

Analysis, dialogue and dissemination of future skills needs

A study of three countries



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Thea Berge, Linda Berg and Sigrid Holm

Preface

Studies of future skills needs are done regularly in Norway, mainly by Statistics Norway and the Norwegian Labour and Welfare Administration. Nevertheless, Norway does not have a national system for analysis, dialogue and dissemination of future skills needs. In 2011, commissioned by the Norwegian Ministry of Education and Research, Vox, the Norwegian Agency for Lifelong Learning, wrote a report where we indicated which elements a national system of future skills needs should include. A few years later, we were appointed by the same ministry to study such systems of future skills needs in other countries, to examine what Norway can learn from their experiences.

As part of this work, we did study visits abroad together with Ingrid Bjartveit Krüger, Gjermund Forfang Rognved, Øystein Braaten, Inger Marie Skinderhaug and Erik Øverland at the Norwegian Ministry of Education and Research. We want to thank all the institutions that we visited in Sweden, Ireland and Finland for their hospitality and generosity in giving us all the information we needed. In particular, we want to thank Jukka Vepsäläinen at the Finnish National Board of Education for his helpfulness. We also want to thank Ingrid Bjartveit Krüger and Gjermund Forfang Rognved at the Ministry of Education and Research for their assistance during our writing process.

This being said, the responsibility of the content of this report lies with us.

Oslo, 2nd November 2015

Thea Berge (project manager), Linda Berg and Sigrid Holm

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Summary

Unlike many other countries, Norway has not yet institutionalized the use and dissemination of future skills needs analyses in public bodies. Possible ways of institutionalizing this has been on the Ministry of Education and Research's agenda since 2011, and a project group tasked with developing a system for analysis, dialogue and dissemination of future skills needs was established in 2013. In 2014, the project group commissioned Vox, the National Agency for Lifelong Learning, to study how analyses of future skills needs are used and disseminated in other countries. The aim of this study is to identify elements and experiences that can be used in the development of the Norwegian system. We have studied the systems in Sweden, Ireland and Finland.

Sweden was chosen as a study object because of the future skills work in the Swedish regions, the dissemination of results tailor made for various target groups and the dialogue and interaction between the labor market and the educational system, where analyses of future skills needs are read and discussed. In Ireland, the most interesting thing to us was the expert group EGFSN. It seems fruitful to have a national expert group that gives advice on skills matters to central authorities, orders analyses from various sorts of analysts and publishes reader-friendly reports regularly. The future skills needs landscape in Finland is very complex. There is an abundance of forecasts and foresights, and what we find interesting is how all these both quantitative and qualitative methods are combined.

Recommendations

Based on our lessons from Sweden, Ireland and Finland, we conclude that it would be useful for the development of a national system in Norway to:

- develop arenas for dialogue on future skills needs between stakeholders at both national and regional levels
- improve the dissemination of results by examining what information is in demand, and by adapting publications to the various user groups
- establish coordinating bodies at both national and regional levels
- base the analyses of future skills needs on a wide range of data sources and methods
- investigate how the Norwegian regions analyze future skills needs, make use of the analyses and disseminate the results
- investigate in what ways different analyses in Norway can be seen in the light of each other

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Introduction

Many countries have established systems for analysis and dialogue concerning future skills needs, as well as systems for disseminating the results from these analyses and dialogues. The systems are a means to predict possible future challenges associated with skills mismatch, where there is a discrepancy between the skills employers need and the skills workers possess.

In 2011, the Ministry of Education and Research in Norway commissioned Vox, the Norwegian Agency for Lifelong Learning to examine how a system for mapping, analysis and dialogue regarding future competence needs could be developed in Norway. The results, published in 2012, suggested that Norway should develop a system including structures such as a coordinating body, a national expert group and regional networks. The report also suggested that the publication of national projections should be both more frequent and more available to the public. Today, national projections comparing supply and demand for labor are presented every three years, in a report written in a technical language.

To follow up on Vox' report from 2012 and the feedback it got from relevant institutions, the Ministry of Education and Research established in 2013 a project group tasked with developing a system for analysis, dialogue and dissemination of future skills needs in Norway. The project group will conclude their work and submit their recommendation by the end of 2016.

In 2014, this project group commissioned Vox to examine how other countries' systems for analysis, dialogue and dissemination of future skills needs are structured, in order to see what Norway can learn from their experiences. This report sums up this work. We have studied the systems in several countries, and chosen to give particular attention to the systems in Ireland, Finland and Sweden. We will return to why these countries were chosen in the following sections.

As part of the work, Vox, together with the Ministry of Education and Research, visited Ireland, Finland and Sweden.

1.1 Future skills needs analyses in Norway

In Norway, Statistics Norway makes projections of future skills needs. The Ministry of Education and Research, the Ministry of Trade, Industry and Fisheries, the Ministry of Labour and Social Affairs and the Ministry of Health and Care Services commission this work. The Ministry of Education and Research coordinates this interministerial agreement with Statistics Norway. Every third year, Statistics Norway produces a comprehensive publication, projecting the supply and demand of labor by education in the entire labor market. Smaller reports are published in the intervening years. Statistics Norway also conducts separate analyses of supply and demand for teachers and health workers.

Besides Statistics Norway's projections, there are some future skills needs analyses conducted by other agencies and institutions. The Norwegian Labour and Welfare Administration (Nav) has an annual survey ("Bedriftsundersøkelsen") where they ask enterprises questions related to expected employment and challenges associated with recruiting workers with skills the enterprises need. Nav also uses Statistics Norway's projections to do their own analyses.

Another example is the Confederation of Norwegian Enterprise's (NHO) annual survey of their members skills needs today and five years from now. The survey is conducted by the Nordic Institute for Studies in Innovation, Research and Education (NIFU), which also investigates university and university college graduate's transition to the labor market.

At the regional level, activities vary. Nav conducts its annual survey at the regional level. The regions have access to a development analysis tool, Panda, which they can use to make forecasts concerning regional issues, amongst other the labor market. Moreover, KS, which is the association of local governments, analyzes future recruitment needs for the municipalities. They also support the municipalities in making their own analyses. In 2002, the central bank of Norway established seven regional networks consisting of enterprises, organizations and municipalities in order to gain information on economic development. The networks also provide information about employment and the labor market.

However, as of today, there is no joint arena, network or forum at a national or regional level where relevant stakeholders may discuss issues related to future skills needs and collaborate on activities, and Norway has no national body tasked with following up on future skills needs and coordinating activities concerning this matter.

1.2 Analyses, dialogue and dissemination of future skills needs in other countries

Many countries have systems for analysis, dialogue and dissemination of future skills needs. How the analyses are used and how the results are disseminated varies. The prevailing trend in Europe is to apply a holistic approach to analysis, where a combination of different methods, both quantitative and qualitative, is used in order to achieve robust results (Cedefop, 2008). The purpose of supplementing quantitative models with qualitative analyses is to both nuance and strengthen the results and address new trends at an early stage.

In this report, we examine the systems in Ireland, Sweden and Finland. These countries were selected because they all have well-developed systems for analysis, dialogue and dissemination of future skills needs. Moreover, all three countries are fairly similar to Norway in several aspects, for instance with regards to population and governmental structure. Elements that we find interesting from the respective countries should thus be relatively easy to implement in a Norwegian context.

In addition to being similar to Norway, each country has specific features that is of particular interest for Norway. In Ireland, they have an expert group working with future skills needs who reports to two ministries. As this may be relevant in a Norwegian context, we wanted to learn more about how this group functions, what type of analyses they produce and how their dialogue with ministries and other stakeholders is organized. Further, we wanted to study the work of SOLAS, which is Ireland's Further Education and Training Authority. Collecting data and making projections concerning future skills needs is an important part of their work.

In Finland, we were particularly interested in learning about how they combine different methods and how stakeholders are involved in the different processes and the different stages of the work. We were also interested in how Finland use their analyses in educational planning.

With regards to Sweden, their work on future skills needs at the regional level was an important reason for choosing to study their system. We wanted to learn more about the Swedish regional skills platforms, as well as other regional initiatives. In addition, we were interested in how the results of analyses are disseminated to students, parents and career counsellors.

1.3 The structure of the report

In this report, we describe the systems for analysis, dialogue and dissemination of future skills needs in Sweden, Ireland and Finland. The chapters for each country start with an outlining of background information, including elements such as the government and administration and the education system. The chapters continue with a description of how the work on future skills needs is organized, for what purposes the analyses are done and the models for dialogue and involvement of stakeholders. The chapters for Sweden, Ireland and Finland conclude with a description of how results from analyses and dialogue are disseminated and used.

In the final chapter of this report, we present our recommendations for the development of a national system of future skills needs in Norway, based on good practice and experiences in Sweden, Ireland and Finland.

1.4 Definition of terms

Some central terms will be used in this report:

Analyses of future skills needs: studies of future skills needs in general, including various methods and models. Skills can be measured by, for example, education or occupation.

Anticipations (in the Finnish context): studies of the future, including development goals

Projections and forecasts: quantitative analyses of future skills needs, based on observed, empirical data and simplifying assumptions

Foresight: different types of studies of the future, mostly qualitative, such as scenarios, Delphi method, expert groups and so on

Education dimensioning: central regulation of fields of educational programs or student numbers



Sweden

In Sweden, the demand and supply of skills and how they correspond to each other receives much attention. National projections concerning the labor market have been made since the 1970s, and Statistics Sweden conducts these analyses every three years. The regions are highly involved, and have their own institutions responsible for both increasing knowledge concerning regional skills needs, as well as facilitating cooperation between relevant stakeholders.

The results from the analyses are disseminated through various channels. Future prospects for more than 200 occupations are for instance made available at a dedicated website. This service aims both at persons contemplating which occupation to choose, as well as career counsellors.

One of the reasons for choosing to study Sweden was that we wanted to know more about their dissemination of future skills needs. We were also interested in learning about the work on future skills needs at the regional level.

2.1 Interesting findings

- The regions actively participate in discussions regarding future skills needs.
- Dissemination receives a lot of attention, and results are spread to different groups through various channels.
- In vocational colleges, the connection between the educational programs and the labor market is strong.
- Results from several analyses and discussions with stakeholders are compiled and used when deciding which programs to include in the vocational colleges.

Important actors

Statistics Sweden (Statistiska Centralbyrån): Statistics Sweden's main task is to produce, develop and disseminate statistics. Statistics Sweden conducts several analyses of future skills needs.

Swedish Public Employment Service (Arbetsförmedlingen): Its main task is to facilitate the matching of supply and demand for labor. Further, The Swedish Public Employment Service collects labor market data conduct analyses of future skills needs and disseminate information.

Swedish National Agency for Higher Vocational Education (Myndigheten för yrkeshögskolan): The Swedish National Agency for Higher Vocational Education is responsible for all matters concerning higher vocational education. It evaluates labor market demand for the different types of higher vocational education.

Regional skills platforms (Regionala kompetensplattformar): The regional skills platforms are regional bodies tasked with increasing knowledge concerning future skills needs at the regional level. They also work for improving coordination and collaboration between stakeholders.

Swedish Agency for Economic and Regional Growth (Tillväxtverket): Its main task is to promote entrepreneurship and sustainable regional growth. It supports the regions in their work concerning future skills needs.

Swedish National Agency for Education (Skolverket): The agency is an administrative authority for schools, pre-schools and other educational activities. Parts of its work include analyzing students' transitions to the labor market.

Data sources

Register data: Statistics Sweden produce and publish labor market and education statistics.

Survey data: Statistics Sweden gathers various types of survey data, for instance through an annual employer survey. Other organizations, such as the Swedish National Agency for Higher Vocational Education and local employment offices, also perform relevant surveys.

In addition to these data sources, several networks and councils, such as the national program councils by the Swedish National Agency for Education, provide information about labor market, industry, education and training.

2.2 Background information

2.2.1 Government and administration

Like Norway, Sweden has three levels of administration: the national, regional and local levels. Currently, there are eleven ministries, which each are responsible for several government agencies. Through the years, many tasks and activities have been decentralized and transferred from the central government to the municipalities (Government Offices of Sweden, 2015).

