Anticipating skill needs of the labour force and equipping people for new jobs
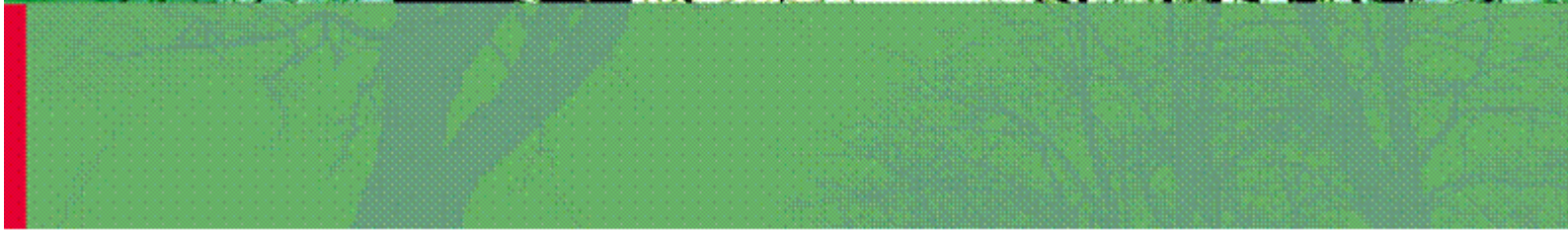
Which role for Public Employment Services in early identification of skill needs and labour up-skilling?

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Content

Preface

European labour markets are increasingly affected by intense global competition for goods and services, rapid technological change and ensuing company restructuring, transformation to a knowledge-based economy, and an ageing and decreasing labour force. In the face of these changes, anticipation of skill needs and skill supply has become a central concept in European labour market and skills policy. The rationale for anticipation is clear: The better we become at identifying the skills and competences that will be needed in the future, the better labour market actors and providers of skills and competences will be at making the right decisions, which will ensure a well-functioning labour market.

The European Public Employment Services potentially play a vital role in this process. PES are responsible for delivering employment services to jobseekers and employers to improve the functioning of labour markets. This role is recognised in the European initiative 'New Skills for New Jobs' which calls for the PES to play a key role in detecting and addressing skills mismatches, and preventing the risks of structural and long-term unemployment.

In a joint statement from 2006, the heads of the European Public Employment Services recognised this role and expressed a need for the development of new methods for early identification of skill needs, and in an Opinion from 2009 they confirmed their commitment to contribute to deliver the European skills and employment agenda.

With the recent recession, the expectations regarding PES have become even stronger. Recently, the Expert Group on New Skills for New Jobs has called for more forward-looking labour market information in order to not only anticipate future requirements but also to actively shape them. Likewise, the new Europe 2020 strategy has among its 'Flagship initiatives' an agenda for new skills and jobs aiming at modernising European labour markets through upskilling of the labour force and ensuring a better match of labour supply and demand and increased mobility in the labour market.

In order to underpin these efforts, DG Employment, Social Affairs and Equal Opportunities, Unit Employment Services, Mobility in 2009 launched a study on the role of the Public Employment Services in anticipating skill needs and equipping people for new jobs.

We are pleased to present the results of the research and trust that they will serve as inspiration for the Public Employment Services that have themselves contributed the most important input for the study. We would like to take this opportunity to thank the Public Employment Services of the 27 EU Member States plus Liechtenstein, Norway, and Iceland for contributing their insight and experience to the study. In particular, we would like to thank the Assistants to the Heads of PES and other representatives of PES who took time to answer the survey questionnaires.

Executive summary

The overall objective of the study "Anticipating skill needs of the labour force and equipping people for new jobs - Which role for Public Employment Services in early identification of skill needs and labour up-skilling?" is to underpin the discussion on how the European Public Employment Services can contribute to the strategic objectives of the European Union in the areas of employment, social affairs and equal opportunities as set out in the EU 2020 Strategy, in particular the Community Initiative on New Skills for New Jobs. The study is set in the context of the PROGRESS programme as a part of the 2008 Annual Plan of Work.

The focus of the study has been the role of PES in anticipation of new skills, in particular PES' use of anticipation methods, strategies and knowledge and only to a limited extent early intervention. The study achieved information about these topics through a multilingual online survey to European PES (the PES survey) designed to deliver information about the current situation in the PES. An analytical framework and two main research questions guided the analysis of this information:

1. What are the main strategies and methods used by European PES concerning the collection, analysis and utilisation of information about future skill needs and skill supply?
2. Which factors may act as barriers against PES activities to collect, analyse and utilise information about future skill needs and future skill supply?

The first aim of the study was to map the current situation concerning European PES' use of anticipation methods and strategies. This aim was achieved: 30 PES from 27 countries contributed information about their strategies and initiatives in the field.

A further aim of the study was to outline and analyse the potential and current benefits of PES involvement in anticipation activities, and this has been achieved. In the survey the PES have provided information about the methods they use for anticipation, including the benefits they saw, and have in addition supplied examples of good anticipation practices in their PES. The data from the PES survey was analysed against results and conclusions of recent and current studies and academic research on anticipation of skill needs to enable an assessment of the PES' practices.

Finally, the study was to identify and select good practice cases of methods and strategies for anticipating skill needs deployed by PES and develop recommendations for future action. The identification of good practice relied on information supplied by the PES themselves based on a set of criteria for good practice that was developed in the first phases of the study.

The main findings and conclusions are presented below, together with a short summary of the recommendations developed on the basis of the findings.

Current anticipation strategies and methods of PES

PES' roles are changing

With the move over the last 30 years towards more active labour market policies, PES have come to play an increasingly important role in the competence development of the labour force. After the turn of the Millennium, the increased focus on the need to strengthen the knowledge economy has put additional pressure on the PES to play a more active and antici-patory role.

Organisational focus on and capacity for anticipation is variable

Even if PES do not themselves collect labour market information, some expertise is needed in the PES to obtain, analyse and communicate information. The study found that there is great variation across Europe as to PES' organisational focus on, and capacity for, anticipation but also, that a dedicated anticipation department does not guarantee that PES themselves rate their anticipation capacity positively.

PES' cooperation with other stakeholders in anticipation

Anticipation of skill needs and skill supply requires close cooperation to ensure the validity of information, as well as implementation of relevant measures. There is considerable variation in the PES' interaction with different types of stakeholders, but also common patterns.

The study found that most PES emphasise the importance of maintaining a close dialogue with *employers* and their organisations. The dialogue with employers in most cases concerns current vacancies, it is often not systematic and in most cases it involves only a small subset of employers. Most PES cooperate on an informal basis with sector organisations to discuss the trends in and prospects for the sector. Only a few PES collaborate with employer organi-sations in the design and development of analyses of future skill requirements, and only two PES reported that they participate in a formal partnership with employer organisations.

PES' interface with organisations on the skill supply side was found to be less solid than the interface with employers. About one third of the PES reported that they cooperate with *educa-tion and training providers* on a regular basis concerning the future skill needs and -supply, while another third reported that such cooperation only takes place rarely. The cooperation mainly concern issues with relevance for continuing training. A majority of the PES reported that they use information about future skill needs in the labour market to influence the supply of education and training.

Types of labour market information used by PES

For the purpose of the study, the ILO definition of Labour Market Information was adopted. According to the ILO Labour Market Information concerns the size and composition of the labour market or any part of the labour market, the way it or any part of it functions, its prob-lems, the opportunities that may be available to it, and the employment-related intentions or aspirations of those who are part of it. The PES survey asked the PES about their use of in-formation from four types of sources: quantitative forecasts, employer surveys, surveys of students and graduates, and foresight studies.

Employer surveys
The PES survey showed that surveys of employers is the main source of labour market infor-
mation used by European PES; indeed more than half of the PES mentions such surveys
among the instruments they consider most important to anticipation. Information is mainly
gathered about current and imminent vacancies and skill needs. Roughly half of the PES uses
data from employer surveys to supplement information from other sources when they prepare
forecasts. Some PES, particularly in some of the New Member States where the statistical
data are not suited as input to labour market forecasts for different reasons, use employer sur-
veys as the main data source for forecasting of skill needs.

Quantitative forecasts
Most PES use information from quantitative forecasts of future skill needs and supply, but
few do so at a regular basis. There are big differences with respect to the scope of, and data
sources used in, the forecasts used by the PES. Some are ongoing nationwide exercises, in-
volving large datasets and complex modelling, while others are regional forecasts built on
projections of information from employer surveys. Regardless of scope, the information that
the PES report that they use most frequently concerns the demand side, while projections or
modelling of the supply of skills and qualifications are less frequently used by the PES.

Surveys of students and graduates
The PES use information from surveys of potential entrants to the labour market considerably
less frequently than surveys of employers. The surveys are used to obtain information about:
the attitudes towards the labour market among students; study programme popularity; factors
which trigger decisions to seek work abroad; and the extent to which graduates take up jobs in
line with their qualification. Only five PES use information about these issues regularly.

Foresight studies
A little more than half of the PES reported that they use information from foresight studies
regularly or sometimes, and a third never used such information. The PES that use foresight
studies to inform their anticipatory activities primarily look for information on economic and
employment trends as well as trends in skill demand and supply. Fewer PES look for infor-
mation about other factors that may critically influence skill demand and supply, such as de-
mographic trends, emerging skills and competences, or consequences of globalisation or tech-
nological change on jobs and occupational profiles.

Anticipatory information is useful for a wide array of purposes in the PES operation

In the PES survey, the utilisation of labour market information was categorised according to
the level of implementation. Thus, information can be used either at a strategic/national level,
in the management of regional or local PES offices or at the level of frontline staff who are in
contact with job seekers.

The use of anticipatory information at strategic/national level
At this level, most PES use anticipatory information in the strategic planning of implementa-
tion of employment policies, including: budgeting and allocation of resources, including staff
in PES offices; planning of active employment measures; identification of target groups for
active measures; and development of ICT-based labour market information systems. A few
PES reported that forward looking labour market information provides input to revisions and
reforms of employment policies.

The use of anticipatory information at regional/local level
At regional/local level, information about future supply of and demand for skills is mainly used for planning purposes, such as setting of production targets, development of action plans, budgeting and distribution of resources to offices. Furthermore, such information is used by some PES as an input to organising active labour markets measures, including training of the unemployed.

Information from foresight studies appears to be utilised in ways that differ from the use of the other types of information. Such information is often used as input to the professional development of PES staff and management; in the mobilisation of stakeholders; in identification of areas for training and advice to training providers; and in guidance to training providers.

The use of anticipatory information in service delivery
According to the PES survey, PES staff use anticipatory information mainly as an input to activities targeted at the unemployed. Guidance appears to be the activity that benefits most from information about future skill needs. However, the survey points to a wide range of services provided to (unemployed) jobseekers who benefit from the PES possessing anticipatory information, namely screening, interviewing, matching, guidance, competence/skills testing, skill assessment, provision of training offers, and development of action plans. In addition, a number of PES have developed or are developing internet-based portals, which, in addition to current vacancies, also hold information about job prospects in specific occupations and sectors.

Barriers with respect to anticipation in PES

The study also identified barriers and structural conditions that may hamper or prevent the anticipatory activities of the PES. According to the PES survey, the barriers encountered by the PES vary considerably according to the political, structural/systemic and operational context of the PES. Contextual factors include the size of the country; labour market regulation; PES' share of vacancies; division of work between political actors and operators in employment and education services; statistical infrastructure; and social dialogue - just to mention a few.

Limited access to and insufficient quality of information

The barrier identified by most respondents to the use of the sources of information mentioned in the survey is limited or no availability of data or studies. A majority of PES in New Member States and in Southern Europe identified barriers with respect to availability and quality of forward looking labour market information (in particular forecasts) or data needed to produce such information. A number of countries experiences poor quality of data with no obvious common characteristics. Barriers with regard to the availability of statistical data were found to be closely connected to the absence of efficient and comprehensive statistical infrastructures.

Limited capacity in some PES to obtain and utilise information

Several PES reported that conducting anticipatory activities and/or using data from anticipatory activities is challenging because few resources are dedicated to this type of activities compared to the daily activities such as profiling and matching. In many of the New Member States, PES are still in the process of developing employment services, and in this work there is little room for advanced anticipatory activities. However, in the survey several of these countries mentioned that they are planning to develop anticipatory services, and/or that they

would like to do so, but that they are short of resources and dedicated staff. Both new and old Member State replied that more time and/or resources dedicated to anticipation activities would contribute to increasing anticipation activities. In a number of cases, EU funding has been used to help develop anticipatory systems. If this source of funding is withdrawn and national resources are not able to fill the gap it is questionable whether these activities will prove to be sustainable.

Lack of focus on anticipation

The study has demonstrated that in some countries where the research team were aware beforehand that comprehensive anticipation of skill needs and skill supply takes place, PES respondents still report limited access to or non-existence of such work. This indicates that there is a need for the PES to consider whether their internal systems are sufficiently efficient in gathering intelligence and ensuring that results of existing knowledge about future skill needs and potential skill mismatches inform their services to jobseekers and employers.

A specific topic relates to the increasing use in PES of performance management systems. Such systems may hamper efficient collection and use of anticipatory information if performance indicators are not developed that reward such activities. A few PES in the survey are currently working in the direction of developing performance management that is oriented towards anticipation.

The way forward and the future role for PES

The study has demonstrated that the European PES have taken on the task of playing a role in anticipation of skill needs and skill supply in Europe. However, the data from the PES survey also show that the development of the role of PES take different shapes and happens at a different pace across Europe. A statistical cluster analysis performed on the data from the PES survey indicates five clusters of PES according to the *width* of the types of information they use in anticipation; the *depth* of utilisation in the PES' implementation systems; and the number of *barriers* they experience with respect to anticipation.

Two main rationales for anticipation

The study did not look into the rationales for anticipation in each PES in detail. However, the responses to the survey indicate that there are two main – and rather different – rationales for PES to engage in anticipation. Some PES – or policy makers in their countries – appear to aspire to be able to *plan future skill supply to match projected skill needs*. While in other PES obtaining, analysing and utilising labour market information is seen mainly as a means to *provide jobseekers, employers and training providers with a rich information base to be used to inform their own decisions*, for example, in the form of labour market information portals on the internet.

In addition, many PES use anticipation information for planning and operational purposes within the PES themselves, i.e. allocation of resources, prioritising among target groups, and developing and planning active measures.

So what ways forward for PES do the results of the study indicate?

Look forward and outward

The French PES gave one quite important pointer when it called for a "forward looking culture in the PES". The study has indicated that such a culture is still not very widespread in many of the PES. To this could be added a need for a more "outward looking culture" of the PES in the sense of a culture more oriented towards European/international trends. The study has clearly demonstrated that many PES are not sufficiently informed about what is going on in anticipation of skill needs and skill supply in their own countries and in Europe at large. These PES would benefit from dedicating resources to developing partnerships with other government departments and agencies, as well as other organisations such as educational and research institutions that are involved in producing such information.

Triangulate

The study has shown that most PES use a limited range of sources for anticipation – only in one of the five clusters identified do the PES use information from many independent sources. Examples from the PES in this cluster demonstrate that information need not be strictly compatible in a statistical sense of the word. Statistical projections may well be enriched by qualitative survey data, foresight results, etc., and may be delivered to decision makers (job seekers, employers, policy makers) as a package of information rather than as one numerical result.

Refine methods

In the PES that currently perceive many barriers with respect to the use of statistical data, the way forward (in addition to working at changing the situation) may be to refine the methods being used. Where the contact to employers is not well structured, the PES can develop a more systematic approach, for instance, by carrying out surveys or meetings at fixed intervals. This will improve their ability to identify trends in the employers' demand for certain skills. In addition, the questionnaires could be reviewed, possibly with a view to using ideas from questionnaires used by other PES to improve the validity of survey information.

Focus on the utilisation of information

In addition to input into resource planning, guidance and counselling of jobseekers, anticipatory information is useful for a large number of other activities in the PES described by the respondents to the survey. However, the study indicates many PES could benefit from a more focused approach when utilising the information. This can be achieved by systematically examining the information needs of stakeholders in regional and local labour markets and devising mechanisms for delivering information to each of these stakeholders. This requires that the resources that are already used for developing and maintaining partnerships be prioritised, so that anticipation becomes a shared issue in the partnerships.

Recommendations

A number of recommendations were developed because of the results of the study. The recommendations are found in the final chapter of the report in their full length.

It is recommended that the EU Commission:

- conduct further research into information infrastructures that facilitate better national coordination between anticipation in the education policy field and in the employment policy field at national level;

- support systematic mutual learning between the PES, in particular between groups of PES that share similar characteristics.

It is recommended that national policy makers:
- initiate competence development programmes with the aim of improving the information processing capacity in the PES implementation system;
- initiate a review of performance management indicators (in countries where PES is governed by such systems) in order to ensure that the systems do not counteract anticipation efforts in the PES.

It is recommended that the management of PES:
- prioritise resources to investigate methods to make employer surveys more forward looking, e.g., by collecting more information about employers' plans concerning equipment, subcontracting, sourcing;
- examine the possibilities for including other sources of information about future labour markets where anticipation relies on quantitative forecasts based on statistical data and employer surveys;
- initiate review the nature of work being carried out within their own countries in the area of anticipation, with the aim of joining up thinking in this field and maximising the use of existing work as well as in the longer term influencing the direction and focus of this work so that it is most useful to the PES;
- take note of the various activities being carried out by Cedefop, Eurofound, OECD and others at a pan-European level that provide insight into the changing demand for and supply of skills.

It is recommended that the PES network at European level:
- maintains and strengthens its focus on anticipation with a view to supporting mutual learning taking into account the different points of departure of the PES;
- work to develop communication channels between research institutes and the PES in each country, starting with conferences/seminars targeting the management level in the PES at regional/local level.

1. Introduction

This report presents and concludes a study commissioned by the EU Commission, DG Employment, Social Affairs and Equal Opportunities on 'Anticipating skill needs of the labour force and equipping people for new jobs. Which role for Public Employment Services in early identification of skill needs and labour up-skilling?'

The report was prepared by a consortium lead by Danish Technological Institute and ÖSB Consulting GmbH and IER Warwick University as partners.

The assignment calls for development of information and recommendations that can support the European Public Employment Services (PES) in developing their role in supporting the strategy on New Skills for New Jobs.

1.1. Context of the study

This study is set in the context of the PROGRESS programme. It is a part of the 2008 Annual Plan of Work[1], which reflects the strategic objectives of the European Union in the areas of employment, social affairs and equal opportunities as set out in the EU 2020 Strategy.

Public Employment Services (PES[2]) potentially play a vital role in anticipating skill needs and/or deploying knowledge on future skill needs in their services to jobseekers and employers. PES are responsible for delivering employment services to jobseekers and employers to enhance the match between supply and demand of labour. Due to the rapid changes in the European labour markets it is increasingly important that PES deliver their employment services with a view to ensuring that employers' skill needs are met not only now, but also in the future, and that the skills of the labour force are continuously updated to facilitate future employability. At the same time, the complexity of skills and competences in the labour markets is increasing. This has led employment services to focus increasingly on the provision of information to employers and jobseekers to help them make prudent decisions on search and recruitment.

This is reflected in the European initiative 'New Skills for New Jobs' adopted in November 2007.[3] This initiative calls for up-skilling of labour to ensure a high level of employment and skill levels in Europe. In the initiative the Education Council stressed the need to:

1. Provide all European citizens with new opportunities to improve their knowledge, skills and competence levels, adapt to new requirements and move to new and better jobs, by combining the instruments that already exist at European and national level.

2. Anticipate the skill needs — also the skill gaps — that are emerging in the European labour markets. The European Commission (2009) develops this point further and notes that a substantial improvement in the Member States and the Union's capacity to forecast, anticipate and match future skills and labour market needs is a precondition

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[1] http://ec.europa.eu/employment_social/progress/docs/progress_005_en.pdf
[2] PES is a generic term which is used to refer to public employment services in the plural (e.g. the European PES are subject to regulatory changes) as well as in the singular, referring to one specific national, regional, or local service (e.g. the French PES has at its disposal..).
[3] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2007:290:0001:0003:EN:PDF

for the design of efficient employment, education and training policies and individual career choices.

3. Improve the matching of knowledge, skills and competences with the needs of society and the economy, as a means to increased competitiveness and growth as well as to achieving greater social cohesion, in Europe.

PES play a central role in meeting these demands. As far back as 2000, the European Public Employment Services in a joint statement clearly expressed a need for the development of *new methods for early identification of skill needs* as a necessary means for preventing and reducing long-term unemployment in Europe, particularly for groups like women, immigrants, low-skilled and un-skilled workers (European Public Employment Services 2002). In the 2006 Mission Statement from the European Employment Services, early identification and intervention was identified as one of the essential strategies in addressing the long-term challenges facing the European labour markets. The Mission Statement explicitly addresses the need for employment services also to address persons traditionally outside the labour force such as women and older workers (EU/EEA Public Employment Services Network, 2006).

These statements were followed up in 2009 by an Opinion from the Public Employment Services Network to the Employment Committee (PES Network 2009). The opinion strongly confirms the commitment of the PES to contribute actively to the New Skills for New Jobs agenda. The opinion was prepared in parallel with the present study. Consequently, it has not served as a point of departure for the study. However, where relevant, we have sought to present our findings in the perspective of the ambitions of the Opinion.

Finally, the increasing diversity of the labour force and rapid changes in skill needs have also been associated with a demand for PES to deliver personalised services. This includes a focus on the need for early diagnosis, individual profiling and individual action plans, so that people are actually equipped for new jobs. These issues are also at the heart of the European Employment Strategy and the Integrated Guidelines – in particular numbers 19 and 20.

Integrated Guidelines – Employment Guidelines - 2005-2008[4]

19) To improve matching of labour market needs – *"Ensuring inclusive labour market, enhance work attractiveness, and make work pay for jobseekers… (…) through active and preventive labour market measures including early identification of skill needs, job search assistance, guidance and training as a part of personalised action plans, provision of necessary social services to support the inclusion of those furthest away from the labour market.(…).*

20) To promote flexibility combined with employment security and reduce labour market segmentation – *"the need to improve the matching of labour market needs through the modernisation and strengthening of labour market institutions, notably employment services. (.) .better anticipation of skill needs, labour market shortages, and bottlenecks. (.)"*

Source: European Commission, 2005

The attention to the roles of PES has become even stronger in the renewed strategy, Europe 2020. An *Agenda for new skills and jobs* is one of seven Flagship Initiatives in the strategy. In the context of this initiative, the European Commission has committed itself to:

> … *strengthen the capacity of social partners and make full use of the prob-*

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[4] New Integrated Guidelines are to be adopted in December 2010.

lem-solving potential of social dialogue at all levels (EU, national/regional, sectoral, company), and to promote strengthened cooperation between labour market institutions including the public employment services of the Member States.

Member States, on their side, are called upon to:

... implement their national pathways for flexicurity, as agreed by the European Council, to reduce labour market segmentation and facilitate transitions [...];
... develop partnerships between the worlds of education/training and work, in particular by involving social partners in the planning of education and training provision.

These initiatives obviously need to involve PES as an active player in anticipation in close cooperation with other stakeholders in the labour market.

Anticipation of skill needs concerns methods and strategies for identifying and analysing the future skill needs of the labour market. PES can organise their own anticipation activities or apply knowledge on future skill needs gathered from other sources.

The time horizon of anticipation activities needs to be considerably distant from the present in order to allow the provision of skills to respond to emerging needs. In the study, PES matching activities in which current and imminent skills, competences or qualification needs are identified and analysed are not considered as anticipation.

1.2. Study objectives and methodology

The purpose of this study has been to map and assess the strategies and methods deployed by European PES for anticipating skill needs, examine how such strategies are translated into the services of PES, and provide recommendations on how PES can contribute to the New Skills for New Jobs initiative.

More specifically, in accordance with the terms of reference, the study was to:
▪ map the current situation of PES' use of anticipation methods and strategies;
▪ outline and analyse the potential and benefit of PES involvement in anticipation activities;
▪ identify and select good practice cases on methods and strategies for anticipating skill needs deployed by PES; and
▪ develop recommendations for future action.

It should be emphasised that the main focus of the study is PES' use of anticipation methods, strategies and knowledge and only to a limited extent early intervention.

The study covers all Member States of the European Union and Norway, Iceland and Liechtenstein.

The main body of the study are the results of a multilingual online survey to PES supplemented with analyses based on research literature and policy documents. In the following countries, the PES at national level contributed to the survey (see Annex C: Response rates on p.

114): Austria, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Luxemburg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden, United Kingdom.

In Belgium, all four regional PES responded to the survey, while in Spain, where the PES are also regionalised, only the PES in Catalonia responded. We therefore warn against any conclusions concerning the Spanish situation as a whole based on the results presented here.

For a more detailed account of the study methodology, please refer to Annex A: Methodology.

2. PES roles and activities in anticipation across Europe

2.1. Introduction

In order to discuss what are and could be the roles of PES in relation to anticipation of new skills for new jobs in Europe, we first need to take a brief glance at the current role and tasks of PES.

ILO (2009) defines generic employment services as comprising these functions:
- Labour exchange;
- Labour market information;
- Labour market adjustment programmes; and
- Unemployment insurance administration.

Nevertheless, the actual roles and tasks of public employment services across Europe vary considerably. Some PES undertake a much wider range of functions than those mentioned above, while others do not engage in all the functions. In the context of the present study, the first two of the above-mentioned points are of particular interest. Below, we take a closer look at how the PES have reacted to changes in framework conditions in each of the above fields during the last couple of decades.

For the purpose of the study, the ILO definition of Labour Market Information was adopted. According to the ILO, Labour Market Information concerns the size and composition of the labour market or any part of the labour market, the way it or any part of it functions, its problems, the opportunities which may be available to it, and the employment-related intentions or aspirations of those who are part of it. According to ILO[5],

> ...*The formulation, monitoring and evaluation of national policies on decent work should be based on set of accurate and up-to-date employment data generated through labour market information and analysis (LMIA) systems. LMIA systems consist of three main elements: collection and compilation of data and information; analytical capacity and tools; and institutional arrangements and networks.*

Dockery (2001) observes that the public sector is actively involved in the employment services market in all industrialized economies as a result of the general agreement that the market for employment services could not deliver socially optimal outcomes when left to free market forces. Furthermore, he argues that the public involvement in PES also reflects a desire to use public institutions to deliver assistance to those disadvantaged in the labour market to achieve equity objectives. Such objectives are reflected in a number of activities related more indirectly to the matching task, such as preparation for employment, gathering labour market information and administration of labour market adjustment programmes. However, the extent of such activities varies considerably across Europe, as does the 'market share' of vacancies, the legal status and organisational models of European PES.[6]

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[5] http://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_140948.pdf
[6] See PES Monitor for details for each PES.

2.2. 'PES classic': Labour exchange/job-broking

The function undertaken by all PES – and one that is reflected in the regulatory frameworks guiding the activities of the PES[7]- is the exchange or job-broking function, i.e. to facilitate the match between employers and jobseekers. Thuy, Hansen & Price (2001) observe that this function is not only the most fundamental but also the most controversial function of the PES for two reasons:

1. The PES monopoly, which has existed in a number of countries, has ended;
2. New methods and new technologies are causing profound changes in the way matching takes place, with or without the involvement of PES.

Our survey, as well as the desk research, confirms that there is indeed increasing interest in methods and tools that will allow jobseekers and employers to find each other without PES staff acting as intermediaries. This includes concepts such as self-service in the form of job portals on the internet or it-based matching systems where jobseekers' profiles are automatically matched to occupational profiles and/or vacant positions in the system.[8]

2.3. New demands on PES

The last 30 years have seen a rapid change in labour markets due to globalisation and the arrival of the knowledge economy. New occupations, jobs, and functions within jobs emerge and disappear at increasing speed (See e.g. Gazier (2008), Brinkley (2006), Thuy, Hansen & Price (2001).

The new European labour markets are characterised by:
- rapid restructuring;
- out- and in-sourcing;
- fragmentation of value chains;
- loss of low-skilled jobs; and
- increasing use of flexible contract forms;

The current recession has helped to accelerate these trends. Likewise, skills perspective analyses draw attention to increasing demand for more specialised skills and increased flexibility as well due to growing skill mismatches in the labour market. Cedefop has carried out several analyses within this theme; most recently the medium-term projections of skill needs and skill supply (Cedefop 2009d). In addition, the implications of sector dynamics for changing skill requirements are included in the sector studies commissioned by the European Commission (Oxford Research (2010) and work by Eurofound[9]).

From passive to active measures

In view of the high, but unevenly distributed rates of unemployment in Europe in the 1990s, the European employment strategy was first launched in 1997 as a tool to give direction to, and ensure co-ordination of, the Member States' employment policy priorities (European

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[7] A short description of statutory tasks for 23 European PES can be found in the database of the PES Monitor, http://www.pesmonitor.eu
[8] These activities have given rise to their own niche in the IT-sector, as the website of the IT-system ELISE illustrates. http://www.wcc-group.com/page.aspx?menu=customers&page=customers&lang=en
[9] Eurofound's web portal gives access to several sector studies all including analyses of future skill needs. http://www.eurofound.europa.eu/emcc/sector.htm

Commission 2007d). The Amsterdam Treaty spelled out the commitment to achieving a high level of employment as one of the key objectives of the European Union, and declared that this objective is equally as important as the macroeconomic objectives. The first strategy built on the four pillars "Employability", "Entrepreneurship", "Adaptability" and "Equal Opportunities". These pillars were followed by more concrete guidelines and policy targets. In the set of targets with direct relevance for the PES, active labour market policies (ALMP) played a major role. Thus, the PES were charged with the task of turning passive recipients of unemployment benefits into active participants in the labour market and, in particular, ensuring that this took place before the unemployed person crossed the 6-month line that was set as the limit between short- and long-term unemployment.

Employment policy to aid competitiveness and quality of work

At the Lisbon European Council in March 2000 the European Union set up a new strategic goal for the following decade. The European Union was to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. The focus of the EES shifted from reducing unemployment to regaining the conditions for full employment.

The Nice European Council of December 2000 introduced Quality as the guiding thread of the Social Policy Agenda and in particular quality in work as an important objective of the EES.[10]

Adaptability and flexibility is increasingly called for

Up until 2008, the EES increasingly focused on creating adaptable and flexible labour markets and upskilling the working population as prerequisites for sustainable growth and competitiveness in the globalised knowledge economy. In a Communication from EU President Barroso in 2005 following up on the mid-term review of the Lisbon Strategy (European Commission 2005) it was emphasised that:

> *Labour markets must be allowed to function better, providing incentives for people to work and for businesses to take them on, and to create more and better jobs. This will require significant investment in human capital, and greater adaptability of the workforce in more inclusive labour markets.*

Since 2008, the current financial crisis and subsequent job losses have further strengthened the emphasis on the adaptability, skills, and competences of the labour force as a means to strengthen Europe's competitiveness by moving the European economy up the value chain. At the same time, there has been substantial policy focus on anticipation.

Anticipation goes beyond matching

The increased focus on the need to strengthen the knowledge economy puts pressure on the PES to play a more active role in their regions or local areas. The OECD LEED programme has looked into management flexibility in employment policies in the OECD (Giguère & Froy 2009). The study finds that employment services are faced with a number of challenges and paradoxes related to anticipation. The rapidly changing labour markets and needs of employers have lead to increasing problems for employment and training organisations in obtaining

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[10] A condensed history of the EES can be found at the website of the European Employment Observatory, http://www.eu-employment-observatory.net/en/ees/

accurate and timely information on these needs to enable them to adapt programmes and services.

As statistical sources have long lag times, and are often too aggregated, local employment and training organisations often rely on information directly from employers concerning their unmet and future business needs. Yet, we know that employers often find it difficult determine their future needs. Furthermore, employers who respond to a survey today may not be the same employers who need skills tomorrow, as old businesses disappear and new emerge. The OECD study concludes that forecasting business needs requires that the assessment of current skills gaps be supplemented with prospective analyses of economic trends and industry developments. It is not clear that PES are best placed to undertake such work, and in many countries it is done by other agencies.

According to the authors of the study, a second, and gloomier, challenge is associated with failure of PES (and national employment policies) to undertake anticipation, particularly in regions characterized by low-tech, low-cost industries. They argue that if employment services in such areas limit their activities to supplying a low-skilled workforce for the current vacancies announced by the industry, it will create disincentives for the enterprises to invest in more efficient technologies or otherwise move up the value chain and for workers to embark upon education and training. This in turn can lead the trained workforce to leave the region, and hence, the emphasis on short-term fulfilment of demand for labour will contribute to harming the long-term social and economic prospects of the area in question.

Anticipation as the way to link demand and supply

The concept of anticipation first surfaced in connection with the restructuring waves around the Millennium. If restructuring could be anticipated, negative economic and social consequences could be averted or even avoided. As Bruggeman (2008) notes:

> *Facing a more and more uncertain world they [large companies, ed.] progressively shifted from "planning" (a kind of forecast based on extrapolation of past tendencies) to anticipation (a kind of forecast based on the understanding of trends and weak signals)*

In the following years, the idea of anticipation spread rapidly to the employment policy field. If skill needs could be forecast on a more sophisticated basis than just extrapolating past trends, and if action could be taken in time to assure that the labour force would then be in the right place with the right skills when demand occurred, then labour shortages and bottlenecks in the European labour markets could be countered. Thus, the idea of anticipation is strongly linked to policies that seek coordination, if not integration, between labour market policies and skill policies and the implementation at all levels of these policies.

Forward-looking labour market information as a precondition for competitiveness

Towards the end of the decade, a major new initiative *New Skills for New Jobs* was launched. The initiative explicitly links the provision of skills to anticipation of the future demand for skills in the labour market.

In the context of this new initiative, the PES became the centre of interest by virtue of its position in the labour market:

> *Public Employment Services help match supply and demand in the labour market by providing support services to both employers and job-seekers. [..] Therefore, they play a key role in detecting and addressing skills mismatches, and preventing the risks of structural and long-term unemployment.* (European Commission 2008a)

Due to their role as matchmakers in the labour markets, the PES already have varying degrees of capacity to collect, analyse and communicate labour market information. Hence PES appear to be well placed to play a central role in the realisation of the ambitions of Europe 2020 and the New Skills for New Jobs initiative. And indeed, it their Opinion (PES Network 2009), the Heads of European PES recognises the need to improve the anticipation of future skills and labour market needs as a precondition for the design of appropriate employment and training policies.

