for the most activities on the same level as the rest of the nation. There seems to be few regional differences when it comes to preferences or frequency of outdoor activities.

## Housing

The access to good and affordable houses is an important pull factor when people are considering moving. Table 14 shows how the costs of housing has changed since 2005 in Norway and the neighbor counties of Hedmark and Oppland.

**Table 13: Real estate prices 2005 - 2010 (source SSB)**

<b>Housing prices 2005=100</b>	<b>Norway</b>	<b>Hedmark and Oppland</b>
2005	100,0	100,0
2006	113,7	109,6
2007	128,0	119,7
2008	126,6	120,3
2009	129,0	123,0
2010	139,7	131,1

As we can see the prices of housing has risen slower in Hedmark and Oppland than the national average. In the same period, the general prices rose by roughly 14 % (source SSB). So the cost of houses grew substantially faster than the general costs.

However, housing in Hedmark is less expensive than in the larger metropolitan areas. For examples is the average cost per m<sup>2</sup> is still twice as high in Oslo than in Hamar, the largest and most expensive housing market in Hedmark.

**Table 14: Areal prices housing, Norway and Hamar (source SSB and ØF)**

	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
	<b>Average price sq. m<sup>2</sup> (NOK)</b>	<b>Average price sq. m<sup>2</sup> (NOK)</b>	<b>Average price sq. m<sup>2</sup> (NOK)</b>	<b>Average price sq. m<sup>2</sup> (NOK)</b>	<b>Average price sq. m<sup>2</sup> (NOK)</b>	<b>Average price sq. m<sup>2</sup> (NOK)</b>
<b>Oslo</b>						
Villa	28 730	30 717	29 538	33 254	35 093	38 309
Apartment	38 619	38 840	35 267	40 404	43 027	47 183
<b>Hamar</b>						
Villa	14 897	16 674	15 406	15 578	16 907	19 068
Apartment	20 885	21 005	:	21 487	23 076	25 075

For many, in particular young families, this is an important pull-factor to move to the region.

## **Cultural services and amenities**

Several studies shows that place-specific amenities matter for regional growth. We have used a tool to measure the cultural services - cultural opportunity index (Tinagli 2009). This is a measure of the proportion of employees in the cultural and recreational industries within an area. The definition is rather wide and account for employment within restaurants and bars, libraries, museums and other cultural and entertainment activities.

We have utilised Location quotient (LQ) as a method in table 13. The LQ is a measure of spatial concentration, expressed as a proportion such that the average for Norway is 1. Location quotient compares the regional share of economic activity in a particular industry to the national share of economic activity in the same industry. The result reveals the degree of regional specialization in



each industry. If the location quotient for a particular industry is between zero and one, the region is less specialized than the nation, while location quotients greater than one reveal greater specialization of the industry in the local economy than in the national economy.

**Table 15: Cultural Opportunity Index LQ - Hedmark municipalities (source SSB and ØF)**

Municipality	Sum Cultural Opportunity	Restaurants	Bars	Film & video	Radio & TV	Other entertainment	Library, museums	Sport
Hedmark	1,23	0,52	0,01	0,05	0,01	0,14	0,17	0,33
Kongsvinge	1,16	0,51	0,00	0,03	0,03	0,10	0,12	0,36
Hamar	2,92	1,09	0,03	0,24	0,04	0,36	0,41	0,75
Ringsaker	0,52	0,31	0,00	0,00	0,00	0,09	0,04	0,07
Løten	0,59	0,40	0,00	0,01	0,00	0,10	0,07	0,01
Stange	0,73	0,38	0,00	0,00	0,00	0,13	0,09	0,13
Nord-Odal	0,20	0,02	0,00	0,00	0,00	0,12	0,06	0,00
Sør-Odal	1,03	0,72	0,00	0,01	0,00	0,17	0,05	0,08
Eidskog	0,31	0,17	0,00	0,00	0,00	0,06	0,03	0,05
Grue	0,53	0,18	0,00	0,00	0,00	0,18	0,12	0,06
Åsnes	0,39	0,21	0,04	0,03	0,03	0,01	0,04	0,04
Våler	0,44	0,08	0,00	0,00	0,00	0,10	0,26	0,00
Elverum	1,71	0,81	0,04	0,08	0,00	0,08	0,43	0,32
Trysil	3,76	0,92	0,01	0,01	0,00	0,03	0,09	2,70
Åmot	0,98	0,26	0,00	0,00	0,00	0,02	0,05	0,65
Stor-Elvdal	0,48	0,22	0,04	0,00	0,00	0,07	0,11	0,04
Rendalen	0,79	0,50	0,00	0,00	0,00	0,20	0,10	0,00
Engerdal	0,21	0,00	0,00	0,00	0,00	0,07	0,14	0,00
Tolga	0,60	0,30	0,00	0,06	0,00	0,18	0,06	0,00
Tynset	1,07	0,65	0,00	0,00	0,00	0,07	0,30	0,06
Alvdal	0,50	0,13	0,04	0,00	0,00	0,08	0,13	0,13
Folldal	0,96	0,30	0,00	0,00	0,00	0,06	0,30	0,30
Os	0,39	0,05	0,00	0,00	0,00	0,20	0,15	0,00

In general, it is the larger city regions that has a larger share than the national average when it comes to employment within the cultural industries. For example, Hamar has almost three times as many employed culture producing services. This indicates that they serve a larger region with cultural services. The municipality with the highest ranking in COI is however Trysil. They have less than 7000 inhabitants, and is located close to the Swedish border, relatively far from any of the larger cities. This is a typical tourist destination and is one of the most popular skiing resorts in Norway. This means they have a local industry aimed to serve a large group of visitors.