Sweden has 21 counties. At the regional level, political tasks are undertaken by the county councils and the county administrative boards. The 290 municipalities, each with a municipal council, are responsible for several public services, for example primary and secondary education (Government Offices of Sweden, 2015).

Authorities at the regional and local levels are self-governing and have different responsibilities. There is thus no hierarchical relation between the regions and municipalities (Swedish Association of Local Authorities and Regions, 2015a). Regional cooperation councils can be established by the municipalities and the county (Swedish Association of Local Authorities and Regions, 2015b).

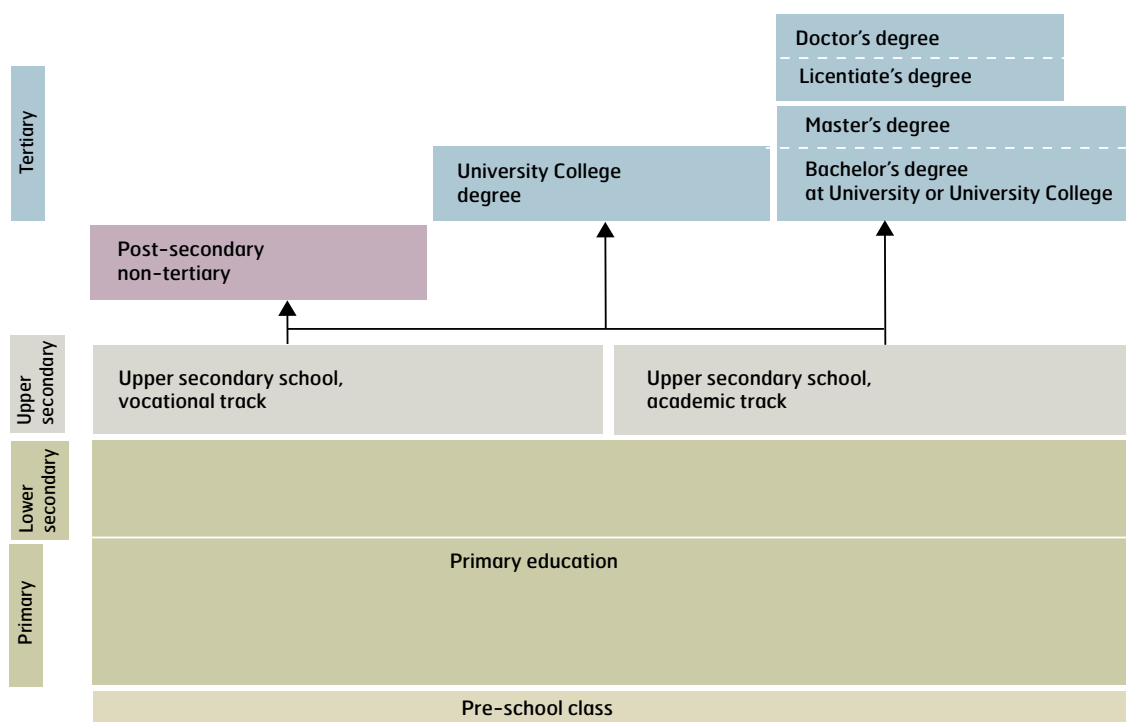
2.2.2 Population

Sweden has a larger population than Norway, just beneath 10 million people (Statistics Sweden, 2015b). Although the age distribution in the two countries is rather similar, Sweden has a somewhat larger share of the population in the oldest age groups, 65 years and older. The future supply of competencies and labor in Sweden's regions is expected to be affected by the changing age structure (Growth Analysis, 2010, p. 9).

2.2.3 Education system

Figure 1 shows the Swedish education system. Before compulsory schooling, there is an optional first year at the age of six, which most children attend. Primary education consists of nine years of schooling (compared to ten in Norway) and is compulsory for children between 7 and 16 years old. Compulsory education is provided by municipal schools and privately run schools, which are approved by the Schools Inspectorate (Swedish Institute, 2015a).

After completing primary education, almost all youth choose to continue with three years of optional, upper secondary education. As in Norway, these students can choose between general studies, which are preparatory for higher education and vocational education and training. Students that do not have grades that qualify for upper secondary education may enroll after completing an introductory program. The responsibility for dimensioning education programs and the number of admissions primarily lies with the municipalities. Both skills needs and youths' wishes should be taken into account in this process (Swedish Agency for Economic and Regional Growth et al., 2012, p. 24).

Figure 1 The Swedish education system.

Source: K. Hallén (http://www.mzes.uni-mannheim.de/publications/misc/isc97/hall08a_the_swedish_educational_system_and_classifying_edu.pdf)

The Swedish Higher Education Authority and the Swedish Council for Higher Education are responsible for matters concerning tertiary education in Sweden. There are 14 public universities and 20 public university colleges. The institutions themselves decide course content, admissions and other related matters. The main part of the funding to the universities and university colleges comes from public sources of funding. In addition to the public higher education institutions, there are several independent institutions (Swedish Institute, 2015b).

Students can also apply for vocational colleges upon completing upper secondary education. These are practical educations, most of them with a duration between one and three years. The vocational colleges have a clearer connection to the labor market, compared to the higher education programs that primarily accommodate individuals' needs (Swedish Agency for Economic and Regional Growth et al., 2012, p. 25).

2.2.4 Labor market

The setback of the Swedish economy due to the financial crisis in 2008 was limited. GDP is now above pre-crisis levels, and employment has been growing steadily. Nevertheless, some challenges remain. There are indications of an increasing difficulty in matching workers and vacant jobs. Increased immigration also creates challenges in the matching of the population's skills with labor market needs (OECD, 2015a, pp. 8–9). The unemployment rate in Sweden is now 6.4 percent (Statistics Sweden, 2015a), compared to 4.5 percent in Norway (Statistics Norway, 2015).

2.3 Organization in Sweden

Several actors are involved in the work on future skills needs in Sweden. Decision-makers at national and regional levels are the target group for most of the authorities producing analyses of future skills needs (Swedish Agency for Economic and Regional Growth et al., 2012, p. 22).

Statistics Sweden is one of the key actors when it comes to such analyses. In addition to conducting analyses, it makes data on labor market and education publicly available in an online database. Most of its activities are conducted upon request by national and regional authorities and the Government (Swedish Agency for Economic and Regional Growth et al., 2012, p. 17).

The Swedish Public Employment Service is a national authority with 320 offices throughout the country. Its tasks and objectives are decided by the Parliament and the Government. Its main objective is to facilitate the matching of supply and demand for labor, and support those with weak labor market attachment. It gathers information about the labor market, conducts analyses and evaluates labor market policy measures (Swedish Agency for Economic and Regional Growth et al., 2012, pp. 14–15).

Growth Analysis and the Swedish Agency for Economic and Regional Growth are both governmental agencies under the Ministry of Enterprise and Innovation. Growth Analysis analyzes and evaluates growth policies. The Swedish Agency for Economic and Regional Growth works to strengthen competitiveness and promote regional growth, mainly through establishing networks, sharing knowledge and financing growth-enhancing initiatives.

In 2010, the Government commissioned the regions to establish regional skills platforms. One of the objectives of the skills platforms is to improve conditions for the provision of skills and contribute to dialogue and knowledge transfers between the regional and the national levels (Swedish Agency for Economic and Regional Growth et al., 2012, p. 24). The regional skills platforms contribute to the development of knowledge and analyses, and coordination of these activities.

The Swedish National Agency for Higher Vocational Education is responsible for issues concerning higher vocational education, and aims to contribute to provision of competencies according to labor market needs. When deciding which programs to include in the vocational colleges, the agency makes use of several different sources discussing labor market needs (Swedish Agency for Economic and Regional Growth et al., 2012, p. 15). The target group of the agency's analyses is decision-makers in the field of education at both the national and regional levels (Swedish Agency for Economic and Regional Growth et al., 2012, p. 22).

The Swedish National Agency for Education is the administrative authority for schools, pre-schools and other educational activities. They analyze students' transitions to the labor market after completing upper secondary education (Swedish Agency for Economic and Regional Growth et al., 2012, p. 16).

The Government's work on issues related to the future is supported by the Secretariat for Strategic Development for the Future at the Prime Minister's Office. A central task for the secretariat is to ensure cooperation concerning future issues between relevant stakeholders. In 2015, the Minister for Strategy, Future Issues and Nordic cooperation appointed three

working groups, addressing issues of importance for the future. One of the groups will concentrate on the future labor market.

2.4 The purpose of analysis, dialogue and dissemination of future skills needs in Sweden

The purpose of analyses, dialogue and dissemination of future skills needs vary between actors. Statistics Sweden's aim is to inform education planners, career counsellors, researchers, students and other stakeholders about education and the labor market. Good examples of such analyses include "Trends and forecasts for education and labor market" ("Trender och prognoser") whose aim is to show the resulting imbalances between demand and supply of skills that will come if the current trends continues (Statistics Sweden, 2014b). "Labor Market Tendency Survey" ("Arbetskraftbarometern") is another, which aims to provide information on the status of the labor market and prospects for different educational groups (Statistics Sweden, 2014a).

Similar to Statistics Sweden, the Swedish Public Employment Service also has quite wide user groups. The Occupation compass¹ ("Yrkeskompassen"), which is a central contribution towards dissemination of future skills needs, is primarily designed to support persons making career decisions and to provide information about prospects in the labor market. The website is also intended to be a tool for career counselors (Swedish Public Employment Service, 2015c).

At the regional level, the skills platforms aim to increase coordination of analyses of future skills needs, competence provision and education planning, in addition to increased knowledge about the supply and demand for educations (Swedish Agency for Economic and Regional Growth et al., 2012, p. 24).

The objective for analyses made by the Swedish National Agency for Higher Vocational Education is to form the basis for deciding which programs to include in the vocational colleges, in order to supply the labor market with relevant skills (Swedish Agency for Economic and Regional Growth et al., 2012, p. 15).

Finally, the work done by labor market and industry councils aims at improving cooperation, sharing information and improving the match between supply and demand for labor. Councils for vocational education programs for instance aim to improve the match between the vocational educations and the labor market.

2.5 Analyses of future skills needs in Sweden

2.5.1 National analyses

Several analyses of future skills needs are produced at the national level in Sweden. Statistics Sweden performs many of them, for example the "Labour market tendency survey". This is an annual employer survey where employers give their own assessments of the supply and

¹ www.arbetsformedlingen.se/For-arbetssokande/Yrke-och-framtid/Yrkeskompassen

demand for labor with different educational backgrounds. The 2014 survey provides information about the labor market situation and the outlook for 71 education and training categories, mostly higher education. The employers state if they think there is a shortage, balance or surplus of job seekers in each educational group. The employers are also asked to assess labor needs one and three years in the future. Further, employers are asked to assess the supply of both newly graduated persons and persons with work experience (Statistics Sweden, 2014a).

In “Trends and forecasts for education and labor market”, Statistics Sweden describes the development of the population, education and labor, as well as prospects for 20–25 years into the future. The report has been published every third year since 1972. The latest report was released in 2014, with forecast up until 2035. The forecasts of supply and demand for labor look at the entire labor market. The supply of labor by education is calculated based on Statistics Sweden’s register of educational attainment. The demand is calculated based on employment forecast, industry forecast, occupation forecast and education forecast. 57 education groups are presented in detail. The analysis shows imbalances between supply and demand that will occur if the current trend persists (Statistics Sweden, 2014b).

Statistics Sweden also conducts other analyses concerning education and the labor market (“Analyser om utbildning och arbetsmarknad”). These analyses aim to examine the transitions between education and work, as well as changes in participation in education and in the labor force.