With the recent recession, the initiative was even more firmly set within the context of increased global competition. According to the Expert Group on New Skills for New Jobs (2010), European countries will no longer be able to compete on cost and price, but need to produce higher quality and more innovative products and services that are delivered by highly skilled people. This in turn means that labour market information should become more forward-looking:

> *The role of LMI [labour market information, ed.] is to assess both the existing skill needs and to provide a longer term perspective, so that we not only anticipate future requirements but also actively shape them [our underlining, ed.]*(Expert Group on New Skills for New Jobs 2010)

Moreover, the Expert Group called for labour market information systems to be developed with a view to giving education and training providers easier access to qualitative information. They also called for providers of labour market information to provide better qualitative information about the nature of competences needed, which could be translated into relevant learning outcomes and inform education and training decision-makers.

This strategic focus has been continued and deepened in the new European strategy 'Europe 2020: a strategy for smart, sustainable and inclusive growth'.[11] The new strategy features seven 'Flagship initiatives', among them *an agenda for new skills and jobs* (European Commission 2010). This initiative is extremely relevant to PES as it targets a modernisation of labour markets through upskilling of the labour force but also through a better match of labour supply and demand and increased mobility in the labour market.

2.4. PES – but not PES on its own

As we have seen, European policy initiatives look to PES to contribute to the development of more flexible labour markets. PES are called on to provide forward-looking labour market information, which will not only make matching more efficient but will also enable providers of education and training to deliver the necessary competences – now and in the future – in

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[11] The strategy was agreed by the Council early 2010

order to increase European competitiveness. However, the European PES have quite different starting points when it comes undertaking this role.

PES' share of vacancies significantly influence PES' scope for anticipation

As observed by several speakers at the PES conference on 'New Skills for New Jobs'[12], the scope for PES to contribute to the improvement of matching in the European labour markets in the short and the long run depends on their market shares, i.e. on the share of vacancies in a country that the PES handles. Figure 2-2 below, which is based on the information given by the PES in the new survey, shows that the estimated market shares of PES varies considerably.

Figure 2-1 PES' estimates of their share of vacancies, %

0 -		10
11 -		20
21 -		31
32 -		41
42 -		52
53 -		62
63 -		73
74 -		83
84 -		
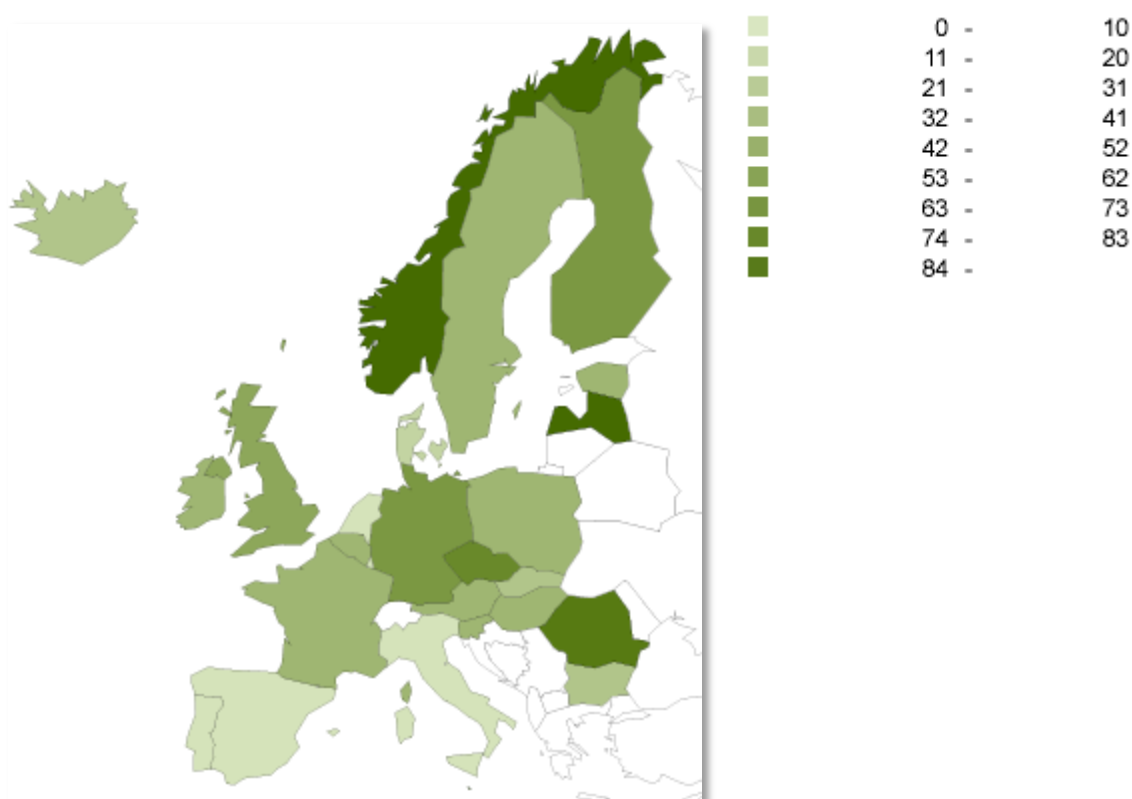
Data source: Survey among European PES Source of map: Norwegian Mapping Authority[13]

More than half the PES (51.7%) estimates that their share of vacancies in the national market is less than 40%. Three PES (NO, LV, RO) estimate their market share at 80-100 %. For those with relatively low market shares, there are also concerns that the vacancies they do cover may not be representative of the whole labour market.

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[12] The conference was held in Gothenburg 22–23 November 2009 as part of the Swedish Presidency. In her concluding remarks, Ms. Wallis Goelen, Head of Unit, DG Employment, Social Affairs and Equal Opportunities, European Commission, remarked that "..over the last two days it has become evident that a partnership based approach and the mobilisation of all actors (public and private and at all levels) in the labour market can provide win-win situations for everyone" (Goelen 2009).
[13] For this and subsequent maps, the following note applies: Countries with no colour have not answered this question.The figure for BE is an average of the estimates given by the four regional PES. The figure for ES is the estimate of the Catalonian PES.

The higher the market share, the more opportunities there are for the PES to meet and talk to employers and jobseekers. Each meeting provides an opportunity for the PES to increase its knowledge base and its scope to plan and influence the behaviour of labour market actors. If a PES with only a small share of vacancies is to play a key role in anticipation, the PES must take a much more proactive role. To obtain valid information about supply and demand in such a situation, the PES needs to gain access to external sources of information concerning (current and future) demand and supply of competences. The PES must also have sufficient economic and human capacity to communicate labour market information to jobseekers and providers of labour market services and upskilling. In other words, the lower the market share of a PES, the more important is the need for good partnerships and cooperation.

Joint action is necessary

Consequently, it is clear that to take on proactive anticipation, the European PES must be strongly linked to national, regional and local networks of stakeholders. This is particularly true for PES with small market shares. The stakeholders are employers, employer organisations, trade unions, education and training providers, research institutions, and other providers of employment services. They all have information that other stakeholders need. It is a complex task to collect and combine the different bits of information (about demand for a specific type of qualification, the demographic trends in a geographical area, the aspirations of school leavers, etc.). Therefore, PES may be instrumental in the transfer of knowledge. However, to take on this role PES need technical capacity as well as a strong network among the stakeholders:

> *There is little that employment agencies can do alone in tackling both the recent economic downturn and the longer term challenges of globalisation. [..] In particular strong integration between employment services, economic development agencies and training institutions is necessary to ensure appropriate synergies and trade-offs between different strategic objectives related to human resources development (e.g. integration into employment, skills upgrading, further education, and the attraction of new talent)* (Giguère & Froy 2009)

2.5. PES' capacity for anticipation

One road that can potentially improve the PES' capacity to participate in or even lead anticipatory partnerships is to improve their matching efficiency. Many PES have developed methods, concepts and tools aimed at improving matching. Several of these approaches make use of ICT, particularly the opportunities provided by the internet. Some of the tools serve as information sources for stakeholders in the labour market, while others underpin self-service by jobseekers and/or employers (Thuy, Hansen & Price 2001, EU/EEA Public Employment Services 2006, ILO 2009).

The self-service concepts not only improve PES' services to their users, they also relieve PES from matching tasks and hence free resources to deal with more complex current and future mismatch issues. Whereas modernisation of the matching process is not the main focus of this report, it does provide an important precondition for the PES' move towards a truly anticipatory role in the labour markets.

Size and competences of PES staff play an important role

The ability of PES to take on the role as the main actor in the generation of knowhow about future demand and supply of labour depends on a number of factors, one of the most important being the manpower resources available to the PES. Figure 2-2 shows the total number of staff in the PES as a function of the total labour force in each country. There is a quite close linear relationship[14] between the size of the labour force and the number of staff employed by PES.

Outliers are Denmark, Norway and Germany, all with more staff relative to the size of labour force than average, and Netherlands, Romania, Poland, Italy and France, all with fewer staff relative to the size of labour force than average. Denmark and Norway are small countries that may not be able to achieve economies of scale in the operation of PES.

The same could, however, be said about the (even smaller) Baltic countries. Therefore, we would tend to see the high number of staff in the former countries as the result of a long tradition for active labour market policies.

Figure 2-2 No. of staff in European PES compared to national labour force
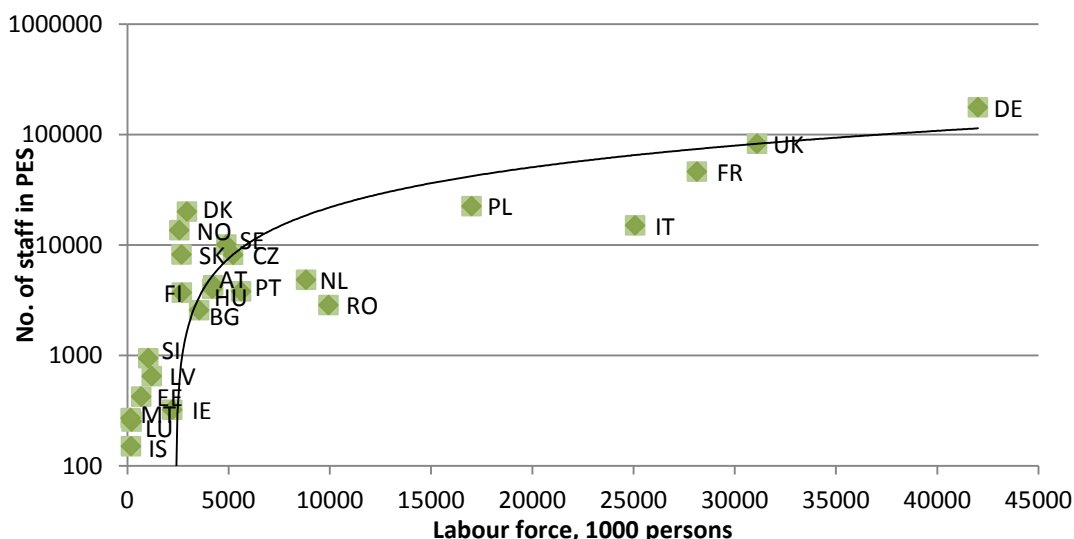
Source: No. of staff in PES: data from survey Labour force: 2008 figures from Eurostat. Regions (Belgian Regions and Catalonia) are omitted.

Whereas the number of staff is one indicator of the capacity of a PES to carry out anticipatory activities, it is clearly not sufficient. The competences of the staff also need to match the competences demanded for carrying out anticipatory activities. Anticipation includes a series of activities that each demand specific methodological competences. Collection of information from employers (which may require competences in survey design and/or interview techniques), econometric modelling or scenario building each have specific methodological requirements. Furthermore, communicative competences are needed when results are to be implemented in guidance and counselling or advisory services. Depending on which activities

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[14] The scale of the y-axis is logarithmic, which is why the relation does not appear linear. The "trend line" shown is linear if the y axis is not logged. The linear model explains 73,7 % of the variation in the number of staff by the variation in the size of the labour force.

the PES take on or outsource to partners or service providers, staff who are competent in (at least some of) a number of the disciplines listed in Table 3-1 below is required.

Table 2-1: Anticipation competences

Activities involved in anticipation	Activities requiring PES need competence in-house	Activity may be outsourced
Creation and maintenance of network of partners	X	
Project management	X	
Knowledge management (strategy and systems)	X	
Management of subcontractors	X	
Strategies for the collection of information	X	
Survey design		X
Practical data collection (quantitative and/or qualitative data)		X
Analysis of data		X
Understanding of (statistical) models	X	
Understanding of foresight methodology	X	
Communication	X	

Source: Findings from an earlier study (in Danish) on methods for anticipation (Teknologisk Institut 2007) This work, which analysed and summarized the results of international research in methods for anticipation of emerging skill needs was targeted at the trade committees in charge of vocational education and training in Denmark.

As the table indicates, certain skills and competences are required for the PES to be able to request relevant information, assess the methodologies used by subcontractors, evaluate deliveries, process analyses and information, and transform the results into requests or recommendations to partners and service providers. The precise volume of staff required depends on the organisation and legal structure of each particular PES. If, for example, a PES carries out analyses and forecasting exercises on its own, this requires a sizeable staff of specialists, whereas the 'anticipation department' may be quite small if these activities are subcontracted. An earlier survey among European PES (Andersen et. al. 2008) indicated that the PES are well aware of this fact, and at the time, many of them said that they needed more and better qualified staff.

Organisational focus

The increased focus on the need for anticipation has encouraged some PES to establish dedicated units within the organisation to carry out anticipatory activities or to be responsible for such activities. About half of the European PES (17 of 29 PES) replied that they have organisational units specifically dedicated to anticipatory activities in their organisation.

Figure 2-3: PES that have established dedicated anticipation departments
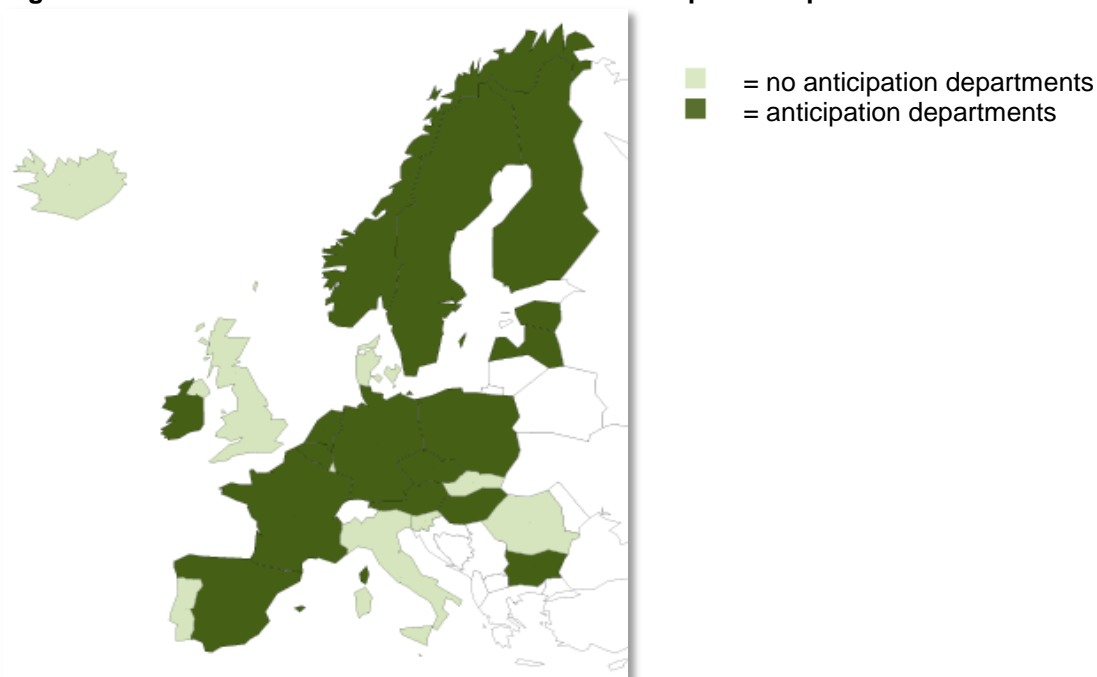
Data source: Survey among European PES Source of map: Norwegian Mapping Authority

However, the implications of this result are not straightforward. Some PES may have replied 'no', indicating that they have no organisational unit dedicated to anticipation. Nevertheless, they may have several staff dedicated to such activities. In other words, some PES may have a well-developed analytical capacity for anticipatory activities even if they have no organisational unit dedicated specifically to such activities. As the French PES observes:

> *It is difficult to evaluate the number of staff in full-time employment who is working on identifying and anticipating job requirements. This is one part of the work of operational* services *and structure services, in the field of forecasting platforms, survey services, forecasting services and statistical services.*

Hence, the map in Figure 2-3 should be interpreted more as an indication of organisational/strategic focus than as a reflection of actual capacity. In many countries other evidence suggests that there is a considerable amount of work going on in this area, even though PES respondents may not be aware of it.

In order to get a clearer picture of their in-house capacity, we asked the PES to assess their own capacity for anticipation of skill needs and skill supply at the national and at the regional/local level. The results are shown in the maps in Figure 2-4.

Figure 2-4: PES' assessment of their own anticipatory capacity at national (left) and regional level (right)

■ = incomplete anticipatory capacity
■ = fair anticipatory capacity
■ = good anticipatory capacity
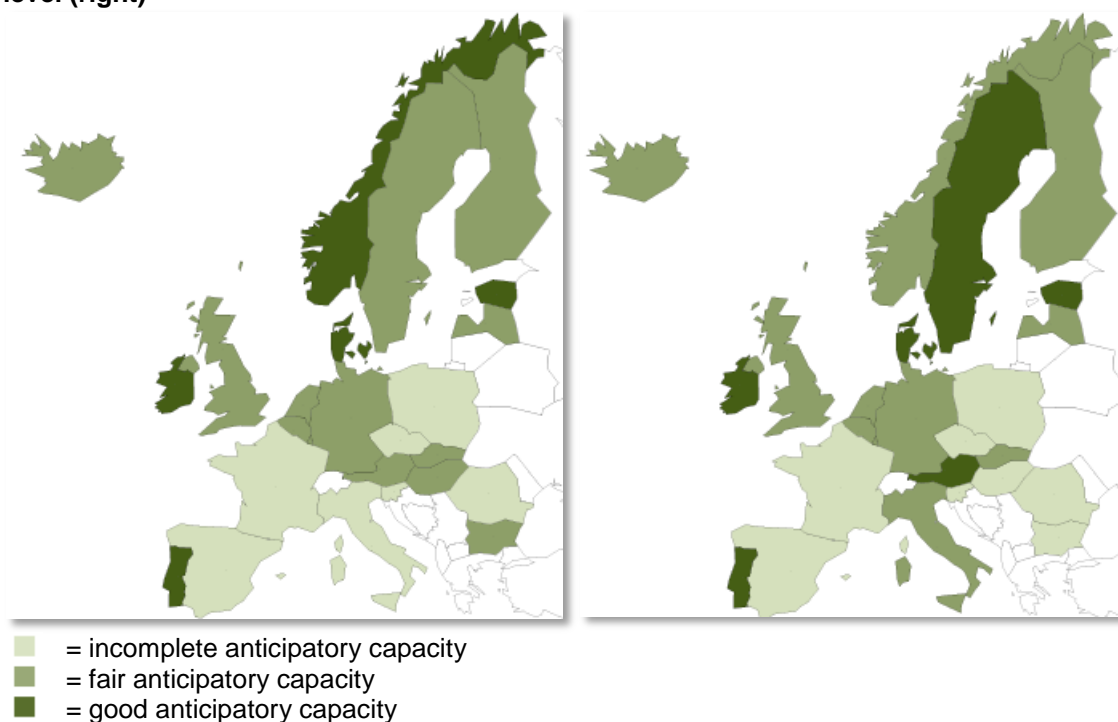
Data source: Survey among European PES Source of map: Norwegian Mapping Authority

We see that two PES (Denmark, Portugal) that do not have 'anticipation departments' actually assess their own capacity for anticipation as 'good'. Six PES (Iceland, Liechtenstein, Luxemburg, Malta, Slovakia, United Kingdom), which do not have 'anticipation departments', also rate their capacity as 'fair'.

Conversely, in Romania and Slovenia, the lack of an 'anticipation department' seems a valid reflection of the PES' anticipatory capacity, as these PES rate their capacity as 'incomplete' at national as well as regional/local level.

Finally, a few PES (Czech Republic, France, Poland and Spain/Catalonia) seem to have adequate organisational focus on anticipation; yet, they still lack capacity in the organisation. These PES have 'anticipation departments', but still rate their anticipation capacity as 'incomplete'. It may be useful to recall that the French and Polish PES both have a lower rate of PES staff to labour force than average, which may explain their apparent lack of ability to transform organisational focus into capacity.

Again it is important to emphasise that the focus here is on the perception of the respondent, which may not always reflect the reality of what is available in the country concerned. This may be a function of the size of the country, with PES respondents in smaller countries being more likely to be aware of activities outside their immediate departments, whereas in larger countries there is a greater danger of people working within "silos" with only limited communication across departmental and other institutional boundaries.

What would improve the situation

We asked the PES what could improve their anticipatory capacity. Their suggestions can be divided into three quite well defined categories:

Spend more money and employ better staff
A number of PES (HU, MT, NO, BG, ES (Catalonia), SI, and LI) point to a general scarcity of resources and competences in the PES to manage and carry out the type of tasks necessary for anticipation.

We need better methods and tools
A number of PES point to methodological issues as the main source of improvement. Both the Dutch and the Polish PES observe that forecasting could be improved by including in their forecasting and qualitative analyses a number of factors that are not presently taken into account, such as economic factors, demography and technological development (PL), sectoral and geographical specificities (both) and data on educational levels (NL).

The Swedish PES finds that the terminology and concepts used in anticipation are at odds with the realities of the labour market. They specifically point to the standard occupational classifications as a barrier to understanding future skill needs. According to the Swedish PES a terminology focused on individual competences rather than occupations and formal qualifications would contribute to a more efficient match. However, it important to recognise that while standard occupational classification may have their limitations, they also lie at the heart of any systematic attempt to classify and measure skill needs (as the US O*NET system demonstrates so well).

Organisation and cooperation should underpin forward-looking approaches
The Finnish PES observes that anticipation could be improved by ensuring that the anticipation mechanisms become more closely linked into decision-making processes. They point out that in spite of the PES having access to abundant amounts of data it is difficult to translate these data into relevant information in a rapidly changing labour market. Improvements would require that the relevant partners were involved more closely in the analysis of data so that the planning and decision-making processes could make better use of the data.

The Latvian PES calls for improved cooperation with social partners and other stakeholders with a view to forecasting demand for specific skills, both at regional and cross-sectoral level. The Czech PES is planning a permanent system for the regular processing of forecasts of skill needs. They expect to build this system and test it within the framework of forthcoming projects. The aim is to establish a regular, periodically repeated procedure for analysis and forecast processing and to make institutional, organisational and financial arrangements for this procedure.

It is worth emphasising that much of this type of development has depended on the European Structural funds. Future development and sustainability may be called into question if this source of funding were to be withdrawn.

2.6. *Which tools do PES themselves consider most important*

As already mentioned, anticipation at the level of the PES can be viewed as involving two steps:

- ▪ Procurement or acquisition, analysis and presentation of forward-looking labour market information;

- ▪ Utilisation of labour market information in the PES' activities to improve the functioning of the labour market.

In a similar vein, Thuy, Hansen and Price (2001) point out that while most PES publish information on manpower supply and demand in geographical regions or areas, one of the key indicators that distinguish the more advanced from the less advanced PES is their capacity to use labour market information from a variety of sources to analyse trends in the labour market and to orient employment policy and programmes accordingly.

We asked the PES respondents which tools they consider the most important in relation to their anticipatory activities. The question was open, allowing the PES respondent to mention very specific data collection tools as well as methodological approaches. Hence, the answers to this question also give a clue to the types and sources of information that the different PES consider as the most important components of an anticipation strategy. The answers are shown in Table 2-2 below. Again it should be emphasised that this represents the perceptions of individual PES respondents and should not necessarily be taken as indicative of the general position in that country. In a number of cases, it is apparent that there is significant forecasting activity going on, much of which can be argued represents "good practice", but which is not mentioned here (e.g. in the Netherlands and the UK, to pick just two examples).

Table 2-2: Tools that PES respondents assess as the most important for the anticipation of skill needs

PES	Tools considered most important
Austria	Regular macro-analyses and company surveys, plus intensive informal contacts at the local level.
Belgium, Actiris	Surveys; Employment Observatory in Brussels; Quality and Method
Belgium, Forem	Ecosystems: Surveys carried out by a research institute. This is a "snapshot" of a sector of activities (12 in total) showing the trends in terms of management of human resources. 800 employers were interviewed. The shortage action group (linked to the economic redeployment plan of the Forem).
Bulgaria	Sociological studies.
Czech Republic	The anticipation of skill needs has not yet been configured in the Czech Republic as a continuous, systemically overseen process. A quantitative model for the processing of sector-based employment projections, a quantitative model to anticipate the economy's skill needs at national level and the production of national and regional sector/foresight studies are all tools that are more or less ready for application. The regular preparation of forecasts and the further development of methodological tools should feature in upcoming projects.
Denmark	We have developed a labour market balance that combines different data on demand and supply of labour to assess the job opportunities for 1,100 different occupations.
Estonia	Data concerning the vacancies, which we mediate, and the professions of the registered unemployed persons (information about compatibility, where there are shortcomings or a surplus).
Finland	The national employer survey, carried out by the Statistics Finland, four times a year. At local level the so-called KOTTI-method, phone interviews with large number of employers in order to investigate their training and recruitment needs.
France	Results of work carried out within an inter-institutional framework (Strategic Analysis Council): Forecast for occupations and qualifications in which the main administrations

28

PES	Tools considered most important
	and national operators in the employment, training, education and statistics sectors take part, as well as representatives of social partners, industrial sectors, regional authorities, the European Commission etc.
Germany	'The job market broken down into professions' (Arbeitsmarkt im Spiegel der Berufe) and monthly statistics 'Unemployed people and vacant positions reported by agencies and professions' (Arbeitslose und gemeldete Stellen nach Agenturen und Berufen).
Hungary	Annual forecast surveys
Ireland	Annual skill bulletins
Italy	The use of surveys and studies carried out by other bodies
Latvia	Use of employer survey data.
Liechtenstein	Constant exchange of information with employers.
Malta	To survey employers directly for micro data and to interview constituted bodies (unions, employer organisations, etc) for an overall macro approach.
Netherlands	Testing of jobseekers at the Competencies Testing Centres. The design of the Competencies Atlas
Norway	Data from PES' own database; information from PES at the regional level; PES enterprise survey
Slovakia	Training, retraining.
Slovenia	The Employment Service of Slovenia uses information about vacancies which, due to the mandatory notification of vacancies, is complete and enables a pretty accurate insight to be gained into what is going on currently on the demand side. Another tool is the questionnaire about annual requirements for workers completed by employers, which we carry out annually (see the description set out in earlier responses). Obviously, in order for forecasts about short-term types of imbalance on the labour market to be reliable, it is also very important to have information about how many people are registered as unemployed (supply side). Also, the systematic collation of notifications about surplus workers made during the course of the year by employers for the regional offices of the Employment Service of Slovenia contributes, not least to our being able to monitor and predict short-term phenomena. (These notifications are made by employers about how many workers are soon due to become surplus with regard to requirements without being eligible for redeployment; in other words, redundancies planned by the employer.)
Spain – Catalonia	Analysing statistics, studying surveys.
Sweden	Occupational barometer and occupational compass. Using an interview questionnaire to employers. Finally a lot of figures.
United Kingdom	Feedback loops from employers about abilities/capabilities of customers we send to them to improve service delivery.

The table shows great variety in the *complexity* of tools that the PES mention. The tools range from constant exchange of information with employers (Liechtenstein) and intensive informal contacts at the local level (Austria) to more complex tools such as the Danish Labour Market Balance, which gives a snapshot of supply and demand within 1,100 occupations, the Occupational Barometer of Sweden, or the Competencies Atlas of the Netherlands.

There is also considerable variation when it comes to the *level* of drivers in the labour market addressed by the PES. The table indicates that focus is mainly on the meso- and micro levels, whereas the implications of megatrends for the labour markets are addressed by fewer PES.

Furthermore, the table indicates that the most important information about the *demand side* is frequently acquired through employer surveys, i.e. the tool most frequently referred to by the PES. Thus, nine PES mentioned employer surveys among their most important tools. In the following we shall see that among the tools that the PES were presented with, employer surveys stand out as *the* tool used by almost all PES. Given the well-recognised difficulties with

employers, surveys for the purpose of anticipation, this does raise some concerns (for discussion see Cedefop (2010) and Wilson (2009)).

The most important information about the *supply side* is acquired by analysing the information about the unemployed that is collected when they first register. In one instance (FR), this information is supplemented by information from the education sector. Only the Dutch PES mentions a supply-side oriented tool besides this, i.e. testing of jobseekers at the Competences Testing Centres and design of a 'Competences Atlas'.

Concerning the *time horizon* for anticipation, most PES emphasise tools that produce estimates of skill needs and supply in the short term, while fewer focus on future skill needs and supply in the long term.

While sometimes difficult to assess[15], the list of approaches and tools seems to indicate that many PES are still very focused on the provision of labour market information that facilitates short-term matching in a very direct and operational way, and not so much on the provision of information that may help stakeholders make relevant choices for the future.

Finally it is worth emphasising again that in a number of cases there appear to be gaps between what the respondents think is available in their country and work that is funded by other government departments and agencies.

2.7. PES' cooperation with employers

As indicated in section 3.6, most PES emphasise the importance of maintaining a close dialogue with employers. Therefore, it is relevant to assess the actual cooperation between PES and employers at the regional and local level. The findings of the survey point to a tentative conclusion showing that whereas most PES are in frequent contact with employers, the dialogue is mainly related to current vacancies or to restructuring and mass redundancies. Moreover, the dialogue does not appear to be very systematic and in most cases it involves only a small number of employers.

Figure 2-5 shows that with a few exceptions (EE, IE, NO and RO), European PES cooperate regularly with employers at the regional or local level. However, most PES believe that there is still scope for improving the scope and content of that cooperation. Out of 29 PES, only six answer that there is no scope for improvement, while the remaining PES[16] all consider that improvements are possible.

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[15] For instance, phrases like 'Analysing statistics, studying surveys' (ES) or 'Sociological studies' (BG) are rather generic and it is difficult to assess their real content.

[16] Except Lithuania and Cyprus, neither of which have answered this question.

Figure 2-5: Frequency of PES' cooperation with individual employers

- Never
- Rarely
- **Sometimes**
- Regularly

Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

To be able to assess whether the contact with employers is sufficiently broad to give the PES a valid knowledge base about trends in the labour market, we asked the PES to estimate the share of employers that they are in direct contact with in the course of a year (cf. Table 2-3, next page)

More than 40% of the PES answer that they are in contact with fewer than 20% of employers, and three quarters of the PES state that they are in contact with fewer than 40% of employers. Only three PES say that they are in contact with more than 80% of the employers during a year. These figures do not necessarily present a problem in a situation where a small number of very large employers hold the majority of the jobs. However, they do raise the question of bias in the PES' knowledge base

Table 2-3: The approximate share of employers involved in cooperation with PES during a year

Share of employers	Number of PES that cooperate with this share of employers	Percent	Cumulative Percent
0-19%	13	43,3	43,3
20-39%	10	33,3	76,7
40-59%	4	13,3	90,0
60-79%	0	0,0	90,0
80-100%	3	10,0	100,0
Total	30	100,0	

Consequently, if a PES is only in contact with fewer than 20% of the employers, it may fail to pick up signals about emerging sectors, technologies, new business models or other types of innovations, which will create a need for new types of competences.

PES representatives whom we talked to suggest a bias towards the manufacturing industries, and historically, PES have indeed been more oriented toward the placing of blue-collar workers (Thuy et. al. 2001, Freedland et. al. 2007) and less toward services and the knowledge intensive sectors. If this bias persists, it will present a serious barrier for PES to become a key player in the efforts to create smart, sustainable growth, as this growth is expected to take place mainly in the knowledge intensive sectors, including the knowledge intensive manufacturing industries.

Scope and content of PES' cooperation with individual employers

First, it is important to remember that high-ranking PES management and staff answered the survey questionnaire, and in most cases the respondents were at national level (and in a few cases[17] at regional level). Such respondents cannot be expected to be fully informed about the nature and frequency of PES-employer cooperation at the lower levels of their organisations. The level of detail in the replies to this question from the PES varies considerably. Nevertheless, some common observations can be made:

- The answers indicate that the *main* rationale for PES cooperation with individual employers is to exchange information about current or imminent vacancies, training needs, and lay-offs/redundancies (DE, AT, UK, LU, BE (Actiris), LV, FI, IS, MT, SE, BG, HU, FR, LI, SI).
- In some cases, the dialogue includes information from PES about the opportunities that active labour market policies offer to the

Good practices, cooperation with individual employers

Support to employers' identification of future demand for employment and skills (Germany, Poland, and Sweden).

Systematic dialogue includes information from the employer about future needs for qualifications (Austria).

Advice to employers on training of employees and the impacts of demographic development.independently of the process of filling vacancies (Germany)

Formalised agreements between the PES and large networked companies and industrial sectors concerning recruitment support (France).

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[17] Belgium and Spain.

company (e.g. subsidized placement, in-company training of disabled employees or employees with learning difficulties) (SK, IT, LV, DK, SE).

▪ PL, NL, DK and SI mentioned other forms of collaboration (cooperation with temporary work agencies, sector arrangements, organisation of job fairs, establishment of mobility centres in companies, information about specific subsidies for job protection).

The Polish PES emphasises that in the current economic climate, employers are unwilling to predict their long-term needs with regard to of employees.

2.8. PES' cooperation with employers' organisations

Whereas cooperation with individual employers is most suited to providing information at the micro level, it is challenging to aggregate this information to obtain a more complete picture of what takes place at the meso and macro levels. Employers' organisations[18] are important sources of meso level information about, e.g., sector dynamics and emerging skill needs within sectors and industries. Therefore, we asked the PES to provide information about their cooperation with these bodies.

