

editorial

The last year has seen many developments concerning early identification of skill needs and the Skillsnet network. Discussion on the desirability and feasibility of a European system of forecasting skill needs launched in 2005, mentioned in the last newsletter, has become the project 'Medium-term forecast of occupational skill needs in Europe'. The project team presented preliminary findings based on available standardised datasets in Warwick in November 2006. Interim project results will be discussed with national experts in Maastricht in May this year. Skillsnet will continue to develop the initiative to produce robust and reliable forecasts on occupational skill demand and supply at European level.

Skillsnet, however, continues to look at alternative approaches to measure new and emerging skill needs by applying a sector focus and comparing methods, systems and approaches. In November 2006, Cedefop organised in Lisbon jointly with Portuguese Farmers Confederation, a workshop on innovation in the sectoral chains of agriculture-food and forestry-wood and related skill needs. New publications provide interesting findings on skill needs in emerging technologies and in nanotechnology, and compare systems, institutional frameworks and processes to identify skill needs applied in different countries.

There is no universal method. A combination of methods, approaches, projects and initiatives bring about better and more comprehensive results. This is confirmed by numerous projects and initiatives communicated by Skillsnet members. They vary from macroeconomic forecasts to online assessment tools, from qualitative foresights to sector studies. We hope our members will continue to support Skillsnet's development and exchange information and experience, and discuss research findings.

Skillsnet coordination team



forecasting systems in Member States: how different, how similar?

Summary of findings from a Skillsnet publication *Towards European skill needs forecasting (2007)*

As we had informed in our previous Newsletter, experts in forecasting occupation and skill needs met in Pafos, Cyprus, 20-21 October 2005 to exchange information on their countries' approaches to forecasting skill needs. This short summary reviews the situation focusing on concepts, methods, models, data sources and classifications in 14 European countries (Austria, Cyprus, the Czech Republic, Estonia, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Poland, the UK and Romania).

The concept of 'skills' in forecasting

The definition of 'skills' in skill needs forecasting is not uniform in European countries. The most common and inclusive definition uses occupational skills and educational attainment. Several countries use the term 'qualifications' and apply the generic skills concept (including social and personal skills).

Forecasting methods

Methods used in Member States differ widely. Most methodologies advocate a several-step model. Starting from macro modelling economic, labour market and sectoral developments, the models then focus on demand for occupations and/or skills on the labour market. Countries also use shift-share analysis, time series extrapolation and other quantitative techniques. Although forecasts are usually based on quantitative methods, many countries combine them with qualitative

approaches, such as expert evaluations, qualitative comparison with sectoral studies, enterprise surveys, in-depth interviews, etc.

Data sources

Most countries use a specific macroeconomic model, with forecasts of GDP growth and other components such as employment forecasts at general and sectoral levels and projections of demographic development.

Concerning skill needs forecasting, data from the labour force survey and the European system of national accounts (ESA95) are used extensively by Member States. Some also use the quarterly national household survey, unemployment records or business inquiries. In addition, data from the population census are used, together with other statistics from national statistical offices and other sources.

Forecasting skill demand and supply

In the vast majority of countries, both expansion and replacement demand are included in the skill needs forecasting methods. Although not to the same level of detail, the majority of countries takes into account the supply side. However, not all countries consider interaction between supply and demand but study supply and demand independently. Thus information on shortage and surplus skills/occupations is not available for all countries.

in this issue

Editorial _____	1	Anticipating Europe's skill needs _____	2	Skillsnet publications _____	3
Forecasting Europe's skill needs		Skillsnet's sector focus _____	3	News from Skillsnet Members _____	4
Forecasting systems in Member States: how different, how similar? _____	1	Innovation in agri-food and forestry-wood chains. What are the future skill needs? _____		Skillsnet future plans _____	4



Considering exogenous factors

When carrying out skill needs forecasts, almost all countries consider exogenous factors and their influence on national and international economic environments, economic growth, consumption demand, legal regulations, the situation on the labour market, salaries/wages, price levels, etc. This is mainly done by quantitative measurements such as econometric equations or extrapolation of past trends for the coming years. In parallel, a qualitative approach, in particular, by expert judgements on the impact of exogenous factors on the labour market, is used in some countries.

Use of the international classifications

Most countries use either international (NACE, ISCO) or internationally compatible national classifications of sectors and occupations. However, each country uses different levels of aggregation (e.g. 1, 2, 3 or 4 digits in case of ISCO), although most of them apply the two and/or more digits system. Use of educational classifications is less consistent. Some apply national educational classifications which are fully or roughly compatible with ISCED, but fields of study are sometimes coded by national classifications. In others, national systems are used and compatibility with ISCED is being explored.