Twice a year, The Swedish Public Employment Service makes occupational analyses for the labor market, “Labour Market Outlook” (“Arbetsmarknadsutsikterna”), one and two years ahead. The analyses are based on interviews with employers in both private and public sector. The latest national results is presented in a report for 2015 to 2016 (Swedish Public Employment Service, 2015a). In addition, they publish reports at the regional level. Further, the Swedish Public Employment Services’ research department perform long-term occupational forecasts, five and ten years ahead. The forecasts are based on variables such as retirements, access to education and training, educational choices, labor market participation and more. There are no long-term forecasts made for occupations deemed to be too small or where statistical data are not reliable (Swedish Public Employment Service, 2015b).

Analyses of skills needs by Growth Analysis and the Swedish Agency for Economic and Regional Growth differ slightly from the other analyses in that they are related to innovation and growth. The type of analyses Growth Analysis perform depends to a large extent on the Government’s priorities. Because of this, most analyses examine specific issues, and few annual analyses are conducted (Swedish Agency for Economic and Regional Growth et al., 2012, p. 22). The agency can produce its own analyses (see for example Growth Analysis, 2009), or commission others to do the analyses for them (see for example WSP Sverige AB, 2013).

The Swedish National Agency for Education was in 2014 commissioned by the Government to follow youths’ transition to employment and education upon finishing upper secondary education. The aim of the study is to examine the relevance of programs in upper secondary education and how they match the needs in the labor market. They use registry data to examine young peoples’ attachment to the labor market or education system one, three and five years after completion. The analyses will be conducted annually (Swedish National Agency for Education, 2014, p. 12).

The Swedish National Agency for Higher Vocational Education examines the labor market's need for higher vocational education. In "Summarizing Occupational Analyses" ("Sammanfattande yrkesanalyser"), the agency reports the labor market's demand for higher vocational education three to five years in the future (Swedish National Agency for Higher Vocational Education, 2013). The analyses are based on information from the Occupation compass, register-based labor market statistics from Statistics Sweden, information from employer and employee organizations, universities and colleges, governmental agencies such as the Swedish National Agency for Education and Growth Analysis and more. To ensure the quality, drafts of the analysis are reviewed by trade organizations and employers (Swedish National Agency for Higher Vocational Education, 2013, p. 3).

In order to investigate how the education and training provided by the vocational colleges meet labor market needs, The Swedish National Agency for Higher Vocational Education holds an annual survey for graduates. This survey examines the graduates' employment rate and the match between their education and their job (Swedish National Agency for Higher Vocational Education, 2015c). In "Education in the vocational colleges. Education places completed 2015–2021" ("Utbildningar inom yrkeshögskolan. Utbildningsplatser som avslutas 2015–2021"), they give an overview of the provision of education and training in vocational colleges in the time span 2015–2021. Stakeholders can use this information to assess whether the number of student places in different educational fields corresponds with the needs in the labor market (Swedish National Agency for Higher Vocational Education, 2015d).

Several of the analyses described above make use of the same data. As mentioned, the Swedish National Agency for Higher Vocational Education uses data published by several other agencies. Data from Statistics Sweden are an information source that is commonly used by other agencies for producing their own analyses.

2.5.2 Regional and local analyses

In addition to the national analyses described above, the Swedish Public Employment Service makes one-year qualitative occupational forecasts at the local level. These forecasts are based on the local employment offices' own assessment, obtained from a survey evaluating the surplus or shortage of labor for various occupations. The results are weighted and estimated for both the regional and national levels (European Commission, 2011, pp. 36–37).

The regional skills platforms may produce their own analyses of future skills needs, or develop analyses in collaboration with others, such as the Swedish Public Employment Service and Statistics Sweden. An example is the collaboration between the regions of Västra Götaland, Skåne and Stockholm, which in 2012 made a forecast of skills needs towards 2020. Through increased knowledge about future skills needs, which can be used for planning education and labor market measures, the aim was to improve skills matching in the labor market. Statistics Sweden was given the task of developing a model for regional forecasting, and the three regions in the project hope that other Swedish regions will start using the regional forecasting model as well (Region Skåne, 2012; Region Västra Götaland, 2012; WSP Group Sverige & Örtquist, 2012). Statistics Sweden will produce new regional analyses this year for four regions: Stockholm, Skåne, Västra Götaland and Östra Mellansverige. For the two latter regions, results will be presented even at sub-regional level.

The Regional Analysis and Forecast System ("Regionalt analys- och prognosystem") is used in these analyses. This analysis and forecasting tool is based on a database containing

regional statistics on population, labor market, industry and economy. Growth Analysis is responsible for the system, while the Swedish Agency for Economic and Regional Growth are responsible for support as well as providing training for users of the tool. Statistics Sweden is responsible for the statistics and the parameters. Both public and private actors use the tool (Swedish Agency for Economic and Regional Growth et al., 2012, pp. 18–19).

The Swedish National Agency for Higher Vocational Education publishes reports on regional demand for skills in a three to five years perspective. In making these reports, it uses information from regional stakeholders, especially the regional skills platforms, and to a limited extent, the regional forecasts from the Swedish Public Employment Service (Swedish National Agency for Higher Vocational Education, 2014, p. 144).

2.6 Models for dialogue and involvement of stakeholders

There are several networks for dialogue between stakeholders in Sweden. The Swedish Public Employment Service collaborates with labor market stakeholders through labor market councils and industry councils (Swedish Association of Local Authorities and Regions, 2011, p. 14). The labor market councils consist of representatives from the local labor market, such as businesses and trade unions. The objective of the labor market councils is to foster cooperation, coordination and exchange of information and knowledge. The industry councils aim to improve the match between supply and demand for labor within strategically important areas. They also function as discussion forums regarding acquisition of labor market training (Swedish Public Employment Service, 2012). The councils consist of the Swedish Public Employment Service, employers and trade unions. Which industry and geographic area that is covered is determined by the industrial structure (Swedish Association of Local Authorities and Regions, 2011, p. 14).

A characteristic of the vocational colleges is that the labor market is the driving force behind the education and training programs. Companies and organizations associated with the respective field actively participate in both the planning and execution of the education (Swedish National Agency for Higher Vocational Education, 2015b). In order to gain information from stakeholders about labor market needs, the Swedish National Agency for Higher Vocational Education can create their own industry networks, or contact other industry organizations and enterprises directly (Swedish National Agency for Higher Vocational Education, 2015a).

The Swedish National Agency for Education is responsible for creating national program councils for each of the twelve vocational programs in upper secondary education. The aim of the councils is to improve the match between the vocational programs and the needs of the labor market. For instance the councils provide the Swedish National Agency for Education with advice concerning the content of the education and training programs (Swedish National Agency for Education, 2015).

According to the Swedish Agency for Economic and Regional Growth as well as the other authors, the participants in several of the councils and networks described above are to a large extent the same persons and organizations (Swedish Agency for Economic and Regional Growth et al., 2012, pp. 22–23).

In 2010, several governmental bodies were given the task of coordinating the area of competence provision at the national level. The objective was to strengthen competitiveness and contribute to regional and national growth, through enhancing the labor market's conditions for acquiring required skills. The initiative aimed at promoting dialogue and knowledge sharing at both the national and regional levels (Swedish Agency for Economic and Regional Growth et al., 2012, p. 5). After this initiative were made, the contact between the national and regional level seems to have increased. Further, the Swedish Agency for Economic and Regional Growth was in 2012 commissioned by the Ministry of Enterprise and Innovation to improve and develop the regional skills platforms. To this end, they created a program where the platforms can apply for funding for development projects.

One of the projects that has received funding through this program is located in the Gotland region. The objective of the project was to find a dialogue model for collecting qualitative data about skills needs in the labor market. This knowledge can be used to adjust efforts to meet the recruitment needs of businesses in the region. It also supplements the forecasts made by the Swedish Public Employment Service. In addition, the dialogue model is intended to increase communication between businesses and public structures. The report from the project gives a detailed description of the suggested dialogue model, including elements such as participants, organization, documentation of results and the process after the meeting. One experience highlighted in the report, was that the participants knew each other from several previous occasions. In such instances, the dialogue may be limited by preexisting roles and informal hierarchies. The report also emphasized that it is important that the results from the meeting are distributed to the participants (Wessman, 2014).

“Reglab” is a forum for regional development. The members are the regions, the Swedish Agency for Economic and Regional Growth, the Swedish Governmental Agency for Innovation Systems and the Swedish Association of Local Authorities and Regions. The forum arranges seminars and disseminates information, and the members can cooperate on analyses. There is a separate network for competence provision, where different actors within this field can exchange information (Reglab Sverige, 2015).

2.7 Use and dissemination of results

2.7.1 Dissemination

Results from analyses and dialogue are mainly disseminated through a website with information about labor market prospects (the Occupation compass), in addition to various reports.

The results of the analyses made by Statistics Sweden are presented in different reports. Labor market statistics are available in the statistics database at Statistics Sweden's website. Statistics Sweden's “Labour market tendency survey” and “Trends and forecasts for education and labor market” are directed towards individuals (Swedish Agency for Economic and Regional Growth et al., 2012, p. 23). In addition, Statistics Sweden publishes the magazine “Welfare” (“Välfärd”), which includes articles on smaller topics from their analyses. These articles are written in plain language and use charts frequently to help explain the results (Statistics Sweden, 2015c).

The Occupation compass provides labor market information and outlook for around 200 occupations, one, five and ten years into the future. The number of occupations included encompasses around 80 percent of employment. The one-year calculation is based on forecasts by the Swedish Public Employment Service's local offices, while their research department makes the long-term forecast (five and ten years ahead). The Occupation compass links to Statistics Sweden's forecast information, for occupations where such information is available. Descriptions of the tasks and the required education and skills associated with the occupation are also available. The Occupation compass is primarily designed to support people making career decisions. In addition, the service is a tool for career counselors. Summaries of the occupational forecasts are published in the publication "Where are the jobs?" ("Var finns jobben?") (Swedish Public Employment Service, 2015b). This publication is aimed at decision-makers and others interested in an overview of the expected changes in the labor market.

One initiative for dissemination of labor market information was created in the region Västmanland in 2011. The initiative "labor market knowledge" ("Arbetsmarknadskunskap") is a collaboration between public and private employers, and is aimed at students aged 10-19 years old and their parents. Through school lessons, meetings with parents and other types of dissemination of information concerning the labor market and future skills needs, the objective is to increase the skills match in the labor market and increase youths' possibilities of choosing an education that leads to employment. This initiative is now being expanded to other regions (Jobba i Västerås, 2015).

On one of their websites, the Swedish Council for Higher Education (Universitets och Högskolerådet) links information on labor market prospects from the Swedish Public Employment Service together with educational programs at institutions providing higher education². The Swedish National Agency for Education (Skolverket) also disseminates information from the Swedish Public Employment Service³.

The projects that receive funding from the Swedish Agency for Economic and Regional Growth in order to develop and strengthen the regional skills platforms must create knowledge that is transferred to the rest of the skills platforms and other actors. The Swedish Agency for Economic and Regional Growth will also contribute to the dissemination of results and good practice from the projects.

2.7.2 Use of the results

In addition to being used by individuals that need information about labor market prospects, results are used in developing higher vocational education.

Persons making career choices, parents and career counsellors can all use the results from the Swedish Public Employment Service's analyses, presented at the Occupation compass. In 2012, it evaluated youths' and career counsellors' need for labor market information. The interviews in this evaluation show that quite many of the career counsellors in the study use the descriptions of the occupations in their work, but not so much the forecasts. The youth in the evaluation expressed a need for information about the future labor market, and state that such information to some extent may affect their educational choices. Yet, most of the

² www.studera.nu

³ www.utbildningsinfo.se

students are unaware of the information at the Occupation compass website, and have consequently not used the service (Göransson & Glössner, 2012). Both career counsellors and youths can also use the analyses of students' transitions to the labor market by the Swedish National Agency for Education. This information can also be used by education providers to develop their institutions (Swedish National Agency for Education, 2014, p. 12).

The Swedish National Agency for Higher Vocational Education uses results from analyses of future skills needs when deciding which programs to include in the vocational colleges as well as when allocating public funding to education providers. Hence, there is a clear link between the results from the analyses and development in this part of the educational sector.

