



New Skills for New Jobs

Anticipating and matching
labour market and skills needs



European Commission

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New Skills for New Jobs

Anticipating and matching labour market and skills needs

European Commission

Directorate-General for Employment, Social Affairs and Equal Opportunities
Unit D.2

Directorate-General for Education and Culture

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Foreword

Skills matter. For workers, skills mean employability and social mobility. They are the best insurance against unemployment and are an important factor for personal development and active citizenship. At the same time, the skills and competences of European workers are a major component of the Union's productivity, competitiveness and innovation. Investment in skills is a crucial prerequisite for the long-term performance of our economies and the future of the European social model. Yet, tomorrow's jobs will be different from those that we know today. What skills will be needed in 10 or 15 years time, and how many workers will have to be equipped with them?

With this in mind, the European Council invited the Commission to provide an assessment of skills needs in Europe up to 2020, to step up its efforts to forecast the needs of tomorrow and see how best they can be met. This Communication sets out how the Commission will develop its work on matching and anticipation of skills and jobs. It is the result of close cooperation between the Directorate General for Employment, Social Affairs and Equal Opportunities and the Directorate General for Education and Culture.

Labour markets - and the skills people need - are evolving ever faster and future jobs are likely to require higher levels and a different mix of skills, competences and qualifications. It will be increasingly necessary for workers to acquire transversal key competences, to participate in lifelong learning and to develop new skills to be able to adapt to a variety of tasks over their working lives. But some workers risk being left behind in fast-changing economies which rely on complex skills. Unless preventive measures are taken to make lifelong learning a reality for all, there is a risk that these workers will be trapped in low-skilled jobs with poor career development prospects.

Skills upgrading and the matching of skills to jobs are strategic priorities for the EU, and we are convinced that they must remain so in these difficult economic times, both in the shorter and the longer term. Our actions in this field will play an important role in how we deal with the crisis; when unemployment is rising, it is even more important to ensure that as many available jobs can be filled by people with the right skills, and that retraining measures provide job seekers with the skills that maximize their immediate employability. Our actions will also determine how we emerge from the current economic downturn; education and training systems must maintain and upgrade the skills of those in and those out of employment, so that they can seize new employment opportunities which will develop in the coming years.



'New Skills for New Jobs' therefore sets the agenda for one of the core future priorities of the EU: how to better anticipate the skills that European citizens and companies will need, reform our education and training systems accordingly so that they can properly prepare people for the jobs of tomorrow, and better coordinate employment and education policies. This Communication is only the starting point of a long-term process to make these objectives reality. To do so will require a sustained joint effort between the Member States and the Commission.

Nobody is able to predict precisely what the future will hold, but everyone has to prepare and plan in order to avoid undesirable outcomes and to make the most of the opportunities they encounter. This must apply to the skills challenge: how to improve our capacity to adapt to changing skills demands, generate growth and jobs and improve social cohesion in the EU.



Vladimír ŠPIDLA

Member of the European Commission
responsible for Employment, Social Affairs
and Equal Opportunities



Ján FIGEL'

Member of the European Commission
responsible for Education, Training,
Culture and Youth

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1. New skills: the key to more and better jobs

1.1. Meeting the skills challenge

The severity of the financial crisis adds an exceptional degree of unpredictability about the future of the world's economy – yet in order to put Europe on the road to recovery it is essential to enhance human capital and employability by upgrading skills. But upgrading skills is not enough: ensuring a better match between the supply of skills and labour market demand is just as necessary.

As part of the European Economic Recovery Plan proposed by the Commission¹ to help Europe alleviate the effect of the immediate crisis and prepare for the economic upturn, the Commission launched a major European employment support initiative. This initiative aims to promote employment and reintegration into the labour market of workers made redundant through activation, retraining and skills upgrading measures.

Skills upgrading is critically important for Europe's short-term recovery and longer term growth and productivity, for its jobs and its capacity to adapt to change, for equity, gender equality and social cohesion.

Across Europe, the shift to a low-carbon economy and the growing importance of the knowledge economy, in particular the diffusion of ICTs and nano-technologies offer great potential for the creation of sustainable jobs. Globalisation, ageing populations, urbanisation and the evolution of social structures also accelerate the pace of change in labour market and skills requirements. The development of new skills and competencies to fully exploit the potential for recovery is a priority and a challenge for the EU and national public authorities, for education and training providers, companies, workers and students.

Situations in Member States and regions differ significantly as concerns the skills profile of their populations or the sector distribution of employment. Improving monitoring, assessing and anticipating as well as the matching of skills is crucial to address both the employment impact of the crisis and the long-term job prospects of the EU workforce.

1 Commission Communication COM(2008)800

The employment support initiative: protecting and creating jobs

Without effective help, society's most vulnerable citizens and those with lower skills risk being badly affected by the economic downturn. With the aim of mitigating the overall impact of this economic crisis, the Commission launched an employment support initiative, as part of the [European Economic Recovery Plan](#).

The Commission will work with Member States to re-programme employment policies and spending to ensure that workers have the right skills to stay in jobs and find new jobs quickly if they are laid off. The type of measures envisaged include making sure that the national Public Employment Services are fully equipped and ready to provide people with personalised counselling and job search assistance, intensive (re-)training, apprenticeships, subsidised employment schemes and grants for self-employment and business start-ups.