Figure 2-6 shows the regularity of contact. The figure indicates that the number of countries that replied that they 'regularly' cooperate with employers' organisations are fewer than is the case where individual employers are concerned while the number that answer 'sometimes' or 'rarely' is higher.

We asked the respondents to describe the content and scope of the cooperation. There is considerable variation in their answers:

▪ In a number of countries the dialogue appears to be quite informal, strategic and wide-ranging (Germany: 'General discussion with employer associations, at all levels, of various questions regarding cooperation, including the development of qualification requirements'; the Czech Republic: 'The state of play and expected developments in the sector' – other examples include IS, LI, MT, SE).

▪ In a few countries, PES participate in formalised partnerships with employer organisations (e.g. sector organisations, chambers of commerce or similar) (PL, SI).

▪ Planning and implementation of active labour market measures is a main issue of cooperation in FI and SK.

▪ A number of PES (AT, LU, UK, SI) discuss qualification requirements or conduct analyses of skill requirement with employer organisations, while others (BE, Walloon region, LV, DK, FI, BG) collaborate with sector and professional organisations on projections of the number of people needed for each sector in the future.

▪ In Italy, the subject of cooperation goes beyond immediate skill needs, and the objective of cooperation is to analyse the sector or corporate dynamics driving the demand for skills and competences.

▪ Finally, the Hungarian PES cooperates with employer organisations on the design and development of employer surveys and forecasts.

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[18] The broad term 'Employer organisations' is used in this context to characterise all types of sector and industry bodies (regional, national or transnational)

Figure 2-6: Frequency of PES cooperation with employers' organisations

Never
Rarely
Sometimes
Regularly
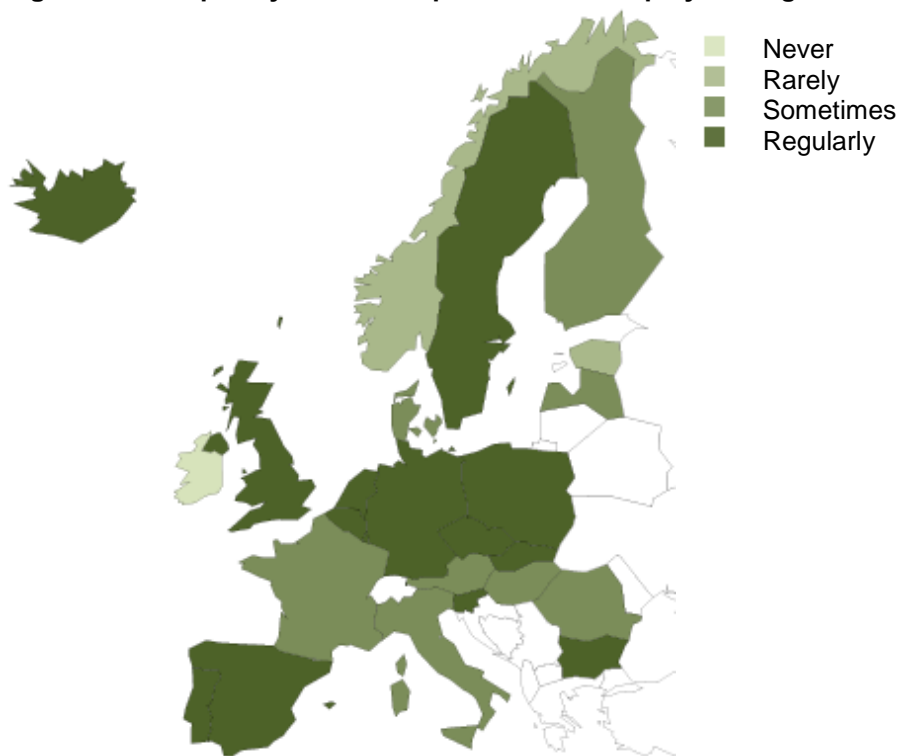
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

PES suggestions for improvement of the dialogue

The most frequent suggestion for how PES could improve their dialogue with employers to improve their knowledge base about skill demand is that the dialogue should be more *frequent, consistent,* and *systematic*. One PES also suggests that the cooperation should be *deeper* for the PES to gain a more comprehensive understanding of unique competence demands in different occupations (SE). The Polish PES presents a different perspective, i.e. employers could be motivated to provide more accurate information if certain bureaucratic barriers were removed. In the same vein, the Maltese PES calls for 'employer-friendly' instruments and methods.

The Bulgarian PES observes that the interface with employers may be too narrow and suggests that a large number of employers representing different sizes of enterprises as well as different sectors and industries should be contacted to gain more precise information. The Finnish PES suggests that the social partners should be more involved in the anticipation processes.

Finally three PES (HU, FR, SI) noted that the most important improvement could come from improved anticipation tools. France calls for a better distribution of data and expertise, and the Slovenian PES suggests that the first step should be to develop medium- to long-term forecasts. Of course all these suggestions imply additional costs.

2.9. PES' anticipatory services to jobseekers

In this section we address PES' anticipatory services to jobseekers, which include:

- PES' use of their insights into imminent and future skill needs in relation to individual skill assessments;
- Systems and methods for recognition by PES of skills acquired outside the formal education system; and
- PES' use of knowledge on future skill needs in preventive services in relation to potential restructuring.

Figure 2-6 shows the results from each country. The figure shows that with the exception of the Hungarian PES, all PES deliver anticipatory service to jobseekers. Twenty-four PES combine labour market information on future skill needs and individual skill assessments, and 22 PES recognise skills acquired outside the formal education system. Austria, Germany, Romania and Sweden reported that they plan to introduce assessment methods that recognise skills acquired outside the formal education system.

- Eighteen PES replied that they use information about future skill needs when delivering employment services to employees who have been made redundant or are at risk of redundancy. Hence, public employment service tend to be slightly more 'anticipatory' when dealing with unemployed persons than when it comes to preventive employment services related to restructuring. This is probably a reflection of the fact that employment services related to restructuring are often more urgent and controversial than 'normal' employment services.

Figure 2-7: Anticipatory services

Combines individual skill assessments with labour market information.

Uses skill assessments that recognise skills acquired outside the formal educational system.

Uses knowledge about future skill needs in provision of preventive services to employed persons in sectors at risk of restructuring.

Data source: Survey among European PES. Source of map: Norwegian Mapping Authority.
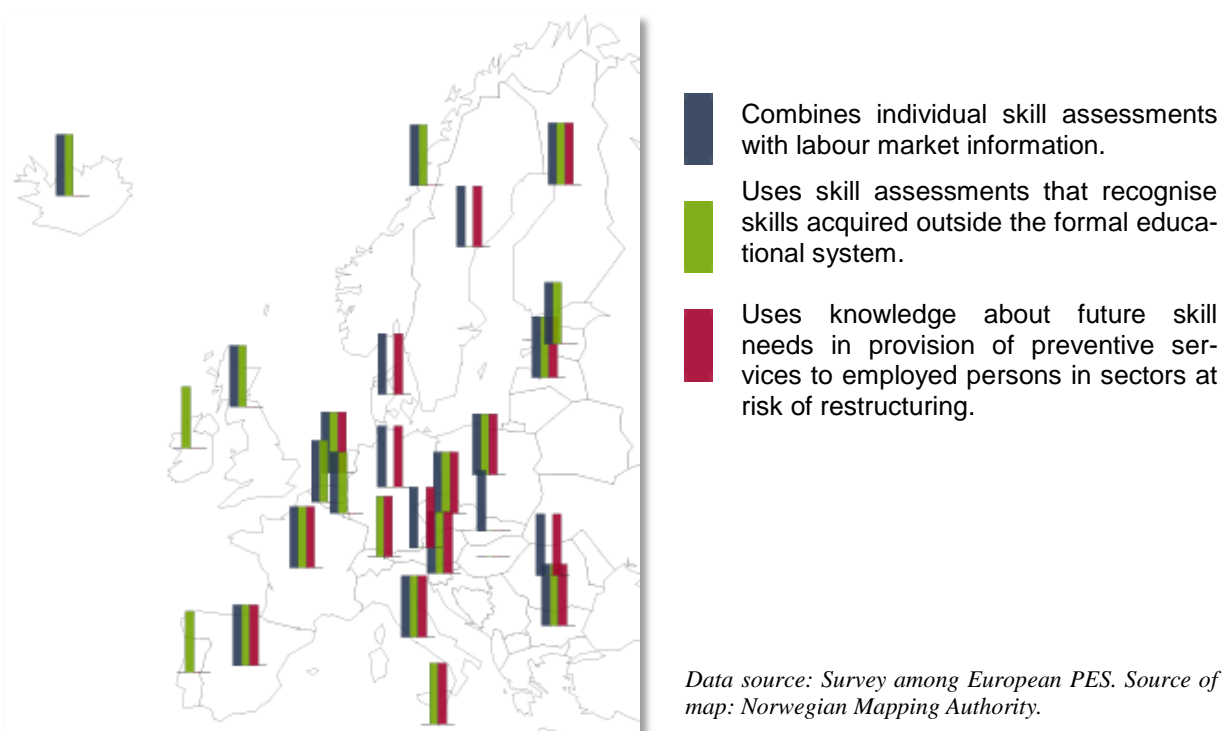
The use of information about future skill needs in services to unemployed jobseekers

In the survey, the PES were invited to describe in more detail how they use forward-looking labour market information to ensure that jobseekers are referred to relevant training and education measures.

PES use own data to improve information about future skill needs from employers

- Several PES explain that they combine information from employer surveys with analyses of employment rates of unemployed persons who have participated in training courses (Belgium/Actiris, Bulgaria, Czech Republic, Estonia, Latvia, Poland, Denmark, Sweden).

Information about future skill needs is used in a wide array of services for unemployed people:

- The following activities involve the use of labour market information: screening, interviewing, matching, guidance, competence/skills testing, skill assessment, provision of training offers, and development of action plans.

Labour market information is used in career guidance and placement:

- In Denmark, advisors use the results of forecasts of supply and demand of labour to identify good job opportunities.
- In Germany, forecast data are used in career advice for jobseekers taking into account the expected demand for certain professions in the job market.
- In Italy, forecast data are used as a general basis for guidance activities.
- In Poland, information on the current situation in the local labour market is combined with services provided by EURES advisors. Reports on deficit and surplus professions are one of the main sources of information exchanged within the EURES network, and these sources are considered vital when exchanging information about job vacancies in EEA countries.

Information about future skill needs is used to select relevant training measures

- In Germany, placement officers, advisors and customers use the database 'Berufenet' (Vocation Net) and/or the Regional Job Market Monitor, RAMON.
- The Swedish PES has developed the so-called 'Occupational Compass', which accommodates information on the current situation for each occupation, a prediction of the situation one year ahead *and* a long-term outlook for the occupation in question.
- The Polish PES combines individual skill assessments and training offers with information concerning the local labour market such as planned investments or redundancies. Estonia uses long-term forecasts of labour demand published by the Ministry of Economic Affairs and Communications for setting up training for the unemployed.

> **Berufenet (Occupational Net) (Germany)**
>
> The German 'Berufenet' is similar to the American system O*Net. Berufenet contains extensive information on 3,100 occupations. The information is updated regularly. Time series of relevant labour market indicators are shown for individual jobs. Berufenet hence makes it possible to identify jobs with an expected positive employment trend. The system is also used to generate rough forecasts (e.g. the need for replacement due to retirement) without having to resort to complex forecasting procedures. Job profiles can be drawn up which highlight related jobs and the associated training requirements. Related jobs constitute the basis for matching, consideration of shortfalls and planning educational objectives to promote more flexible professional mobility.

- The Czech PES explains that they use analyses and forecasting of skill needs when planning targeted active employment programmes.
- In Romania, labour market information is used by regional career information and advice centres.

The use of information about future skill needs in preventive services to employees at risk of unemployment

As mentioned above, 18 PES use knowledge about future skill needs in the provision of preventive services to employed persons in sectors at risk of restructuring. These services aim at ensuring timely job-to-job transitions before the employees, who have been made redundant, become unemployed. Several PES explain that these services entail giving advice and guidance to persons at risk of becoming unemployed due to company restructuring or closure. In addition, most of the PES provide training themselves or refer employees to training measures and/or placement (e.g. Austria, Belgium/Forem, Belgium/VDAB, Bulgaria, Spain, Finland, France, Italy, Liechtenstein, Malta, Germany, and Slovenia).

- In Slovenia, regional employment officers visit employers with large numbers of surplus workers and present the workers with opportunities for re-employment, training and re-training and self-employment, along with extensive information on the range of 'ordinary' employment services offered by PES. These visits take place before the employment contracts with surplus workers expire.
- The Czech PES uses information about future skill needs to develop employment programmes targeted at sectors and occupations with forecast future needs and individual action plans for employees at risk.
- The Danish, Finnish, and Polish PES do not target the individual employees. Instead they offer support to employers who are planning or implementing redundancies to help equip the companies to provide relevant training to employees at risk of redundancy or about to be made redundant. In Poland, career advisors, employment agents and labour market specialists deliver the service, which makes use of research findings, reports and various analyses, to employers.
- The Finnish PES employs a 'transition security model' in which transition security advisors work in companies at risk of restructuring. The transition security advisors actively seek to find new training and employment opportunities for the employees at risk of unemployment.

2.10. PES' cooperation with other organisations

This section analyses the cooperation between PES and other organisations concerning anticipation of skill needs and skill supply. It also looks into the methods that PES use to assist providers of training and education to ensure that their provision of training and education is in keeping with labour market demand.

Cooperation with education and training providers to anticipate skill needs

Providers of education and training are an important source of information, not only about future skill supply, but also because some of the providers (particularly universities and technical colleges, but also other types of educational institutions) have access to knowledge about trends shaping the future labour market.

Figure 2-8: Frequency of PES cooperation with education and training providers concerning anticipation
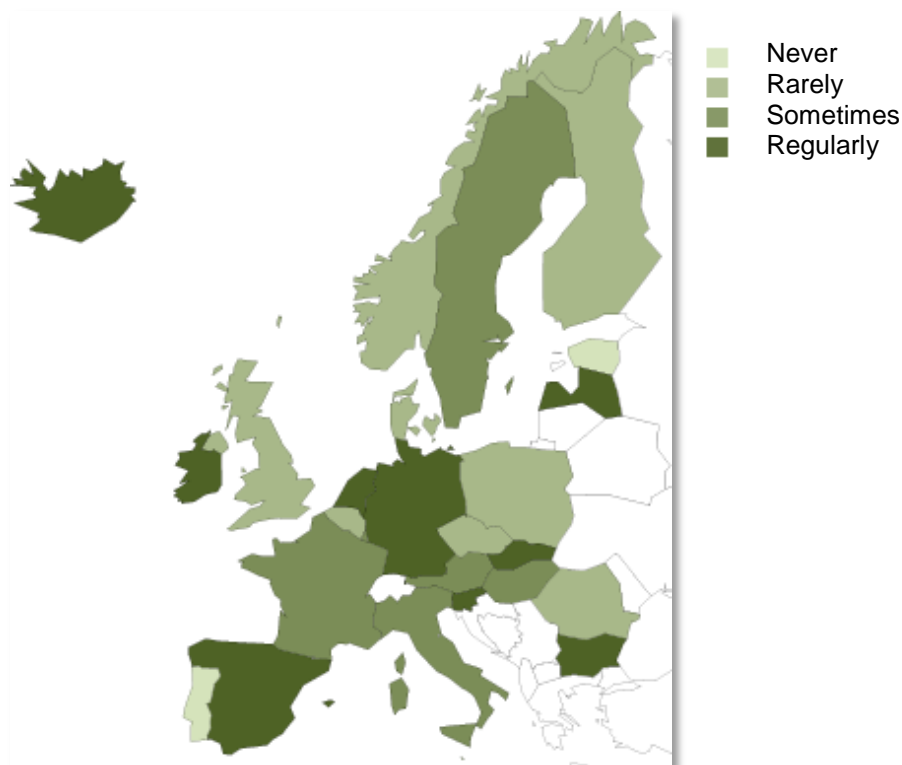
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

Whereas most PES cooperate with employers, the cooperation with training providers is a more mixed picture as shown in Figure 2-8. Ten PES reported that they cooperate with education and training providers on a regular basis on anticipating skill needs, and seven PES do so sometimes. Ten other PES report that such cooperation only takes place rarely, and the Estonian and the Portuguese PES never cooperate with education and training providers about issues pertaining to anticipation.

The cooperation between PES and education and training providers typically concern:

Studies concerning the labour market and skill supply/demand
- Bottleneck occupations, employer's requirements for specific skills (Belgium/VDAB, Germany, Italy, Latvia, Sweden).

Training measures according to skill needs
- The following PES explicitly mentioned such training measures: Germany, France, Iceland, Italy, Slovakia, Latvia, Slovenia and Slovakia.
- The Dutch PES cooperates with education and training providers on internships.
- The German PES is developing e-learning education and training offers in cooperation with education and training institutions.

PES use of knowledge about future skill needs to influence the supply of training and education

In addition to being a source of information about future skill supply, providers of education and training are also labour market actors. Their main role is to ensure that future employees

have the right knowledge, skills and competences so that they are employable and able to contribute to the development of the economy. In addition, training providers play a role in providing courses and retraining to unemployed people.

Figure 2-9: PES that use labour market information to influence training and education
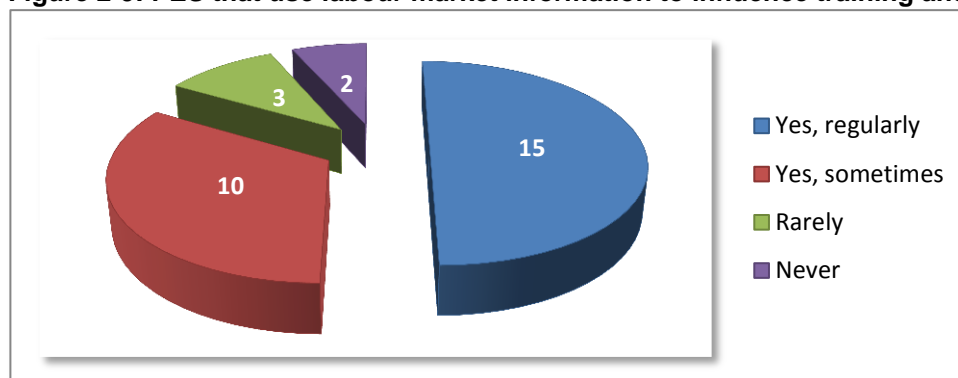
Twenty-four out of the 29 PES that responded to the survey reported that they use information about future skill needs in the labour market to influence the supply of education and training. However, even among those who do so, there is large variation in their approaches: from the very structured (e.g. in Germany where local employment agencies cooperate closely with the social partners, who are also responsible for vocational education), to the less systematic (e.g. in Italy, where the PES links up 'in a more or less structured manner' with the professional training system).

The survey reveals that the PES have different approaches to the cooperation with education authorities and providers with a view to influencing the supply of training and education. However, it is evident that focus is mainly on vocational education and training and that fewer PES are concerned with influencing higher education qualifications.

PES use information about future skill needs in their own provision of training as part of the active labour market policy

- A number of PES remark that information about future skill needs is incorporated in tenders for training offers (Austria, Czech Republic, Estonia, Liechtenstein, Malta, Norway, Spain, and Sweden).
- The Slovenian PES writes: 'We have a direct impact, however, above all through the provision of information and advice in relation to lifelong career advice (including with content we manage on the Internet) and through educational and training programmes that are a part of the active employment policy. Through these, after all, we have an impact on the organisers of these programmes (whether in the public or private sectors), so that they tailor what they are offering to the needs of the labour market.'
- The Walloon PES, Forem, has developed tailored training courses in energy performance of buildings due to an expected increase in demand for this type of skills.

PES cooperate with social partners involved in the development of vocational education and training

- The German PES has institutionalised its cooperation by *involving* the social partners in administrative committees at local level (e.g. Employment Alliance (Bündnis für Arbeit)).

- In Latvia, the social partners receive regular information on labour market developments, including forecasts for various industries.
- The British PES cooperates with the Sector Skills Councils, which are employer-based coalitions, shaping training supply and identification of skill needs.

Some PES employ a strategy that targets a wide range of education stakeholders

- In Poland, information about skill needs is used by directors and employees of employment offices in liaison with training institutions, the education authority, lecturers at universities and colleges and school headmasters and headmistresses
- In Finland, joint planning groups have been set up with representatives from the training community.
- In the Netherlands, the PES cooperates with municipalities, training institutions, knowledge centres for vocational training and temporary work agencies.

PES provide labour market information to education authorities

- In some countries, PES cooperation with education institutions mainly concerns national level cooperation between the Ministry of Employment and the Ministry of Education (e.g. Hungary, Luxemburg).
- The French PES uses a multilevel approach. An Occupations and Qualifications Forecasting Partnership has been set up at national level. There is formalised cooperation at the level of sectors of industry. Finally, cooperation takes place within the framework of employment/training observatories at the regional level.

Cooperation with other employment service providers to anticipate skill needs

As we have seen, the PES usually handles only a part share of vacancies in most European countries. Temporary work agencies and specialised employment service providers, e.g. in the labour markets for persons with a higher education, are in contact with employers that PES do not get to be in contact with. Therefore, such agencies may have access to information about trends in demand and supply of potential interest to the PES as such trends often 'trickle down' through the occupations. For example, developments in the use of advanced robotics may not be immediately relevant to the PES' unemployed clients today, but future skilled workers will need skills to work alongside robots.

Whereas we can assume that most or all PES cooperate with other providers of employment services (e.g. providers of training or counselling services) in their day-to-day service delivery, considerably fewer cooperate with other employment service providers in anticipation of skill needs, as Figure 2-10 on the next page illustrates.

Figure 2-10: PES that cooperate with other employment services about anticipation
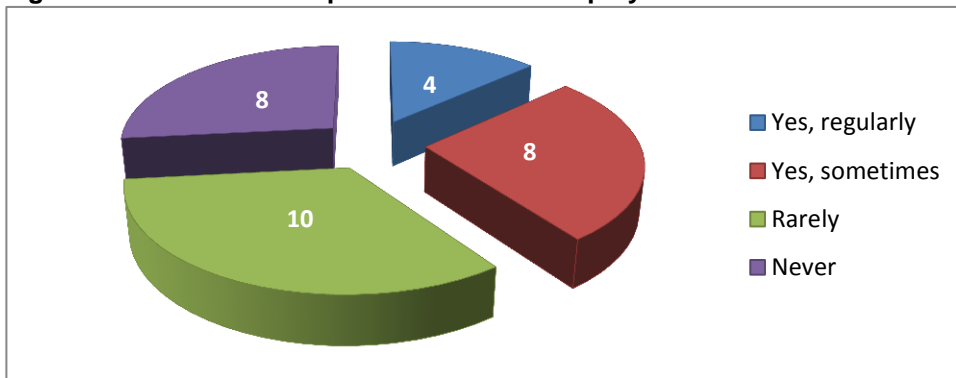
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

The cooperation with other employment service providers concern rather diverse issues:

- Recruitment of workforce via the EURES network (Bulgaria);
- Influencing the vacant positions of private job market service providers via the virtual job market portal of the Federal Employment Agency (Germany);
- Preparing training programmes (France);
- Meetings, projects and consultations concerning various labour market issues (Netherlands, Italy); and
- Providing ordinary and specialised employment services related to skill needs.

Cooperation with trade unions to anticipate skill needs

Figure 2-11 below shows the frequency of PES cooperation with trade unions and other labour organisations concerning anticipation. Seventeen PES cooperate with labour organisations/unions concerning anticipation of skill needs, ten of which do so regularly. Conversely, five PES say that they never cooperate with trade unions concerning anticipation of skill needs.

The issues with regard to PES cooperation with trade unions mainly concern identification and assessment of skill needs. Most PES remark that trade unions are not addressed separately. However, their views are taken into account insofar as they are represented on boards and in councils where the social partners are represented.

- The Finnish PES reports that it is in regular dialogue with the country's most important trade unions to identify new ways to meet the needs of certain sectors.
- Three PES specifically mentioned that they cooperate with labour organisations/unions to handle corporate restructuring (Denmark, Germany, Italy).

PES' cooperation with research institutes to anticipate skill needs

- Around half of the PES who have responded to the survey reported that they regularly or sometimes cooperate with research institutes to anticipate skill needs (cf. Figure 2-11 below), but only six PES cooperate with research institutes on a regular basis.

Figure 2-11: Frequency of cooperation with trade unions (left) and research institutions (right) concerning anticipation
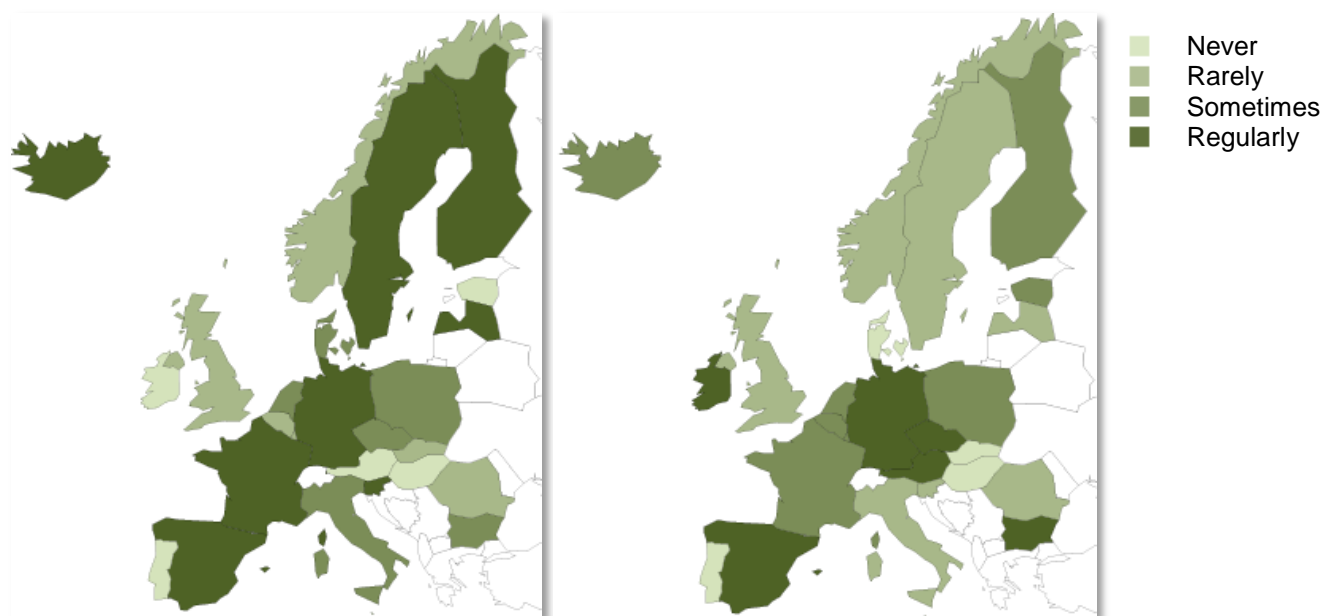
Data source: Survey among European PES Source of map: Norwegian Mapping Authority

The cooperation mainly concerns production of forecasts and other forward-looking studies and development of methodology (Austria, Belgium/Forem, Bulgaria, Czech Republic, Germany, Estonia, Ireland, Luxemburg, Netherlands and Poland).

- In Germany, the Federal Employment Agency maintains its own research institute, which carries out qualitative surveys (company panel) and has established a 'qualification research' field.
- In Bulgaria, there is cooperation within the specific field of labour market needs for skilled labour with specific abilities.

Cooperation with other types of organisations to anticipate skill needs

To enable the PES to deliver a complete description of the networks they use in anticipation, we asked if they cooperate with other types of bodies than those mentioned above.

Four PES regularly cooperate with other organisations and five PES occasionally do so. The Bulgarian and Estonian PES mentioned that they use research material to achieve a more precise specification of occupations in relation to retraining of unemployed and employed people. The German PES replied that it often cooperates with the chambers of trade and industry regarding the certification of partial qualifications.

3. The use of quantitative forecasts

In the context of this study, the term "quantitative forecasts" is used as a generic term for different quantitative methods that produce information on future labour markets. Quantitative forecasts use statistical data about the present and past to estimate future developments and the results of such forecasts are typically presented in tables and/or graphs.

Labour market relevant forecasts range from simple extrapolation of time series of the development of employment in one or a number of occupations to complex models involving demographic and/or econometric modelling.

Manfred Tessaring of Cedefop has summed up the rationale for preparing quantitative forecasts of skill needs like this:

> *'The purpose of a skills forecast is to orient policy-makers - among other things, by warning them of possible undesired results or distortions on the labour market. If they take these warnings seriously and take measures to avoid the predicted distortions, then the forecast will be wrong! But of course this is the intention of every early warning system – to be a "self-destroying prophecy"!* (Interview with Manfred Tessaring, former head of Cedefop's Research and Policy Analysis area, Cedefop Newsletter [Online] http://www.cedefop.europa.eu/en/news/15940.aspx

This highlights its role in helping to guide strategic thinking. Furthermore, the results of forecasts prepared by PES may feed back into the policy process to inform other policy makers and providers of education and training about the situation in the labour market. In the context of the PES, forecast data can also be useful at a more micro level, i.e. for informing guidance or counselling services to jobseekers as well as when having a dialogue about future skill needs with employers.

One factor influencing the quality of labour market forecasts is the empirical foundation on which it is built and the methods used. Simple forecasts built on trend extrapolation assume that growth rates (for example the rate of growth in the employment of a specific occupational group) remain constant. In a labour market context, with complex interdependencies between the business cycle, demographic developments, the supply of skills, technological change, changes in mobility, etc, this type of assumption may deliver results, which can be questioned, particularly when the time horizon exceeds one or two years. However, many of the underlying trends are very robust especially at a broad level.

Customers as well as the producers of forecasts frequently employ more advanced statistical, demographic and/or econometric models to refine such projections. Such models require a set of assumptions about the interrelationship between causes and effect, or in other words, a set of hypotheses about drivers for future skill needs and/or skill supply.

Depending on circumstances, forecast data used by a particular PES may originate from different sources:
- forecasts may be prepared by experts within the PES;
- they may be prepared by external experts on contract to the PES; or

- they may derive from other sources (statistical offices or scholarly research from universities or other research institutions).

3.1. Prevalence of PES' use of quantitative forecast data

The survey of PES has indicated that 17 of the 30 PES regularly use information from labour market forecasts that predict future labour demand and supply, while six PES use such forecasts sometimes, see Figure 3-1.

Figure 3-1: Frequency of European PES' use of forecast data
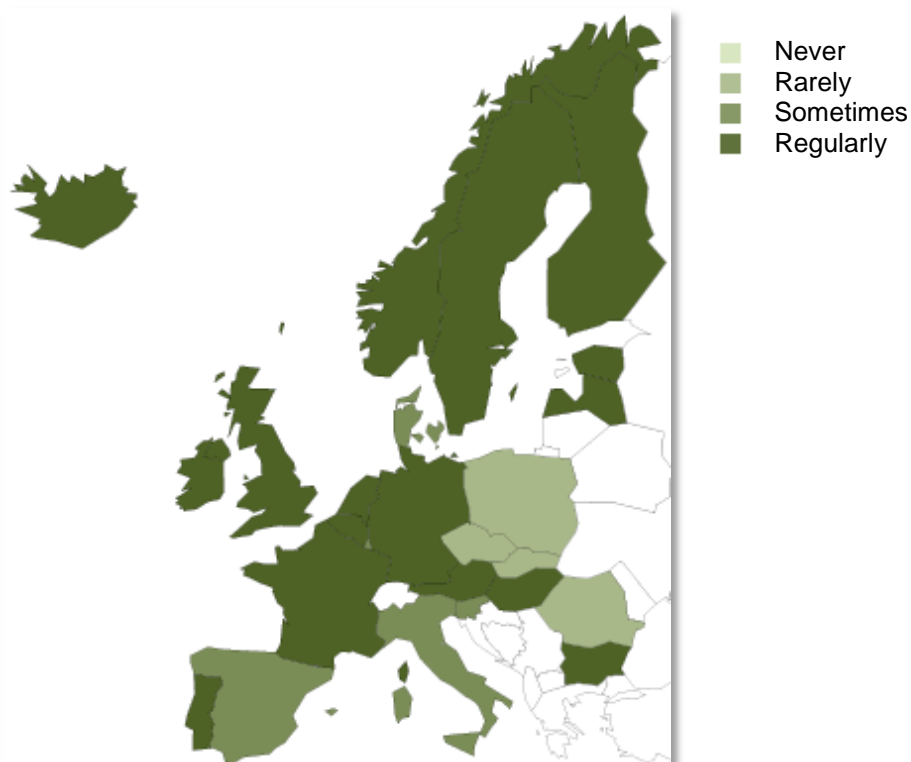
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority.

Only two PES (Liechtenstein and Malta) replied that they never use labour market forecast data. The small size and the nature of the labour markets of these two countries[19] may explain this. The PES in these countries may be able to obtain an overview of the labour market using less costly and time-consuming methods. The PES in the new Member States Poland, the Czech Republic, Romania, and Slovakia state that they rarely use forecast data. This can be explained by their history. In the recent past, i.e. before 1989, statistical data were collected according to different objectives and classifications that do not immediately lend themselves to forecasts of skill needs. Since accession to the EU in 2004 and 2007 respectively[20], they

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[19] Of the 144,094 full-time workers in Malta, some 40,000 of these depend, directly or indirectly, on work in the hospitality sector and in the tourist season there is a large influx of foreign labour (Source: EURES, http://ec.europa.eu/eures/main.jsp?lang=en&acro=news&catId=20&parentId=0&function=focusOn&focusOnId=9601&from Home=Y. Liechtenstein has a population of only about 35.600 (2009. Source: Eurostat) A distinctive feature of the Liechtenstein GDP is that it derives to a considerable extent from the work done by working personnel domiciled abroad. In 2005, 48.1% of people at work in Liechtenstein were cross-border commuters from abroad (Source: Liechtenstein in Figures 2009. [Online] http://www.liechtenstein.li/en/pdf-llv-avw-statistik-fl_in_zahlen_2009.pdf.
[20] The Czech Republic, Poland, and Slovakia joined in 2004, Romania (and Bulgaria) in 2007.