According to a report by the Swedish Higher Education Authority (Universitetskanslersämbetet), the existing forecasts of skills needs are not considered to be certain enough to be used as basis for decisions regarding regulation of education programs. Forecasts are primarily used as a supplement to other documentation (Swedish Higher Education Authority, 2015, p. 4). This is related to the perception of the labor market as unpredictable and that graduates are not restricted to apply for jobs in one specific part of the labor market. On the other hand, the categories in the forecasts can be too coarse. In addition, it is seen as a shortcoming when analyses are at the national level, as university colleges are more concerned with local or regional needs. When the results from analyses of future skills needs differ from their perceptions of the needs in the labor market, the latter is deemed more important (Swedish Higher Education Authority, 2015, p. 19).

2.8 Discussion

As is evident from the outline above, there are many different studies of future skills needs in Sweden. One interesting element is the interaction and dialogue between the labor market and the educational system. For example, the Swedish National Agency for Higher Vocational Education uses labor market information and analyses together with dialogue with stakeholders. This knowledge affects higher vocational education directly, ensuring a close connection between the higher vocational education programs and the labor market. In addition to the contact between the Swedish National Agency for Higher Vocational Education and stakeholders in the labor market, the Swedish Public Employment Service collaborates with labor market stakeholders through labor market councils and industry councils. Such networks can create new knowledge, increase the information flow and be used for improving the labor market relevance of educational programs. However, based on experiences from the dialogue model in the Gotland region, it can be a challenge if the dialogue is confined due to preexisting roles between participants that know each other from previous occasions.

There is a lot of activity at the regional level in Sweden, and there are several structures that facilitate work on future skills needs in the regions. Examples are the regional skills platforms, the funding program by the Swedish Agency for Economic and Regional Growth and RegLab. In addition, the Swedish Public Employment Service does analyses at regional and local levels and Statistics Sweden produce regional projections upon request. Statistics Norway has previously pointed out that in the case of Norway, there are great challenges both in terms of the quality of projections as well as the use of resources associated with making regional projections. However, the Norwegian regions do perform other types of analyses of future skills needs to a various extent (Holm, Bekkevold, & Berg, 2012). How

elements from Sweden can improve analysis, dialogue and dissemination in Norway must be seen in relation to the work that the regions already do.

As earlier described, the local employment offices in Sweden perform qualitative local assessment that are disseminated through the Occupation compass. It is likely that these offices have very different prerequisites for making these assessments, which can lead to concerns related to quality. Some sources suggest that the local forecasts might not always be fully credible (SOU 2007:18, 2007, p. 28). It may not be desirable to develop the Norwegian service for disseminating labor market prospects at utdanning.no towards the Swedish service in all aspects. Nevertheless, there may be some elements, for example, the descriptions of the different occupations and educational paths, that can improve the Norwegian service.

Further, the reports by Statistics Sweden are, in our opinion, more adapted to a wider audience than their Norwegian counterparts, as they are written in a language that is more accessible to the public. They also have the magazine “Welfare”, dedicated to smaller topics from their analyses. This publication seems to reach a wide range of readers, such as teachers, students and journalists. In general, results from Swedish analyses of future skills needs seem to be successfully published in different formats, aimed at different audiences. This feature can be transferred to the Norwegian setting in order to improve readability of publications and to broaden the audience.

3

Ireland

The recession that hit Ireland in 2008 triggered an increase in the interest for analyses of future skills needs. Systematic analysis of skills needs have, however, been conducted since 1997, when the Expert Group on Future Skills Needs (EGFSN) was founded. The EGFSN orders analyses from research institutions and government bodies, and advises the Government on future skills needs and possible mismatches. One important source of information on future skills needs is SOLAS, the Further Education and Training Authority, which conducts skills forecasts on a regular basis.

The way they work with future skills needs in Ireland has several interesting aspects. Our main goals when we visited Ireland, was to examine how their expert group works and how it relates to and deals with other agencies. In addition, we were interested in how they involve stakeholders and how they relate to both the national and the regional levels.

3.1 Interesting findings

- The EGFSN has an important function in advising the Government on future skills needs.
- The Government actively seeks advice on future skills needs from the EGFSN and SOLAS.
- The EGFSN serves as a central organ where different analyses are compiled.
- Both employers and educational institutions are involved in the future skills need dialogue, both at the national and the regional levels.
- SOLAS compiles several data sources concerning skills in the National Skills Database.

Important actors

SOLAS (An tSeirbhís Oideachais Leanúnaigh agus Scileanna): SOLAS is the Further Education and Training Authority in Ireland, and is responsible for making skills forecasts. The Skills and Labour Market Research Unit in SOLAS, SLMRU, conducts different types of analyses, such as reports on vacancies in Ireland.

EGFSN (Expert Group on Future Skills Needs): The EGFSN advises the Irish Government on current and future skills needs. It orders data, analyses and research from other organizations, such as SOLAS.

The Department of Education and Skills: The Department of Education and Skills established SOLAS in 2013. The EGFSN reports both to this ministry and to **the Department of Jobs, Enterprise and Innovation**.

Data sources

National Skills Database (NSD): This is a database developed for the EGFSN in 2003. It includes data on employment; education and training provision, participation and output; first destination of third level students on graduation; employment permits; job vacancies; job announcements and redundancy announcements; jobseeker data.

There are several data sources. Some sources are provided by public agencies, such as from the Central Statistics office, the Higher Education Authority, the Department of Education and Skills and SOLAS. Data from the web resource page “IrishJobs.ie” and some private education and training providers are also included. Further, surveys, case studies and other qualitative data are used to supplement the register data in the NSD.

In addition to this, the EGFSN arranges workshops, conducts interviews and so on to gather more information.

3.2 Background information

3.2.1 Government and administration

The structure of the Irish Government resembles that of Norway. There are 15 ministries (departments), and each ministry has several underlying agencies and other public bodies. Local authorities in Ireland include county councils and city councils. There are 31 such councils. The local authorities are responsible for provision of several public services. Most of the council administrative areas have a system of municipal districts. The system of 95 municipal districts was established in 2014, integrating town and county governance (Citizens Information Board, 2015a).

When it comes to education, the local authorities are organized differently in Ireland than in Norway. In Ireland, the local authorities are responsible for primary and some secondary schooling, whereas 16 Education and Training boards (ETBs) also administer some of the

secondary education and most of the adult education in Ireland (The Department of Education and Skills, 2015).

3.2.2 Population

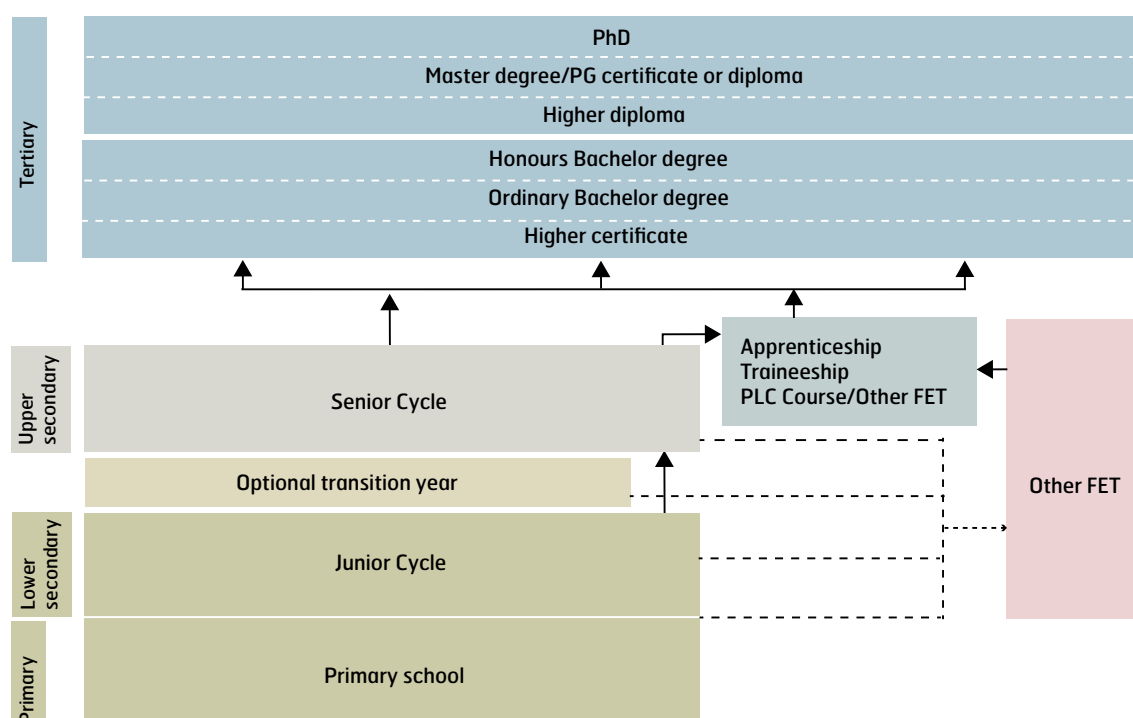
Ireland has a population of approximately the same size as Norway, 4.6 million (Central Statistics Office, 2015b), but the population in Ireland is younger (Central Statistics Office, 2012).

3.2.3 Education system

Figure 2 shows the structure of the Irish education system. Education is mandatory from the age of 6 to the age of 16, alternatively when the student has completed primary education and three years of lower secondary education (the “junior cycle”). This is similar to the Norwegian system. Upper secondary education (“senior cycle”) in Ireland differs from that in Norway in that all students in Ireland have to enroll for general studies, whereas in Norway students can choose to enroll for vocational education at this level. Students in Ireland may also take an optional transition year between the junior and the senior cycles, which is a combination of schooling and work experience offered by most upper secondary education providers (Citizens Information Board, 2015b). After the senior cycle, a student can move onto higher education or vocational training.

Higher education is mainly offered at 7 universities, 14 Institutes of Technology and 7 colleges. The Higher Education Authority has the responsibility for planning and developing higher education and research. In 2014, the Minister for Education and Skills established an expert group on future funding for higher education (Department of Education and Skills, 2015). So far, the group has arranged two consultations with stakeholders and interested parties, resulting in two discussion papers.

Figure 2 The Irish education system.



Source: SOLAS

Further Education and Training (FET) is post-secondary education and training that is not a part of higher education. Several schools, organizations and institutions offer further education and training. SOLAS is responsible for funding, planning and coordinating various education and training programs. They cooperate with the ETBs, Quality and Qualifications Ireland (a government agency responsible for external quality assurance of further and higher education and training) as well as other actors.

3.2.4 Labor market

The financial crisis hit the Irish economy hard. In just a few years, the unemployment rate increased to 15 percent among the general workforce, and to 33 percent among youths (Kelly, McGuinness, O'Connell, Haugh, & González Pandiella, 2015). Several changes were made after the crisis, such as the strengthening of the adult learning sector (Sweeney, 2013). Also, Further Education and Training programs now have to report on the employment rate of former students in order to receive further funding from SOLAS (Further Education and Training Authority, 2015). The unemployment rate has dropped substantially over the last couple of years, and is now approximately 9.5 percent (Central Statistics Office, 2015a), compared to approximately 4.5 percent in Norway (Statistics Norway, 2015).

3.3 Organization in Ireland

The EGFSN is organized under the Department of Education and Skills and the Department of Jobs, Enterprise and Innovation. Its mandate states that they should give the Government advice about future skills needs and related labor issues affecting national potential for enterprise and employment growth.

SOLAS belongs to the Department of Education and Skills. The Skills and Labour Market Research Unit (SLMRU) in SOLAS contributes to the fulfillment of the EGFSN's mandate through data collection, analysis and research activities. It reports directly to the EGFSN.