## **Public Provision Index**

The level of public service, such as education and health care is obviously important to attract and retain inhabitants. There are many ways to measure the service and welfare level in a region. One way to quantify this is through an index used by Florida "Public Provision Index" (PPI). PPI denotes the public and private welfare service level in a region, and is calculated by the share of how many of every 100 inhabitants that works within PPI occupations. The PPI index indicates how many that works with PPI of the total population (including people not employed), while the share point towards how many of the working force is employed with PPI

**Tabell 16: PPI - Share of people working in public service (source SSB and ØF)**

	PPI index	population 1.1. 2009	Employment after workplace 2008	Share employed in PPI	Share in education	Share in healthcare
Norway	14,05	4799252	2 525 000	26,7	7,7%	19,0%
Kongsvinger	13,73	17326	8948	26,6 %	6,5 %	20,0 %
Hamar	17,00	28211	18931	25,3 %	7,0 %	18,4 %
Ringsaker	11,00	32402	13957	25,5 %	6,1 %	19,5 %
Løten	8,55	7255	1754	35,3 %	9,6 %	25,8 %
Stange	14,81	18982	6636	42,4 %	9,7 %	32,6 %
Nord-Odal	10,67	5098	1619	33,6 %	5,6 %	28,0 %
Sør-Odal	9,38	7795	2461	29,7 %	10,2 %	19,5 %
Eidskog	8,63	6394	1935	28,5 %	5,7 %	22,8 %
Grue	10,47	5080	2055	25,9 %	4,4 %	21,5 %
Åsnes	13,32	7610	3059	33,1 %	8,6 %	24,5 %
Våler	13,39	3869	1579	32,8 %	11,4 %	21,4 %
Elverum	16,76	19687	9983	33,0 %	8,1 %	24,9 %
Trysil	12,86	6749	2942	29,5 %	7,3 %	22,2 %
Åmot	12,59	4280	1735	31,1 %	9,9 %	21,2 %
Stor-Elvdal	15,73	2689	1124	37,6 %	15,6 %	22,1 %
Rendalen	12,96	2014	808	32,3 %	7,1 %	25,2 %
Engerdal	13,51	1436	637	30,5 %	9,7 %	20,7 %
Tolga	10,07	1678	613	27,6 %	8,6 %	18,9 %
Tynset	20,91	5400	3343	33,8 %	8,4 %	25,4 %
Alvdal	11,21	2399	1171	23,0 %	8,7 %	14,3 %
Folldal	10,95	1671	708	25,8 %	5,8 %	20,1 %
Os	10,65	2046	775	28,1 %	6,6 %	21,5 %

In a welfare state such as Norway these services be relatively evenly dispersed. There are regional differences, but laws and regulations smoothen these out more than the population would indicate.

Some smaller municipalities has a high score because health and education employs a large share of the workforce. In addition does some municipalities high because they have some centre place functions, meaning that they serve a larger region.

Below there is a map showing PPI in Eastern Norway and two Swedish counties. The regional differences are comparatively small, with some urban areas sticking out with a high share.

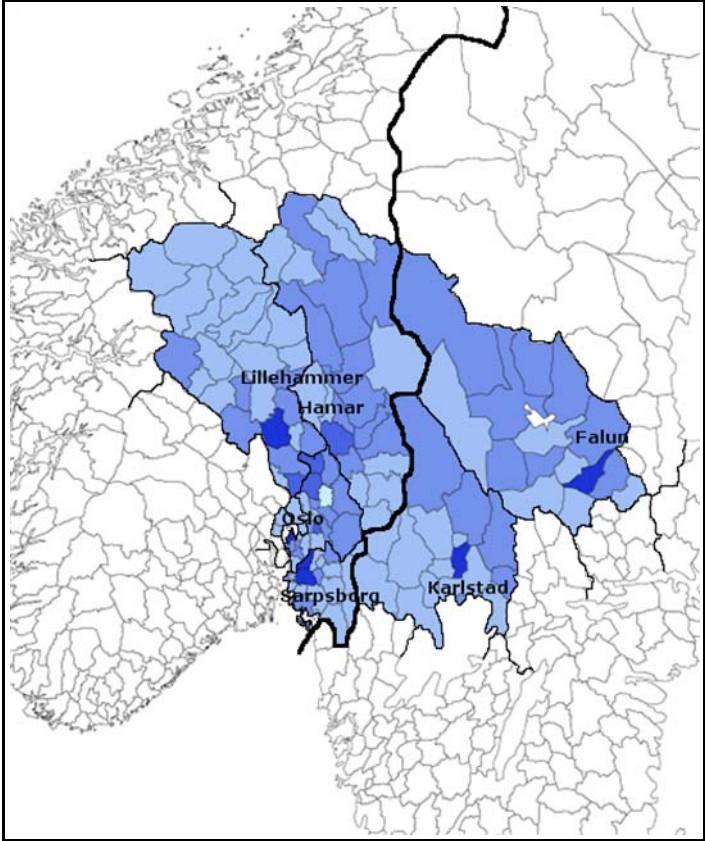


Figure 3: PPI in Eastern Norway and Värmland and Dalarna (Sweden) (source SSB and ØF)