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have started building up their policy implementation structures but still largely rely on funding from the EU.

3.2. Themes and types of forecast data used by the PES

Labour market forecasts, while often producing quite rich and complex results, are usually constrained by a specific focus that determines the variables and indicators that are included in the model used for forecasting. They include:

- geography, e.g. employment trends in a region or local area;
- sector, e.g. changes in employment and skills in a specific sectors or changes in the sectoral composition of employment;
- occupation, e.g. employment trends according to an occupational classification;
- education, e.g. qualification levels in the labour force; or
- demography, e.g. employment or skill characteristics by gender or by age groups in the population.

Most often, labour market forecasts will include more than one of these types of variables. For instance, a forecast of mismatch problems or geographical imbalances between labour and skill supply and demand will need to include educational indicators in addition to occupational indicators.

To be able to establish the focus of PES' use of information from forecasts, we asked the PES about their use of five different types of forecast data on supply of and demand for labour. The results are shown in Table 2-1 below.

Table 3-1: PES use of different types of information from forecasts of labour supply and demand

Supply and demand of labour by... PES	Sector	Rgion/ ge- ograph ial area	Occu- pation	Educa- tion by level	Educa- tion by type	No. of types of forecast data used
Austria	✓	✓	✓	✓	✓	5
Belgium (Actiris)	✓		✓			2
Belgium (VDAB)	✓	✓				2
Belgium (German)		✓	✓	✓		3
Belgium (Forem)	✓	✓	✓	✓	✓	5
Bulgaria	✓	✓	✓	✓	✓	5
Denmark	✓	✓	✓			3
Estonia	✓	✓	✓	✓	✓	5
Finland	✓	✓	✓	✓	✓	5
France	✓	✓	✓			3
Germany	✓	✓	✓	✓	✓	5
Hungary	✓	✓	✓			3
Iceland	✓	✓	✓			3
Ireland	✓	✓	✓	✓	✓	5
Italy	✓	✓	✓			3
Latvia	✓		✓	✓		3
Luxemburg	✓	✓	✓	✓	✓	5
Norway	✓	✓	✓		✓	4
Portugal	✓	✓	✓	✓	✓	5
Spain	✓	✓	✓			3

Supply and demand of labour by... PES	Sector	Rgion/ geographial area	Occupation	Education by level	Education by type	No. of types of forecast data used
Sweden	✓	✓				2
Netherlands	✓	✓	✓	✓	✓	5
United Kingdom	✓	✓				2
Used by…	22	21	20	12	11	

Source: Survey of European PES

The table gives rise to two observations:

▪ If a PES uses data from quantitative forecasts at all, it tends to use a broad array of data that offer different perspectives on the labour market situation. Of the 23 PES that use forecast data, ten PES use data of all the types mentioned, one four of the types, eight three of the types - and none use only one type.

▪ Most PES use data which view the labour market through three perspectives:
  – the sector perspective (22 PES use forecast data with this perspective);
  – the spatial perspective (21); and
  – the occupational perspective (20).

Considerably fewer PES use forecast data with an educational perspective. Such data may concern future demand for or supply of employees with specific educational levels. Twelve PES use this type of data and eleven use information on types of education.

Generally speaking, the use of a broad array of data sources and perspectives is recommended in any anticipation exercise. The more drivers are taken into account, the more robust the results of the forecast, as data triangulation tends to strengthen the validity of results and enhance the credibility and persuasiveness of a research account (Bryman 2010).

Depending on the context, PES may choose to use information directly from forecast work of a more general nature, such as forecasts covering general economic issues (activities in sectors, development of foreign trade etc.); demographic prognoses; and forecasts of the supply of skills (forecast of the number and qualifications of persons leaving the educational sector).

Triangulation of methods and information sources (Latvia)

In order to ensure training of the unemployed takes into account labour market demand and the development of various industries within the economy, a number of linked methods are used:
- analysis of medium-term and short-term forecast data, including data from employer surveys and analysis of the number of vacancies in concrete professions; and
- suggestions and forecasts from social partners (employers, trade unions, educational establishments and local governments).

As the figure indicates, more than half the PES use data from general forecasts. In addition to such general forecasts, most PES use information from forecasts of future labour supply and demand. Such forecasts can focus on different perspectives. Most PES use information on labour supply and demand by sector (21 PES), but forecasts of supply and demand by regions (19 PES) or occupations (19 PES) are used by most PES.

It is less common for the PES to include forecasts with an educational perspective. Such forecasts may serve to inform labour market policy with information about which types and levels of qualifications or competences will be available to create future innovation and growth. As the map in Figure 3-2 indicates, education flow forecasts are only analysed by 10 PES; 14 PES use forecast of labour supply by education types[21]; and only 11 PES include forecasts of the labour supply by educational level.

Only a few PES (Austria, Germany, Slovenia, and Sweden), indicated that they use other types of forecasts or perspectives on forecasts:

- The Austrian PES uses quantitative forecasts of VET students who will be looking for apprenticeships and employers who will offer apprenticeships;
- The German PES uses information from forecasts of salary development. The Swedish PES uses quantitative forecasts of unemployment and labour market measures.

Figure 3-2 shows the extent to which the PES use each type of forecasts.

Figure 3-2: Types of general forecasts used by PES in anticipation

■ Forecasts of economic development

■ Demographic trend forecasts

■ Forecasts of education flows
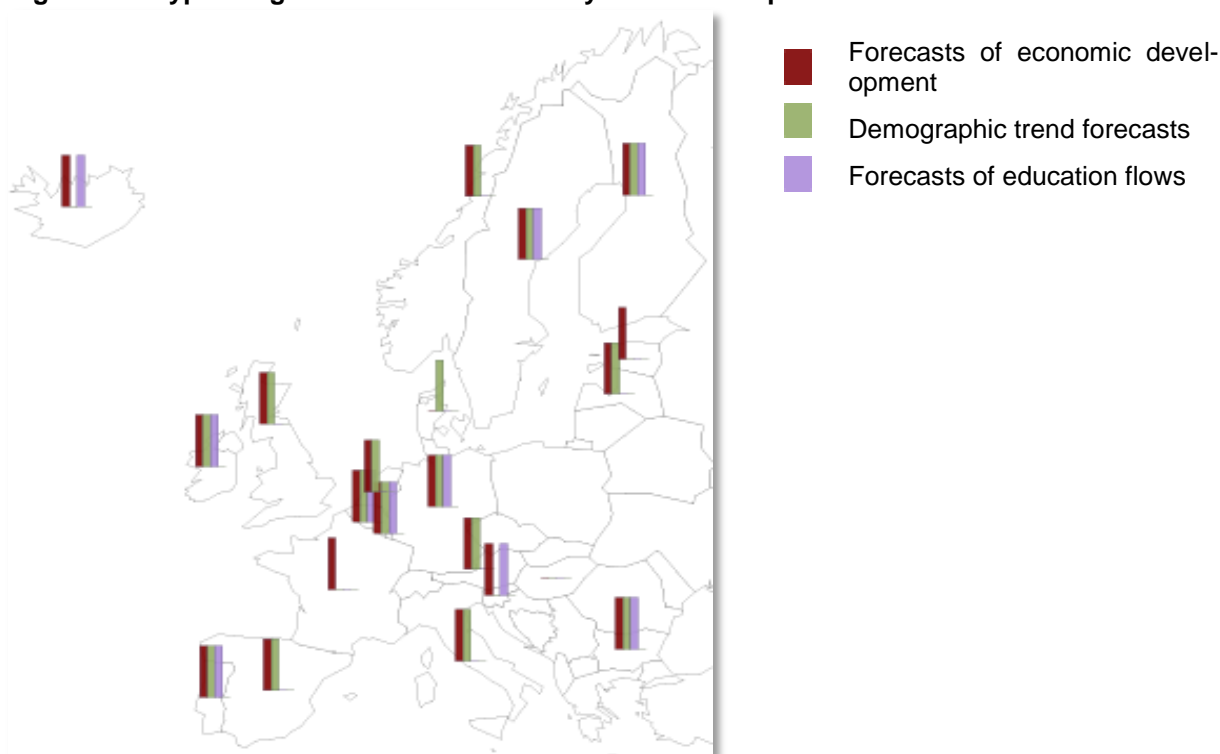
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

3.3.   Who uses data from quantitative forecasts – and for what

Labour market information – including data from forecasts – may be produced as well as used at different tiers of the PES' organisation.

Table 3-2 shows at which PES level activities are based on quantitative forecasts. In most countries quantitative forecasts are used at national (21) and regional levels (20), while fewer

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[21] E.g. general education, technical education, vocational education, academic education.

countries (15) use forecast data at the level of staff in direct contact with or delivering employment services.

Table 3-2: PES' use of quantitative forecasts as input for activities

Data from quantitative forecasts are used... PES	..as input for activities at national level	..as input for activities at regional level	..by staff in direct contact with or delivering employment service
Austria	✓	✓	✓
Belgium (Actiris)		✓	✓
Belgium (VDAB)		✓	
Belgium (Forem)	✓	✓	✓
Bulgaria	✓	✓	
Czech Republic	✓		
Denmark	✓	✓	✓
Estonia	✓	✓	✓
Finland	✓	✓	✓
France	✓	✓	✓
Germany	✓	✓	✓
Hungary	✓	✓	✓
Iceland	✓		
Italy	✓	✓	✓
Latvia	✓		
Luxemburg	✓		✓
Malta			
Netherlands	✓	✓	✓
Norway	✓	✓	✓
Poland		✓	✓
Slovakia	✓	✓	
Slovenia	✓	✓	
Spain	✓	✓	✓
Sweden	✓	✓	
United Kingdom	✓	✓	
Total	**21**	**20**	**15**

The use of quantitative forecast data - at national level

At national level, various PES activities are based on quantitative forecasts. The activities can be categorized as follows:

Input to revisions and reforms of employment policies and employment support measures
Results of forecasts – either produced by PES or synthesized and interpreted by PES – may give early warning of structural changes in the labour market and may thus give impetus to review and possible adjustment of policies or measures. As an example, a forecast may point to an increase (or decrease) in the demand for employees within a certain occupation or at a specific skill level.

Planning of active employment measures and preventive unemployment reduction measures
Forecast results can indicate where, and for which target groups it is necessary to make an extra effort at national level (e.g. the Czech Republic, Denmark).

Identification of target groups for active measures
In some countries, quantitative forecasts are used in the planning of anticipative measures for specific groups such as young people or vocational students who cannot find a training place in a company (e.g. Austria and Iceland).

Budgeting and allocation of resources
Quantitative forecasts are used for budget estimates and allocation of funds for active employment measures and active labour market policies. At national level, the preparation of budgets and allocation of resources also include setting targets or guidelines for the regions. Forecasts of unemployment insurance rates are used to forecast the revenue and expenditure of the PES system. In some countries, the quantitative forecasts are comprehensive macroeconomic forecasts used not only in the field of employment policy but also in many other policy fields. In Slovenia, for example, the government uses quantitative forecasts when producing the annual state budget and determining the level of funding that will be allocated to supporting individual policies, including employment policy. These forecasts are issued by The Slovenian Institute of Macroeconomic Analysis and Development.

To estimate the work force demand of PES' organisation
In France, for example, forecasts are used for estimating the dimensions of PES activities such as scheduling of registration interviews or other meetings with jobseekers, forecasting job offers, scheduling work with partners and service providers, monthly, weekly and daily activities to encourage meetings for registration interviews or other meetings to monitor and support jobseekers. In the Netherlands, quantitative forecasts are used to design an annual plan and help prioritise tasks.

To produce prospective information for jobseekers
In Austria, results of quantitative forecasts are regularly incorporated into the Qualification Barometer, a self-help tool for information on jobs and labour market orientation. The Qualification Barometer presents regionalized data on jobseekers from 2009.

> **Regional Job Market Monitor, "Regionaler Arbeitsmarktsmonitor" (RAMON) Germany**
>
> The primary objective of the Regional Job Market Monitor is to make developments on the regional job markets transparent. To do so, the opportunities and risks concerning employment are estimated by sector in line with the structural composition of a region.
> In doing so, estimates of opportunities and risks for individual occupations are initially drawn up at the national level. The subsequent extrapolation to the level of the agency regions is checked and supplemented by regional job market experts.
>
> RAMON is based on a multiplicity of data relating to the structural composition of the region such as social stratification, educational levels, educational dropout rates, industry-specific "diagnostic factors" like export dependency, inflow and range of orders, development in turnover coupled with structural features of the labour market such as demographic developments, overall economic situation, etc.

The use of quantitative forecast data – at regional/local level

At regional/local level, the quantitative forecasts data are typically regionalized and used in the implementation of employment policy measures at regional/local level.

Development of production objectives, action plans and strategic orientations for the regional and/or the local level of PES

In Denmark, for example, each local PES has to make a plan for the upcoming year that describes their goals and efforts for the different groups of unemployed. This plan is based on, among others things, forecast data at local level. At the Danish regional level, quantitative forecast data are used for guiding the local PES towards areas where it is important to make an effort. Likewise, in Finland quantitative forecasts are used at regional level to plan labour market training and to set targets at the local level.

Budgeting and distribution of resources to PES at regional level

In Germany, the regional distribution of budget resources is based on the estimated potential for unemployment within specific groups of people. In Spain, budgets are allocated on the basis of forecast data.

Diagnosing labour market challenges at regional/local level

In Sweden, regionalized forecast data are used to analyse the major labour market challenges that the local PES are facing and to develop the local action and working plans. In Poland, regional employment offices make use of research results for drawing up SWOT analyses and other analyses regarding the region's labour market. Forecast data are also used for organizing training and adjusting it to employers' needs.

Estimating future workload in the PES' regional and local offices

In France, quantitative forecasts are used at regional level for forecasting job offers; scheduling work with partners and service providers; monthly, weekly and daily activities to encourage meetings for registration interviews or other meetings to monitor and support jobseekers. In Hungary, forecast data are used to assess the impact of planned measures in terms of human resources.

"The labour market balance"
Denmark

Twice a year, the regional PES provide a forecast called "The Labour Market Balance" based on various data on demand for and supply of skills. A part of the data is an employer survey on recruitment based on answers from companies that cover about 50 pct. of the employment in Denmark.

The balance assesses job opportunities for approximately 1,100 occupations covering the entire labour market. It is posted on a public internet site to be used by regional and local staff, jobseekers, organisations and other labour market participants. The Labour Market Authority considers that the balance provides reliable short-term information on job prospects. It is used in for:
• identifying "bottlenecks" areas that should get extra funding for education and upgrading;
• deciding whether immigrants can get a job permit and work in Denmark;
• advising unemployed and helping them to identify occupations they can manage with good job prospects; and
• counsellors making a 'job plan' in cooperation with unemployed people to guide their activities towards areas with good job prospects

5-year occupational forecasts
(Ireland)

The main objective is to inform education/training, immigration policy, career guidance advisors, students, individuals making career choices, etc.

The occupational forecasts are broadly based on the assumptions underpinning the economic forecasts for the Irish economy in a medium 5-year term. The change in employment is divided into three effects:

• scale (employment growth in the economy overall):
• industry (the relative growth of the different industrial sectors compared to national growth): and
• occupational (change in the relative share of an occupation in the sectoral skill mix)

The use of quantitative forecast data – by staff in contact with clients and employers

According to the survey, PES staff use information from quantitative forecasts mainly as an input to activities targeted at the unemployed. The most frequent types of PES activities based on quantitative forecast data at this level are:

Incorporation of forecast data into the counselling of jobseekers
In Denmark, PES staff responsible for guidance of jobseekers use regional forecasts of supply and demand of labour by occupation to identify good job opportunities. In Germany, forecast data are used in career advice for jobseekers taking into account the expected demand for certain professions in the job market. In Italy, forecast data are used as a general basis for guidance activities. In Poland, information on the current situation in the local labour market

> **Occupational Compass,**
> **"Yrkescompassen"**
> **(Sweden)**
> The Occupational Compass covers approximately 200 of the largest and most common professions and occupations as well as some of the fastest growing professions/occupations in the Swedish labour market (approx. 80% of the total number of occupations). It includes forecasts for individual professions/occupations. It does not include forecasts for minor professions due to statistical uncertainty. Employment trends are included for a 1- and 5-year timeframe at the national and on regional levels and 10-year timeframe at national level. It also includes 1-year forecasts based on prognoses from local public employment services that are merged into regional and national forecasts.

is combined with services provided by EURES advisors. Reports on deficit and surplus professions are one of the main sources of information exchanged within the EURES network, and these sources are considered vital when exchanging information about job vacancies in EEA countries.

Planning of training provisions
In Austria, Belgium, Finland, Hungary, and Estonia forecasts are used at regional level for planning specialised education and further training in various job areas.

3.4. Barriers with respect to using quantitative forecasts

Even though forecasts are used by most PES, more than half of the PES (19 out of 30) encounter barriers that either prevent them from using forecast data or hamper efficient utilisation of data. If the PES are to play a more active role in the anticipation of new skills for new jobs, it is important that these barriers are identified and addressed by policy makers.

Figure 3-3 shows the distribution of barriers categorised into four different types, namely poor quality of data, insufficient capacity in the PES itself to obtain and analyse these data, limited availability of relevant forecasts, and other barriers identified by the PES.

- *Poor quality of data is* perceived to be a problem in six PES (Belgium/VDAB, Estonia, Iceland, Portugal, Spain, and the UK)

- *Insufficient capacity of PES to analyse and utilise data are* mentioned by the Belgian PES (with the exception of Actiris), and the PES in the Czech Republic, Italy, Liechtenstein, Spain, and the United Kingdom. Of these, VDAB, Liechtenstein, and the UK rated their overall capacity for anticipation 'fair', while the rest reported an incomplete capacity.

- *Limited or no availability of relevant forecasts* is reported by the Belgian PES (with the exception of Forem), and the Estonian, French, Maltese, Portuguese, Slovak and Slovenian PES.

Figure 3-3: Barriers with respect to the use by PES of forecast data

*Data source: Survey among European PES. Source of map: Norwegian Mapping Authority. Size of circles do **not** indicate severity of barriers. All the Belgian PES have indicated that they experience at least one of the barriers*

In addition to these types of barriers identified by the research team the PES themselves have identified a number of additional barriers that prevent them from using forecast data to the desired extent or for the intended purposes:

- *Time lag before data are made available.* The German PES points out that statistical data have a long lead-time, and that more up-to-date information would enable high-quality forecasts and would hence benefit the planning of future labour market efforts.

- *Reliability of forecasts.* The Danish PES observed that the recent dramatic changes in the labour market due to the recession have made it clear that anticipation based on statistical trend extrapolation alone has limited predictive power.

- *In some countries, forecasts are mainly carried out at national level and not broken down at the regional level* (Belgium/Actiris). A removal of this barrier would benefit the planning and the quality of training provisions. It would also benefit information on the labour market at regional level.

- *Incompatibility and inconsistence between data from different sub-systems* complicate the development of quantitative forecasts. Three PES (Austria, Belgium/Forem, France) pointed to a lack of consistency between indicators and scope of statistics collected in different subsystems for different purposes, for example education statistics, labour market statistics, and social statistics. Taking into account the limited capacity in some PES to analyse and utilise forecast data, a harmonisation of definitions used across the relevant statistical databases would improve PES' statistical evaluations and planning activities. According to the PES it would also improve PES capacity to work with other partners

such as industrial sector organisations, national and regional employment observatories, and training bodies.

- *The application of quantitative forecasts is still in its infancy in some countries.* In the Czech Republic, the reliability of quantitative forecasts is restricted and the use of the results must be adapted accordingly. There are plans to launch training of PES staff on how to work with forecasting results at individual PES centres. The forecasting results will be improved in collaboration with PES centres to prepare products based on the specific needs of different types of PES centres and PES clients.

- Likewise, in Slovenia, no regular or systematic studies are carried out to compare and assess various types of future development in the labour market, e.g. the supply and demand of labour in particular occupations, sectors or educational domains. Such forecasts would benefit all operational activities –including information for jobseekers in general, information provision and working with and for unemployed people, informing young people about long-term prospects in vocational areas, etc.

3.5.   *The use of quantitative forecasts – summary and conclusions*

In implementing a forward-looking approach to the functioning of the labour market, quantitative forecasts are invaluable instruments. If interpreted with caution, labour market forecasts can provide important input to labour market policy and implementation in the form of data on how labour markets may develop if current and past trends persist and if policy is not changed.

In addition, since the 1990s considerable efforts have been made throughout Europe to improve the empirical foundation for anticipation in the form of forecasts (e.g. the British *Working Futures* medium-term forecasts, the Europe-wide skill demand and supply forecasts by Cedefop, and the work under the auspices of the German-led FrequenzNet, etc.). In addition, the research team is aware of several national and sub-national initiatives in the field.

In spite of this, only little more than half the PES reported that they use this type of information regularly. Moreover, about a third of the PES reported that they do not have access to relevant forecasts. This may indicate that the level of insight into skill forecasting initiatives and the outcomes of such initiatives vary somewhat among the PES. This is not surprising given that a significant share of all PES reported that they have insufficient capacity to analyse and utilise data from forecasts.

However, the PES that use data from forecasts tend to use them a lot and to use data that describe the labour market from several different perspectives.

Forecasting data are mainly used by the PES to inform planning at the national and regional level but less to directly inform the contact between PES staff and jobseekers directly. However, a number of the PES have developed or are developing internet portals with access not only to current vacancies but also to assessments of future skill needs. Where this is the case, the information is made useful for jobseekers without the intermediation by a PES counsellor.

4. The use of employer surveys

In the context of this study, the term "employer surveys" describes collection of qualitative and quantitative information from public or private enterprises. Data collection and analysis may be carried out by PES themselves or by subcontractors or other bodies.

Employer surveys about skill needs are widely used across Europe, as well as in many other parts of the world. In most cases these surveys are focused on the current situation or the recent past, but some countries do ask direct questions about expected future requirements. An extensive review of this type of work has been conducted by Cedefop (2010a and b). This considers "good practice" across the world, especially with regard to trying to anticipate changing needs in the future, and aiming to establishing the feasibility of conducting useful surveys on this topic at a pan-European level.[22] The results of the feasibility study confirmed that such surveys can help to develop useful insights for both policy makers and individual labour market participants about changing skill needs, although it concluded that asking direct questions about future needs is not necessarily the best way to do this.[23] It is clear from the Cedefop review that there are wide variations in practice and focus. The term Employer Skills Surveys covers a very heterogeneous set of activities and results. Each of these has different strengths and weaknesses. The present survey of PES practice in this area was not able to explore these issues in great detail. However, it provides a broad overview the use of such information.

4.1. Prevalence of PES' use of information from employer surveys

Figure 4-1 shows that the use of employer survey data by the PES is widespread. Two thirds use them regularly and eight PES use them sometimes. Only Malta and Estonia rarely or never use employer surveys in their day-to-day activities.

Figure 4-1: Frequency of European PES' use of information from employer surveys
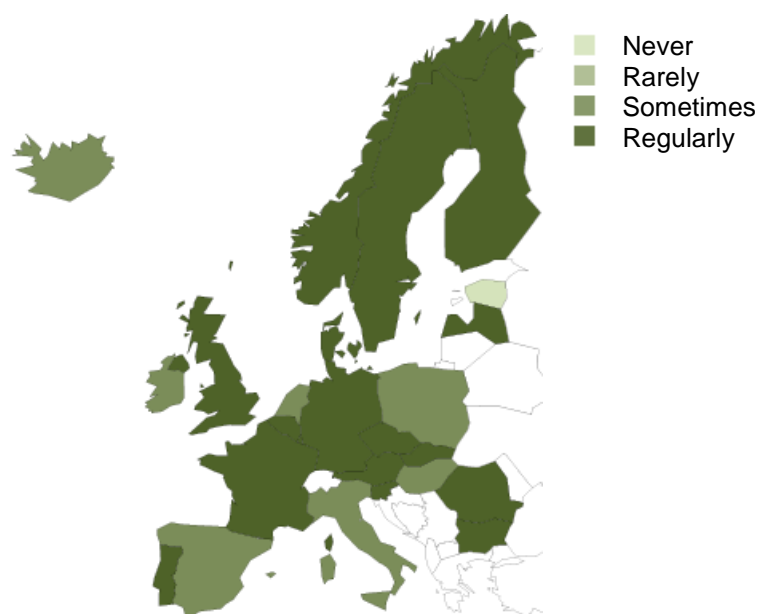
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

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[22] As a result of this feasibility study Cedefop have recently embarked on pilot study which is exploring this issue in more detail (Cedefop, 2010b).
[23] For a critical review of the use of Employer Surveys for this purpose see Wilson (2009).

4.2. Themes and types of information from employer surveys used by PES

In the survey, each PES was asked to indicate *what* their main use of employer surveys was.

Table 4-1 shows the types of information from employer surveys that each PES uses. As the table shows, the PES use employer surveys primarily to obtain information about current recruitment needs by occupation, unfilled vacancies and current skill shortages. Nine of the PES use information falling into of eight or nine f the nine categories identified, and another nine PES use five or fewer types of information.

Table 4-1: Types of information from employer surveys used by PES

	Unfilled vacancies	vacancies	Recruitment needs							
	...in general	...by sector	...by occupation	...by sector	Recruitment problems/delays	Current skill shortages	Future skill needs	Business expectations	Employees enrolled in training or education	Types of information used, total
Austria	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Belgium (Actiris)	✓	✓	✓	✓	✓	✓	✓			7
Belgium (VDAB)	✓	✓	✓	✓	✓	✓		✓	✓	8
Belgium (Forem)	✓	✓	✓	✓		✓	✓	✓	✓	8
Bulgaria	✓	✓	✓	✓	✓	✓	✓	✓		8
Czech Republic	✓	✓	✓	✓	✓	✓				6
Denmark			✓	✓	✓	✓		✓		5
Finland	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
France	✓	✓	✓	✓	✓		✓	✓		7
Germany	✓	✓			✓			✓		4
Hungary	✓	✓	✓	✓		✓	✓	✓		7
Iceland	✓	✓			✓	✓			✓	5
Ireland					✓	✓	✓			3
Italy	✓	✓	✓	✓	✓	✓			✓	7
Latvia	✓	✓	✓	✓			✓			5
Liechtenstein	✓					✓				2
Luxemburg			✓	✓			✓			3
Netherlands			✓	✓	✓	✓				4
Norway			✓	✓	✓	✓				4
Poland	✓	✓	✓	✓		✓	✓			6
Portugal	✓	✓	✓	✓	✓	✓	✓	✓	✓	9
Romania	✓	✓	✓		✓			✓		5
Slovakia	✓	✓	✓		✓	✓	✓			6
Slovenia	✓	✓	✓		✓	✓	✓	✓		7
Spain	✓	✓	✓	✓	✓	✓	✓		✓	8
Sweden	✓	✓	✓	✓	✓	✓	✓	✓		8
United Kingdom	✓	✓	✓	✓	✓	✓	✓	✓		8
Total	22	21	23	21	21	22	17	14	8	

The PES reported using employer surveys to obtain information about:

- Issues related to anticipation of skill and manpower needs:
  - employers' anticipated manpower needs a year ahead (Slovenia, Sweden, France);
  - changes in demand for goods and services in companies (Latvia, Sweden);
  - information about expected and planned investments (France);
  - employers' use of foreign labour (Norway); and
  - how willing employers are to invest in human capital (courses, vocational training, higher education etc.) (Poland).
- Issues concerning PES' service delivery:
  - PES' image (Belgium, (Forem));
  - employers' use of different service channels, evaluation of service delivery and quality (Finland, Bulgaria, France, Germany, Poland, United Kingdom);
  - impact of services (Belgium (Forem)); and
  - employers' use and evaluation of job portals and temporary work agencies (France).

4.3. Who uses information from employer surveys – and for what

The above section showed that employer surveys can concern various themes. While the most frequent objective of employer surveys is to assess *current* challenges, two thirds of them also use some information from employer surveys to assess *future* challenges. In this section, we examine the use of employer surveys as input for different activities within the PES.

As with other types of labour market information, data from employer surveys can be used for many different purposes:

- as input to strategic activities (typically at national level);
- as input to regional/local activities such as planning (budgets and staff), prioritization of target groups, or development and prioritization of active measures;
- as support for targeted guidance and counselling of jobseekers.

The new survey of PES shows that those that that use employer surveys most frequently use the resulting information for more than one of these purposes. This is illustrated in

Table 4-2 below, which shows how the PES use the data from employer surveys as input for activities at different levels of the organisation.

In all, 19 PES use data from employer surveys at all three levels. Interestingly, four

> **Employment Barometer**
> **Malta**
> The Maltese PES highlights a survey model which ran successfully between 2003 and 2006, but was discontinued due to funding problems. The Employment Barometer was a short-term forecasting indicator based on direct interviews with a representative sample of local employers as well as interviews with bodies such as unions, employers association, federation of industry, universities, etc. The final output was a barometer of a number of occupations highlighted as being in shortage, balance or surplus for the subsequent six-months. It provided information to a number of stakeholders in the labour market:
> - PES offices as input to guidance of jobseekers and design or upgrading of training courses;
> - Jobseekers, who could access information on whether the jobs they were seeking were in shortage, balance or surplus;
> - Employers, who get the opportunity to assess whether their problems were common to the area or sector and to learn from other employers how to deal with particular recruitment problems.

other PES (Iceland, Ireland, Portugal and Romania) have reported that they sometimes use employer surveys. However they did not respond to the questions concerning how the information is used at the specified levels.

Table 4-2: PES' use of employer surveys as input for activities

	..as input for activities at national level	..as input for activities at regional level	..by staff in direct contact with or delivering employment service
Austria	✓	✓	✓
Belgium, Actiris		✓	
Belgium, VDAB		✓	✓
Belgium, Forem	✓	✓	✓
Bulgaria	✓	✓	✓
Czech Republic	✓	✓	✓
Denmark	✓	✓	✓
Finland	✓	✓	✓
France	✓	✓	✓
Germany	✓	✓	✓
Hungary	✓	✓	✓
Italy	✓	✓	✓
Latvia	✓	✓	✓
Liechtenstein	✓	✓	
Luxemburg	✓		
Malta	✓		
Netherlands	✓	✓	✓
Norway	✓	✓	✓
Poland		✓	✓
Slovakia	✓	✓	✓
Slovenia	✓	✓	✓
Spain	✓	✓	✓
Sweden	✓	✓	✓
United Kingdom	✓	✓	✓
Total	**21**	**23**	**21**

What are employer survey data used for at strategic level

The PES report that data from employer surveys are used for many diverse purposes.

At the national or strategic level, employer survey data are used as input for policy-making, and, in addition, the data are used for a number of planning activities at this level.

Input into policy making
In the Czech Republic, information from regular employer surveys is analysed and included in the annual Report on Employment and Unemployment, which serves as input to the employment policy-making process. Similarly, in Austria, a "structure report" on the need for qualifications is prepared annually. In addition, the respondents from German and the Italian PES reported that employer survey data are used to guide strategic decisions at the national level, but they did not offer further details.

Input into allocation of resources to regions, sectors or target groups
The respondent from the Slovenian PES reported that data from employer surveys form part of the basis for assessing what funds will be required for passive and active measures. This is also the case in Finland.

Input into performance management systems
In Finland, employer survey data are used in the development of targets for labour market policies (e.g. for the share of companies meeting difficulties in recruiting, for the average time to fill vacancies, etc). In the Netherlands, the data are used by national account managers.

Passing information to the education system (Slovenia)

The Slovenian PES pass on the results of surveys of employers' expected short term skill needs to the Slovenian Ministry of Education and Sport and other agencies responsible for professional and vocational education. These ministries are particularly interested in the part of the analysis that summarises the responses of employers concerning skill profiles for which it is difficult to recruit qualified workers.

Planning of measures at national level
In a number of countries (NL, DK, BG, FI, SI), data from employer surveys are used in the preparation of national action plans. In Slovenia, the data are used in the preparation of a plan for visits to employers, which are then carried out at regional/local level.

Input into product development at national level
In Malta and Slovakia, these data serve as input to the central design of new training programmes and active measures.

Provision of information to lower levels of the PES as support for their activities
The Latvian PES prepares a list of professions and skills demanded on the labour market for training the unemployed. The information is also passed on to school-based advisors, for whom they prepare a presentation of the conditions in regional labour markets each year, including preparing and holding employment/career fairs (regional and local fairs etc.)

Provision of comprehensive non-targeted information about labour markets
The respondents from Germany and Slovenia report that the results of employer surveys are distributed from the central level to wider audiences, including the scientific community and specialist experts, as well as schools, colleges, public bodies operating in the area of education, professional associations, and the general public via the media.

Types of activities based on employer survey data – at regional/local level

Employer survey data are used as input to management of PES activities, allocation of resources and planning of active measures. All these activities gain from the information from employer surveys. The respondent from Italy was the only one to report that employer survey data are used to guide strategies at the regional level, but it seems likely that this is the case in other PES too. The main activities in which employer survey data are used can be divided into four main groups. They are described below.

Planning of active measures, particularly skills training for the unemployed
The field of application where employer survey data are most frequently used is the regional or local PES' planning of active measures. The respondents from Sweden, the Netherlands, the Czech Republic, Hungary, Germany, Norway, Poland, and Slovakia report that data are used for this purpose, with particular emphasis on using the data to decide the focus of training measures.

Input to campaigns targeted at employers
A few respondents (FR, UK, SI) report that the data are used to shape campaigns aimed at employers. In France, the results of employer surveys are used in the development and implementation of action plans and mailing campaigns aimed at companies. In the UK, Employer Account Managers use data to target employers in growth areas or those who have vacancies suitable for priority customers. Finally, in Slovenia, the survey results are used to plan visits to employers who have forecast surplus employees as well as those who expect a future demand for more employees to enable the PES to prepare for timely and concerted activities to help with recruitment and placements, and contributing to employment programmes.

Management purposes
A number of PES (BE/Actiris, LV, CZ and FI) report that the data are used for management. In Latvia, the data are used in the development of performance indicators of active employment measures and preventive unemployment reduction measures. In the Czech Republic, employer survey results underpin the allocation of active employment policy funds. In Finland the results are also used when acquiring labour market training.