The EGFSN and SOLAS conduct analyses commissioned by the Department of Education and Skills and the Department of Jobs, Enterprise and Innovation. In addition to the data, analyses and research the EGFSN receives from SOLAS, they get research and secretariat support from the Department of Education and Skills. In addition, they use analyses and information from research institutions and stakeholders. The EGFSN comprises representatives from businesses, employees, education and training, ministries and other government bodies.

The budget of the EGFSN comes from the National Training Fund, which is financed by a payroll tax. This tax applies to all the main types of employment in Ireland (Cedefop, 2015). SOLAS is financed by the Department of Education and Skills.

3.4 The purpose of analysis, dialogue and dissemination of future skills needs in Ireland

The objective of the EGFSN's analyses is to use the results as the basis for recommendations to the Government on how to meet future skills needs and other labor market issues.

The purpose of SOLAS's projections is to indicate how the expected economic development is likely to affect employment across different occupations. The report aims at informing decision makers in the education and training area, concerning labor and immigration policies and career guidance. SOLAS also addresses students and parents in order to provide persons making career decisions with useful labor market information.

The Department of Education and Skills is particularly interested in increasing communication between employers and education providers. To this end, it has established regional fora aimed at facilitating a structured and regular dialogue between the two groups on the skills needs in the respective regions.

3.5 Analyses of future skills needs in Ireland

3.5.1 National analyses

The EGFSN is the main provider of future skills needs analyses in Ireland. They commission research institutions, such as SOLAS, to conduct studies based on both qualitative and quantitative methods. Among the methods they use are literature review, interviews, workshops, review of existing measures and policy approaches, and scenario development. A Steering Group consisting of representatives from industry, education, relevant Government Departments and agencies, often oversees the work. These analyses usually have a 5–6 years perspective.

The EGFSN undertakes several analyses that are targeted at specific skills or sectors. One example is an analysis of the demand for big data and analytical skills. The objective was to identify how Ireland can build up the pool of these types of skills according to the demand in the labor market (Expert Group on Future Skills Needs & Forfás, 2014). Another example is an analysis of skills needs of the manufacturing sector until 2020. Here they conducted interviews with businesses, facilitated workshops for stakeholders, reviewed future competence and explored scenarios for future employment (Expert Group on Future Skills Needs & Forfás, 2013).

The EGFSN publishes some analyses annually. One example is the publication “Monitoring Ireland's Skills Supply”, which SOLAS produces on behalf of the EGFSN. This report gives an overview of trends in education. For instance, it gives an overview of the number of persons in different education groups and their chances of employment. The aim of the analysis is to give an indication of skills supply both now and in the future. The report is linked to the annual publication “National Skills Bulletin” that examines the demand for skills (Expert Group on Future Skills Needs, 2015d, p. 5). This report gives an overview of the Irish labor market (Expert Group on Future Skills Needs & Further Education and Training Authority, 2015a).

An important analysis from SOLAS is its employment projections by occupation. The projections are based on a model developed by the Economic and Social Research Institute (ESRI).

The latest analysis is from 2014, with projections up until 2020. Three different scenarios from ESRI for the Irish economy from 2012 to 2020 were used in making the projections (Further Education and Training Authority, 2014). In addition, they used a scenario that largely follows a projection that the EGFSN outlined in the analysis of future skills requirements in the manufacturing sector, mentioned above (Expert Group on Future Skills Needs & Forfás, 2013). There were several reasons for including the alternative scenario for the manufacturing sector. One of the reasons was that it was suggested by industry representatives that the ESRI forecasts were too pessimistic for this sector (Further Education and Training Authority, 2014, p. 24). In the projections, SOLAS gives an overview of occupational projections by all sectors. The results are divided in 9 broad occupational groups, 15 sectors and 4 levels of education. During the process, several actors, such as the EGFSN and ESRI, commented on the results. Furthermore, SOLAS studies transitions between employment, unemployment and inactivity.

SOLAS also conducts a survey to see what results people who undertook courses in the former FÁS get. FÁS was an agency responsible for supporting unemployed persons. The latest follow-up survey was conducted in 2015. The survey examines economic status and connection to the labor market both before the course and after the course (Perspective Insight, 2015).

3.5.2 Regional and local analyses

There are no regional projections made in Ireland, nor are there any local analyses, due to lack of data and the small size of the regions in Ireland. However, the EGFSN publishes the report “Regional Labour Markets Bulletin”, which gives an overview of the labor market situation in the different regions (Expert Group on Future Skills Needs & Further Education and Training Authority, 2015b).

3.6 Models for dialogue and involvement of stakeholders

The main actor when it comes to engaging stakeholders is the EGFSN. The expert group has a diversified group of participants. It consists of more than 20 persons who represents businesses, employees, education and training institutions, ministries and other government bodies. The EGFSN is chaired by a representative from the private sector. Stakeholders are also included in the EGFSN's work through interviews, workshops, steering groups and more. After the EGFSN has published a report, the chair writes directly to those identified with the responsibility of implementing the recommendations, to highlight main conclusions and to invite them to give feedback concerning their implementation of the recommendations. The EGFSN's analyses has also resulted in the creation of new networks within specific sectors (Expert Group on Future Skills Needs, 2015b).

The EGFSN are also involved in dialogue with stakeholders and influence decision-making on an ongoing basis through participation in cross-ministerial groups. Important labor market information is disseminated via presentations at conferences and similar events.

The regional fora established by the Department of Education and Skills organizes and facilitates structured dialogue between employers and the education system. The ministry wants the forums to inform future planning, share information and make employers realize what skills they need. The ministry does not manage the groups very tightly, but it makes

sure that all groups involve all education and training providers and other key stakeholders, such as enterprises and local authorities, to ensure that they have some common elements. As was the case in Sweden, the experience in Ireland is that enterprises need to see that they will benefit from participating in order to do so actively.

3.7 Use and dissemination of results

3.7.1 Dissemination

Reports from the EGFSN are available on their website and are sent to subscribers. They also publish brief presentations summarizing key findings. Results are distributed to students, parents, career counsellors and teachers through newsletters and targeted websites Career-sPortal⁴, Qualifax⁵ and the Institute of Guidance Counsellors⁶. The EGFSN also disseminates the results through participation in conferences, forums and groups where they are represented (Expert Group on Future Skills Needs, 2015b).

In addition to the report on occupational projections, SOLAS disseminates the projection results through a web page⁷. The service is supplemented by other information such as unemployment rate and characteristics of those employed in each occupation. Today, the available information from SOLAS's forecasts is mainly read by people of higher socio-economic status. In order to reach out to the wider public, SOLAS wants to publish a small and easy accessible leaflet.

3.7.2 Use of the results

Both national and local authorities use the information from SOLAS and the EGFSN. The work by SOLAS and the EGFSN is supporting the Department of Education and Skills and the Department of Jobs, Enterprise and Innovation. The EGFSN gives the Government advice on competence issues affecting businesses through analyses of future skills needs and they give the Government strategic advice on building skills through education and training (Expert Group on Future Skills Needs, 2015a).

The EGFSN's recommendations have led to the development of certificates, for example in the manufacturing industry, new networks, training, action plans and as well as other concrete results (Department of Jobs Enterprise and Innovation, 2015; Expert Group on Future Skills Needs, 2015b). In addition, the EGFSN has made courses available under two training programs: the Springboard initiative and the Momentum initiative. Springboard provides free part-time courses at the graduate level for unemployed and previously self-employed to provide expertise in areas experiencing or expected to experience skills needs. The EGFSN issues guidelines that help to align education and training in the Springboard initiative with companies' skills needs. The guidelines provide a list of identified skills needs based on the EGFSN's analyses and consultations with businesses (Expert Group on Future Skills Needs, 2015c). Momentum funds free education and training for jobseekers who are unemployed for 12 months or more. The goal is to help them access work in growing sectors, such as ICT and multi lingual customer service (Momentum, 2015).

4 www.careersportal.ie/

5 www.qualifax.ie/

6 www.igc.ie/

7 lmi.fas.ie/search.aspx

The EGFSN follows up on organizations and stakeholders to see that they act upon the EGFSN's recommendations. The report "Monitoring Ireland's Skills Supply" can provide education providers with information on outcomes over time for graduates in different fields of education (Expert Group on Future Skills Needs, 2015d, p. 13). Recommendations from the EGFSN also serve as input for national policy objectives and strategies, such as for the "Action Plan for Jobs 2012-2015" (Department of Jobs Enterprise and Innovation, 2015), the "ICT Skills Action Plan, 2014" (Department of Jobs Enterprise and Innovation, 2014) and the "Further Education and Training and Higher Education Strategies" (Further Education and Training Authority, 2015).

An example of how the results of SOLAS' analyses are being used, is "JobBridge"⁸, which is a national internship scheme that provides work experience opportunities for unemployed people. SOLAS's analyses are the base of a list of eligible occupations for those who apply for work permits. The results are also used in the development of strategies and funding.

Projections are not used in the dimensioning of the education system, as the education system is not dimensioned centrally. However, the issue of central dimensioning has been up for debate more frequently lately, as Ireland is discussing if financing training and education should be more closely linked to labor market needs. In "Further Education and Training Strategy 2014-2019", SOLAS suggests a new financing model where educational institutions are given incentives to adapt to the demand for labor (Further Education and Training Authority, 2015).

Other users of SOLAS' information are people working with education and training and career guidance, in addition to people making career decisions, who for instance use SOLAS' projection results available on their website.

3.8 Discussion

There are a number of features from Ireland that are worth highlighting. First, having an expert group like the EGFSN can be an important way of advising governmental bodies on future skills needs, and disseminate the findings in analyses of future skills needs. In Ireland, it seems to have been beneficial for the system on future skills needs to have a central expert group. It is important that the role of the expert group is defined and that the group is trusted by both government bodies and other stakeholders.

Second, regional fora can be a way to create dialogue and reduce the gap between the education sector and the labor market. To ensure this, both enterprises and education providers should be included in the fora. Further, it can be a way to establish the use of skills projections locally, even if the projections themselves are at a national level. Dialogue between stakeholders can bring focus to potential regional differences in the demands and supply of skills that are not reflected in national analyses. It seems to be an experience in Ireland that participants need to see what they will gain from participating. The work of the EGFSN provides an example of this. Their sectoral analyses give rise to concrete changes in the sector. This will probably serve as motivation for stakeholders to attend workshops and

⁸ www.welfare.ie/en/Pages/JobBridge.aspx

similar activities during the process of producing the analyses. Further, the EGFSN seems to have a lot of credibility, which makes people more prepared to participate in the dialogue. They arrange workshops to validate their findings, while they are careful about lobbying.

Third, SOLAS compile various data sources in the National Skills Database. Register data is supplemented with surveys, case studies and other qualitative studies to complete the picture and create a common understanding among stakeholders. These methods can also be used regionally.

Lastly, the EGFSN shows its emphasis on dissemination by presenting the results in several different ways. SOLAS' current publications, on the other hand, do not seem to reach all user groups. Because of this, SOLAS intends to produce a different type of publication (leaflet) in order to reach more individuals.

4

Finland

Finland has a long tradition of producing analyses of future skills needs and for using the results for educational planning (Directorate-General for Education and Culture, 2015, p. 2). Quantitative forecasts were produced already in the late 1950s (Tiainen, 2012, p. 1), while qualitative anticipations became important in the 1990s (Kaivo-oja, Marttinen, & Varelius, 2002). Today there is an abundance of skills anticipations activities in Finland. National, regional, and local levels, as well as several different stakeholders, are all involved (Arnkil, 2010b, p. 6). Both the Finnish Parliament and Government participates actively in the debate on future challenges and opportunities.

One of the reasons for choosing to study Finland was that we wanted to know more about how stakeholders are involved in analyses of future skills needs. In addition, we were interested in the use of different methods and analyses, and how the results are used for educational planning.

4.1 Interesting findings

- Projections are used systematically for dimensioning intakes at educational programs.
- The regions have their own analyses, both quantitative and qualitative.
- Qualitative foresight is used actively for policymaking, also at the regional level.
- It seems to be a common recognition in Finland that quantitative analyses alone are unable to keep up with the fast development in the employment structure.
- Many actors also seem to experience that the reflection process of qualitative foresight is a highly valuable aspect of analyses of future skills needs.