The period and the frequency of forecasts

Forecasts are carried out over the medium-term, around five years in most countries. Frequency of forecasts varies among countries from regular annual, biennial to every three to four years and even one-off projects.

Producing the output

Output of forecasts differs considerably between countries depending on the specific questions each seeks to answer using forecasts. It is common to project overall and sectoral employment, although the number of sectors, and thus their division, is different across countries. Breakdown of these projections by occupations does not follow the same pattern among countries. Matrixes and coefficients like 'sector x occupation' and 'occupation x education' are calculated by almost all countries, although at different levels of aggregation.

Target groups and end users

Almost all countries have policy/decision-makers (e.g. ministries, public employment services, employment agencies) as the main target group and users of forecasts. Guidance and counselling services are often users. Educational institutions are also regarded as a target group in several countries.

Institutional frameworks

Forecasting studies are carried out in most countries by independent research institutes, or local employment authorities. Sometimes a research team in a relevant ministry routinely carries out forecasts. In such cases forecasting is not considered a separate project and receives no additional or independent funding. Forecasts produced by independent institutions, are normally funded by a ministry or the local employment authority. Forecast funding is not always stable and continuous. In some countries researchers compete for funding on a project basis for each forecasting exercise.

Anticipating Europe's skill needs

Expert workshop in Warwick

Ilias Livanos, IER, Warwick University

The latest in a series of expert workshops on anticipating skill needs across Europe was held at Warwick University in November 2006. The event was coorganised by Cedefop's network Skillsnet, the Warwick Institute for Employment Research (IER), and the Dutch Research Centre for Education and the Labour Market of Maastricht University (ROA). It built on results of the Skillsnet 2005 workshop organised in Cyprus (see the previous issue of Skillsnet Newsletter and the summary above).

The workshop was part of the 25th anniversary celebrations for the founding of the IER and the 20th anniversary of joint organiser ROA.

Workshop participants discussed producing a pan-European forecasting model. Sets of consistent information provided by Member States prior to the meeting were compared and data gaps identified. Discussion tackled ways to fill these gaps. The workshop also discussed supply-side forecasts and agreed further steps to develop a robust system for European skill needs forecasting.

Workshop participants reached a consensus on the feasibility of pan-European skill needs forecasts. It was proposed that all experts discuss the issues further, including scenarios being developed by the CE/IER/ROA team, and comment on the preliminary results. Participants also agreed on future cooperation to develop more sophisticated forecasting methods. Discussion of some interim results is planned for late spring 2007. Final results of the 'Medium-term forecasts of occupational skill needs in Europe' project will be presented at a Skillsnet Agora conference, organised by Cedefop in early 2008.

Medium-term forecasts of occupational skill needs in Europe

IER, Cambridge Econometrics (CE) and ROA, are being supported by Cedefop to carry out medium-term forecasts of occupational skill needs in Europe. Preliminary results demonstrating the feasibility of producing regular and consistent pan-European projections were presented at the Warwick workshop. Debate among experts highlighted technical and other problems facing the project.

More information about the workshop and the project is available from: www.trainingvillage.gr/skillsnet (in the section 'Forecasting').



skillsnet sector flash nanotechnology

The second Skillsnet sector flash is devoted to nanotechnology. It summarises on two pages main sector trends and related skill needs. It also informs on outcomes of the linked Skillsnet workshop.

All sector flashes are available in electronic format on Skillsnet's webpage in 'Sectors' and 'Publications and working papers' sections.

Innovation in agri-food and forestry-wood chains. What are the future skill needs?

The workshop in Lisbon

Renate Wesselink and Sanne Schaafsma, Wageningen University

The international workshop 'Future skill needs: innovation in agri-food and forestry-wood chains' in November 2006 in Lisbon, Portugal was organised by Cedefop's Skillsnet network, assisted by Prof. Martin Mulder from Wageningen University. The workshop discussed current findings on trends and skill needs in both sectors from an international perspective. Participants from more than 10 European countries were represented.

Agriculture and forestry are typical sectors where new skill needs are emerging. These sectors are undergoing fundamental restructuring. Organisations are operating increasingly in networks and supply chains. Food and nutrition as well as forestry and wood-processing, are by no means homogeneous sectors, but they have common trends. These are linked to security, safety and sustainability, changes in consumer demand (such as demand for cheaper products, changes in lifestyle, health and ethical concerns), globalisation, competition, international regulations, application of ICTs and environmental protection. This makes it interesting to see what the similarities and differences are between the sector-specific future skill needs.



Workshop participants stressed numerous differences between and within the two sectors/chains, and the jobs and skills they need. Differences are found not only between the primary sectors but also between the growing processing industry and various services around them.