As input into the dialogue with other stakeholders
Such information is also used in collaboration with regional employers' associations in planning joint activities to eliminate imbalances in the labour market etc. (SI)

Types of activities based on employer survey data – in the provision of services
Most PES which use employer survey data at the frontline staff level do so to inform guidance of unemployed jobseekers. Fewer PES report that these data are used in employer services. The uses fall into two main groups as listed below.

As input into the guidance of the unemployed and other services directed at jobseekers
The Danish, Finnish, French, Hungarian, Italian, Latvian, Luxemburg, Slovenian, and Polish PES respondents report that employer survey data are used to inform services to jobseekers, especially to guide them towards occupations in demand for labour and to shape training suggestions. The Polish respondent specifically points to EURES advisors as an important target group for information about the current situation in the local labour market. The Dutch PES use employer survey data as input into mobility arrangements, job fairs and "speed meetings" between employers and employees.

As a background for services to employers
In the Netherlands, recruitment services to employers and support for the creation of jobs take the employer surveys as their point of departure. In Latvia, employer survey data concerning everyday work are distributed to employers.

4.4. Barriers with respect to using employer surveys

Seventeen PES replied that they experienced barriers with respect to the use of employer surveys (see
). They include poor quality of data; lack of capacity within the PES to analyse and utilise the data; and complete lack of data.

Figure 4-2: Barriers with respect to the use by PES of employer survey data
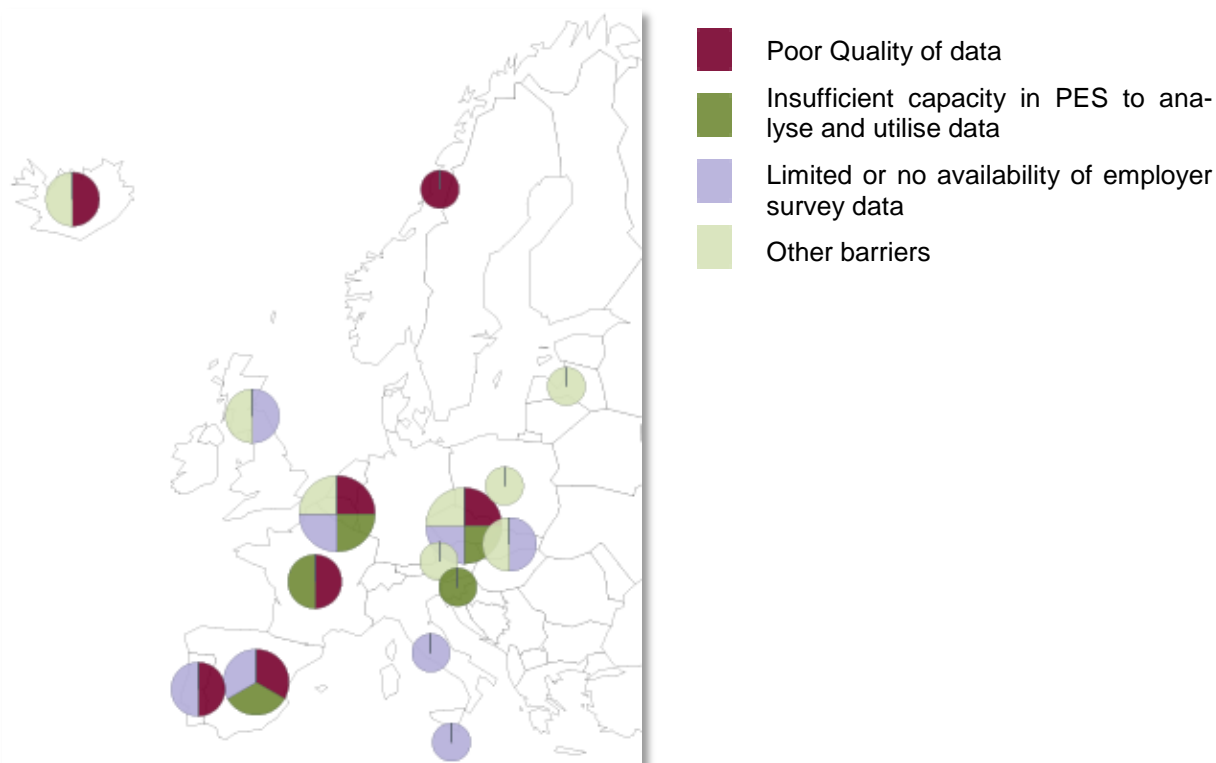
*Data source: Survey among European PES. Source of map: Norwegian Mapping Authority. Size of circles do **not** indicate severity of barriers*

As the figure shows, two PES (the Czech and Spanish PES) encountered barriers in all the three mentioned areas.[24] The barrier with respect to employer surveys most frequently reported is limited or no availability of employer surveys. This barrier was particularly reported by respondents from Southern European countries (Italy, Portugal, Spain, Malta), and by a few New Member States (the Czech Republic and Slovakia), but also by the UK and Belgium/Actiris. Poor data quality is encountered by the PES in Belgium/VDAB, the Czech Republic, France, Iceland, Norway, Portugal and Spain.

4.5. The use of employer surveys – summary and conclusions

Generally, employer surveys can provide useful data that can help at a macro strategic level as well as when delivering services to individual clients. Most PES make use of some data of this kind, but practices vary widely. There is a wide variety of different types of employer survey with different foci, but PES do not always seem to be aware of everything that is available in their countries – there is potential for gains from making better matches. The main benefits appear to be in getting a good handle on the current situation. While some PES use survey information to try to peer into the future, there are problems with this approach, which needs to be carefully addressed.

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[24] It appears as if this is also the case in Belgium, however, the Belgian figure is based on responses from all four Belgian PES, and they experience different barriers: Actiris reports limited access to employer surveys, while VDAB reports poor quality of data as well as insufficient capacity to analyse data. Finally, Forem has not specified the barriers they encounter.

5. The use of surveys of students and graduates

In the context of this study, surveys of students and graduates include all types of survey activities targeted at learners or those who have recently completed an education.

Anticipation – be it in the sense of creating better conditions for labour market actors to make decisions or in the "top-down" sense – requires information, not only about demand, but also about supply of skills and competences. Statistical data that will allow projections at the level of qualifications, let alone competences, is, however, not readily available or is only available at very aggregate levels in many European countries. Surveys of students and graduates can complement statistical information about educational flows and graduations, where this information exists, and is a means to obtain some information where none is available.

Depending on the scope of a survey of students and/or graduates, it may give information about the size and distribution of the future supply of skills and competences, but in addition, it may produce information which cannot be obtained from statistical data about the aspirations and career preferences of young people entering the labour market for the first time.

5.1. Prevalence of PES' use of information from surveys of students and graduates

Overall, only few countries use surveys of students and graduates as a means to anticipate future the skill supply. Figure 5-1 below shows the frequency of PES' use of this method.

Figure 5-1: Frequency of PES' use of surveys of students and graduates
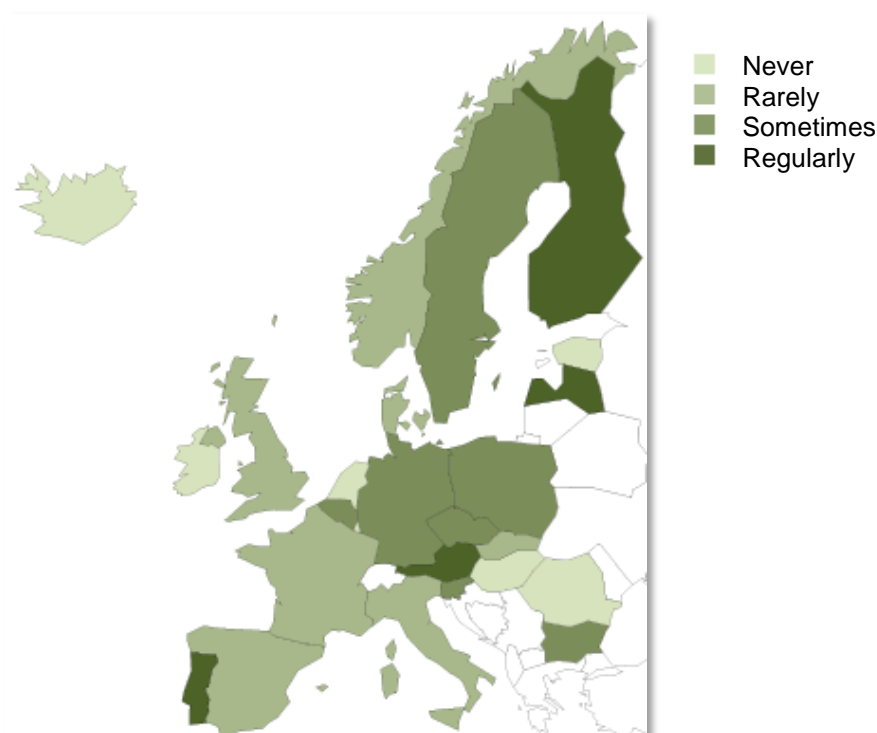
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

61

Five PES use surveys of students and graduates regularly,[25] eight PES sometimes, eight more rarely, and nine never. As the map in Figure 5-1 illustrates, there does not appear to be a clear pattern that would explain why the PES in some countries have included this method in their collection of instruments and others not. The PES that use this type of survey *regularly* are the ones in Finland, Latvia, Austria, Portugal, and Belgium/Wallonia. Hence, the method is used by large as well as small countries, old as well as new EU Member States, northern as well as southern countries, and countries with a very regulated labour market as well as those with a more liberal approach.

Likewise, it is difficult to spot commonalities between the PES *never* using this method, i.e. Belgium/Actiris, Estonia, Hungary, Iceland, Ireland, Liechtenstein, Luxemburg, Romania, and the Netherlands. Hence, whether or not a PES uses this method appears to depend on factors not related to the ones discussed in relation to the other methods (statistical infrastructure, market shares/monopoly, degree of centralisation of the PES).

5.2. Themes and types of information from employer surveys used by PES

As Table 5-1 shows, surveys of students and graduates mainly concern employment/labour market status after graduation (10 PES) and surveys regarding job preferences after graduation (nine PES). Seven PES use surveys of final year students to obtain information about their career plans. Austria, Bulgaria, Latvia and Portugal use surveys of students and graduates concerning all three themes.

Table 5-1: Types of information from surveys of students and graduates used by PES

	Job preferences and expectations after graduation	Career plans of final year students	Employment/ labour market status after graduation	Types of information used, total
Austria	✓	✓	✓	3
Belgium, Forem	✓		✓	2
Bulgaria	✓	✓	✓	3
Czech Republic	✓		✓	2
Finland	✓	✓	✓	3
Germany			✓	1
Latvia	✓	✓	✓	2
Malta			✓	1
Poland	✓	✓		2
Portugal	✓	✓	✓	3
Slovenia		✓		1
Sweden	✓		✓	2
Total	**9**	**7**	**10**	

Furthermore, a number of PES carry out surveys of students and graduates which look into other issues of relevance to anticipation:

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[25] In addition to the national PES visible on the map in Figure 5-1, the respondent from Forem in Belgium (Wallonia) reports that Forem uses this type of survey regularly.

The level of information of and attitudes towards the labour market among students
This type of information is obtained in surveys carried out in Belgium/Wallonia among young people in their last year of study and in Poland, and in Malta where surveys are carried out among students who fail to complete upper secondary general or VET education.

Study programme popularity
In Latvia, annual surveys are carried out of Latvian higher education establishments on study programme popularity.

Factors which trigger decisions to seek work abroad
Poland has conducted surveys looking into this subject.

The extent to which graduates take up jobs in line with their qualification
In Poland, a survey[26] of graduates examine which professions graduates in the region enter, detailing if the graduates
- go on to post graduate studies in their chosen profession or area of specialisation;
- are employed in line with their professional qualifications and training;
- are employed outside their professional qualifications and training; and
- become unemployed.

The employment of graduates is analysed taking into account
- the manner in which employment is found;
- the form of employment;
- whether graduates are employed in the profession in which they have qualifications or areas of specialisation.

The competences of graduates is assessed, taking into consideration their practical training for work in a profession as a basis for determining their level of competences and the development needs of students in higher education in the region.

Finally, the Polish survey looks into the graduates' familiarity with issues concerning entrepreneurship as well as the concerns that may prevent graduates from starting their own business.

5.3.   Who uses information from surveys of students and graduates – and for what

Eleven PES use surveys of students and graduates as input for activities at both national and regional/local level, and the surveys are also used by staff in direct contact with or delivering employment services.

The PES report that information from surveys of students and graduates is used for many very diverse purposes. The use of information from these surveys at different levels of the PES' organisation is shown inTable 5-2 below.

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[26] Poland has reported that they use survey of this type sometimes. Therefore it is not clear whether the detailed information above relates to one specific survey or a number of consecutive surveys.

What are data from surveys to students and graduates used for at strategic level

This type of information is mainly used for two purposes. First, as input to strategic decision-making and for general information material and, second, other areas of application mentioned by the PES:

Table 5-2: PES' use of surveys of students and graduates as input for activities

	..as input for activities at national level	..as input for activities at regional level	..by staff in direct contact with or delivering employment service
Austria	✓	✓	✓
Belgium, Forem	✓	✓	✓
Bulgaria	✓		
Czech Republic	✓	✓	✓
France	✓	✓	✓
Iceland	✓	✓	
Italy	✓	✓	
Latvia	✓	✓	✓
Malta	✓		✓
Poland		✓	✓
Slovakia		✓	✓
Slovenia	✓	✓	✓
Sweden	✓		✓
Total	11	10	11

Input into the public debate
Latvia uses the information as background material for national-level conferences, discussions, and mass media interviews.

Targeted employment programmes
The Czech PES uses this type of information when developing guidelines for employment programmes.

To compensate for lack of reliable statistical data
The Slovenian PES uses this type of surveys to obtain information about the number of young people and adults in secondary or further educational programmes and about people graduating from such programmes. The information is used to predict the number and breakdown of people leaving schools and entering the labour market.

> **Occupational Compass, "Yrkescompassen" (Sweden)**
> Results from surveys of students and graduates are analysed and included in the national Swedish information portal the Occupational Compass (see good practice box, p. 51). In this way, the information is made available to underpin the career decisions of jobseekers as well as the human resource planning of employers.

To complement statistical data
Sweden uses the survey data to qualify the numbers in their long-term outlook.

What are data from surveys to students and graduates used for at the regional/local level

The main area of application at the regional and local level is in the planning and implementation of active measures and guidance.

To guide strategies at the regional level

In Italy, where labour market policy is very regionalised, these data, along with other types of information, are used to guide strategic decisions at the regional level.

To help qualify jobseekers' decisions

Austria uses the data as input to informative material, information and advice. In Belgium/Wallonia, Forem uses a tool specifically designed for young people entering the job market (JOBTONIC). Forem also uses the information obtained during JOBDAYS in local offices.

To serve as input to planning of active measures

The Finnish, the Polish, the Slovak and Czech PES use data from students or graduates as input to training/retraining programmes, in the creation of incentives and client-focused programmes, and in the design of guidelines for guidance and counselling.

> **Information to employers about future jobseekers**
> **(Slovenia)**
>
> At the regional level, occupational advisors monitor enrolment in (upper) secondary school programmes in their area, the enrolment of students in further education programmes, and how many graduates and what type of graduates are joining the labour market. Furthermore, they also interface with schools, particularly those running vocational education programmes. Thus, advisors obtain information about the future influx onto the labour market and, at the same time, pass on information about this influx to employers looking for workers (especially in areas with deficits).

As input to communication exercises

The Latvian PES uses this type of information in its communication with mass media, and in conferences and meetings.

What are data from surveys to students and graduates used for by staff who are in direct contact with or delivering services to job seekers or employers

In the local offices, this information is mainly used as input to recruitment services for employers and in services for unemployed jobseekers. The French PES respondent observed that whereas comprehensive knowledge about students and graduates is useful when linked with statistical forecasts of the labour market, the use of such data is not very systematic.

5.4.   Barriers with respect to using surveys of students and graduates

Twelve PES experienced barriers with respect to using surveys of students and graduates. This is fewer than that those that experienced barriers with respect to using employer survey. (Although fewer used surveys of students and graduates than used surveys of employers). The types of barriers are shown in Figure 5-2.

Significantly, there is no connection between the experience of barriers and the actual use by PES of this method. Among the four regular users of the method, two (Austria and Portugal) encounter barriers to its use. Both PES report about poor quality of data and limited availability of surveys of students and graduates. The latter r is the one most frequently encountered barriers mentioned by six PES.

Barriers identified by the PES, in addition to those listed Figure 5-2: Barriers with respect to the use by PES of information from surveys of students and graduates below, are *lack of access to training and education institutions* and *scattered data*.

Figure 5-2: Barriers with respect to the use by PES of information from surveys of students and graduates

*Data source: Survey among European PES. Source of map: Norwegian Mapping Authority. Size of circles do **not** indicate severity of barriers*

In addition to these barriers, the PES mention a number of other factors that may hamper the use of information supplied by students and graduates:

It is difficult or impossible to obtain listings of the target group
This was mentioned by the Belgian PES.

Data are not up-to-date
The Norwegian PES reported that usually data from surveys of students and graduates are too old to be used to estimate the current situation on the labour market.

Results of such surveys are not taken up by education providers
The Polish respondent remarked that the approach and attitude of schools is a barrier, in that they do not broaden and enrich their curricula by adding new vocations. For financial reasons, these schools want to enrol as many students as possible and do not attach much importance to the students' subsequent careers in the labour market.

Division of labour in the field of employment services

In the UK, graduate recruitment channels are managed by University Careers Services and by Department for Business, Innovation and Skills (e.g. the employer internship network) and not by the PES (Jobcentre Plus).

5.5. The use of surveys of students and graduates – summary and conclusions

According to the new survey, considerably fewer PES include information from surveys of students and graduates in their anticipatory activities than is the case with the other analysed information sources.

The analysis has not been able to point to factors that would explain why some PES choose to use this type of information more regularly than others do in all instances. However, in some countries information from such surveys can partly compensate for lack of reliable statistical data concerning educational stocks and flows. Moreover, regardless of policy and implementation context, such surveys are found to provide a level of detail and qualitative richness which can rarely be achieved in statistical projections.

6. The use of foresight studies

Foresight studies differ from the types of information sources covered in the previous three chapters in a number of ways. Foresight studies involve not just one method, but rather refer to studies that use a variety of techniques to develop – often rich and detailed – pictures of alternative futures that can be used to underpin policy-making and other strategic processes. Foresight studies are often multidisciplinary and draw on a large toolbox of methods, including, for example, trend and drivers analyses, scenario building, modelling and simulation, backcasting, Delphi, etc.[27]

6.1. Prevalence of PES' use of information from foresight studies

Eighteen – or a little more than half - of the PES respondents reported that they use information from foresight studies regularly or sometimes, whereas 13 PES replied that they rarely or never use foresight studies (cf. the figure below). Nine PES– or roughly one third – never use foresight studies, whereas eight PES use foresight studies regularly. The use of foresight studies is thus less common than quantitative forecasts and employer surveys but more common than the use of surveys of students and graduates.

Figure 6-1: Frequency of PES' use of information from foresight studies

Never
Rarely
Sometimes
Regularly
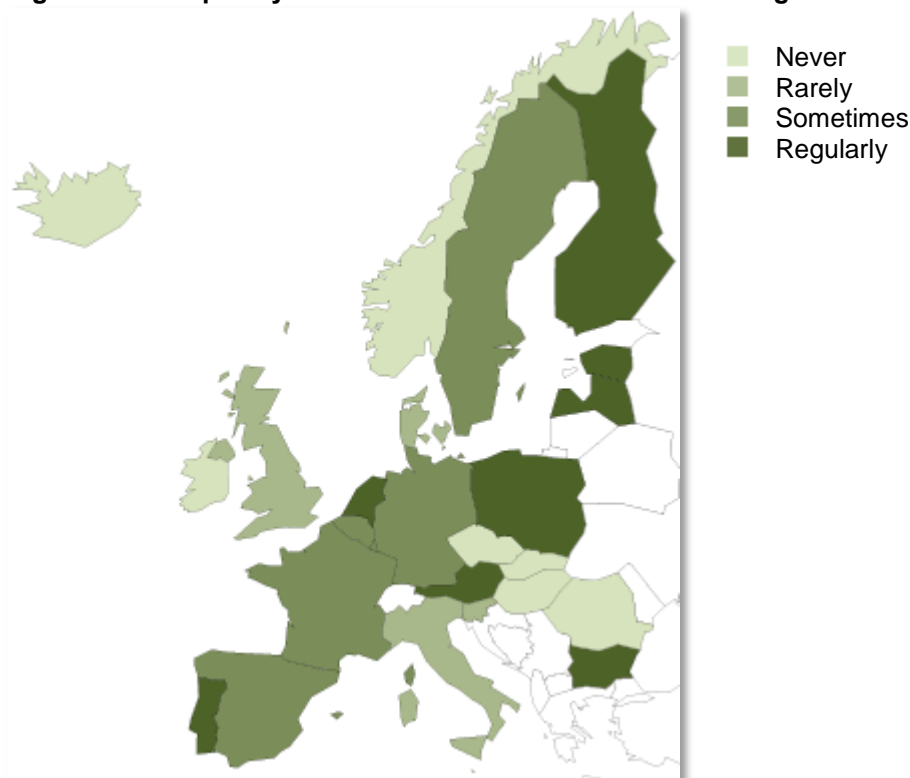
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

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[27] For a comprehensive presentation of "the foresight toolbox", see the website of the British Horizon Scanning Centre, http://www.foresight.gov.uk/microsites/hsctoolkit/The-tools.html

6.2. Themes and types of information from foresight studies used by PES

PES use foresight studies concerning a range of different themes, such as main economic and employment trends, as well as technological change. Table 6-1 shows which PES use foresight studies concerning each particular theme.

Table 6-1: Themes of information from foresight studies used by PES

	Main economic and employment trends	Technological change	Emerging skills and competences	Implications of megatrends for occupational profiles	Demographic trends	Migration trends	Trends in skill demand	Trends in skill supply	Mobility/location trends	Skills and jobs at sector/industry level	Other themes	Total no. of themes
Austria	✓	✓	✓		✓	✓	✓	✓		✓		8
Belgium/Actiris	✓			✓	✓		✓	✓	✓	✓		7
Belgium/VDAB	✓	✓		✓	✓	✓			✓			6
Belgium/ADG	✓	✓	✓		✓		✓					5
Belgium/Forem	✓	✓	✓	✓			✓	✓				6
Bulgaria	✓		✓	✓	✓	✓	✓	✓	✓	✓		9
Estonia	✓		✓	✓	✓	✓	✓	✓				7
Finland	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		10
France	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	11
Germany	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		10
Latvia	✓		✓		✓	✓	✓	✓	✓	✓		8
Luxemburg	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		10
Poland	✓					✓	✓	✓			✓	5
Portugal	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		10
Spain	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		10
Sweden	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		10
Netherlands	✓		✓	✓	✓	✓	✓	✓	✓	✓		9
No of PES	17	11	14	13	15	14	16	15	12	12	2	

The table shows that the PES that use foresight studies to inform their anticipatory activities obtain a wide range of information from these studies. The most sought after information concerns issues directly related to the core tasks of PES, i.e. information about main economic and employment trends and trends in skill demand and supply. Somewhat fewer PES look for information about factors that may critically influence skill demand and supply, such as demographic trends, including trends in migration, emerging skills and competences, consequences of megatrends (e.g. globalisation) on occupational profiles, or technological changes influencing both numbers and contents of jobs.

In addition to these themes, the Polish PES uses foresight studies to obtain information about a wide range of issues, including:

- Changes in investment priorities affecting the types of qualifications in demand.
- Analysing emerging sectors which may exist in the voivodeship (regions) at the early stages or which are identified as structures or cluster initiatives with a major potential for expansion. Such sectors are then subjected to further analysis of:
  - demand for staff and access to qualified staff (extent to which and source from which the employer's personnel needs are met);
  - the extent to which the employer's requirements are met with regard to skills and qualifications;
  - professional development of staff (staff costs and effectiveness, including pay levels and work efficiency); and
  - anticipated changes to the staffing structure.

6.3. Who uses information from foresight studies - and for what

The majority of PES that use foresight studies utilise the information from such studies as input for activities at regional/local level. Table 6-2 shows which PES use this type of information at the different levels.

Table 6-2: PES' use of information from foresight studies as input for activities

	..as input for activities at national level	..as input for activities at regional level	..by staff in direct contact with or delivering employment service
Austria	✓	✓	✓
Belgium, Actiris		✓	✓
Belgium, VDAB		✓	
Belgium, Forem		✓	
Bulgaria	✓	✓	✓
Estonia	✓	✓	✓
Finland	✓	✓	
France	✓	✓	✓
Germany	✓	✓	✓
Ireland			✓
Italy	✓	✓	✓
Latvia	✓	✓	✓
Netherlands	✓	✓	✓
Poland	✓	✓	✓
Spain	✓	✓	✓
Sweden	✓	✓	✓
Total	**12**	**15**	**13**

The PES report that information from foresight studies is used for many very diverse purposes.

What is information from foresight studies used for at strategic level

As was the case with the other types of information covered in the new survey, some PES report that they use this type of information as input to strategic decision-making, without further elaborating how this is achieved. An exception is Poland, where the respondent report-

ed that information of this type is used in the ongoing adaptation of the legislation regulating the operations of the PES to the current situation in the labour market.

In addition, the PES that use this type of information mentioned the following activities as being, at least in part, based on information from foresight studies:

Planning at the national or strategic level
In Austria, Finland, Latvia, the Netherlands, Germany and Bulgaria, information from foresight studies give input to planning, e.g. planning of further training.

As input into forecasting
The Bulgarian and Latvian PES use this type of information to underpin unemployment and labour demand forecasts. The Estonian PES uses foresight studies to underpin forecasts of unemployment insurance rates, the need for active measures and the associated revenue and expenditure of the PES system, and the skills related employment training needs. These PES all operate in countries with a weak or outdated statistical infrastructure. This explains why foresight information goes into forecasts which, in other contexts, would be based predominantly on statistical data.

> **Guidelines for compilation and quality assurance of a local job market and integration programme**
> **(Germany)**
> The guidelines are currently being introduced across the country. They set out a systematic procedure for compiling a job market and integration programme to preserve and improve employability in an local area. Particular value is placed on involving local job market players who are able to identify local job market requirements.
>
> The Federal Employment Agency believes that future qualification requirements can only be identified in discussions with experts. The discussions make it possible to combine statistics or forecasts with practical experience and thereby permit a more accurate identification of regional developments and/or integration of (future) developments only detected in the region. The job market and integration programme becomes very important, particularly in the field of basic provision, where maintaining employability is one of the primary objectives of the Federal Employment Agency. This is an issue which all relevant players in the job market must work together to solve together.

As input into development of occupational classifications and databases
The French PES uses foresight studies as input to the development and adaptation of the Operation Directory for Jobs (ROME), whose main objective is to optimise matching.

The responses that refer to a time horizon, mention quite short horizons ("short-term" or "one-year"). Given the usually quite long-term nature of foresight studies, it would appear that the PES could bring information from such studies into play in more productive ways by looking for ways in which long-term trends may affect short-term developments in labour markets.

What is information from foresight studies used for at regional/local level
At the regional or local levels, information from foresights studies is used for strategic decision-making and planning purposes by a number of PES (Belgium/Forem, Bulgaria, Finland, Germany, France, Poland, Spain/Catalonia)).

In addition, such information is used for:

Input into the professional development of PES staff and management
The French and Dutch PES use results in the development of professional teams, staff and management.

Mobilisation of stakeholders
In Germany, information from foresight studies may lead to the formation of regional networks that propose strategies in the event of changes on the job market.

Identification of areas for training and advice to training providers
Two Belgian PES (Actiris and Forem), as well as the Polish PES, use foresight results as input to planning of training for the unemployed, as well as for giving guidance to training providers.

Input into forecasting of labour and skill demand and supply at regional level
This takes place in Bulgaria, Latvia and Estonia. As discussed above, the use of foresight results as input to forecasting is probably due to lack of reliable statistical data in these countries.

Adjustment of labour market programmes and projects
The Polish PES uses foresight studies in the adaptation of projects carried out by the PES to the real needs of the target groups of recipients and in evaluation of active labour market policy.

What is information from foresight studies used for by staff in direct contact with or delivering services to job seekers or employers?

The main area of activity where such information is used by frontline staff is in guidance and information to jobseekers.

6.4. Barriers with respect to foresight studies

Eleven PES reply that they experience barriers with respect to using foresight studies and seven of these countries use foresight studies despite the barriers (see Figure 6-2 below).

Belgium/VDAB and Spain/Catalonia use foresight studies despite experiencing poor data quality, insufficient capacity to analyse data and limited or no availability of foresight studies.

Identification of relevant studies
Limited or no availability of foresight studies is the most common barrier with respect to obtaining information from foresight studies (seven PES report that they experience this barrier). Even where such studies are known to exist, the French PES points out that they tend to come from a wide range of different bodies and research institutions and that the data produced by such studies are not sufficiently consolidated. By implication, obtaining and utilising information from foresight studies is quite resource intensive, a fact which is also reported by the Spanish/Catalonian PES.

Figure 6-2: Barriers to using information from foresight studies
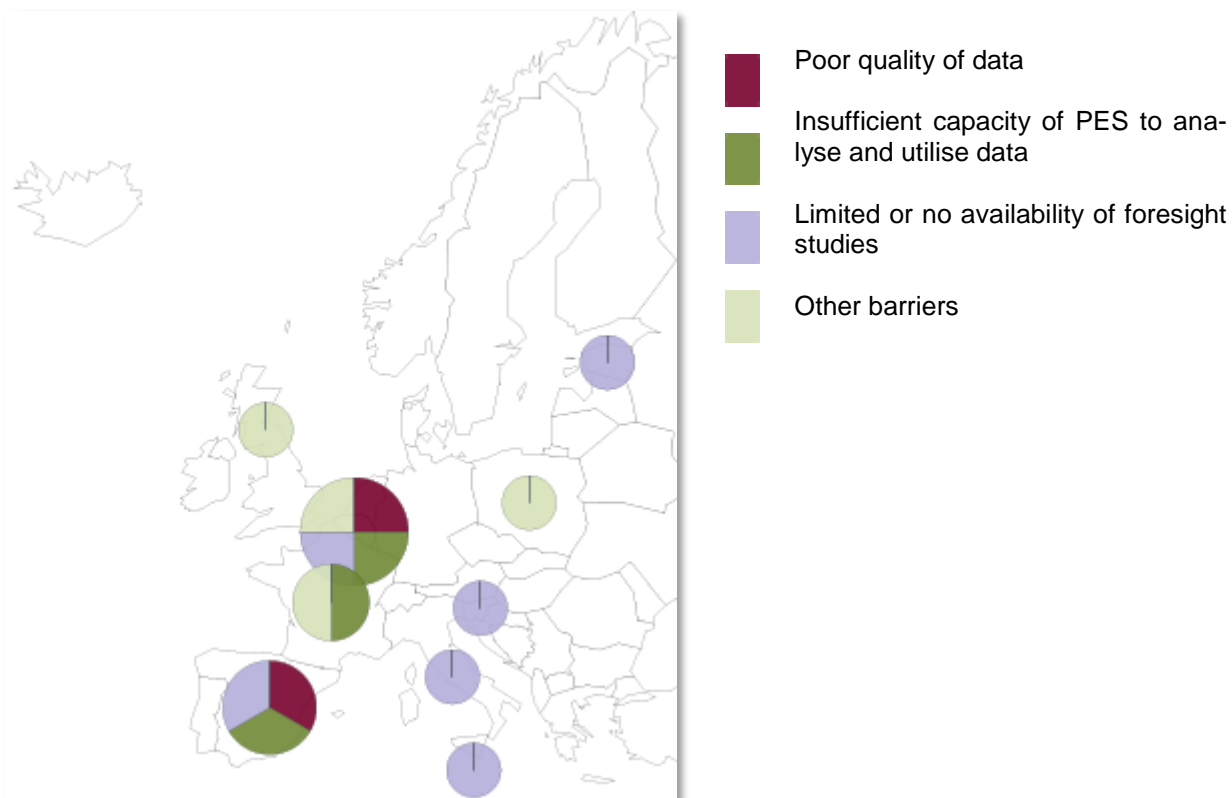
Data source: Survey among European PES. Source of map: Norwegian Mapping Authority

Information does not necessarily lead to implementation

The respondent from the Polish PES notes that while there are no barriers connected to identification or analysis of relevant research, the employment offices sometimes meet obstacles in contacts with authorities and institutions responsible for the education system. The PES may pass on the results of analyses, but the PES does not have any influence over whether this information is passed on to those responsible for curricula.

6.5. The use of foresight studies – summary and conclusions

In conclusion, the main reasons for not using foresight studies are limited or no availability of such studies, lack of dedicated resources and challenges regarding access to and composition of data. Some countries also find it challenging to set up such studies.

7. PES practices – a cluster analysis

In the sections above, we have presented and discussed the results of a survey of PES that have provided information about the use of different instruments and sources of information that PES can use to anticipate future demand for and supply of skills.

The survey results presented above give evidence to quite varied anticipation practices among the European PES. Some PES use a wide range of information sources, while others rely on considerably fewer sources. Employer surveys, as already discussed, are the most frequently used source of information, while surveys of students and graduates are least often used or consulted.

In order to make a first assessment of whether the variations display systematic patterns, we carried out a cluster analysis[28] of the survey results.

The cluster analysis is based on:
- *Width:* the range of methods, tools and instruments employed by the PES for collection of information about future skill supply and demand.
- *Themes included:* the number of variables or themes that the PES address in their search for information.
- *Depth:* the number of organisational levels in the PES that use the information in their day-to-day operations.
- *Barriers:* whether PES experienced barriers to using information provided by the four methods presented.