## **Main challenges for Hedmark**

As mentioned in the introduction, there was a foresight process in Hedmark in 2010. Foresight is a planning tool which systematically attempt to look into the longer-term future of in this case a county. Different techniques can be employed, but the overall goal is to indulge in critical thinking about the future and possible challenges. The purpose of the foresight process was to give background information and data for a new regional planning process in Hedmark County Council. The foresight process included 994 different actors, six workshops, numerous meetings and broad data collection. This concluded in six areas where the main challenges for Hedmark could be found. These areas are very much in align with the Button project's primary focus.

- Infrastructure and transportation
- Population
- Access to competence, skills and education
- Development of natural resources
- Attitude change
- Public government and management

In the following there will be a brief overview of each of these themes, and why they are important.

### **Infrastructure and transportation**

Sub standard infrastructure, meaning both roads, railways and digital communication, was a reoccurring theme in the foresight process. Hedmark is a large geographical region, with relatively few people. A well developed infrastructure is thus crucial when people and business want to interact both within and also outside the region. This was both a challenge and a solution to many of the regions challenges. A better infrastructure can help with the other challenges as well.

### **Population**

Stagnation or even decline in population growth was heavily emphasised as a challenge. There were regional differences in how acute this challenge was, but was mentioned in every regional workshop. In many way is growth in population the ultimately yardstick for regional development. The last few decades have seen a clear tendency towards urbanisation; cities and larger urban regions have undergone the most positive development, both in terms of job creation and the number of inhabitants. This mean that a rural region like Hedmark must work hard to keep the regional population and housing pattern. Traditionally, regional development has had a business focus, with the logic that people follow jobs. With more and more people employed in the service sector, there are clear tendencies in Norway that increasingly people are looking for good, interesting places and not jobs when they move. Jobs on the other hand, are increasingly pursuing these people. To put it bluntly, in many cases jobs follow people, not the other way around.

## **Access to competence, skills and education**

Hedmark has large regional differences when it comes to educational level, but every region has challenges when it comes to attract or educate highly skilled workers. There needs to be a change in attitude when it comes to education, all the way from primary school. Hedmark is today one of the counties with the highest proportion of students quitting before finishing high school and the poorest results in primary school. This makes the challenge of attracting and retaining talents essential. This is a problem for the whole society, not only in the education sector. To create a good learning arena the entire society must focus; media, educational institutions, public and private organisations and businesses must work together to create an attitude change.

## **Development of natural resources**

Hedmark is a region with plenty of nature, but relatively few people. The nature and natural resources are crucial for future development and standard of living. Of course, in interaction with the human resources. There is a potential conflict between the development and protection, and this needs to be acknowledged and debated. On one hand are natural resources important for business one expects to grow in the future, such as experience economy and water and power supply (bio energy and wind power). On the other it is the basis for traditional businesses such as agriculture and forestry. In addition, resources such as free access to nature, clean water, low pollution level make Hedmark an attractive place to visit and live.

## **Attitude change**

Change of attitude can include different features. In the foresight two areas were focused.

- 1) Attitude to regional and business development
- 2) Attitude to diversity

This is an important subject, but also a bit sensitive. By focusing on attitudes one wants to change, people can feel excluded and in some cases self-enforcing. By talking about problematic attitudes, these can create an image of a region with problematic attitudes.

Even though some disagreed with that view, the notion of people from Hedmark as a bit slow and cautious is quite common. This can be a problem when regional development increasingly is dependent on innovations and entrepreneurs. In addition, in a globalised world one must be open to other people and ideas. If a region wants to attract new inhabitants, it is important that the ones who come feel welcomed.

## **Public government, planning and management**

In a survey previous to the foresight meeting, almost half of the respondents reported that public government and planning was an important challenge. Both among the representatives for the public organisations and private businesses, a holistic planning strategy emphasised as important. In particular was planning across municipality and county borders called attention to.

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### **Regional fact sheets - a “Brain Flow” report**

This report has been prepared for the Component 3A ‘Regional fact sheets’ of the so-called *Button-subproject*. This is a sub-project in the framework of the INTERREG IV C Mini Programme “Brain Flow”, with the full title ‘Towards tailored policy measures to attract and retain highly educated workers; “Pushing the right Button”.

The report presents facts and information on the Norwegian County Hedmark.

It has data on the county and four sub-regions, and covers area such as population, employment, education, economic structure etc. A part of the findings is informed by Richard Florida's theory of the Creative Class.

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