Important actors

Ministry of Education and Culture: The Ministry of Education and Culture prepares the legislation and regulations for the education sector. The ministry takes part in the collaborative consortium PATKET (commission consortium of long-term labor and education need forecasts), which carries on anticipation of business branches and demand for labor in the future.

Finnish National Board of Education (FNBE): The FNBE is the national development agency responsible for primary and secondary education as well as for adult education and training. The organization is responsible for developing and utilizing models for quantitative and qualitative analyses of future skills needs. The FNBE also takes part in the collaborative consortium PATKET.

National Education and Training Committees: The National Education and Training Committees are tripartite bodies. They work with monitoring and anticipating skills needs, and make proposals towards the development of the content of upper secondary vocational education, adult education, and higher education.

Ministry of Employment and the Economy: The Ministry of Employment and the Economy is responsible for innovation, employment and the development of the regions. The ministry includes a section for research and development, and has an important function when it comes to providing labor market information. The ministry takes part in the collaborative consortium PATKET.

Regional Councils: The Regional Councils are responsible for regional development. There are 19 regions in Finland. They coordinate anticipations of regional long- and medium-term educational needs and participate in preparation of regional educational objectives.

Centers for Economic development, Transport and Environment (ELY Centers): The 15 ELY Centers are responsible for business and labor development, transport and infrastructure, and the environment and natural resources. The ELY Centers carry out anticipation of labor demand and education in cooperation with the Regional Councils and educational institutions in the regions.

Employment and Economic Development Offices (TE Offices): The TE Offices are the Finnish bodies for jobseekers. They work in close cooperation with the ELY Centers. The TE Offices anticipate the future short-term demand for labor.

The Parliament Committee for the Future: The Parliament Committee for the Future is tasked with putting future matters on the political agenda, both in the Parliament and in the Government.

The Government Foresight Group: The Government Foresight Group started in 2015. Its main task is to lead and coordinate national skills anticipations and to make these analyses visible in the public debate.

The National Foresight Network: The National Foresight Network is a forum for discussion and coordination for national foresight actors, open to anyone interested in foresight activities.

VATT Institute for Economic Research: VATT Institute for Economic Research is responsible for preparing long-term economic forecasts.

Data sources

Register data: Statistics Finland publish data on labor market and education.

Survey data: Statistics Finland conduct the Labour Force Survey. Data from the survey are used in several analyses of future skills needs. There are several other surveys, for example interviews with companies included in the TKTT model (Study of the need for workforce and training) (Ahvenjärvi, 2013).

In addition, there are many foresight activities, such as Delphi studies, scenarios and expert consultations, at all levels in Finland, for example through the TKTT model.

4.2 Background Information

4.2.1 Government and administration

The Government in Finland consists of the Prime Minister's Office and eleven ministries. Each ministry is responsible for several public bodies and government agencies (suomi.fi, 2015a).

Finland has 19 regions. Unlike Norway's counties, Finland does not have directly elected bodies at the regional level. The Regional State Administrative Agencies, six in total, have a steering and executive function (suomi.fi, 2015c). Their fields of responsibility are basic public services, education and culture, occupational health and safety, environmental permits, and rescue services and preparedness. The ELY Centers are responsible for the regional implementation and development tasks of the central government. Labor market centers (TE Offices) are also present in each region. Each region has a Regional Council. These councils are statutory joint municipal authorities with responsibilities within regional development.

Finland has a little more than 300 municipalities. The municipalities are a very important part of Finnish society. The municipalities enjoy high degrees of autonomy and have broad responsibilities. One of the responsibilities they have is the provision of pre-primary and basic education. Many municipalities cooperate on the provision of basic services and regional development through joint municipal authorities (suomi.fi, 2015b).

4.2.2 Population

The Finnish population is approximately of the same size as Norway's, around 5.4 million (Statistics Finland, 2015a). A larger share of Finland's population is aged 65 and over.

4.2.3 Education system

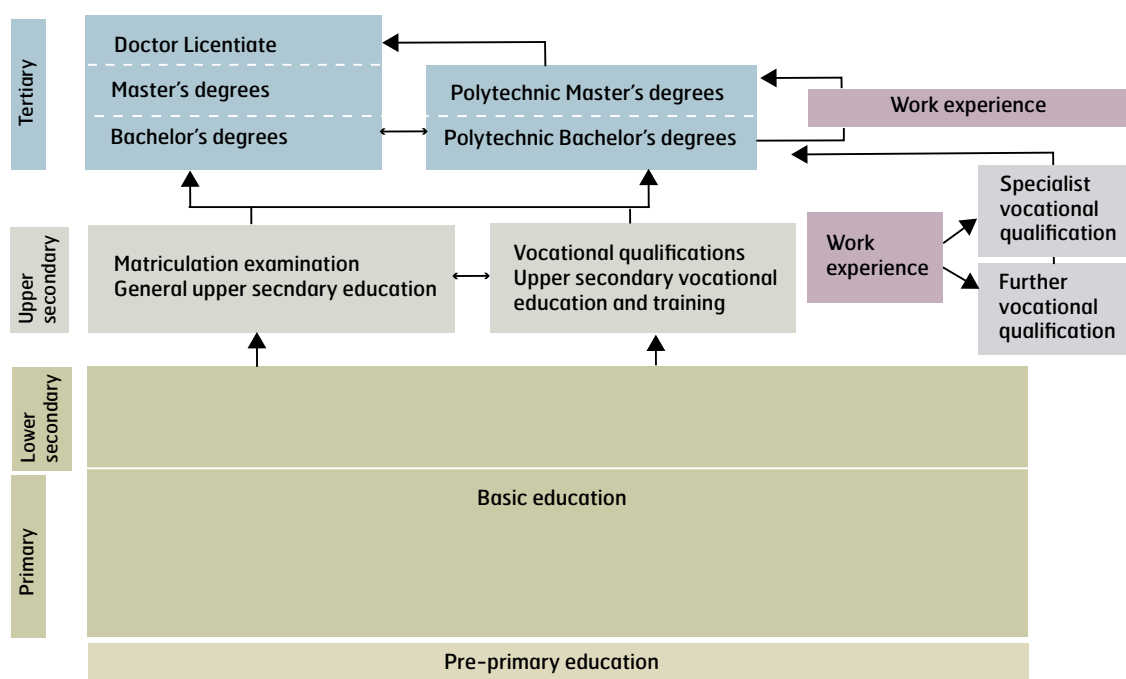
Figure 3 shows the structure of the education system in Finland. The Ministry of Education and Culture is responsible for Finland's education policy, while the Finnish National Board of Education (FNBE) is responsible for the implementation of the policy aims (Ministry of Education and Culture, 2012b). Educational autonomy is high at all levels in Finland. Each provider of basic and upper secondary education adjusts their own local curriculum, based

on the core curriculum stated by the Ministry of Education and Culture and the objectives and contents that the FNBE develop based on the core curriculums⁹.

In 2015, it became compulsory for children at the age of six to attend pre-primary education (Finnish National Board of Education, 2015b). Basic education is compulsory for all children in the age group seven to sixteen years old. After nine years of basic education, the students can continue with upper secondary education. This education has a duration of three years. It consists of general studies, which qualifies for university studies, and vocational education and training, which leads to a vocational qualification. Apprenticeships are available, but in Finland, unlike many other European countries, most apprentices are adults. Adults may participate in further and specialized vocational training. This training is so-called competence-based, i.e. it is based on the validation of prior learning.

Universities and polytechnic institutions provide higher education in Finland. The fifteen universities provide academic, research-based education. The universities enjoy a large degree of autonomy. The Ministry of Education and Culture steers the universities through funding, legislation and information-based guidance (Hanhijoki, Katajisto, Kimari, & Savioja, 2012, pp. 14–15). Each of the universities negotiates targets for the university as well as funding with the Ministry of Education and Culture. Polytechnic institutions are universities of applied sciences. There are 26 such institutions, which provide higher education with emphasis on vocational education and connection to the labor market. Persons with a bachelor degree and at least three years of relevant work experience can apply for a master's degree program at polytechnics.

Figure 3 The Finnish Education system.



Source: The Finnish National Board of Education (FNBE) (www.oph.fi)

⁹ The Core Curriculum of the Basic Education is revised every tenth year, and the next revision will be implemented in 2016.

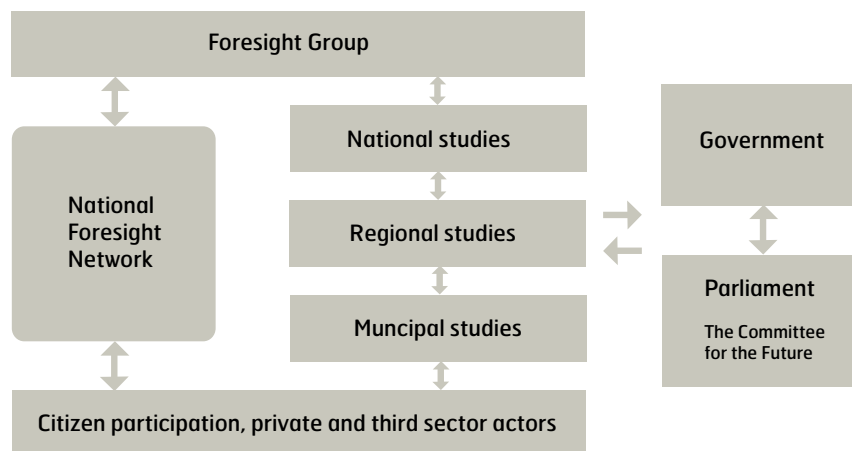
4.2.4 Labor market

Finland was hit hard by the economic crisis in 2008, and after a period of initial economic growth after the crisis, the GDP fell again. The slower economic growth largely reflects deterioration in two important sectors: forestry and electronics (OECD, 2105, p. 15). The unemployment rate has increased, and is now above eight percent (Statistics Finland, 2015b), which is nearly four percentage points higher than in Norway.

4.3 Organization in Finland

Analyses of future skills needs are highly institutionalized at the national level in Finland; there are foresight bodies both in the Parliament and in the Government, as shown in figure 4. During the last two years, it has become even more organized, as the Finnish Government has launched a project to better coordinate all national foresight actors in Finland (Prime Minister's Office Finland, 2014). The project led to the establishment of a new national foresight network (NFN). The national foresight network is coordinated by the Prime Minister's Office and the Finnish Innovation Fund (Sitra), and is responsible for organizing foresight processes and producing up-to-date perspectives and solutions for policy makers. The foresight work of the Government and the Parliament are interconnected, as the Parliament Committee for the Future prepares discussions in the Parliament based on a report on the future that the Government submits to the Parliament during each electoral period.

Figure 4 Organization of work with future skills needs in Finland.



Source: Ilkka Turunen, the Ministry of Education and Culture.

The Ministry of Employment and the Economy and the Ministry of Education and Culture have the overall responsibility of the national forecasts. The FNBE is responsible for the implementation of quantitative and qualitative analyses of educational needs. The institution is also responsible for an anticipation database and website (Finnish National Board of Education, 2015a), which is a database containing labor market information.

Further, the FNBE supports the National Education and Training Committees. The Education and Training Committees are expert bodies for anticipation of educational needs, and there are committees for 26 sectors. The Ministry of Education and Culture is responsible for establishing these expert groups, and their work is a tripartite collaboration. Group members

therefore represent employers' associations and trade unions as well as public authorities and education providers. Each group has maximally 16 members and 16 deputies. The steering committee is organized with the Ministry of Education and the FNBE.

The Regional Councils organize regional analyses, in collaboration with education providers, the ELY Centers, the TE offices and other stakeholders. This work also receives support from the FNBE. Anticipation activities at regional and local levels are regulated by law in Finland. The Law on Regional Development states that the Regional Councils have the responsibility of coordinating the middle and long-term analyses of future skills needs. The ELY Centers and the TE Offices are responsible for short term anticipations, regulated by the Act on public employment and business service (Marttinen & Vahtonen, 2012, p. 139). Education providers also have a responsibility for anticipating labor market needs, and responding to changes (Hanhijoki et al., 2012, p. 13).