Looking first at the use of different instruments, the results presented above indicate that some PES use a wide range of sources, while some use only one type of source (for instance employer surveys). Likewise there appears to be some variations concerning how information about future skills demand and supply is used in the PES organisations. Some PES report that they use the results at all levels of the organisation, while others use the results mainly at one organisational level (for instance mainly at the national level or mainly at an intermediate planning level).
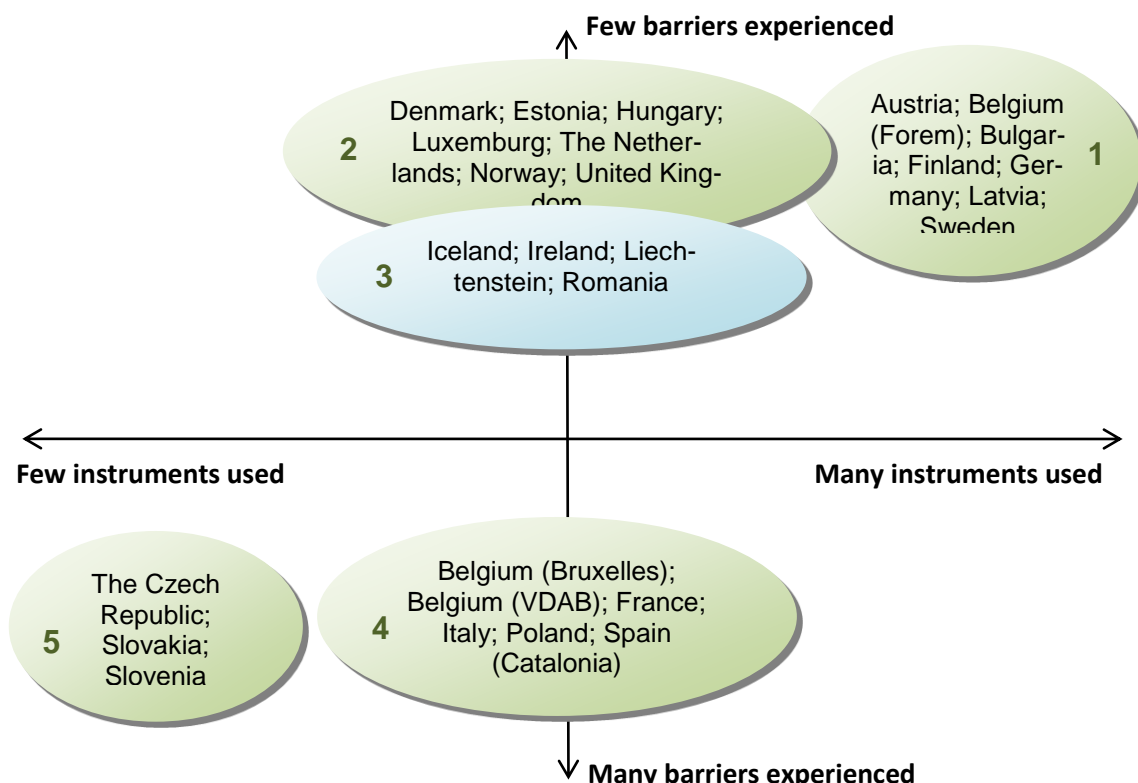
Results of the cluster-analysis

The analysis identified five clusters as illustrated in Figure 7-1 below. The PES belonging to each of these clusters are similar to each other in the width of the instruments they employ, the range of themes they explore and the depth of implementation of results.

The colours in the figure indicate the 'depth of implementation' of the results of implementation exercises. In the 'green clusters', instruments are used throughout the organisation, while this is not the case in the 'blue cluster'.

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[28] The method used for clustering is described in more detail in section **Fejl! Henvisningskilde ikke fundet. Fejl! Henvisningskilde ikke fundet.** on page 20.

Figure 7-1: Anticipation clusters

Few barriers experienced

2 Denmark; Estonia; Hungary; Luxemburg; The Netherlands; Norway; United Kingdom

1 Austria; Belgium (Forem); Bulgaria; Finland; Germany; Latvia; Sweden

3 Iceland; Ireland; Liechtenstein; Romania

Few instruments used ← → *Many instruments used*

5 The Czech Republic; Slovakia; Slovenia

4 Belgium (Bruxelles); Belgium (VDAB); France; Italy; Poland; Spain (Catalonia)

Many barriers experienced

1:"Fast forward on all engines"
Austria, Belgium (Forem), Bulgaria, Finland, Germany, Latvia, Sweden.
This cluster is characterised by:
- high reliance on all instruments;
- results are used at all or most levels (Exception: Finland: partly); and
- no barriers to use of instruments (Exception: Austria (partly)).

2:"We want figures"
Denmark, Estonia, Hungary, Luxemburg, the Netherlands, Norway, the United Kingdom.
This cluster is characterised by:
- high reliance on quantitative forecasts and employer surveys, but not so much of other instruments (Exceptions: Estonia, the Netherlands);
- results are used at all or most levels; and
- no barriers to use of instruments (Exceptions: Estonia (partly), the United Kingdom).

3:"Planning before implementation"
Iceland, Ireland, Liechtenstein, Romania.
This cluster is characterised by:
- high reliance on quantitative forecasts and employer surveys, but not so much on other instruments (Exceptions: Liechtenstein, Romania);
- anticipatory information is mainly used for planning purposes at the strategic level;
- no barriers to use of instruments (Exception: Iceland).

4: "High barriers"
Belgium/Actiris, Belgium/VDAB, France, Italy, Poland, Spain/Catalonia.
This cluster is characterised by:
- medium reliance on instruments; especially quantitative forecasts and employer surveys are utilised;
- results of forecasts and surveys are used at all or most levels; but
- these countries experienced barriers to the use of (nearly) all instruments.

5: "Let's ask the employers"
The Czech Republic, Slovakia, Slovenia.
This cluster is characterised by:
- high reliance on employer surveys, but not on other instruments;
- employer surveys used at all or most levels and
- barriers to using of (nearly) all instruments

Specific remarks concerning Malta and Portugal:
- Malta can be said to form a cluster on its own, as it has low use, only uses the instruments at a few levels and experiences several barriers to the use of the instruments.
- Portugal does not fit into one specific cluster, but shares similarities and differences with several clusters. In terms of use of instruments, Portugal lies closest to cluster 1, while it differs from the other countries in cluster 1 in terms of the levels the instruments are used at and the barriers to use.

8. Challenges and benefits for PES

8.1. *What is to be gained from improving anticipation in PES*

In the survey we asked the PES to identify activities which could gain from improvements in the acquisition and use of each of the sources of information covered in the previous chapters.

Overall, the PES responded that improved use by PES of information from quantitative forecasts, from surveys (of employers and of students/graduates), and from foresight studies would improve either the efficiency of their operations, the quality of their services or both.

They identified the following activities which could benefit in particular by a better use of forward-looking information:

More targeted labour market policies

A few PES from New Member States expected that improved anticipation in PES could potentially give input to more targeted employment policy formulation.

More efficient partnerships

Anticipation requires the PES to work with other stakeholders in the provision of information. However, but according to the PES improved anticipation will in itself contribute to improving their cooperation with other stakeholders in the labour market, thereby narrowing the gap between labour supply and demand.

Improved operational efficiency - improved services

Improved forecasting
A more efficient use of employer surveys would enable the PES in some countries to obtain more up-to-date information than by just using statistical data, where there may be a considerable time lag. A couple of PES in the New Member States expected that greater involvement on the part of employers in the research process would ensure more comprehensive information about activities on the labour market.

Improved planning and budgeting of PES activities
Many PES observed that improved use of information from forecasts of skill needs and skill supply would benefit the planning and management of the implementation of employment policies by enabling PES to prioritise between measures, and by allowing a more targeted application of their budgets to regions, offices, and measures.

Improved training and guidance of the unemployed
If PES staff were more knowledgeable concerning future skill needs, it would benefit their services to jobseekers in general, and the information and guidance given to the unemployed. A number of PES specifically drew attention to improvements in the guidance of young people, who would benefit from operational information about long-term prospects in different occupations.

Improved quality of placement
This was mentioned by a couple of PES, and one (the Icelandic) noted that improved anticipation would hopefully lead to "more young people from unemployment to work".

8.2. Challenges with respect to anticipation

Just like the PES have identified a number of benefits from improved anticipation, the study has also revealed that they are faced with a number of challenges. These challenges are not the same for all PES, but differ according to the specific framework conditions of each PES.

Current political focus is on the short term

Currently, unemployment is growing across Europe. Hence, the focus of employment policies have become concentrated more on active measures which will get people back in employment quickly, and less on measures designed to enhance the employability of the labour force in the long term, or to avoid future mismatches between skill needs and supply. Moreover, the focus on those currently unemployed is a challenge to initiatives to move people out of inactivity and into the labour force has become less strong. This change of focus away from the long-term is in some cases reflected in performance management systems which do not give the PES any incentives to initiate activities oriented towards the future.

Performance management systems in PES do not reward forward-looking approaches

Earlier studies show that PES increasingly focus on measurable outcomes and performance management (Andersen et al 2009). A new study from the Policy Research Institute and ITS finds that performance management systems tend to change the focus of attention to measurable outcomes, and this could impede better skills matching which is hard to measure (Nunn et al 2008). Despite recent methodological progress, there are still considerable methodological challenges towards identifying and measuring skill mismatch, and hence avoiding skill mismatches. Performance indicators tend to focus on unemployment rates and placement rates as well as the efficiency of the PES in achieving these outcomes, rather than on ensuring that the skills and jobs enrich each other to the benefit of individuals, companies, and the economy. If the trend towards performance management continues, it will be a challenge for policy makers and PES management to develop performance indicators that take into account the PES' ability to foresee future skill needs and skill supply, and the quality of matching of skills.

Insufficient statistical infrastructure in parts of Europe hampers anticipation

In many of the countries surveyed, the statistical infrastructure does not allow the PES (or other bodies) to collect reliable data on the current situation, enabling them to analyse trends and establish a baseline for anticipation.

Lack of dedicated resources and retraining of PES staff

Several PES noted that conducting anticipatory activities and/or using data from anticipatory activities is challenging because few resources are dedicated to this type of activity compared to the daily activities of profiling and matching. In many of the New Member States PES are still in the process of developing employment services, and in this work there is little room for advanced anticipatory activities. However, in the survey several of these countries mentioned that they are planning to develop anticipatory services, and/or that they would like to, but that they are short of resources and dedicated staff. Both new and old Member State replied that more time and/or dedicated resources to anticipation activities would enable them to increase anticipation activities.

Data definitions not up-to-date

Even in countries with a reasonable statistical infrastructure, anticipation often relies on quite simple statistical projections of manpower need and supply by broad sector or occupational

group (sometimes just management/white collar/blue collar), and it is often not possible to break down data to a local level. Even where data exist on employment by detailed occupation and labour market entrants by qualifications, there is no reliable method to link the two, as the skills demanded in a particular occupation frequently may not match the skills supplied by a particular qualification one-to-one. This phenomenon appears to be increasingly important. For example, whereas there is a good chance that a person holding a qualification as nurse will work as a nurse (occupation) in the health sector, there is no such certainty attached to a person holding a qualification in media design. The latter may take up a number of different occupations in a very wide range of sectors. Modern labour markets are becoming increasingly complex and differentiated and the traditional focus on sector and occupation in thinking about skills matching is no longer sufficient.

The skills implications of dynamic labour markets are difficult to capture

Labour markets can be very dynamic in the sense that occupations disappear, appear and merge quickly. Therefore, anticipation exercises based on occupational and qualification standards may fail to catch important developments in labour markets. Even if the vast bulk of jobs are likely to remain within the same occupational groupings, and the mix of skills and competences needed to undertake them successfully only change gradually, anticipation needs to consider carefully the emergence of new, potentially important sectors, technologies, business models and occupations.

Target group definitions remove focus from those currently inactive

European labour markets are still characterised by low levels of participation in the labour market, particularly amongst women, older people, young people, migrants and people with disabilities (Hadarson 2007). Inactive persons are individuals who do not have a job and are not actively looking for one or are available for one. According to Eurostat LFS data the main reason for inactivity in Europe is family responsibilities and early retirement (ibid). The main reason for young people to be inactive in the labour market is participation in education, whereas for older people the main reason is retirement.

In their 2006 Mission Statement the European Heads of PES advocated increasing employment participation rates, in particular those of women who have either never entered the labour market or failed to return to work after maternity leave (Heads of PES 2006). Due to the ageing of the working population, the inclusion into the labour force of currently inactive groups is imperative if the current participation rates are not to decline even further. The size of this challenge is illustrated by figures from the European Labour Force Survey showing that 16 million inactive persons of working age (15-64) are willing to work (Hadarson 2007). However, people who have never or rarely have had a paid job are very likely to need comprehensive employment services to facilitate entrance to the labour market or measures to help them remain employed despite ageing, childbirth and disability. The main challenge for PES in this regard is to change their focus from people actively seeking jobs to people with an employment potential. Even if the last years have seen some mergers between PES and social security systems to overcome this barrier, the problem remains with respect to persons not receiving any public benefits (like women working in the home in the single breadwinner-systems, which are particularly widespread in Southern Europe).

8.3.   What should be changed to improve anticipation

The PES respondents have given indications as to what they think needs to be changed to improve the situation with respect to anticipation.

More resources should be dedicated to forward-looking activities

Insufficient capacity in PES to analyse and utilise information about future skill needs and future skill supply is a frequently mentioned barrier to improved anticipation. In line with this, several PES suggested that more time and/or resources need to be specifically dedicated to forecasting/foresight activities in most PES. Some PES require staff with different qualifications than those currently employed.

Access to and quality of data should be improved

Access to and quality of, data, in particular statistical data, is seen by the PES to be another significant barrier with respect to anticipation. Many PES point to the need to have statistical information which is more up-to-date, more comprehensive, and disaggregated geographically, as well as with respect to occupational classifications (demand side) and qualifications or type of education (supply side). Furthermore, more detailed information about flows in the labour market is needed.

PES' access to forward-looking studies and documents should be improved

Most PES acknowledge that their forecasting exercises would benefit from being informed by data and information from a wider range of different sources and methods, including survey data and the results of foresight studies. However, few PES use such information, reportedly due to difficulty in obtaining the relevant studies and transforming their results into operational information. Therefore, improved access to forward-looking studies is called for by a number of PES. One suggestion for improving access to forward-looking labour market study results is to intensify PES' cooperation with research institutions and other agencies conducting or funding such work.

PES' cooperation with employers should be improved

Despite employers being the closest partner of most PES, the PES still call for this relationship to be further intensified and improved based on mutual trust.

A forward-looking culture is needed in PES

Last, but not least, the French PES suggests that the development of a 'forward-looking culture' within PES is the key to improving the use of the forward-looking labour market information.

9. Conclusions and recommendations

The main findings and conclusions are presented below, followed by a section devoted to recommendations.

9.1.　Anticipation - strategies and methods of PES

PES' roles are changing

With the move over the last 30 years towards more active labour market policies, PES have come to play an increasingly important role in the competence development of the labour force. After the turn of the Millennium, the increased focus on the need to strengthen the knowledge economy has put additional pressure on the PES to play a more active and anticipatory role.

Organisational focus on and capacity for anticipation is variable

Even if PES do not themselves collect labour market information, some expertise is needed in the PES to obtain, analyse and communicate information. The PES survey found that there is great variation across Europe as to PES' organisational focus on, and capacity for, anticipation. Roughly half of the European PES (17 of 29 PES) has organisational units specifically dedicated to anticipatory activities in their organisation. However, the study found that there is not a one-to-one relationship between organisational focus and the PES' own perception of their capacity for anticipation. Among the 12 PES without 'anticipation departments', two rated their own capacity for anticipation as 'good' and six as 'fair'; and among those with an 'anticipation department', four still found their capacity for anticipation to be 'incomplete'. Some of the latter are PES with a lower staff/labour force rate than average.

PES' cooperation on anticipation

Anticipation of skill needs and skill supply requires close cooperation to ensure the validity of information, as well as implementation of relevant measures.

Cooperation with employers
The survey shows that most PES emphasise the importance of maintaining a close dialogue with employers. Even so, this dialogue does not appear to be very systematic and in most cases it involves only a small subset of employers. Moreover, focus in the contact appears to be more on current vacancies than on anticipation of future skill needs. This raises a concern that PES may not be able to pick up weak signals concerning emerging sectors or technologies and their implications for future skill needs.

Cooperation with employers' organisations
Most PES cooperate frequently with sector organisations to discuss the trends in and prospects for the sector, but this is mostly informally and not very systematic. A few PES collaborate with employer organisations in the design and development of analyses of future skill requirements. Only two PES have reported that they participate in formalised partnerships with employer organisations.

Cooperation with education and training providers to anticipate skill needs
PES' partnerships concerning skill supply appear to be less solid than those concerning skill demand are. About one third of the PES reported that they cooperate with education and training providers on a regular basis on anticipating skill needs, while another third reported that such cooperation only takes place rarely. Two PES reported that they never cooperate with

education and training providers about issues pertaining to anticipation. The cooperation mainly concern issues with relevance for continuing training, and a majority of the PES (24 out of the 29 PES) reported that they use information about future skill needs in the labour market to influence the supply of education and training, but the approach varies from the very systematic to the less structured.

Anticipatory services to jobseekers
Most PES use anticipatory information in a wide range of services to jobseekers. All PES deliver such services to unemployed jobseekers, while 2/3 of the PES deliver them to employed persons in sectors at risk of restructuring. The activities include screening, interviewing, matching, guidance, competence/skills testing, skill assessment, provision of training offers and development of action plans. In addition, a number of PES have developed internet-based portals which, in addition to current vacancies, also hold information about job prospects in particular occupations and sectors.

Employers are the main source of labour market information used by PES
For the purpose of the study, the ILO definition of Labour Market Information was adopted. ILO defines Labour Market Information thus: "Any information concerning the size and composition of the labour market or any part of the labour market, the way it or any part of it functions, its problems, the opportunities which may be available to it, and the employment-related intentions or aspirations of those who are part of it" (Thuy et. al. 2001) . The PES survey asked the PES about their use of information from four types of sources: Quantitative forecasts, employer surveys, surveys of students and graduates, and foresight studies. Out of these sources, employer surveys are the source of information used in anticipation by most PES; indeed more than half of the PES mentions such surveys among the instruments they consider most important to anticipation.

The use of employer surveys
The PES survey showed that the main focus of the employer surveys is on current and imminent vacancies and skill needs. However, roughly half of the PES uses data from employer surveys to supplement information from other sources when they prepare forecasts. Some PES, particularly in some of the New Member States where the statistical data are not suited as input to labour market forecasts for different reasons, use employer surveys as the main data source for forecasting of skill needs.

The use of quantitative forecasts
Most PES employ quantitative forecasts as a means for obtaining information about future skill needs and supply, but only a little more than half the PES reported that they do so regularly. There are big differences with respect to the scope of, and data sources used, in the forecasts used by the PES. Some are ongoing nationwide exercises, involving large datasets and complex modelling, while others are regional forecasts built on projections of information from employer surveys. Regardless of scope, the forecasts most frequently focus on trends in the (geographical and/or sectoral) distribution of jobs and occupations. Projections of the supply of skills and qualifications are less frequently used by the PES.

The use of surveys of students and graduates
The PES use information from surveys of potential entrants to the labour market less frequently than surveys of employers. Most PES have used such surveys, but only five PES use them regularly.

The surveys are used to obtain information about: the attitudes towards the labour market among students; study programme popularity; factors which trigger decisions to seek work abroad; and the extent to which graduates take up jobs in line with their qualification.

The use of foresight studies
A little more than half of the PES reported that they use information from foresight studies regularly or sometimes, while a third never used such information. The PES that use foresight studies to inform their anticipatory activities primarily look to studies concerning the main economic and employment trends, and trends in skill demand and supply. Fewer PES look for information about other factors that may critically influence skill demand and supply, such as demographic trends, emerging skills and competences, or consequences of globalisation or technological change on jobs and occupational profiles.

Anticipatory information is useful for a wide array of purposes in PES operation

Utilisation of labour market information was categorised according to the level of implementation. Thus, information can be used either at a strategic/national level, in the management of regional or local PES offices, or at the level where frontline staff is in contact with job seekers.

The use of anticipatory information at strategic/national level
At this level, most PES use anticipatory information in the strategic planning of implementation of employment policies, including: budgeting and allocation of resources, including staff in PES offices; planning of active employment measures; identification of target groups for active measures; and development of ICT-based labour market information systems. In addition, a few PES reported that the information obtained from the sources mentioned above provides input to revisions and reforms of employment policies.

The use of anticipatory information at regional/local level
At regional/local level, like at the national/strategic level, information about future supply of and demand for skills is mainly used for planning purposes, such as setting of production targets, development of action plans, budgeting and distribution of resources to offices. Furthermore, such information is used by some PES as an input to organising active labour markets measures, including training of the unemployed.

Information from foresight studies appears to be utilised in ways that differ from the use of the other types of information. Thus, such information is used, e.g., as input to the professional development of PES staff and management; in the mobilisation of stakeholders; in identification of areas for training and advice to training providers; and in guidance to training providers.

The use of anticipatory information in service delivery
According to the survey, PES staff use anticipatory information mainly as an input to activities targeted at the unemployed. Most mentioned guidance as an activity that benefits from information about future skill needs. This information can be obtained from any of the four categories of sources. A few PES reported that recruitment services for employers and support for the creation of jobs take the employer surveys as their main point of departure.

9.2. Barriers with respect to anticipation in PES

The study has identified a number of barriers and structural conditions that hamper or prevent the anticipatory activities of the PES.

Conditions vary considerably across Europe

The survey results show that there are considerable differences between the width and depth of PES activities in anticipation. Hence, the barriers encountered by the PES (highlighted below) cover a wide range of different types, in accordance with their different circumstances (e.g. differences according to size of the country; labour market regulation; PES' share of vacancies; division of work between political actors and operators in employment and education services; statistical infrastructure; and social dialogue - just to mention a few).

Limited access to and insufficient quality of information

The barrier identified by most respondents to the use of the sources of information mentioned in the survey is limited or no availability of data or studies. Availability of quantitative forecast data is perceived as limited by PES in most New Member States and in Southern Europe. Poor quality of one or more types of data is experienced in a number of countries, with no obvious common characteristics. In addition, many PES identified barriers with respect to availability and quality of forward looking labour market information or data needed to produce such information. These barriers include: long lead-time of statistical data; limited reliability of statistical trend extrapolation; national forecasts which are not sufficiently broken down into regional or sector level; difficulty in accessing the target group for surveys of students and graduates; and incompatibility and inconsistency between data from different subsystems (for example education statistics, labour market statistics, and social statistics). Barriers with regard to the availability of statistical data were found to be closely connected to the existence of an efficient and comprehensive statistical infrastructure in the country of the PES concerned. In countries where the infrastructure is currently inadequate, a way forward for the PES is to compensate by using data that do not require so much prior investment, such as employer surveys.

Limited capacity in some PES to obtain and utilise information

Several PES have reported that conducting anticipatory activities and/or using data from anticipatory activities is challenging because few resources are dedicated to this type of activities compared to the daily activities of profiling and matching.

In many of the New Member States, PES are still in the process of developing employment services, and in this work there is little room for advanced anticipatory activities. However, in the survey several of these countries mentioned that they are planning to develop anticipatory services, and/or that they would like to do so, but that they are short of resources and dedicated staff. Both new and old Member State replied that more time and/or resources dedicated to anticipation activities would contribute to increasing anticipation activities.

EU funding has been used to help develop anticipatory systems in a number of cases. However, this calls into question the long-term sustainability of such activities if this source of funding is withdrawn and national resources are unable to fill the gap.

Lack of focus on anticipation

The study has demonstrated that in some countries where the research team knows that comprehensive anticipation of skill needs and skill supply takes place, respondents still report limited access to or non-existence of such work. This indicates that there is a need for the PES

to consider whether their internal systems are sufficiently efficient in ensuring that results of existing knowledge about future skill needs and potential skill mismatches inform their services to jobseekers and employers.

A small number of PES reports that they work on including results from anticipatory activities in their performance management systems. Such systems may themselves present a barrier hampering anticipation, insofar as they reward the PES implementation system and its people according to performance indicators like placement efficiency, rate of job placements, etc., rather than indicators of activities to increase the employability of the labour force or increase the labour force.

9.3. The way forward and the future role for PES

The study has demonstrated that PES have taken on the task of playing a role in anticipation of skill needs and skill supply in Europe. However, the survey data also show that the development of this role is quite different across Europe. This is confirmed by the results of the cluster analysis, which indicates five clusters of PES based on: the *width* of the types of information they use in anticipation; the *depth* of utilisation in the PES' implementation systems; and the number of *barriers* they experience with respect to anticipation.

We have not looked into the rationales for anticipation in each PES in detail, but the responses to the survey appear to indicate that these rationales differ among the PES. Some PES appear to aspire to be able to plan future skill supply in order to match projected skill needs. In other PES obtaining, analysing and utilising labour market information is mainly a means to provide jobseekers, employers and training providers with a rich information base to be used to inform their own decisions, for example, in the form of labour market information portals on the internet.

In addition, many PES use anticipation information for planning purposes within the PES themselves for allocating resources, prioritising among target groups, and developing and planning active measures.

So what ways forward for PES do the results of the study indicate?

Look forward and outward

One quite important pointer was given by the French PES when it called for a "forward looking culture in the PES". The study has indicated that such a culture is still not very widespread in many of the PES. To this could be added an "outward looking culture". The study has clearly demonstrated that many PES are not sufficiently informed about what is going on in anticipation of skill needs and skill supply in their own countries and in Europe at large. These PES would benefit from dedicating resources to developing partnerships with other government departments and agencies, as well as other organisations such as educational and research institutions that are involved in producing such information.

Triangulate

The study has shown that most PES use a limited range of sources for anticipation – only in one of the five clusters identified do the PES use information from many independent sources. Examples from the PES in this cluster demonstrate that information need not be strictly compatible in a statistical sense of the word. Statistical projections may well be enriched by quali-

tative survey data, foresight results, etc., and may be delivered to decision makers (job seekers, employers, policy makers) as a package of information rather than as one numerical result.

Refine methods

In the PES that perceive many barriers with respect to the use of statistical data, the way forward (in addition to working at changing the situation) may be to refine the methods being used. Where the contact to employers is not well structured, the PES can develop a more systematic approach, for instance, by carrying out surveys or meetings at fixed intervals. This will improve their ability to identify trends in the employers' demand for certain skills. In addition, the questionnaires could be reviewed, possibly with a view to using ideas from questionnaires used by other PES to improve the validity of survey information.

Focus on the utilisation of information

In addition to input into resource planning, guidance and counselling of jobseekers, anticipatory information is useful for a large number of other activities in the PES, which are described by the respondents to the survey. However, the study indicates that many PES could benefit from a more focused approach when utilising the information. This can be achieved by systematically examining the information needs of stakeholders in regional and local labour markets and devising mechanisms for delivering information to each of these stakeholders. This requires that the resources that are already used for developing and maintaining partnerships be prioritised, so that anticipation becomes a shared issue in the partnerships.

9.4. Recommendations

A number of recommendations follow from the results presented above. These are divided into recommendations to: the EU Commission; national policy makers in skills and employment; and national PES. Following the observations above, it is not appropriate to direct all recommendations at every PES. On the other hand, the survey results do not warrant very precise recommendations to specific PES. Therefore, we have elected to address the recommendations to PES in general, giving an indication of the context that warrants the particular action.

Recommendations to the EU Commission

The study has pointed to certain weaknesses in the systems for coordination and information exchange at national level between employment and educational policy makers, as well as between PES and education service providers.

> *We recommended that further research be conducted (in the context of the PROGRESS programme) into information infrastructures that facilitate better national coordination between anticipation in the education policy field and in the employment policy field at national level.*

Given the wide variety of practices in anticipation across the surveyed countries, and the differentiation of the good practices identified by the study, there appears to be a considerable potential for systematic mutual learning between the PES, in particular between groups of PES that share similar characteristics (e.g., with respect to statistical infrastructure, regulatory framework, and tradition for stakeholder involvement).

We recommend that support be given from DG Employment, Social Affairs and Equal Opportunities to establish and implement a mutual learning programme involving all levels of the European PES in the exchange of information that may improve anticipation in their home country. Such a programme needs to engage with those involved in conducting the anticipation activities if this is carried out outside the PES.

Recommendations to national policy makers

The study has demonstrated that anticipation can (and does) take place in various institutional contexts in addition to within the PES themselves. Even if the PES in a particular country only has limited capacity for anticipatory work, other bodies may be better equipped to carry this out and provide the PES with the kind of information it needs. Choosing which way to go is inherently strategic and such choices should be made at the highest policy level to avoid doubling of efforts. No matter which organisation(s) carries out anticipation, PES' organisational capacity and performance targets should:

- allow it to make good use of any and all available anticipatory information in its services to jobseekers, employers and training and educations providers; and
- avoid choosing targets that undermine the aims of providing a better match to future skill needs.

We recommend that national employment policy makers initiate competence development programmes with the aim of improving the capacity in the PES implementation system to make good use of anticipation information in service provision.

We also recommend that a review of performance management indicators be initiated in countries where PES is governed by such systems. The review should look into the opportunities for adjusting the systems so that they do not counteract anticipation efforts in the PES.

Recommendations to PES

The study has shown that whereas important benefits are to be derived from anticipation, many PES still have some way to go even when we take into account barriers that may exist concerning resources and access to information. To some extent, these are management issues. Our recommendations are therefore directed at the management of each group of PES.

We recommend that where anticipation currently relies mainly on information from employer surveys, PES should prioritise resources to investigate methods to make such surveys more forward looking, e.g., by investigating trends in technology and business models (employers' plans concerning equipment, subcontracting, sourcing) rather than asking directly for skill needs.

We recommend that where anticipation relies on quantitative forecasts based on statistical data and employer surveys, the PES should examine the possibilities for including other sources of information about future labour markets. Institutes carrying out foresight studies with relevance for the labour market are not present in all European countries. Therefore, we rec-

ommend that the PES network work to develop communications channels between such institutes and the PES in each country, starting with conferences/seminars targeting the management level in the PES at regional/local level.

We recommend that all PES review the nature of work being carried out within their own countries in the area of anticipation, with the aim of joining up thinking in this field and maximising the use of existing work as well as in the longer term influencing the direction and focus of this work so that it is most useful to the PES.

It is also recommended that PES take note of the various activities being carried out by Cedefop, Eurofound, OECD and others at a pan-European level that provide insight into the changing demand for and supply of skills.

The PES network at European level plays a vital role in promoting anticipation in the PES.

We therefore recommended that the network maintain and strengthen its focus on anticipation with a view to supporting mutual learning taking into account the different points of departure of the PES.

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Annex A: Methodology

The following methodological elements contributed to the study:

1. An analytical framework guiding the study

2. Analysis and synthesis of existing analyses and documentation (desk research).

3. A survey to European PES to collect information about the anticipation strategies and practices across Europe

4. Collection of secondary data from PES Monitor and similar sources

5. Transversal analysis employing different instruments such as comparative tables

6. Cluster analysis

7. Selection of good practices and description of the selected good practice cases

Below, we describe each of these elements in more detail and discuss the application to the present assignment.

Analytical framework

In order to approach the study in a well-founded and concise manner and ensure a coherent and rigorous analysis, it has been guided by an analytical framework developed in the initial phase of the study. This framework was developed in dialogue with the Commission and the PES expert group on New Skills for New Jobs[29]. It has served as a device to describe and understand the roles and functions of PES in relation to anticipation of future skill needs, guiding the research questions and the development of a survey questionnaire. The analytical framework is illustrated in the figure below.

As illustrated, PES are positioned between three different types of *actors*:

- The demand side of the labour market: Employers and employers' organisations
- The supply side of the labour market: Current and potential jobseekers, including persons currently outside the labour force
- Other organisations with influence on either supply or demand, most importantly other providers of employment services, providers of training and education, and those providing labour market information, including projections.

Basically, there are two different areas of activity within the PES that are involved in anticipating skill needs and providing services to meet them:

- Labour market information tools and resources (the ways that information is obtained and generated); and
- Services to jobseekers and employers (the way that information is used).

In order to integrate anticipation into their work, PES need *organisational capacity and strategic focus*.

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[29] This group consists of PES experts in the field of labour market analysis and information and should not be confused with the interdisciplinary Expert Group which was set up by the Commission in 2009 and completed their work in 2010 with a report (Expert Group on New Skills for New Jobs 2010)

We understand a particular PES' anticipation strategy as the specific combination of organisational capacity and strategic focus with actors and instruments.

Analytical framework for the study of the roles of PES in anticipation
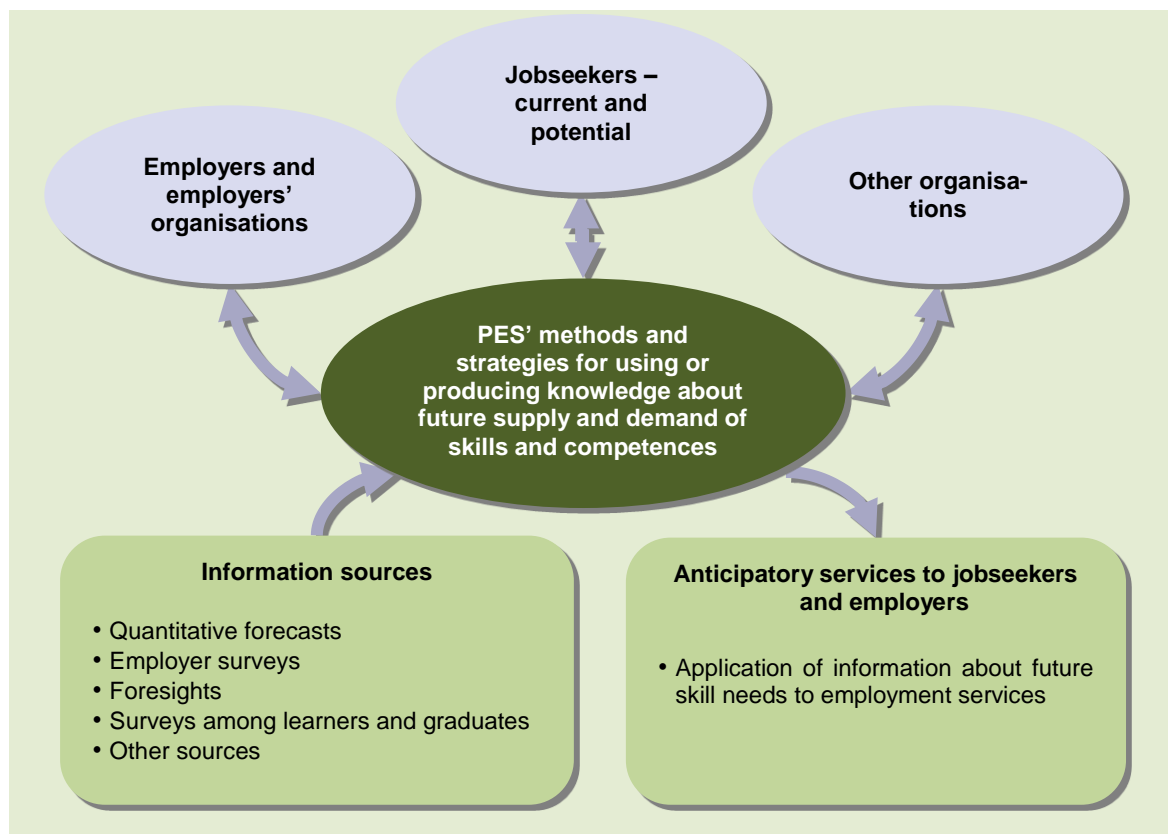
Comments to the analytical framework

The focus on "anticipation" in the work of the PES is relatively new and that for many it is still not a priority nor a topic regarded as central to their main activities. This may have affected the quality of responses to the questionnaires sent out to the PES. For many senior officials in PES anticipation has not been their top priority and this situation has probably not been changed by the need to deal with the immediate effects of the ongoing financial and economic crisis.