Summarising current developments, three important aspects can be mentioned. First, SMEs are growing and becoming increasingly multinational. This emphasises team working, entrepreneurship, cooperation, communication and management skills. An open attitude is important for larger companies as production and work processes are more standardised and can limit innovation. A challenge for them is to be open to cooperation with other innovative companies.

Second, as companies grow, some outsource to remain flexible. This splits up vertically integrated supply chains. Supply chain networks need interpersonal skills, attention to efficiency and organisational skills to manage.

Third, for small companies there is a market niche 'selling emotions', where direct contact with customers makes communication skills important. As the products are made by the companies themselves, hard skills in the sense of basic craft skills are a prerequisite.

In agri-food sectors, several other important generic skills were identified. Examples are skills to develop and maintain one's employability, entrepreneurial skills, human resource management



skills, ability to cope with waste management, innovative skills at an interdisciplinary level and the ability to go beyond the borders of the individual company and individual skills. There is a growing need for higher levels of skill and a shift from knowledge towards performance. Even though hard skills should be a basis, more attention is paid to developing soft skills.

In forestry and wood it is important to consider segmentation of the sector. Large companies need operators whereas small companies need specialists and entrepreneurs. Large companies frequently outsource important tasks. They tend to be less locally oriented. Small businesses often become suppliers or parts of production chains for large companies. New business models or packages should be defined to make large companies more aware of their immediate surroundings. This trend effects companies' demand for skills.

Despite the abovementioned heterogeneity between and within sectors, there are many similarities, especially regarding softer and broader skills. Similar skills are needed given general trends, such as sustainability, service orientation, expectations of the public, chains and networks, scale enlargement, and standardisation and regulation.

Changes and shifts in skill needs pose challenges for education and training. From a company viewpoint it is important to match skills of employees with those needed in the company in a way that people can contribute to productivity and innovation processes. Another challenge is to prepare workers to switch between jobs and sectors as people can no longer expect to work in the same sector or occupation throughout their working life. Education and training systems should pay particular attention to developing skills to improve employability.

The workshop helped define changes and skill needs in the sectors, making clear the importance of continuing to exchange information in the Skillsnet network. Workshop proceedings and a Skillsnet sector flash will be published during 2007. More information is available from: www.trainingvillage.gr/skillsnet (in sections 'Sectors' and 'Events').

skillsnet publications



Published in 2006/2007

Identification of skill needs in nanotechnology

[2006 – Available in English and German]

Abicht, Freikamp, Schumann
[Cedefop Panorama series; 120]



Systems, institutional frameworks and processes for early identification of skill needs

[2007 – Available in English]

Strietska-Iliina, Tessaring (eds)
[Cedefop Panorama series; 135]



Towards European skill needs forecasting

[2007 – Available in English]

Zuckersteinova, Strietska-Iliina (eds)
[Cedefop Panorama series]

Forthcoming ...

- **Emerging technologies: new skill needs in nanotechnology** (online publication);
- **Early identification of skill needs in agri-food and forestry-wood chains**

New project 'Innovation, skills and jobs'

The European Commission, DG Employment, Social Affairs and Equal Opportunities initiated a pilot project to define a European foresight methodology to identify emergent job profiles and their skill needs. Pilot sectors are ICT and mechanical engineering. The project focuses on new jobs for Europe, by encouraging more effective interaction between innovation, skills development and job-creation. It should help foster implementation of the European strategy for growth and jobs. Source: EC, DG EMPL, unit Working Conditions, Adaptation to Change.

Peer review 'Forecasting skills and labour market needs'

A peer review was held 8-9 June 2006 in Helsinki, Finland, hosted by the Finnish Ministry of Labour, with inputs from the Ministry of Education and the Finnish National Board of Education. Along with the host country, 12 others participated (Austria, Bulgaria, Cyprus, France, Germany, Iceland, Latvia, Lithuania, Luxembourg, the Netherlands, Norway and the United Kingdom) and Cedefop. More information available from: www.mutual-learning-employment.net

Employment projections: international experience and the case of Greece

This paper presented at the conference 'Vocational guidance and its role in the economic growth of a country, Hellenic Society of Counselling and Guidance (ELESYP)', in Athens 2 and 3 December 2006 reviews international practices of employment forecasting and examines the case of Greece. The paper assesses different methods and labour market

information for various users and target groups. Finally, it examines previous forecasting work in Greece and presents the econometric forecasting methodology developed by the author. More details about the conference available from: www.elesyp.gr. Source: Ilias Livanos [e-mail: I.Livanos@warwick.ac.uk].