Although the several anticipation activities in Finland, involving national, regional and local levels, in addition to the number of organizations and stakeholders, offer decision-makers in Finland good conditions for planning for the future, it also makes the system fragmented (Arnkil, 2010b, p. 6).

4.4 The purpose of analysis, dialogue and dissemination of future skills needs in Finland

The Finnish analyses of future skills needs aim at improving labor supply's response to developments in the Finnish labor market, through information to individuals. The analyses are also used in implementation of the educational policy through regulation of student intakes.

The Committee for the Future in the Parliament and the National Foresight Network are two institutions that contribute to putting future skills needs on the political agenda. The Committee for the Future aim at engaging the Government in a dialogue on future challenges and possibilities (The Parliament of Finland, 2015). The National Foresight Network is open to anyone that works with or is interested in foresight activities, and has the objective of creating dialogue and knowledge in the public sphere.

Several analyses aim at improving curriculum planning and the content of education and training (Koukku, Kyrö, Packalén, Volman, & FNBE, 2012, p. 27). The FNBE's foresight is used to assess the relevance and quality of educational programs. The National Education and Training Committees aim to develop educational content. Furthermore, forecasts of labor demand by occupation are used to inform individuals making career decisions (Kaivo-oja & Marttinen, 2008, p. 22).

In addition to the national forecasts, the regional analyses (occupation barometers) aim at providing persons making career decisions with labor market information and improving employment services (Central Baltic Job Ferry, 2012, p. 4). Analyses made at the regional level have the objective of providing information that can be used in regional development. In addition, the regions aim to contribute towards national processes.

4.5 Analyses of future skills needs in Finland

As indicated above, the Finnish system of future skills studies is multifaceted and complex. Both quantitative and qualitative analyses are produced at many different levels in Finland.

4.5.1 National analyses

VATT Institute for Economic Research produces employment forecasts for industries. The extensive and detailed model that they use takes account of interactions between different sectors of the economy. They have also prepared regional forecasts for the use of the regional councils and their anticipation work (Honkatukia, 2009).

The Ministry of Employment and the Economy is responsible for a model (the Long Term model) that is used for making forecasts of future supply and demand for labor, for more than 30 industries. The model has been used since 1990, and has been updated continuously (Tiainen, 2012, p. 2). The results are used by the Ministry of Employment and the Economy for growth and labor force forecasts, employment effect estimates and to measure the effects of immigration on the labor market. The model is also used by other ministries.

The economic forecasts produced by the models mentioned above are used as input in another important model (the Mitenna model), which produce forecasts of educational needs. The FNBE has the responsibility of this model and conduct the analyses every four years. The forecasts have a time span of 15 years. The Mitenna model employ quantitative data, but the may be supplemented by expert opinions at various stages, although this is not institutionalized. The FNBE typically contact experts if they lack information. The experts are for example researchers, social partners, government employees, industry representatives or representatives from regional councils.

A qualitative example is the VOSE model. This started as a pilot project called “the National Project on Anticipation of Competences and Skills Needs” (“Valtakunnallinen ammatillisten osaamistarpeiden ennakointiprojekti”), initiated by The FNBE in 2008. The project aimed at developing a qualitative process model of anticipating vocational skills needs. It was an umbrella project and anticipated the needs of both Finnish and Swedish speaking citizens (Finnish National Board of Education, 2012). The anticipation process included the participation of stakeholders, ministers, regional bodies, universities, national forecasting experts, and educational institutions. The model was piloted in several sectors (Backman, Englund, & Nordström, 2011). The VOSE model is now regularly used to develop content in vocational education at upper secondary and third level. Recent processes has anticipated skills needs in the game industry, retail trade and food industry.

4.5.2 Regional and local analyses

The range of regional future analyses has developed rapidly in recent years in Finland. All Finnish regions implement and use both quantitative and qualitative analyses in short, medium, and long term (Kaivo-oja & Marttinen, 2008, p. 41). Key actors in the work of regional future analyses include regional councils, the ELY Centers, the TE Offices and education providers. Other stakeholders, such as organizations and enterprises, also participate.

The activities concerning future skills needs are organized in various ways in Finland's regions, but there are some common elements. Every regional council collect and produce information regarding regional development. They also offer assessments concerning the

future and scenarios for how it may unfold. In addition, they coordinate the regional foresight work. The regions may also use a tailor made version of the Mitenna model, specially adjusted for each region by the FNBE.

Education providers play an important role in the efforts made at the regional and local levels. They cooperate with the regional councils, and can use the results from regional foresight analyses as a basis for their own education policies.

The ELY Centers have an important role in sharing regional and local labor market information. They are responsible for the anticipation of adult education needs, and contribute towards work on future analyses, aiming to ensure a match between supply and demand in the regional labor market. Each ELY Centre has a process of developing insight in the short-term educational needs in the region. These analyses are communicated in the report “Regional Economic Prospects”, which has been published by the Ministry of Employment and the Economy since 2008 (see for instance TEM Toimialapalvelu, 2015).

Another important element of foresight work in the regions is the TKTT model. This model is used by the Finnish regions to gather information about enterprises’ skills needs, and involves input from regional enterprises as well as expert opinions. The TE Offices prepare and conduct surveys, sometimes based on recommendations from the ELY Centers. The fields to be studied are chosen depending on elements such as prior knowledge about skills needs in the sector and recruitment problems. The results are discussed by experts, and the final results are sent to the participating enterprises and experts, in addition to government bodies and educational institutions (Kaivo-oja & Marttinen, 2008, pp. 42–48).

Another regional activity is the TE Offices’ development of occupation barometers, which they do in cooperation with employers. The first barometer was made by the ELY Centre in Southwest Finland, inspired by the Swedish occupational barometer (Central Baltic Job Ferry, 2012, p. 1). The barometer is now used all over Finland (Marttinen, 2012). The TE Offices gather information about the local labor market, and estimate the demand for 200 occupations one year in the future. The match between supply and demand for these occupations are assessed and classified in three categories: the occupation lack jobseekers; is in balance; or has a surplus of jobseekers (Marttinen, 2008).

The municipalities participate in various ways in future analyses of the labor market. They do this through the common public institutions of the municipalities, regional councils, various educational institutions, and business organizations. They also participate in regional and local workshops and forums. Finally, the municipalities may also make their own analyses of local future skills needs.

4.6 Models for dialogue and involvement of stakeholders

Finland has a particular culture of “openness, informal networking and trust” (Marttinen & Vahtonen, 2012, p. 139). It seems to exist a perception that the processes of dialogue and reflection are important elements of analyses of future skills needs.

There is a long tradition of negotiations between the social partners in Finland (Broughton, 2011, p. 10), and the dialogue on skills needs takes place also within enterprises. According to the Act

on Co-operation within Undertakings, enterprises with at least twenty employees must arrange negotiations between the employers and the employees in matters concerning major changes in work and production, including the skills needs of the employers (Arnkil, 2010b, p. 13).

PATKET is an important expert group at national level. It is a collaborative consortium where the core group consists of representatives from the Ministry of Employment and the Economy, Ministry of Finance, Ministry of Education and culture and Ministry of Social and Health Affairs (Arnkil, 2010a, p. 14). The consortium runs an anticipation model called PATKET-VATTAGE. In this model, a long-term basic scenario is calculated, both nationally and regionally, and through dialogues with stakeholders, alternative scenarios are developed (Broughton, 2011, pp. 8 and 11). The results of the model are used for policy, among other things for education dimensioning and labor market planning in the health sector (Directorate-General for Employment, 2014, pp. 14–15).

As already mentioned, the Mitenna model can include dialogue with experts, and the Long Term model also includes elements of expert opinions (Tiainen, 2012, p. 12). The National Foresight Network is open to anyone who is interested in future analyses. The network bring stakeholders together and aim at creating public debate. The network arranges seminars, and it has an Internet based dialogue tool named Yammer (Prime Minister's Office Finland, 2015).

The members of the National Education and Training Committees represents education and training administration, teachers, employers and employees. They monitor and anticipate future skills needs, and make proposals for improving the contents of education and training and qualifications in upper secondary vocational education and training as well in higher education. The FNBE has recently implemented an interactive, Internet based foresight tool, called the Forecasting Radar, for all members of the Education and Training Committees. The purpose of the Radar is to create innovation, and the tool is a dynamic platform for collaborative discussions and learning. Each analysis in the VOSE project involves a group of relevant stakeholders from the Education and Training Committees (25–35 persons in total).

At the regional and local levels, the TKTT model includes a lot of networking and discussions (Marttinen & Vahtonen, 2012, pp. 146–147). The development of the report “Regional Economic Prospects” at the Ely Centers also includes processes of dialogue and reflection, such as panel discussions. The experts may be representatives of labor market organizations, trade organizations, education providers and employees from the Regional Councils, ELY Centers and the TE Offices.

Another dialogue platform is the Finnish Society for Futures Studies, which is a network for researchers. It arranges one seminar every summer, and publishes the journal “Futura” four times a year.

4.7 Use and dissemination

4.7.1 Dissemination

The Ministry of Employment and the Economy has an essential function of providing labor market information to the TE Offices and the enterprises. On its website, the Ministry publishes the Occupational Barometer with the total sum of vacancies for the whole nation. The

Ministry also administers a website with relevant information especially targeted towards the enterprises (Ministry of Employment and the Economy, 2015).

As mentioned before, the FNBE is responsible for disseminating labor market and anticipation information through a database and a website. It includes statistics, forecasts and articles on future needs for skills and education. However, the information service is only on Finnish. FNBE also publishes various reports containing results from analyses by the Mitenna and VOSE models.

The Regional Economic Prospects developed by the ELY Centers are collected and published by the Ministry of Employment and the Economy. The ELY Centers themselves publish the regional occupational barometers and other analyses of skills needs and the labor market. Posters with information from the regional occupation barometers are published in Finnish, Swedish and English.

At the local level, the TE Offices provide employers and job seekers with information from the Occupational Barometer as well as other relevant labor market information.

4.7.2 Use of the results

The results from analyses in Finland are used to inform individuals making career decisions. In addition, policy and decision-makers use the various analyses of future skills needs.

Analyses of labor demand by education are used in dimensioning of the Finnish education and training system. The Ministry of Education and Culture has been using the forecast results when preparing the “Development Plan for Education and University Research” (Kaivo-oja & Marttinen, 2008, p. 22). The Government has been passing development plans since the 1990s. The plan describes educational policy objectives and specifies key qualitative, quantitative and structural measures for different education sectors. In addition, admission targets for higher education and vocational training are stated (Ministry of Education and Culture, 2012a, pp. 68–74). However, the current Finnish Government has decided that the Development Plan for Education and Research will be replaced by the Government Action Plan. This decision is based on recommendations from the OHRA project (OHRA Project Group, 2014). The OHRA Steering System Reform Project was established in 2013, aiming at better coordinating governmental steering (OECD, 2015b, p. 8).

The Ministry of Education and Culture also uses the analysis results by the Regional Councils and their partners. The Ministry uses this information when deciding on the authorization to provide upper secondary vocational education and training (Kaivo-oja & Marttinen, 2008, p. 22). The authorization regulates the type and scope of education and training activities that will receive financing from the education and culture sector. In certain cases, the authorization specifies annual student numbers (Hanhijoki et al., 2012, p. 13). Information from the regions is also used when the Ministry of Education and Culture negotiate and agree on education provision with the universities and polytechnic institutions (Kaivo-oja & Marttinen, 2008, p. 22).

The results of the VOSE model are used by the FNBE and the Education and Training Committees to develop examination structures, qualification, the core curriculum, and the teaching content, as well as in forecasts of skills needs in both vocational education and training and higher education.