Alternative approaches to anticipation of changing skill needs
There are many different approaches to anticipating future skills needs and how these compare with supply. Reviews by Cedefop (2007 and 2008f), the European Commission (2008) and others (Wilson (2008)) suggest that these fall into two broad main categories quantitative and qualitative, although even this broad distinction is not always clear cut.

- Quantitative approaches included projections based on macroeconomic models and econometric methods, but they can also encompass survey work such as employer (and other) surveys which ask quantitative questions.

- Qualitative approaches include the use of Focus Groups, Delphi and Scenario Development techniques, as well as employer and other surveys and interviews which ask more qualitative questions.

In addition there are many "mixed methods" including the setting up of Observatories at both regional and sectoral levels. This includes work such as the in depth Sectoral Studies conducted by DG Employment (2009). None of the methods has a monopoly on truth, and each has their strengths and weaknesses. Generally a mix of methods can provide the most robust and reliable picture.

Feasibility

What is feasible depends upon what Wilson (2008) has referred to as "statistical infrastructure". Building complex econometric models require massive prior investment in National Accounts and other data. Countries that have not made such investments, or those that are only just beginning to do so, need to place much more reliance on other methods, including more qualitative techniques. What is possible in individual countries is often limited by their existing "statistical infrastructure". This encompasses all the economic and labour market data necessary to carry out detailed analysis and assessment of the labour market. In some countries, long-term investment in national accounts and surveys of employment and skills enables quite sophisticated quantitative analysis

> **Statistical Infrastructure – an example of barriers (Poland)**
>
> In Poland, Employment offices have reported that research conducted by the Central Statistical Office ('Research into the Demand for Employment') does not enable a diagnosis of the situation in a local district (powiat). This research also does not give information about the needs local labour markets, in particular the qualifications in demand. In addition, research does not provide information regarding reduction of staffing levels. The Polish PES concludes that an effective system providing information about the labour market should incorporate recruitment plans in the employment establishments of local districts within each voivodeship (region).

and modelling. In many others, such information does not exist and anticipatory activities rely upon more qualitative methods, including sectoral and regional observatories using Delphi techniques or scenario development methods.

Appropriateness

What is appropriate also depends on the audience and the use to be made of the projections. Different audiences and uses may require different levels of detail and foci. In some countries the focus is still on providing information to policy makers to help plan education and training systems. More commonly nowadays, the focus is on individuals and other labour market actors about trends and possible futures, helping them to make informed choices and decisions and making markets work better. However, what is possible in practice is often limited by the statistical infrastructure in place, so what is ideal is often constrained by the feasibility issue.

In most countries there is now a general acceptance of the case for carrying out such anticipatory work, recognising the public good arguments for investment in such activities as well as the economies of scale in organising and carrying it out centrally. However, only a few countries have a really well coordinated system that recognises all the different needs of users.

The information sources used by PES

Based on the initial desk research and subsequent discussions with the PES, we identified four main methodological approaches to obtaining anticipatory labour market information. These approaches differ with regard to focus, timescale, and the nature of the information they provide – quantitative or qualitative, detail, scale, etc. Furthermore, they differ considerably with regard to the resource requirements (methodological and manpower capacity, and access to valid statistical data). None of these approaches is inherently superior to the others, nor do the

methodological approaches represent mutually exclusive anticipation strategies. Indeed, due to the nature of anticipation, the use of a plethora of methods should be preferred, and most PES use a combination of the approaches. In most cases the options used reflect constraints on what general statistical is available in the countries concerned as much as any resource or other limitations within the PES itself.

The four categories distinguished are as follows:

- *Quantitative forecasts* use statistical data about the present and past to estimate future developments and the results of such forecasts are typically presented in tables and/or graphs. Labour market relevant forecasts range from simple extrapolation of time series of the development of employment in one or a number of occupations to complex models involving demographic and/or econometric modelling.

- *Employer surveys* are surveys of employers (private or public) regarding vacancies (current and/or expected), skill needs, and/or training needs. The surveys may be quantitative or qualitative and can use questionnaires or interviews. The scale may vary from surveys in a local area to national surveys[30]. In addition, surveys may cover one or more sectors or occupations. In general they are backward rather than forward looking although in a few countries the future is given greater emphasis.

- *Foresight studies* are typically multidisciplinary and involve qualitative as well as quantitative analyses. Foresight studies often include the development of alternative scenarios in addition to statistical projections of trends. Foresight activities may also consider the actions that should be taken to contribute to shaping the future in a particular way, and hence can take on a normative character.

- *Surveys of students and graduates* addresses potential labour market entrants and include topics like students' job preferences, and expectations after graduation and graduates' employment status and career expectations after graduation.

Each of these methods allows collection of information about the supply side, the demand side or both to identify growth sectors, emerging skill needs, skill gaps etc. Each approach has different requirements in terms of the data and information which needs to be collected.
Depending on information needs, information may be structured according to level of aggregation, geographical subdivisions and/or classifications and standards (sector classifications, occupational classifications, skill qualifications etc.).

Supply side information
Information at the *macro* level is required to make quantitative estimates of future skill supply. The provision of such information requires access to time series demographic data and trends, as well as data on employment indicators (population data and labour force data categorised by age, gender, employment status, contract type, geographical and occupational mobility, occupation, etc.)

At the *meso* level, information can be assembled using varied sources of data, the nature of which depends on the focus of a specific anticipation exercise. Examples include:
- information about young people's career choices;

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[30] An example of a large scale employer survey is the National Employer Skills Survey in England (European Commission 2008b).

- data provided by educational demographics (e.g. a forecast of the supply of nurses in a particular region in 2025);
- data on the use of continuous vocational training.

At the *micro* level, PES may collect information about individual competences and preferences in order to match the individual to vacant or potential jobs. This (qualitative) information about knowledge, skills, qualifications, plans, and preferences may be aggregated to feed into some kind of anticipation of skill supply and hence add to available meso or macro level data.

Demand side information

At the *macro level* relevant data include information which can contribute to anticipation of the future demand:

- demographic analyses of the employed labour force (replacement demand);
- general economic and employment trends, including key drivers such as globalisation and technological change;
- information about emerging sectors and industries

Ideally, much of this is encapsulated in economic data on output and productivity trends at a detailed sectoral level, recognising that the demand for skills is a derived demand that can be traced back to the demand for various types of goods and services.

At the *meso level* (sectors, regions), relevant data include information about developments within a specific sector, occupation or geographical area, e.g.:

- competitiveness of a sector (in a national and/or global context);
- regional or local enterprise statistics;
- technological trends in a sector;
- employment trends in a sector or geographical area (vacancies, recruitment within different occupational categories).

At the *micro level* (individual employers and employees), qualitative information that is not picked up in statistical surveys may be obtained from employers. The information may concern the employers' perception of current and expected skill needs, as well as skill gaps in relation to existing jobs and functions.

The geographical dimension is important for both demand and supply. At the end of the day, all skill shortages (vacancies) or labour surpluses (unemployment) occur at a local level. The PES in all countries recognise this in their day-to-day operations, but the significance of the "regional" dimension varies greatly across countries. This is partly a question of size of the country. What are defined as "regions" in some countries (such as in Slovenia, for example) would be regarded as local labour markets in others (e.g. the UK).

It is clear from the desk research, as well as the survey of PES carried out as part of this project, that there is considerable variation in practice regarding how much of the anticipatory activity and related data collection focussing on the labour market is carried out "in-house" and how much is undertaken by others. This reflects institutional and historical differences between countries and responses to recent political and economic change (notably in the New Member States).

While the general case for undertaking anticipatory activities as a "public good" has been accepted in all countries, there are still some differences in the rationale for doing it. These range from those who see its prime function as aiding policy makers to "plan" the education, training and related systems "from the top down", to those who see its prime function as helping to inform individual choices and decisions (helping markets to work better). The new member states in Central and Eastern Europe tend to be especially wary of any attempt to re-introduce "central planning" and are particularly strong advocates of the "helping markets work better" rationale.

While there is probably general acceptance of the economies of scale as well as "public good" arguments for advocating that such work should be centralised and provided (or at least funded) by the government, there is considerable variation practice across countries. Only in a few cases do PES play a central role in conducting such work, although many more make use of such work carried out by others. Some PES themselves collect the primary data used for such analyses. They may also use available data and analyses from, e.g., research institutes, central statistical offices or specialised public agencies. In some cases PES may tender their data collection or analysis requirements.

The actors
The collection of information as well as the utilisation of the results of the analysis requires creating and maintaining constructive relations with the actors in the field:

- *Employers and employers' organisations* possess knowhow about current and emerging skill and competence needs and about skill gaps in their own company or sector. They do not, however, have the broad knowledge about the supply of skills and competences that the PES have.

- *Jobseekers* may be unemployed, in employment and wanting to change job, in employment, but redundant or threatened by redundancy, or outside the labour market. These different circumstances represent very different needs for information and assistance. Furthermore, PES typically have a statutory duty to deliver services to unemployed jobseekers, while the duties to the other categories of jobseekers vary across countries.

- *Other organisations* include organisations, bodies, institutions and other stakeholders that have information, knowhow or operational capacity which can aid the PES task of improving the future match between skill needs and demand. Examples of such organisations are private providers of employment services, education or training institutions and services, providers of social services, and providers of information, data or systems (such as e.g. research institutes or national statistical offices).

Anticipatory services to jobseekers and employers
The role prescribed for PES requires not only that they collect and analyse information, but also - and importantly - that this information is used proactively to ensure better matches now and in the future. More options are available to PES for this purpose. They include the following options (which are not mutually exclusive):

Provision of targeted information
- Provision of labour market information to employers and employees (and their respective organisations) to enable them to make better decisions in view of the expected future developments

- Provision of labour market information to the educational system (including the policy makers) to inform decisions about investment in education and training.

Services to current and potential jobseekers

- Information from anticipation exercises can be distributed internally in the PES organisations to ensure that the insights are reflected in individual guidance and counselling and in the design of active measures.

Activities in the study

Desk research

Initial desk research was carried out to provide the study with a theoretical underpinning. The purpose of the desk research in this phase was to:

- Develop clear and concise definitions and key concepts
- Enhance and refine the analytical framework as the study progressed
- Contribute to the mapping of PES roles and activities in anticipation across Europe
- Contribute to the identification and selection of good and innovative practices regarding PES and anticipation activities

The desk research involved the development of a terminology defining and describing key concepts and definitions of the study. The terminology is attached in Annex D.

Survey of European PES

The key data source for the study has been a new online modular survey distributed to all PES in EU Member States as well as Norway, Liechtenstein and Iceland. The survey asked for information about:

- Basic information (size of staff pay roll, share of vacancies, organisation of anticipatory activities)
- Types of information on future skill needs and skill supply used by the PES
- What the information is used for
- Cooperation with employers and other organisations on anticipation of skill needs
- Good or innovative approaches used by the PES to engage in anticipation activities (to be described further below).

Links to the survey were sent by email to PES at the national level.[31] In two cases, however (Belgium and Spain)[32] the survey went to a sub-national, because the PES is fully devolved to the regional/provincial level in these countries. In the letter accompanying the survey, we asked the Heads of PES and their Assistants to involve relevant parts of their organisation to collect the information and assessments needed to answer the questionnaire.

The survey questionnaire was developed in close cooperation between the members of the consortium research team. Assistants to Heads of PES in *Austria, Belgium (Flemish Region),*

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[31] The survey was sent to the Heads of PES as well as to their Assistants.

[32] In Belgium, the four regional PES were approached. They are: VDAB (Flanders), Actiris (Brussels), Forem (Wallonia) and ADG (The German Community of Belgium). They all replied, but the reply from ADG was after the deadline. We did manage however, to include it in several of the analyses. In Spain, all regions were approached, but only Catalonia replied.

Germany, Denmark, Finland, and *Slovenia* then tested the questionnaire. The comments from the testing were incorporated into the final version of the questionnaire before the European Commission approved it.

The questionnaire was developed in English and was then translated into 17 languages.[33] Each PES was given the opportunity to respond in its native language, and subsequently the responses were translated back into English.

The survey was launched in early August 2009 and closed the 1st November 2009. By that time, 29 PES had replied. PES in the following countries did not supply information: Greece, Lithuania and Cyprus (See Annex C: Response rates for details).

A hierarchical cluster analysis was performed to evaluate statistically how – and on the basis of which variables – the national PES participating in the survey could be grouped. The analysis includes the PES' replies to 20 variables in the dataset and resulted in five distinct clusters containing 27 of the 29 countries/regions in the dataset. Of the two countries not belonging to one specific cluster, Malta could be said to form a cluster on its own, as it was the only country with low scores on all variables. Portugal, on the other hand, shared similarities and differences with several clusters and could therefore not be fitted into a particular cluster.

A statistical cluster analysis (and in particular hierarchical cluster analysis of binary choices, such as whether or not barriers exist) is inherently tentative because it depends on the order of variables to solve any potential ties (i.e. identical values) between cases. However, the validity of the analysis can be assessed by changing the order in which variables are sorted or the algorithm used for clustering individual cases. For the present analysis, all the methods used (Ward's Method, Complete Linkage and Furthest Neighbours) returned consistent results.

Good PES practices in anticipation

In the current context, we understand 'good practice cases' as cases which constitute a mutual learning potential (European Agency for Safety and Health at Work 2000). Good practices are context-specific and they take into account the particular environment of the case. In this study, we have aimed at selecting a wide array of good practices, which can serve as a basis for mutual learning among the PES. The main requirements for a good practice case are:
- full or substantial achievement of the original objectives;
- beneficial impact on environment;
- provision of relevant and useful learning points.

Good practice cases are therefore cases that are good for learning. Thus, the context as well as the practices, the activities, and the instruments involved in a good practice case need to be described thoroughly and in detail to enable outsiders to understand and learn from the case. More specifically, the study focuses on good and/or innovative practices in which *PES has used anticipation of skill needs in a successful or innovative way from which other countries/regions could learn.* However, not all the good practice cases suggested by respondents fall into this category (indeed some do not even have an anticipatory element at all!).

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[33] български (Bălgarski) - BG – Bulgarian; Čeština - CS - Czech; Deutsch – DE – German; Eesti - ET - Estonian; Elinika - EL - Greek; Español - ES - Spanish; Français - FR - French; Italiano - IT - Italian; Latviesu valoda - LV - Latvian; Lietuviu kalba - LT - Lithuanian; Magyar - HU - Hungarian; Malti - MT - Maltese; Polski - PL - Polish; Português - PT - Portuguese; Română - RO - Romanian; Slovenčina - SK - Slovak; Slovenščina - SL – Slovene.

Selection of good practice cases
The *selection* of good practice cases covers:

- different economic and political contexts
- different approaches to anticipation
- different methodologies

The survey invited PES to suggest good practice cases. Based on the PES' own identification of good practices, the consortium has followed up with desk research and – in a few instances - contact to the PES to obtain more information about the selected cases. In addition, we have used desk research to collect further information on the selected cases.

Good practice fiches
The good practices are presented in the text as boxes when they are relevant for the topic in question. In addition, all good practices offered by the PES are presented in comparable fiches containing information on the development of the case and its context, its main goals and objectives, involved partners, costs, results and effects (where available). (See Annex D: Good practice cases).

Methodological challenges and reservations

As already mentioned, the centrepiece of the study is the survey of PES at national level. It has not been possible within the framework of the study contract to survey the entire implementation system of the PES. As a result, the findings of the study will have to be interpreted with a certain amount of caution. The reasons for this are as follows:

- We do not know who did in fact fill in the questionnaire in each PES. The link to the survey was sent to the Head of the PES and to the Assistant to the Head of the PES, but somebody else in the organisation may have completed the questionnaire on their behalf.

- Whoever completed the questionnaire at the high level of PES may not be fully aware of how implementation of anticipation takes place at all levels of the organisation, let alone which tools and methods are used at the lower levels and in the contact with jobseekers and employers. We encouraged the respondents at the PES to consult specialist colleagues in the organisation. We also asked them to distinguish clearly between activities taking place at local, regional and national level. We have no way of knowing, however, how far the respondents have actually ensured the completeness or accuracy of the information that they have supplied.

- Therefore, the survey data does not necessarily reflect the anticipation practice on the ground, as the respondent may or may not be fully informed about this practice.

- The size of the country may play a role in the accuracy of the supplied information: In a small country, the level of knowledge at the strategic level about implementation about what takes place on the ground, including knowledge about what is happening across departmental boundaries, may be higher than in a large country. In the latter there may be significant barriers both within the PES itself as well as between it and other government departments and agencies. This means that information may not always be fully shared. Our findings do suggest, however, that there is not a one-to-one (reverse) relationship between accuracy and size. Some of the PES in large countries have very well-developed information and knowledge management systems which allow PES managers at strategic level to have comprehensive and real-time insight into the implementation of anticipation strategies both within the PES itself and across other agencies.

To sum up, we would caution against interpreting findings of this study as a comprehensive picture of anticipation in European PES. Rather, the findings should be taken as a snapshot, in late 2009, of

1. The *anticipation strategies* of the PES; and
2. The *perception of PES anticipation practices* at strategic level.

This snapshot, however, can be useful as a starting point, not only for mutual learning, between the PES, but also for internal reflection, within the PES.

The next logical step will be to look at the implementation on the ground: To what extent and how is information about future skill needs and supply used in guidance and counselling? In services to employers? Is information about future labour markets passed on to providers of education and training and through what channels?

Issues like these could be approached through well-structured and targeted comparative case studies or through a large-scale survey of a sample of staff in local job centres/labour offices.

Annex B: Survey questionnaire

Public Employment Services (PES) and anticipation of future skill needs
Questionnaire

PES' use of quantitative forecasts based on statistical projections, econometric models, or similar methods

Quantitative forecasts produce information on future labour markets. Quantitative forecasts use data about the present and past to estimate future developments. The results of forecasts are typically presented in tables and/or graphs.

1. Does your PES, in its day-to-day activities, utilise data from quantitative forecasts of labour market demand/supply?

☐ Yes, regularly ☐ Yes, sometimes ☐ Rarely ☐ No

If yes, does your PES, in use quantitative forecast data concerning the following themes?

Themes covered by forecasts used by your PES	Yes	No
General economic trends	☐	☐
Demographic changes	☐	☐
The future supply/demand of labour by regions/geographical areas	☐	☐
Quantitative flows through the educational system (for example statistical forecasts of numbers of entrants, students, and graduates)	☐	☐
The future supply/demand of labour by occupation	☐	☐
The future demand/supply of labour by type of education	☐	☐
The future demand/supply of labour by educational levels	☐	☐
The future demand/supply of labour by sector	☐	☐
Future imbalances in the labour market	☐	☐

2. Does your PES use quantitative forecast data on other themes than those mentioned above?

☐ Yes ☐ No
If yes, which themes?

3. Are quantitative forecast data being used as input for activities..

.. at the national level? ☐ Yes ☐ No
If yes, which PES activities at national level are based on quantitative forecast data?

.. at the regional/local level? ☐ Yes ☐ No
If yes, which PES activities at regional/local level are based on quantitative forecast data?

.. by staff who are in direct contact with or delivering services to jobseekers or employers?
☐ Yes ☐ No
If yes, which PES activities at this level are based on quantitative forecast data?

4. Does your PES experience barriers in relation to the use of forecast data?

☐ Yes ☐ No
If yes, which barriers?
☐Limited or no availability of relevant forecasts
☐Poor quality of data
☐Insufficient capacity in PES to analyse and utilise data,
 Please specify: _____
☐ Other barriers, please specify: _____

Which activities of your PES would benefit in particular from a reduction of these barriers?

PES' use of employer surveys
Employer surveys are directed to (private and/or public) companies. Surveys may be quantitative or qualitative, using questionnaires or interviews.
5. What is PES' market share of vacancies?

Approximate percentage: ____%

6. Does your PES, in its day-to-day activities, utilise data from employer surveys?

☐ Yes, regularly ☐ Yes, sometimes ☐ Rarely ☐ No
If yes, does your PES use data from employer surveys on the following themes?

Theme	Yes	No
Unfilled vacancies in general	☐	☐
Unfilled vacancies by sector	☐	☐
Recruitment problems by sector (i.e. prolonged time needed for staffing)	☐	☐
Current skill shortages	☐	☐
Estimated future skill needs	☐	☐
Employers' business expectations	☐	☐
Recruitment needs by occupation	☐	☐
Recruitment needs by sector	☐	☐
Employees enrolled in continuing training or education	☐	☐

7. Does your PES use data from employer surveys on other themes than the above mentioned?

☐ Yes ☐ No
If yes, which themes?

8. Are data from employer surveys being used as input for activities ..

.. at the national level? ☐ Yes ☐ No
If yes, which PES activities at national level are based on data from employer surveys?

.. at the regional/local level? ☐ Yes ☐ No
If yes, which PES activities at regional/local level are based on data from employer surveys?

.. by staff who are in direct contact with or delivering services to jobseekers or employers?
☐ Yes ☐ No
If yes, which PES activities at this level are based data from employer surveys?

9. **Does your PES experience barriers in relation to using employer survey data?**

☐ Yes ☐ No
If yes, which barriers?
☐Limited/no availability of employer survey data
☐Poor quality of data
☐Insufficient capacity in PES to analyse and utilise data,
 Please specify: _____
☐ Other barriers, please specify: _____

Which activities of your PES would benefit in particular if these barriers were reduced?

PES' use of surveys among students and graduates

10. **Does your PES, in its day-to-day activities, utilise data from surveys among students and graduates?**

☐ Yes, regularly ☐ Yes, sometimes ☐ Rarely ☐ No
If yes, does your PES use data from surveys among students and graduates on the following themes?

Theme	Yes	No
Job preferences and expectations after graduation	☐	☐
Career plans of final year students	☐	☐
Employment/labour market status after graduation	☐	☐

11. **Does your PES use data from surveys among students and graduates on other themes than the above mentioned?**

☐ Yes ☐ No
If yes, which themes?

12. **Are data from surveys among students and graduates being used ..**

.. at the national level? ☐ Yes ☐ No
If yes, which PES activities at national level are based on surveys among students and graduates?

.. at the regional/local level? ☐ Yes ☐ No
If yes, which PES activities at regional/local level are based on data from surveys among students and graduates ?

.. by staff who are in direct contact with or delivering services to jobseekers or employers?
☐ Yes ☐ No
If yes, which PES activities at this level are based surveys among students and graduates?

_____

Does your PES experience barriers in relation to using surveys among students and graduates?
☐ Yes ☐ No
If yes, which barriers?
☐Limited/no availability of surveys among students and graduates
☐Poor quality of data
☐Insufficient capacity in PES to analyse and utilise the data,
 Please specify:_____
☐ Other barriers, please specify:_____

Which activities of your PES would benefit in particular if these barriers were reduced?

_____

PES' use of foresight studies

Foresight studies are typically multidisciplinary, qualitative and quantitative analyses which assume that alternative futures are possible. Foresight studies may include alternative scenarios. Foresight activities may also consider the actions that should be taken to shape the future.

13. Does your PES, in its day-to-day activities, utilise data from foresight studies?

☐ Yes, regularly ☐ Yes, sometimes ☐ Rarely ☐ No
If yes, does your PES use data from foresight studies on the following themes?

Theme	Yes	No
Main economic and employment trends	☐	☐
Technological change	☐	☐
Emerging new skills and competences	☐	☐
Implications of megatrends for occupational profiles	☐	☐
Demographic trends	☐	☐
Migration trends	☐	☐
Trends in skill demands	☐	☐
Trends in skill supply	☐	☐
Mobility trends/location trends	☐	☐
How future trends may affect skills and jobs at sector or industry level	☐	☐

14. Does your PES use data from foresight studies on other themes than the above mentioned?

☐ Yes ☐ No
If yes, which themes?

_____

15. Is data from foresight studies being used as input for activities at the following PES levels:

.. at the national level? ☐ Yes ☐ No
If yes, which PES activities at national level are based on on data from foresight studies?

_____

.. at the regional/local level? ☐ Yes ☐ No
If yes, which PES activities at regional/local level are based on data from foresight studies?

.. by staff who are in direct contact with or delivering services to jobseekers or employers?
☐ Yes ☐ No
If yes, which PES activities at this level are based on data from foresight studies?

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16. Does your PES experience barriers in relation to using foresight studies?

☐ Yes ☐ No
If yes, which barriers?
☐Limited/no availability of foresight studies
☐Poor quality of data
☐Insufficient capacity in PES to analyse and utilise the data,
 Please specify:_____
☐ Other barriers, please specify: _____
Which activities of your PES would benefit in particular if these barriers were reduced?

---

17. Would it be possible for your PES to improve its use of data from foresight studies?

☐ Yes ☐ No
If yes how? What would that require?

PES' role in the collection, analysis and use of labour market information
18. How many staff does your PES employ in total?

(Including PES at national, regional and local levels)
Approximately:_____

19. Does your PES have departments/organisational units specifically dedicated to anticipatory activities?

☐ Yes ☐ No
If yes, how many staff in total are employed in these?
Approximately:_____

23. Please assess your PES' overall capability to identify and anticipate skill needs

At national level? ☐ Good ☐ Fair ☐ Incomplete
If "fair" or "incomplete" –what needs improvement?

At regional/local level? ☐ Good ☐ Fair ☐ Incomplete
If "fair" or "incomplete" –what needs improvement?

---

24. What do you consider to be the most important tool that your PES use for the anticipation of skill needs?

_____

PES' cooperation with employers

26. Does your PES at the regional/local level cooperate with individual employers in order to be able to anticipate skill needs?

☐Yes, regularly ☐Sometimes ☐ Rarely ☐ Never
If yes, what approximate share of employers is involved in cooperation with PES during a year?
Approximately: ___%
Which issues does the cooperation concern?

_____

27. Does your PES cooperate with employers' organisations to anticipate skill needs?

☐Yes, regularly ☐Sometimes/ad hoc ☐No
Which issues does the cooperation concern?

_____

28. Could PES' cooperation with employers be improved with a view to enhancing the anticipation of skill needs?

☐ Yes ☐ No
What should be improved?

_____

PES' anticipatory services to jobseekers

29. Does your PES combine individual skills assessments with labour market information about future skill needs to ensure that jobseekers are referred to relevant education and training measures?

☐ Yes
☐ No
If yes, how?

_____

30. Does your PES use skills assessments that recognise skills acquired outside the formal educational system?

☐ Yes ☐ No ☐ No, but planned for the future

32. Does your PES' use its knowledge about future skill needs to provide preventive services to <u>employed</u> persons in sectors at risk of restructuring to ensure timely job-to-job transition _before_ they are made redundant?

☐ Yes ☐ No
If yes, which services?

PES' cooperation with other organisations

33. Does your PES use its knowledge about future skill needs in the labour market to influence the supply of training and education?

☐Yes, regularly ☐Sometimes ☐ Rarely ☐ Never
If yes, how?

34. Does your PES cooperate with education and training providers to anticipate skill needs?

☐Yes, regularly ☐Sometimes ☐ Rarely ☐ Never
Which issues does the cooperation concern?

35. Does your PES cooperate with other employment service providers to anticipate skill needs?

☐Yes, regularly ☐Sometimes ☐ Rarely ☐ Never
Which issues does the cooperation concern?

36. Does your PES cooperate with labour organisations/unions to anticipate skill needs?
☐Yes, regularly ☐Sometimes ☐ Rarely ☐ Never
Which issues does the cooperation concern?

37. Does your PES cooperate with research institutes to anticipate skill needs?

☐Yes, regularly ☐Sometimes ☐ Rarely ☐ Never
Which issues does the cooperation concern?

38. Does your PES cooperate with other organisations than those mentioned above to anticipate skill needs?

☐Yes, regularly ☐Sometimes ☐ Rarely ☐ Never
Which issues does the cooperation concern?

Examples of good practice

39. Please identify up to 3 examples of *regular* PES activities in your country which have proved successful in relation to anticipating skill needs.

(Regular means that the activities are not ad hoc or pioneer projects)

Example 1:
NB! We only ask for introductory information. If any of your suggestions are selected, we will contact you directly in order to get more complete information concerning the particular practice.
What is the activity?

Why is this good practice?

Example 2:
What is the activity?
Why is this good practice?

Example 3
What is the activity?
Why is this good practice?

For your information: Criteria for our first selection of practices:

- A good coverage of various economic and political contexts will be attempted

- Practices should cover different approaches to anticipation

- Practices should cover different methodologies

- Good practice should be justified either by evaluation or by reasoned statement

Annex C: Response rates

The table below contains an overview of the countries and regions replying to the survey. 27 of 30 countries have responded to the survey. This corresponds to a response rate of 90%.

Most PES in the survey replied at the national level. In Belgium and Spain, however, PES are fully decentralized, and here, all regional PES where invited to participate in the survey. In Spain only Catalonia responded to the survey whereas all four Belgian PES have replied[34]. In the analysis of quantitative survey responses, data from the Belgian regions have generally been consolidated in order to create an overall picture based on countries rather than regions. The similarity of the responses of the three regions to the closed questions warrants this decision methodically. In the analysis of the text responses, all responses, including the responses from the three regions, carry the same weight. A full list of the national PES and their response status is listed in the table below.

Country	Did not reply	Replied
Austria		X
Belgium		X (Forem, VDAB, Actiris)
Bulgaria		X
Cyprus	X	
Czech Republic		X
Denmark		X
Estonia		X
Finland		X
France		X
Germany		X
Greece	X	
Hungary		X
Iceland		X
Ireland		X
Italy		X
Latvia		X
Liechtenstein		X
Lithuania	X	
Luxemburg		X
Malta		X
Netherlands		X
Norway		X
Poland		X
Portugal		X
Romania		X
Slovakia		X
Slovenia		X
Spain		X (Catalonia)
Sweden		X

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[34] The response from ADG (The PES for the German Community of Belgium (Arbeitsamt der Deutschsprachigen Gemeinschaft) was only received after the deadline and is therefore not included in all analyses).

Country	Did not reply	Replied
United Kingdom		X
Total	3	27 (29 PES)
Total response rate		90%

Annex D: Good practice cases

Below we describe 24 good anticipation practices. For the methodology involved in identifying and describing the cases, please refer to Annex A above. The information in the cases are given by the PES themselves and to the extent possible supplied by desk research of information available on the internet.

One of the criteria for selecting the practices was evidence of success, but as only a few PES supplied such evidence, this point was omitted from the descriptions.

Category	Quantitative forecasts
Title	**Triangulation of methods and information sources**
Country	Latvia
Description	In order to ensure training of the unemployed according to forecasts for labour market demand and development of various industries within the economy, a number of linked methods are used: • analysis of medium-term and short-term forecast data, including data from employer surveys and analysis of the number of vacancies in concrete professions • suggestions and forecasts from social partners (employers, trade unions, educational establishments and local governments)
Why is it a good practice?	Using various data and information sources ensures greater reliability of such data and their correspondence with the current labour market situation. This results in high-quality services that correspond with the situation on the labour market.

Category	Quantitative forecasts
Title	**5-year occupational forecasts**
Country	Ireland
Description	The objective of the method is to provide an indication of how the occupational composition of the workforce is likely to change given the assumed performance of the global and domestic economy in the medium term. The change in employment is divided into three effects: • scale (employment growth in the economy overall) • industry (the relative growth of the different industrial sectors compared to national growth) • occupational (change in the relative share of an occupation in the sectoral skill mix) The occupational forecasts are broadly based on the assumptions underpinning the economic forecasts for the Irish economy in a medium 5-year term.
Why is it a good practice?	The method provides an overview of where the jobs will be in the future in broad terms, and the main objective is to inform education/training, immigration policy, career guidance advisors, students, individuals making career choices, etc.

Category	Quantitative forecasts
Title	**Occupational Compass, "Yrkescompassen"**
Country	Sweden
Description	The Occupational Compass covers approximately 200 of the largest and most common professions and occupations as well as some of the fastest growing professions/occupations in the Swedish labour market (approximately 80% of the total number of occupations). It includes forecasts for individual professions/occupations. However, it does not include forecasts for minor professions due to statistical uncertainty. Employment trends are included for a 1- and 5-year timeframe at the national and on regional levels and 10-year timeframe at national level. It also includes 1- year forecasts based on prognoses from local public employment services that are merged into regional and national forecasts.
Why is it a good practice?	The communication of different results and statistical data is instrumental in showing employment opportunities in a very accessible form. It helps young people to take the needs on the labour market into consideration when they choose an educational programme. http://www.arbetsformedlingen.se/For-arbetssokande/Yrke-och-framtid/Yrkesinformation/Yrkeskompassen.html

Category	Quantitative forecasts
Title	**Regional Job Market Monitor, "Regionaler Arbeitsmarktsmonitor" (RAMON)**
Country	Germany
Description	The primary objective of the Regional Job Market Monitor is to make developments on the regional job markets transparent. To do this, the opportunities and risks concerning employment are estimated by sector in line with the structural composition of a region. In doing so, estimates of opportunities and risks for individual occupations are initially drawn up at the national level. The subsequent extrapolation to the level of the agency regions is checked and supplemented by regional job market experts. RAMON is based on a multiplicity of data relating to the structural composition of the region such as social stratification, educational levels, educational dropout rates, industry-specific "diagnostic factors" like export dependency, inflow and range of orders, development in turnover coupled with structural features of the labour market such as demographic developments, overall economic situation, etc.
Why is it a good practice?	Initial feedback from the agencies shows that the Regional Job Market Monitor constitutes a useable aid that can provide support in developing action strategies on site. Preliminary discussions with players inside and outside of the Federal Employment Agency have shown much interest in the observations and descriptions. It appears that with its mission to depict possible developments accurately, objectively and transparently and initiate discussion regarding possible actions at an early stage, the Federal Employment Agency is on the right track.