New approach to early identification of skill needs in the farming sector in Germany

In farming potential growth lies in the interface between tourism, energy, sales and marketing. With growing markets the sector needs new skills. Against the background of social developments and sector trends the report describes the situation of German farming and new requirements for employees' skills in agrotourism, renewable energies and direct marketing. Research was conducted in the framework of the German initiative of early identification of skill needs FreQueNz. More information available from: www.frequenz.net. Source: Henriette Freikamp [e-mail: freikamp@isw-institut.de].

Skill needs in the building industry in Germany

Globalisation, individualisation, demographic change and technological developments cause new trends within the building industry. Stationary building processes, IKT based building, sustainable building, energy optimising, use of high-tech and recycled materials, universal design and marketing strategies cause changing work activities and skill needs for companies and employees. Research was conducted in the framework of the German initiative of early identification of skill needs FreQueNz. More information available from: www.frequenz.net. Source: Henriette Freikamp [e-mail: freikamp@isw-institut.de].

'National skills bulletin 2006', FÁS/ Expert group on future skills needs, Ireland

The annual 'National skills bulletin' provides a detailed review of the Irish labour market. It combines statistics on employment, immigration and vacancies and describes current labour market trends from macro to occupational level. Occupations are profiled to illustrate recent developments in labour demand and highlight areas of labour and skill shortages. Information in the bulletin is particularly relevant to policy-makers in the areas of labour market, education and migration, as well as those providing and seeking career guidance. The bulletin can be found at: www.skillsireland.ie/press/reports/. Source: Joan McNaboe, e-mail: joan.mcnaoe@fas.ie

Project 'Labour market institute' in the Czech Republic

Forecasting skill needs activities have been developing since the late 1990s in the Czech Republic, particularly in cooperation between the National Training Fund and the Research Institute for Labour and Social Affairs. Outcomes include quantitative forecasts, which measure mismatch between supply and demand, and several sectoral studies (tourism, automotive

industry and energy). The studies were funded by the Ministry of Labour and Social Affairs (MoLSA) as one-off projects. The intention is to establish a regular system of projections with solid institutional and financial backing. This can be partially implemented by the 'Labour market institute' project co-funded by the ESF and launched at the beginning of 2007. Part of the project concerns sectoral studies. Methodology will be developed and organisational matters addressed, including sustainability of the studies after the project ends. Procedures will be tested by two pilot studies. The project will identify and use experience of other countries that develop such studies and put their results into practice. Source: Vera Havlickova [e-mail: havlickova@nvf.cz].

e-Assessment of learning needs in SMEs

The 'e-Assessment of learning needs in SMEs' project is developing an online diagnostic tool to enable SMEs (with assistance from training and development specialists) to analyse their learning needs and select appropriate learning strategies. The research phase of the project has been completed. The report and prototype assessment tool are available from: www.e-assess.org where you can also find more details about the project, and to download or subscribe to the project's newsletters. E-mail caron@enovateknowledgespan.org (Caron Brenner) or markus@enovateknowledgespan.org (Markus Wolf). Source: Rosalie Ireland [e-mail: Rlreland@ucreative.ac.uk].

Early identification of key competences of unemployed young people in Slovenia

As part of the EQUAL programme, the CPZ-International Centre for Knowledge Promotion, in Slovenia developed a competence model, defining the key competences needed to find and keep a job in the local labour market. The model helps identify competence gaps among the unemployed and define the training needed. The model is based on a self-evaluation questionnaire which encourages unemployed people to think about their knowledge, skills and attitudes, and is combined with labour market data. Results of the pilot test show this approach leads to more focused training. It can be used by all stakeholders, including job-seekers themselves. More details available from: www.cpz-int.si. Source: Metka Ursic [e-mail: metka.ursic@guest.arnes.si].

forthcoming skillsnet events

Workshop on enterprise surveys as a tool to identify skill needs and recruitment difficulties [June 2007]

Skill needs in the health care and social work sector [autumn 2007]

Skillsnet Agora conference on future skill needs in Europe [early 2008]

For more information visit regularly the Skillsnet webpage, section 'Events'.

how to become a skillsnet member?

Skillsnet welcomes experts active in research or policy on early identification of skill needs, to join the network. If you are an experienced researcher in skill needs analysis and forecasting, or are actively engaged in discussions on the transfer of research results on future skill requirements into policy and practice, you are welcome to submit the online application form on Skillsnet website (www.trainingvillage.gr/skillsnet).



European Centre for the Development of Vocational Training

Europe 123, GR-57001 Thessaloniki
Tel. +30 2310 490 103, Fax +30 2310 490 117
<http://www.trainingvillage.gr/skillsnet>



Contact for feedback, review, ideas or contributions:
skillsnet-team@cefefop.europa.eu