Further, the regions use both national and regional results from the Mitenna model to establish regional educational targets. These targets are finalized in agreement between the providers of vocational education and polytechnics and the Ministry of Education and Culture (Arnkil, 2010a, p. 11).

The results of the occupation barometer are used by both the TE Offices and the ELY Centers (Marttinen & Vahtonen, 2012, p.145). The occupation barometers are used for career guidance and for matching jobseekers with vacancies (Central Baltic Job Ferry, 2012, p. 4). The barometers are also used for regional and occupational promotion of labor mobility in the European labor market through EURES (The European Job Mobility Portal). Moreover, planning of further education and vocational training, planning of immigration and labor market analyses make use of the results from the barometers. The ELY Centers and the TE Offices also use the results from the TKTT model for labor market information.

Since the 1990s, targeting and management of education has gradually been delegated to universities and vocational training providers, and the education providers' responsibility of analyzing and responding to changes in the labor market has increased. The education providers are expected to play an active role in assessing skills needs in the labor market and in the regions. The provision of education and training is also managed by means of outcome-based funding, that is, funding based on the number of students that pass the education (Hanhijoki et al., 2012, p. 13).

4.8 Discussion

Even though future skills needs analyses are both frequently conducted and used in Finland, Kaivo-oja and Marttinen highlight some key problems in the Finnish foresight system. They argue that the frameworks and networks for regional foresights are too vague, that there is a tendency to "invent the wheel again" and that the links between foresight activities and decision-making are not strong enough (Kaivo-oja & Marttinen, 2008, pp. 54–55). At our visit in Helsinki, we got the impression that the problem is not the analyses of future skills needs; Finland has enough of these. The challenge is rather to make connections between the analyses and the decision-making processes. Especially because of the abundance of future analyses in Finland, it is worth questioning to what extent all the analyses actually are used (Broughton, 2011, p. 10). Besides, it may sometimes be hard to recruit a representative selection of persons in foresight groups, which may threaten the participation process (Kaivo-oja & Marttinen, 2008, p. 56).

Despite these issues, there are features from the Finnish system that can be interesting in the Norwegian setting. Analyses of future skills needs in Finland include various methods. It seems that Finnish stakeholders think that the results of quantitative forecasts are not enough as a knowledge base for educational policy. The FNBE therefore think that the quantitative and qualitative analyses should be coordinated in a better way as they do not complement each other sufficiently (Hanhijoki et al., 2012, p. 62).

We have also seen that there are a lot of skills anticipations at both regional and local levels in Finland, including quantitative forecasts, and that the results of these analyses are used, among other things as an information source to job and education seekers all over Finland.

5

Recommendations

Experiences from Sweden, Ireland and Finland all offer useful insight concerning how a Norwegian system for future skills needs analyses can and should be developed. Based on the most interesting features from the three countries, this concluding chapter sums up our recommendations concerning the future work with developing a future skills needs system in Norway.

We start out with recommendations for the development of existing structures in Norway. Then we move on to recommendations concerning elements that can be implemented when the system for analysis, dialogue and dissemination has been developed further. In the last part, we recommend topics that should be investigated further.

5.1 Activities to be implemented now

5.1.1 Develop the dialogue on future skills needs

As we have seen, Sweden, Finland and Ireland all have networks, forums or other structures facilitating dialogue between the labor market, the education sector and other relevant stakeholders. In Ireland, for instance, regional forums have been established in order to facilitate structured dialogue between employers and education providers. While in Finland, the National Education and Training Committees, consisting of participants from both the education sector and labor market, monitor future skills needs and make proposals for development of educational content. Based on these and similar experiences, Vox recommends that efforts should be made towards developing a dialogue between stakeholders in the labor market, the education sector and other relevant stakeholders, at both the national and the regional levels.

In the process of developing this dialogue, it is important that:

- the groups have a clear mandate
- measures are taken in order for the participants to find it meaningful to take part in this dialogue
- there is at least some variation in participants between different dialogue forums
- a pilot to test how the potential new model of dialogue might work is initiated first

Below we argue why these features are important.

Make the mandate clear to the participants

The mandate should specify which types of issues the dialogue group is going to discuss, what the objectives of the dialogue are and what the intended outcomes are. This is important in order to reach the full potential of the dialogue. It is also important in order to motivate participants. If the participants know what the outcome of the dialogue will be their motivation to participate actively in the dialogues might increase. This leads us to our next point.

Ensure that the participants find it meaningful to participate in the dialogue

By finding out what factors that can motivate participation, and taking these into consideration when developing the mandate, it is likely that participants will find it meaningful to spend time on the dialogue. Actors in all the three countries stated the importance of this. In Ireland, the way the EGFSN disseminates the outcomes of their sectoral analyses makes stakeholders see concrete results of their efforts, increasing their willingness to participate in activities such as interviews, workshops or other ways through which the EGFSN collects information. In Finland, stakeholders within the education sector have an incentive to participate since the results of foresight processes is actively used in their own education planning. Much of the same is the case in Sweden. Here, the results from analyses and dialogue on future skills needs has a strong influence on the Swedish National Agency for Higher Vocational Education's development of the education programs. Since this means that analyses of future skills needs has a strong effect on the supply of skills through its influence on the development of higher vocational education programs, stakeholders, particularly employers, have a clear incentive to participate.

Ensure that there is at least some variation in participants between different networks

One experience from both Finland and Sweden is that the same persons often participate in different networks. To have several similar forums with little variation in participants is inefficient, and can decrease the participant's motivation for taking part in the discussions. Moreover, from the work with developing a dialogue model in the Gotland region, it was highlighted that including participants that knew each other from previous occasions can uphold existing hierarchies, and in this way inhibit some participants of fully participating.

Based on these experiences, we believe that at least some variation in participants between different forums is essential for the dialogue to produce new and innovative information.

Develop a pilot to test the dialogue model

Vox recommends to conduct a pilot, where the features described above are included, to test whether the planned dialogue model will produce outcomes in line with its objective and mandate. This could be done now, and an evaluation of this process could be used as input towards the national system that the project group in the Ministry of Education and Research will suggest by the end of 2016.

5.1.2 Improve the dissemination of results

Dissemination of results is emphasized in all three countries we have studied, and there are several examples that should serve as inspiration. Statistics Sweden's reports are written in an easy language that seems to be more available to the nonprofessional than the case is with Statistics Norway's reports. Readability seems to be one important factor in this, thus we recommend that efforts are made to produce reports that are both more reader friendly and adapted to intended user groups.

In order to reach this objective, Vox recommends:

- to examine what information different target groups need and how they wish to receive it
- to produce several publications based on the same analyses, but from different angles so that they are tailor made for different user groups

Examine what information that is in demand

In order to ensure that results from future skills needs analyses are made most use of, it is necessary to know what kind of information that is in demand. This could for instance be mapped through a target group survey where respondents are asked what information on future skills needs they are interested in, and how they would prefer to have this information presented to them. A relevant target group is youths about to make decisions concerning education and occupation. In Sweden, we saw that the Swedish Public Employment Service interviewed youth and career counsellors, gathering information about the need for labor market information and the extent to which they use already available information.

Adapt publications to different user groups

Producing several publications with different angles were recommended by Vox in the report from 2012. This study has only reaffirmed this recommendation. In Sweden, for instance, analyses made by the Swedish Public Employment Service are disseminated to persons making career decisions, parents and career counsellors through the website the Occupation Compass. The same results are also presented in a report ("Where are the jobs") aiming at giving decision-makers an overview of expected development. SOLAS in Ireland will also adapt their dissemination so it is interesting for different groups, as they experience that they do not reach all the targets groups as intended. To produce several publications based on the same analyses, but from different angles so that they are tailor made for different user groups, is a measure for improved dissemination that can easily be transferred to Norway.

5.2 Recommendations for the future system for analysis, dialogue and dissemination of future skills needs in Norway

5.2.1 Establish coordinating bodies

It is important that activities are coordinated and that there is a good flow of information between different stakeholders. Vox therefore recommends establishing coordinating bodies at both national and regional levels that facilitate the dissemination and use of knowledge concerning future skills needs. The bodies should also produce or commission their own analyses. Key areas that should be strengthened through the coordinating bodies

are dialogue between stakeholders, dissemination of results and regional work on future skills needs.

In Ireland, the central expert group seems to manage such a coordinating function very well. The Finnish system might be criticized for being too complex, leading to concerns about how much the analyses are actually used and whether the different actors are able to fully take advantage of each other's work. Sweden has also experienced some challenges regarding coordination and cooperation in the field of future skills needs, but have taken steps to improve this. If the number of bodies is kept at a reasonable level and they have clear roles and mandates, it is likely that they can and lead to a more efficient exchange of knowledge.

Vox recommends that the Norwegian system should include structures that facilitate dialogue between the labor market, the education system and other relevant stakeholders. An evaluation of the suggested pilot in recommendation 5.1.1 can form the basis for how the dialogue should be structured.

Further, dissemination of results should be emphasized in the bodies' work. We recommend a continuation of the publications adapted to the user groups as described in recommendation 5.1.2. This will ensure that the different target groups have access to relevant information.

Tools, networks and other structures should be developed to facilitate the regions' work on future skills needs. This should be closely interlinked with the coordinating body at regional level. This development process should be done based on the results from the investigation of how the Norwegian regions analyze future skills needs, make use of these analyses and disseminate the results, as described below in recommendation 5.3.1.

5.2.2 Include different data, methods and analyses

To apply a combination of different data, methods and analyses can create a better understanding and wider insight to the questions being addressed. This was emphasized in Finland, where several actors combine qualitative and quantitative analyses. These actors also expressed a wish to do even more of this. In Ireland, SOLAS combines several data sources in a large database. It can, however, be challenging to base the analyses of future skills needs on a wide range of data sources and methods.

Vox recommends to build on the investigation described below in recommendation 5.3.2, to see what gaps there are in the analyses concerning topics, methods and data, and use this information to develop the analyses further.

This information can, for example, be seen in relation to Statistics Norway's projections. In Sweden, they make projections at the regional level. They also include more educational groups than Norway in their projections. It could be interesting to examine the reasons for these differences, and look into both if, and if so, how, the future skills needs projections in Norway can be developed.

5.3 Recommendations for further investigations

Our final recommendations concerns issues that should be further investigated in order to create the best possible future skills needs analysis system in Norway. They should be carried out in parallel with our other recommendations.

5.3.1 Investigate activity on future skills needs in Norwegian regions

Investigate how the Norwegian regions analyze future skills needs, make use of these analyses and disseminate the results

As we have seen, the regions play an important role in the field of future skills needs in both Finland and Sweden, both as producers and users of information. Common for Finland and Sweden is that they have a body responsible for coordinating the work (regional councils in Finland and regional skill platforms in Sweden). Further, the activities are supported by national initiatives. In Finland, for example, the FNBE provides the regional councils with a forecasting model adapted to regional needs. In Sweden, the regional skill platforms can apply for development funds.

Establishing regional bodies in Norway and adapting measures aiming at strengthening the Norwegian region's work on future skills should depend on what is already done. Although there might be some common tools in use, such as Panda and the KS recruitment model, it seems to be variations between the regions when it comes future skills needs work. We therefore recommend that the region's future skills needs activity be properly mapped. This can illustrate how elements from regional work in other countries can be adapted to the Norwegian setting.

5.3.2 Investigate how analyses complement each other

As briefly described in the introduction of this report, there are several analyses of future skills needs in Norway. These are made using different data and methods, and they have different objectives. In order to improve the use of the analyses that are already produced in Norway, Vox recommends examining how the different analyses can be used together and complement each other.

Here, Norway might draw on the experiences of the Swedish National Agency for Higher Vocational Education. When they evaluate which educational programs that should receive funding, they compile information from several sources in order to make the most informed decision. The sources might be analyses done by others and input through their dialogue in networks and with enterprises. A similar approach of compiling information can be done in Norway as well. Discussions between users and producers of analyses, for example through networks and forums for dialogue described in recommendation 1.1, is one way of identifying better use of existing information.

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