From the initial reactions from agencies, it is clear that due to the great disparity in the employment situation at regional and local levels, no consistent and central recommendations can be issued. When it comes to selecting, combining and designing suitable regional measures, a local process of discussion and design is necessary in each case. At the same time, the decentralised findings obtained in the summary at central level and at the level of the regional directorates offer an improved information base for the Board of Executives and the Board of Directors as well as for management-level staff within the regional directorate. In addition, the findings may be useful for policy advising at a federal and state level.

http://www.bundesagenturfuerarbeit.de

Category	Foresight studies
Title	**Guidelines for compilation and quality assurance of a local job market and integration programme**
Country	Germany
Description	The guidelines, which are currently being introduced across the country, set out a systematic procedure for compiling a job market and integration programme for the consortia. Particular value is placed on involving local job market players with whom the local job market requirements can be identified and objectives and strategies for a future approach can be determined jointly. The strategies also include planning the demand for integration services. The topics of the job market and integration plan relate to possibilities for preserving and improving employability and for taking up employment.
Why is it a good practice?	The Federal Employment Agency believes that future qualification requirements can only be identified in discussions with experts. The discussions make it possible to combine statistics or forecasts with practical experience and thereby permit a more accurate identification of regional developments and/or integration of (future) developments only detected in the region. The job market and integration programme becomes very important, particularly in the field of basic provision, where maintaining employability is one of the primary objectives of the Federal Employment Agency. This is an issue which all relevant players in the job market must work together to solve together.

Category	Quantitative forecasts
Title	**Berufenet**
Country	Germany
Description	The German Berufenet is the approximate equivalent to the American system O*Net. Berufenet contains extensive information on 3,100 professions. The information is updated regularly. However, in this context, it is relevant to note that time series of relevant job market figures are shown for individual jobs. Consequently, it is possible to view the relevance of individual jobs through the development of, for example, employment and unemployment figures. The relevance of the jobs is a fundamental fact to be ascertained for a qualification plan.
Why is it a good practice?	Berufenet makes it possible to identify jobs for which a positive employment trend is expected in the future. By considering unemployment and employment figures and the age structure in a time series, rough forecasts can be issued (e.g. the need for replacement due to retirement) without having to resort to complex forecasting procedures. Job profiles can be drawn up which highlight potential related jobs and the necessary further training requirements to perform these. Related jobs constitute the basis for matching, consideration of shortfalls and planning educational objectives to promote more flexible professional mobility.

Category	Information tool for client level
Title	**Qualification Barometer**
Country	Austria
Description	The Qualification barometer is a self-help tool for information on jobs and orientation into which the results of various qualitative and quantitative surveys are regularly incorporated (company surveys, analysis of the job market, expert discussions, income statistics, data from the federation of social insurance agencies, and data from the AMS).
Why is it a good practice?	The qualification barometer is a very pragmatic but extremely helpful tool, which is popular with customers and advisors. The tool combines different data sources and provides relevant labour market information at client level.

Category	Facilitation of contact between jobseekers and employers
Title	**The Employment Week**
Country	Belgium, Wallonia
Description	The Employment Week is an annual event with extensive participation of sectors and companies as well as trainers, to meet jobseekers.
Why is it a good practice?	The Employment Week is a tool that allows participants to highlight the main trends in terms of recruitment and adapt job applications to the needs of the market.

Category	Quantitative forecasts
Title	**The Labour Market Balance**
Country	Denmark
Description	Twice a year, the regional PES provide a forecast called "The Labour Market Balance" based on various data on demand for and supply of skills. A part of the data is an employer survey on recruitment based on answers from companies that cover about 50 pct. of the employment in Denmark. The balance shows the assessment of job opportunities for approximately 1,100 occupations covering the entire labour market. It is posted on a public internet site to be used by regional and local staff, jobseekers, organisations and other labour market participants.
Why is it a good practice?	It is an objective tool providing quite reliable short-term information on job prospects. It is used in different contexts for : • identifying "bottlenecks" areas that should get extra funding for education and upgrading • deciding whether immigrants can get a job permit and work in Denmark • advising unemployed and helping them to identify occupations they can manage with good job prospects. • counsellors making a 'job plan' in cooperation with unemployed people to guide their activities towards areas with good job prospects

Category	Quantitative analysis of job integration after training
Title	**The take-up of unemployed people who have completing retraining**
Country	Bulgaria
Description	An annual analysis of the take-up of adults/unemployed people who have completed training based on information received from the National Revenue Agency on the take-up of unemployed people who have completed retraining courses.
Why is it a good practice?	It makes it possible to determine which skills are in demand in the labour market and which skills ensure that work can be found, incl. region by region

Category	Cooperation with employers and other public organisations
Title	**Train to Gain**
Country	United Kingdom
Description	Skills' Brokers offer skills advice to employers and match business needs with further education and training providers. They also help identify any funding or grants that can be used to offset the investment in training.
Why is it a good practice?	The appeal to employers is that they receive targeted, quality approved training to upskill their staff in line with their individual and business related needs. The appeal to employees is that they are training to help them in their role and have the opportunity to certify their existing skills. In addition, funding is available for improving literacy and numeracy. Run by Learning and Skills Council, not by PES. Learning and Skills Council cooperate with Jobcentre Plus. www.lsc.gov.uk/aboutus/

Category	Mixed methods: Surveys and forecasts
Title	**Training requirements**
Country	Italy
Description	Piedmont launched the survey of companies' professional requirements in the late 1990s and the survey has become an important benchmark for educational and professional guidance. It consists of a network that is stable over time and allows surveys to be updated easily by involving the various public and private stakeholders directly. Work groups have been created for each sector. They are composed of company representatives and technical experts from both sides of the industry, who have defined the cyclical statistical framework, the supply chains and the range of products as well as the relevant professions.
Why is it a good practice?	During the last ten years, it has been widely used to provide precious information for the purposes of planning the vocational education and training system. The Piedmont region and provinces have decided to re-launch this research activity to identify the professions on which local companies will rely on in the next 3 or 4 years within the most important sectors of the various geographical areas. A further aim is to register any changes in the job market.

Category	Skills needs forecast
Title	**Skills Barometer**
Country	Austria
Description	The PES Skills Barometer of the Department for Labour Market Research and Vocational Information of the Public Employment Service (PES) Austria is a comprehensive online information system on qualification trends for the Austrian labour market. The main objective of the PES Skills Barometer is to provide a broad group of users with valid, comprehensible and well-structured information on current and short-term qualification needs. From the very beginning, it was evident that information that was already available should be exploited and merged in a synoptic way. Additionally, methods such as expert interviews and processing of statistical data are also used. Consequently, the PES Skills Barometer is primarily an instrument for data presentation and secondarily an instrument for data analysis. The PES Skills Barometer addresses the broad public - e.g. persons confronted with making a decision on their vocational future as well as PES employees, journalists and decision makers in the fields of education, vocational training, politics and economics. The main sources of information are: • A broad survey of occupational developments in enterprises with more than 20 employees is carried out every two years by the PES (PES Company Monitoring) • Quantitative data (labour market statistics from data providers like Statistik Austria, Hauptverband der Sozialversicherungsträger, etc.) • Research, analyses and forecasts on skills demand for the Austrian labour market (at regional and national level) • Specific analyses on job advertisements commissioned by the PES (the analyses are based on the continuous monitoring and analysis of the most important media; currently 84 daily and weekly papers are searched) • Relevant texts from a broad range of sources ranging from general publications (even articles from mass media) to specific branch journals • Explorative interviews with labour market experts in specific occupational fields (HR management members in leading enterprises, directors of educational institutions, representatives of professional bodies, etc.)
Why is it a good practice?	The skills barometer is a very pragmatic but extremely helpful tool, which is popular with clients and advisors. It is highly praised for its customer-friendliness. In a 2004 evaluation, about 200 decision-makers in the fields of labour

market, education and qualifications (such as representatives from social partner organisations, ministries, vocational counsellors and researchers) were asked to use the PES Skills Barometer and report their experiences in telephone interviews. More than half of the respondents had never used the instrument before. Those familiar with it, used it once or twice a month at the most. When asked if they would use the barometer in the future, their answers were encouraging: more than half planned to use the instrument once or twice per month, and almost none could imagine not using it at all in the future. When asked 'will you recommend the PES Skills Barometer (e.g. to colleagues, clients, etc.)', 98% declared that they would recommend the instrument to others.

Sources:
http://www.ams-forschungsnetzwerk.at/deutsch/willkommen.asp?sid=483270344

Humpl, Stefan and Maria Kargl (2008) AMS-Skills Barometer – Austria's Target Group oriented Labour Market information System.

Category	Expert panel and mixed methods
Title	**Renewal of the Operational Directory of Jobs (ROME)**
Country	France
Description	This development method relies on the expertise of PES staff, meetings with sectoral representatives from the governing boards of large companies and representatives from professional federations, investigations within companies and meetings with HR managers and jobholders (more than 6,000 meetings). An assessment procedure for job records/jobs carried out by production groups by all approached partners has been implemented. This step, which must be followed by an update and supported monitoring of the development of professions and jobs, constitutes a support that is essential to gaining knowledge about new qualifications and new jobs by the PES.
Why is it a good practice?	The method of development linked to the renewal of ROME is promising with a view to improving the adaptation and anticipation capabilities of PES. The method provides knowledge of new jobs and new qualifications and proposes a progressive and adapted service choice for jobseekers and companies. Identified competencies enable the potential scope for mobility to be defined (jobs and professions closely related through their contents; possible jobs and professions if a change through a period of adaptation or development of competency is proposed).

Category	Employer Surveys
Title	**Short-term labour market projection surveys**
Country	Hungary
Description	Hungary has carried out short-term labour market projection surveys for the past 18 years. The surveys used to be made every six months, but since 2004 they have been carried out on an annual basis and since 2005 in collaboration with Magyar Iparkamara [Hungarian Chamber of Industry], one of the most important employer organisations, and its Gazdaság- és Vállalkozáselemző Intézet [Economic and Business Analysis Institute].
Why is it a good practice?	In addition to its initial purpose, the survey also serves other, very important objectives and has highly useful 'by-products'.

Category	Employer surveys
Title	**Employment Barometer**
Country	Malta
Description	The Employment Barometer is a short-term forecasting indicator based on direct interviews with a representative sample of local employers to identify recruitment problems and shortages. This model also includes interviews with consolidated bodies (such as unions, employers association, federation of industry, university, etc) to gather information on a macro approach. Other questions on recruitment problems and how employers have tackled (or not) such issues are also asked. The final output is a barometer of a number of occupations highlighted as being in shortage, balance or surplus for the subsequent six-months. This model ran between 2003 and 2006 and was discontinued due to funding problems.
Why is it a good practice?	It provides information to a number of stakeholders in the labour market: • Information to PES to assist and guide jobseekers looking for particular jobs and to design or upgrade its provision of training courses. • Jobseekers (even not seeking PES assistance) can access information on whether the jobs they are seeking are in shortage, balance or surplus. In this way, they have information that may help them to deal with prospective employers during job interviews. • Employers themselves, to determine what is available in the labour market, whether there problems are shared with other employers and learn from other employers how to deal with particular recruitment problems.

Category	Career advisory service
Title	**Borsino delle professioni**
Country	Italy
Description	The "Borsino delle professioni", an initiative launched in the Veneto region, is an ONLINE career advisory service for students and educational establishments, professional training centres, careers advisors as well as companies. It is a useful tool to support young people's professional choices and bring together job seekers and employers.
Why is it a good practice?	The online guide to educational and career paths offered by the Veneto region allows users to view the training courses that are available, according to their professional aspirations and the area in which they live; the system also allows users to assess the value that employers attach to qualifications – and their related professions.

Category	Research on special competence needs
Title	**'Training of commerce stimulation specialists in an expanding European Union'.**
Country	Poland
Description	The Voivodeship Employment Office in Toruń coordinated and conducted research into the need for commerce stimulation specialists. The research was conducted together with the employers of the region, representing the public and private sectors, which, it was assumed, employed persons performing tasks similar to the fields covered by the research. In the next phase, detailed research was conducted into the need for commercial stimulation specialists in the Kujawsko-Pomorskie Voivodeship. The aim of the research was to obtain – from persons performing duties connected directly with regional development, development of entrepreneurship and technological development – information regarding current and future problems that might hamper the performance of their work and information regarding training needs.
Why is it a good practice?	The project made it possible to broaden the skills of graduates of universities and colleges, staff and employees of business enterprises and public administration officials in relation to technological culture and entrepreneurship.

Category	Statistics on graduate take-up
Title	**Annual report on the situation of graduates**
Country	Poland
Description	The Voivodeship Employment Office in Poznań is the only office that prepares (the first time in 2002) an annual report entitled 'Assessment of the situation of graduates from schools in the Wielkopolski Voivodeship' in a given yearbook, with an in-depth analysis of the situation of graduates in the regional labour market. The reports are based on a broad range of data (the number of graduates and unemployed graduates according to type of school and subjects (vocations) studied as well as the number of unemployed graduates according to the active forms[35] in which they took part) obtained from the Education Authority in Poznan, the Ministry for Education, higher education institutions and administrative district employment offices in Wielkopolska.
Why is it a good practice?	Annual reports make it possible to observe trends in the region, draw up forecasts and take into account information from business enterprises to determine the future need for employees.

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[35] Translator's note: 'form' is a literal translation. The intended meaning of 'active forms' here is unclear.

Category	Advanced vacancy service
Title	**Local Employment Partnerships**
Country	UK
Description	Launched in 2007, Local Employment Partnerships are part of the UK's "something for something". The approach offers the fullest service to employers in return for increased opportunities for customers. The "Employer Offer" is about matching the level of Jobcentre Plus' service to employers with their readiness to work with Jobcentre Plus. While some employers are happy simply to use a standard vacancy advertising service, others are keen to work with Jobcentre Plus in a Local Employment Partnership (LEP). This means agreeing to give priority customers a fair crack at their jobs, and in return, Jobcentre Plus will ensure those customers have the necessary skills and are job-ready. The LEP offer recognises that employers can be prepared to adjust their recruitment and development policies in ways that increase customers' ability to compete for available jobs. In their turn, employers want effective and efficient recruitment support – their jobs filled by people who are ready to work and learn. LEPs are based on a 'deal' with employers in which: • Jobcentre Plus provides access to recruitment and training services (both pre and post employment), supported by a wide network of partners; • Employers with vacancies make the commitment to work with Jobcentre Plus and to open up their jobs to unemployed local talent. Although originally designed to help Jobcentre Plus focus on priority customers, eligibility was widened in April 2009 to include newly unemployed customers as part of the UK Government's response to the global economic downturn.
Why is it a good practice?	Local Employer Partnerships have demonstrated that it is possible to change employer perceptions about customers and that they can be prepared to offer opportunities in return for the type of help that meets their business needs. Differentiating between pre and post employment training for customers makes it easier for employers to choose the 'package' they need (i.e. immediate job ready skilling or long-term upskilling). It also provides customers, particularly those with low or no skills a clear ladder to improve skills/qualifications and thus job sustainability. This suggests that, by better meeting employer needs and by improving co-ordination between the skills and employment communities, transitions into work can be improved without leaving the more disadvantaged behind. By September 2009, 250,000 people had found work through LEPs since they were introduced. Over 63% were from the originally designated priority groups. Jobcentre Plus aims to help 200,000 people back into work through Local Employment Partnerships during 2009/10.

Category	Employer survey on occupational developments
Title	**PES company monitoring (Future Recruitment)**
Country	Austria
Description	Every two years, the "AMS" (PES) carries out a broad survey of occupational developments in enterprises with more than 20 employees. The survey focuses on contacting Human Resource Managers to gain information about labour force demand as well as occupational and skills trends, thereby enhancing the contact between the regional offices of the "AMS" and their customers. The survey's questionnaire has been adapted accordingly, e.g. it now includes more detailed questions, such as 'Name three occupations that your company highly demanded in the last two years', 'Please specify the demand trend for these occupations within the next 12 months', or: 'Which skills and competencies will be needed specifically for these occupations?' As a result, specific trend information on "most demanded occupations", "most demanded skill", and "most dynamic occupations" (increase or decrease in occupational demand) can be displayed via "charts" for occupations and skills. The results can also be edited according to the nine Austrian "Bundesländer" (regions), which display a quantitative database for regional occupation and skill trends. The survey started in 2006 and is carried out every two years.
Why is it a good practice?	The results of the survey are used for anticipation and feedback into the PES system: • Data source for the PES Skills Barometer • Analyses along current/specific questions • Tool for planning qualification offers (training, etc.) • Information system for the PES service for employers • Information source for institutions providing further education • Reporting at European level (OECD)

Category	Institutional framework
Title	**UK Commission for Employment and Skills (UKCES) and the Sector Skills Councils**
Country	UK
Description	Established by Government in April 2008, the UK Commission for Employment and Skills aims to benefit employers, individuals and Government by providing independent advice on how improved employment and skills systems can help the UK to become a world-class leader in productivity, in employment and in having a fair and inclusive society: all this in the context of a fast-changing global economy. As employers have prime responsibility for improving productivity, the UK Commission strengthens the employer voice and provides greater employer influence over the UK's employment and skills systems. It is responsible for funding and managing the performance of the UK's Sector Skills Councils which are responsible for articulating the views of the employers they represent. Underlying these responsibilities are three strategic priorities: • Building a more strategic, agile and demand-led employment and skills system in the UK; • Maximising individual opportunity for skills and sustainable employment ; • Increasing employer ambition, engagement and investment in skills. UKCES provides independent advice to the highest levels in the four UK Governments, helping to achieve improvements through strategic policy development, evidence-based analysis and the exchange of good practice. A key plank in its approach is the need to anticipate future changes in the labour market. This is done both at national and sectoral levels using, a variety of different tools and techniques.
Why is it a good practice?	It shows the benefits of having a both a centrally coordinated and independent view of labour market and related developments as well as the importance of gaining an in-depth sectoral perspective from the employer side.

Category	Systematic forecasts
Title	***Working Futures*** and other projections carried out on behalf of the UK Commission for Employment and Skills and the Sector Skills Councils
Country	UK
Description	The Leitch review recommended the need for regular and systematic projections of the labour market in order to provide information to guide policy makers and other labour market actors about possible future demands for skills. The *Working Futures* projections are funded by the UKCES. They are intended to provide useful information for all government departments, including that responsible for PES. They represent a very detailed and comprehensive approach, covering the whole economy, based on quantitative methods, including use of a detailed multi-sectoral macroeconomic model . The Sector Skills Councils are charged to produce assessments for their particular sectors. These use a variety of tools and techniques, including drawing upon the national set of quantitative projections produced under the *Working Futures* banner. The work on anticipation of changing skill needs carried out by the SSCs also uses qualitative techniques to assess developments in their sectors.
Why is it a good practice?	It shows the benefits of having a both a centrally coordinated and independent set of labour market projections. It also illustrates the importance of a strong sectoral perspective and employer involvement.

Annex E: Glossary on anticipation and PES related concepts

This section provides a list of key concepts and their definitions as applied in this study. The list draws on a comprehensive survey of literature listed at the end of the annex.

Active Labour Market Policies (ALMP)

Active labour market policies are labour market policies which encourage people by giving them work incentives, facilitate effective job search and ensuring that people participate in training. Active labour market policies also imply that benefits are dependent on some level of activation and demands to the beneficiary (training, job search courses, job clubs etc.) (European Commission 2007c).

Anticipation of future skill needs

Although the term "anticipation of skill needs" or just "anticipation" is increasingly common in literature and policy documents, there seems to be no commonly accepted definitions of the term. The term "anticipation of skill needs" is sometimes used synonymously with the term "early identification of skill needs" (Cedefop 2008b). It is also sometimes used for specific methods like statistics-based forecasting of manpower needs in specific occupations or with specific qualifications, surveys to establish employers' perception of future requirements to the labour force or foresight studies. Cedefop notes:
'The prevailing question for future oriented research into skill needs is not: 'How many people in this profession will be required in 5 to 10 years?' but: 'Which professions and what kind of new qualifications and skills?' and: 'What qualities of the workforce will be in demand?' The new functions and research questions require non-mechanistic approaches and enriched methods and, therefore, more than computerised manpower forecasting models'.

In this study, therefore, the term *anticipation* is used broadly to encompass activities with the aim of identifying future skill needs. We do introduce, however, a distinction between activities aimed at improving matching in the short term and activities aimed at anticipating, in the proper sense of the word, the future demand and supply of skills in European labour markets.

Assessment of skills

"Assessment of skills" is an encompassing term for the methods and processes used to evaluate individual attainments including not only skills but also knowledge, know-how, and/or competences. The outcome of an assessment is typically used for certification, profiling of jobseekers and matching jobseekers and employers (Cedefop 2003). Assessment of skills can be objective or subjective (Cedefop 2009:9).

Competence

'There is such confusion and debate concerning the concept of 'competence' that it is impossible to identify or impute a coherent theory or to arrive at a definition capable of accommodating and reconciling all the different ways that the term is used' (Winterton 2006). However, in the present study, we will use the following definition based on the definitions used in the development of the European Qualification Framework, EQF: A competence is the proven ability to actually apply knowledge, skills, and personal, social and/or methodological abilities in a work or education situation including changing situations (European Commission 2008e, Ecotec 2007, Cedefop 2008d).

Continuing Vocational Education and Training (CVET)

CVET refers to education and training after initial education and training or after entry into working life. The purpose of CVET is to help individuals to improve or update knowledge, skills or competences, acquire new skills for a career move (including transition from unemployment or inactivity to employment) or retraining, and continuing personal or professional development (Cedefop 2008d). In relation to employment policies, CVET is closely related to improving the employability of individuals. CVET is a part of lifelong learning (Ibid.).

Depreciation of skills

Depreciation of skills describes a situation or process in which particular skills lose their value on the labour market as a result of falling demand or obsolescence caused by e.g. outsourcing or technological change.

Early intervention

Early intervention is the use of active measures early in relation to the duration of an unemployment spell. The rationale behind early intervention is to prevent long term unemployment by applying active measures as early as possible in an unemployment spell, thus avoiding *depreciation of skills*. Early intervention however, is also associated with deadweight losses occurring when unemployed, who would otherwise have found a job themselves are given an offer of activation (OECD 2006). Early intervention measures may (but need not) be tied in with anticipation when the measures are designed in response to information about future skill needs resulting from an anticipation activity in order to address skill mismatches.

Education

Education is organised and sustained communication with the aim of learning. Education is organised according to established aims or curricula by an educational agency. Learning refers to a change in behaviour which cannot be attributed to a physical growth or development related to behaviour. Education can be initial or continuing (OECD 2008).

Employability

Employability is the extent to which a person has the necessary competences, skills, knowledge, and qualifications to find and keep a job. According to Tamkin & Hillage, the employability of an individual embraces his/her knowledge and skills, personal attributes and attitudes, marketing and deployment skills (career management, job search skills, and approach), presentation (ability to demonstrate assets) and finally the personal and labour market context. The more 'employable' a person is, the easier it is for themselves or for PES to find employment for him/her.

Employer surveys

Employer surveys are surveys among employers (private or public) regarding skill needs, competence vacancies, and training. The surveys may be quantitative or qualitative, using questionnaires or interviews. One example of an employer survey is the National Employer Skills Survey in England (European Commission 2008e).

Flexicurity

Flexicurity is a policy configuration, intended or unintended, combining flexibility and security in the labour market. The concept has four main components: 1) flexible contractual arrangements, 2) modern social security systems, 3) Active Labour Market Policies, and 4)

comprehensive systems of lifelong learning (European Commission 2008, European Commission 2009).

Forecasting

Quantitative forecasts produce information on quantitative aspects of future labour markets using more or less advanced methods. Quantitative forecasts use data about the present and past to estimate future developments. The results of forecasts are always numbers, often presented in graphical forms as curves showing a trend.

Formal learning

Formal learning is learning appearing in an organised and structured context and which is denoted as learning. Formal learning is generally intended and typically leads to certification (Cedefop 2003).

Foresight studies

Foresight studies are typically multidisciplinary qualitative and quantitative analyses which assume that alternative futures are possible. Foresight studies may include alternative scenarios. Foresight activities may also consider the actions that should be taken to shape the future.

Guidance and counselling

Guidance and counselling are activities designed to facilitate individuals' to take decisions and carry them out with a view to improving the employability of the individual (Cedefop 2003).

Higher education

Higher education refers to the three-cycle system of the Bologna Process: first cycle (bachelor), second cycle (master) and third cycle (doctorate). This roughly corresponds to ISCED 5-6 and EQF levels 6, 7, and 8.

Horizontal skill mismatch

Horizontal skill mismatch is the situation where a person might have the required *level* of qualification for a job, but the person does not have the right *type* of knowledge or skills required for the job (Cedefop 2009:10).

Informal learning

Informal learning is learning by daily work-related, family or leisure activities. Hence, informal learning is not organised and structured with the purpose of learning, and it often not intended to be learning from the perspective of the learner. Thus, informal learning typically does not lead to certification (Cedefop 2003). Informal learning is included in the concept of lifelong learning.

Initial Vocational Education and Training (IVET)

IVET is the preparation of young people with skills and/or competences to enter the labour market via a specific occupation or sector (Cedefop 2009b). IVET however, can also in some countries, lead to further education and training.

Job polarisation

Job polarisation refers to the situation in which job growth mainly occurs among high skilled workers on one side and unskilled or low skilled workers on the other (European Commission 2008). Job polarisation can also refer to polarisation of high wage and low wage jobs.

Key skills/key competences

The sum of skills or competences needed to participate in contemporary society. The European Commission has put forward eight key competences: Communication in the mother tongue; communication in foreign languages; competences in maths, science and technology; digital competence; learning to learn; interpersonal, intercultural and social competences, and civic competence; entrepreneurship; and cultural expression (Cedefop 2008d).

Labour force

The labour force is the total number of employed and unemployed persons in the working age (usually 16 to 64 years)(ILO/KILM).

Labour Market Information (LMI)

The study uses the official ILO definition of LMI: "Any information concerning the size and composition of the labour market or any part of the labour market, the way it or any part of it functions, its problems, the opportunities which may be available to it, and the employment-related intentions or aspirations of those who are part of it".

Thus, LMI is a broad term which covers quantitative and qualitative information to employers, employees and stakeholders in the labour market about the supply and demand of jobs and workers. In labour economics, the rationale behind the provision of labour market information is that the labour market is not necessarily transparent for the actors (employers, employees, unemployed). Improving the information to these actors will help to correct market failures resulting from lack of information which will lead to a smoother functioning of the labour market. Thuy et. al. (2001) observes that in industrialised countries, there are large numbers of highly educated people who form a new kind of market for information about jobs and the labour market. The authors see the provision of LMI as one of four main functions of the PES.

Learning outcomes

Learning outcomes is the result of a learning process focusing on what the learner is expected to know, understand or be able to do at the end of a learning process. Education and training in Europe is increasingly understood in terms of learning outcomes (Cedefop 2009c).

Lifelong Learning

Lifelong learning is all learning activity undertaken throughout life with the aim of improving knowledge, skills, competences and/or qualifications for personal, social and/or professional reasons (Cedefop 2008d).

Non-formal learning

Non-formal learning is learning embedded in planned activities containing a learning element but not explicitly denoted as learning. Non-formal learning is intended as learning from the learner's point of view (Cedefop 2008d).

Occupation

Occupation is a term for a set of tasks and duties characterised by a high degree of similarity. Occupations are mainly identified via the International Standard Classification of Occupations, ISCO (ILO 2009).

O*Net

O*Net (Occupational Information Network) is an electronic database of the US Department of Labor in which information on jobs is collected and updated every 6 months (European Commission 2008). The database is based on employee surveys and the work of trained job analysts. The database contains information on 812 occupations. The information is structured according to six broad domains describing different aspects of the worker and the job (European Commission 2008d, O*Net 2009).

Over-education

Over-education describes a situation where the educational level of a person exceeds the actual requirements related to a job (Sloane 2009). The opposite of under-education.

Over-qualification

Over-qualification is when the qualification level of a person exceeds the actual requirements related to a job (Sloane 2009). The opposite of under-qualification.

Over-skilling

Over-skilling is when a person is not able to fully utilise her or his skills in a job (Sloane 2009). The opposite of under-skilling.

Post secondary non-tertiary education

Post-secondary non-tertiary education is education on the boundary between upper secondary and post-secondary education. Post-secondary non-tertiary education is not necessarily more advanced than upper secondary programmes but mainly services to broaden the knowledge of individuals who have already acquired an upper secondary qualification (OECD 2008).

Prior learning

Prior learning is knowledge, knowhow, skills and/or competences acquired through previously unrecognised training or experience (Cedefop 2003).

Private Employment Agencies/Services (PRES)

Private employment services are legal non-governmental entities supplying employment services. PRES normally works under contract to with PES.

Public Employment Services (PES)

PES are public or governmental bodies responsible for the implementation of labour market policies. PES can provide a range of services to jobseekers, unemployed, inactive individuals, and employers such as job-broking, job-search assistance, guidance and counselling, collecting and applying LMI, restructuring programmes. PES can sub-contract its services to PRES or other organisations and/or deliver its services in cooperation with other organisations such as the Social Partners (Thuy et. al. 2001, European Commission 2009d).

Qualification

The term qualification can refer to two different things:

a) An official record of achievement such as certificates and diplomas recognising a successful completion of education, training, testing or examination; a qualification can also be a legal entitlements to practice a trade

b) The requirements for an individual to enter or progress within an occupation.

Quantitative forecasts

Quantitative forecasts is information estimating the development of the labour market based on data about the present and past.

Skill

The term skill is widely used by often with very different meanings. Here a skill is defined as the ability to apply knowledge and knowhow to complete tasks and solve problems. In relation to the European Qualifications Framework, skills are cognitive or practical (Cedefop 2008d, European Commission 2008).

Skill gap

A skill gap occurs when the level or type of skill of an employee or a group of employees does not meet the requirements of the job adequately (Sloane 2009).

Skill mismatch

Skill mismatch is an encompassing term referring to different types of skill gaps and imbalances such as over-education, under-education, over-qualification, under-qualification, over-skilling, skill shortages and surpluses, skills obsolescence and so forth. Hence, skill mismatch can be both qualitative and quantitative thus referring to both situations where a person does not meet the job requirements and when there is a shortage or surplus of persons with a specific skill. Skill mismatch can be identified at various levels from the individual, the employer, the sector or the economy. Several types of skill mismatch can coincide (Cedefop 2009).

Skill needs

Skill needs is a term used to describe the needs of employers, sectors, or the economy for specific skills in order for the economy to perform properly. Skill needs can arise as a result of manpower needs or skill gaps. But in addition to these situations, skill needs can arise where new sectors or industries emerge, where new technologies are introduced or where new jobs are created as a result of convergence between existing sectors or industries.

Skill obsolescence

Skill obsolescence refers to the situation in which skills are no longer demanded or useful in the labour market (economic skill obsolescence) or decay of skills resulting from atrophy (technical skill obsolescence) (Cedefop 2009:14).

Skill shortage

Defining skill shortages is extremely difficult (for discussion see Holt R. and, S. Sawicki (2010). In simple terms a skill shortage occurs when the demand for a particular type of skill exceeds the supply of people with that skill (Sloane 2009, Cedefop 2009).

Skill supply

The supply of (particular) skills in the labour market.

Skill surplus

Skill surplus occurs when the supply of a particular type of skill exceeds the demand of people with that skill (Sloane 2009).

Surveys among students and graduates

Surveys among students and graduates are surveys concerning learners' skills and qualifications and the learners' job preferences, expectations after graduation, and their employment status after graduation.

Tertiary education

See *higher education*.

Unemployment rate

The unemployment rate is the number of unemployed persons divided by the number of labour force participants. This definition is in accordance with the guidelines of the International Labour Office (OECD 2008). The unemployment rate is expressed as a percentage.

Unemployment ratio

The unemployment ratio is the number of unemployed persons divided by the total number of persons in the population. As opposed to the unemployment rate, the unemployment ratio thus includes persons in and out of the labour force (OECD 2008). The unemployment ratio is expressed as a percentage.

Upper secondary education

Upper secondary education is the final stage of secondary education which normally commences after the completion of compulsory/primary education. Upper secondary education can be preparatory preparing students to enter tertiary education or vocational, preparing students to enter a specific occupation/vocation in the labour market. Upper secondary education corresponds to ISCED 3 (Cedefop 2008d).

Validation of informal and non-formal learning

The confirmation of learning outcomes of an individual acquired from non-formal, informal and formal learning. The validation is done by a competent body and the learning outcomes are assessed against a predefined set of criteria. Validation typically leads to certification (Cedefop 2008d).

Vertical skill mismatch

Vertical skill mismatch describes the situation where the level of skills that a person possesses is higher or lower than the level of skills required for the job (Cedefop 2009:10).

Vocational Education and Training (VET)

VET is education and training aiming to equip the participants with knowledge, knowhow, skills and competences to enter the labour market or in particular occupations/vocations (Cedefop 2008d).

Under-education

Under-education occurs when the educational level of a person is lower than the actual requirements related to a job (Sloane 2009). The opposite of under-education.

Under-qualification

Under-qualification occurs when the qualification level of a person is lower than the actual requirements related to a job (Sloane 2009). The opposite of over-qualification.

Under-skilling

Under-skilling occurs when a person lacks the skills required to perform a job to acceptable standards (Sloane 2009). The opposite of over-skilling.