Long-term challenges for EU labour markets and skills requirements

With new technologies improving the effectiveness of the production process and changing the way we work, for example towards more multitasking or team work, demand for higher-skilled workers is increasing. Over the last decades, companies have been operating across a wider geographical scope and trade has become more internationalised. These factors have a significant impact on EU labour market requirements. According to the [European Restructuring Monitor](#) database, most jobs that have been transferred abroad from EU Member States are in manufacturing or production – 51.5% – and yet a substantial proportion comes from other areas such as services.

The ageing of the population will also likely have a considerable effect on the supply of labour and skills, together with the way people work and the demand for employees in some sectors such as health and social care, creating many new job opportunities.

In addition, there is the ongoing shift to a low-carbon economy: Europe already holds a leading position in some of the technology required for renewable energy and may yet benefit further from this shift. But this will necessitate education and training programmes for emerging new professions.

Why are skills important?

Skills are the ability to use knowledge and know-how to complete a task or solve a problem, whether in a professional or learning context and in personal and social life. A highly skilled and adaptable workforce both helps boost the competitiveness of the economy as a whole, and benefits employers and employees. Young people and adults need to have the generic competences that will enable them to adapt to change and engage in further learning. Over their lifetime, learners and workers should also develop job-specific skills which should be kept up-to-date. Developing skills ensures greater employability in the long term, and can lead to better job opportunities and wage increases. Workers' skills equally play a key role in their job satisfaction – an important component of quality of work – and are vital for active citizenship. For employers, investing in skills is a way to enhance their employees' motivation and productivity, and to boost capacities to innovate and adapt.

1.2. Upgrading skills at all levels and promoting employability

Skills upgrading is crucial for equity, since the low skilled are more vulnerable in the labour market and can be hit first by the crisis. Upgrading skills is not just a luxury for the highly qualified in high-tech jobs: it is a necessity for all. Low-qualified adults are seven times less likely to participate in lifelong learning than those with high educational attainment; too little is done to increase and adapt the skills of an ageing workforce. The education, training and employment policies of the Member States must focus on increasing and adapting skills and providing better learning opportunities at all levels, to develop a workforce that is high skilled and responsive to the needs of the economy. Similarly, businesses have an acute interest in investing in human capital and improving their human resource management. Moreover, gender equality is a key factor to responding to new skills needs.

Improving the equity and efficiency of EU education and training systems is essential to avoid the waste of its human and financial resources, increase employability and reduce inequalities². While upgrading skills implies immediate costs and must be seen in a context of financial sustainability, medium and long-term private, fiscal and social returns should out-weigh initial costs. A qualified labour force not only contributes to productivity: investment in well-designed lifelong learning systems can largely offset the economic cost of skills shortages and gaps. While the economic downturn puts increasing pressure on public and private expenditure, now is not the time to reduce investment in education, skills or active employment measures.

Education and training systems must generate new skills, to respond to the nature of the new jobs which are expected to be created, as well as to improve the adaptability and employability of adults already in the labour force. Providing high quality early-childhood and basic education for all, improving education attainment and preventing early school leaving are crucial to equip people with key competences, including the basic skills and learning that are pre-requisites for further updating of skills³.

2 Commission Communication "Efficiency and Equity in Education and Training Systems" - COM(2006) 481, 8.9.2006.

3 "European Reference Framework on Key Competences for Lifelong Learning", European Parliament and Council Recommendation 2006/962/EC of 18.12.2006.

The European Employment Strategy: supporting skills development for more and better jobs

Established in 1997, the [European Employment Strategy](#) (EES) enables Member States and the European Commission to set common objectives regarding employment policies, monitor progress and exchange best practice in order to help create more and better jobs in every Member State. In particular, the EES has encouraged Member States to give increasing priority to 'active' labour market policies which help the unemployed find work, in order to complement the range of measures offering them financial compensation for the loss of income.

An important concept embedded in the EES is 'flexicurity' – a strategy which involves moving from a 'job security' mentality to an 'employment security' mentality. However, in order to be effective, flexicurity needs workers to be able to adapt to change to stay on the job market and advance in their working life. For this reason, it relies on a high level of worker training and the availability of learning opportunities over workers' lifetimes.

Indeed, at the core of the EES is a commitment to expand and improve investment in workers' skills. The [Employment Guidelines](#), which set the EES objectives, call for the attractiveness, openness and quality of education systems to be enhanced and for 'lifelong learning strategies' to be implemented. Through such lifelong learning strategies, citizens are encouraged to engage in learning at all stages of their lives and in all contexts.

In addition, the Employment Guidelines stress the need for education and training systems to adapt to new occupational needs and skills requirements, and to make it easier for employers to recognise and understand candidates' qualifications.

Education and training cooperation in the EU

The EU Member States and the Commission have worked together in this area under the [Education & Training 2010](#) work programme since 2001. This cooperation takes the form of an 'open method of coordination' to stimulate reforms and build higher skills through better education and training systems. This includes monitoring progress towards a set of shared objectives and against common indicators and benchmarks taking into account Member States' very different starting points, with mutual learning as an important means of exchanging good practice and implementing tools and instruments agreed at European level.

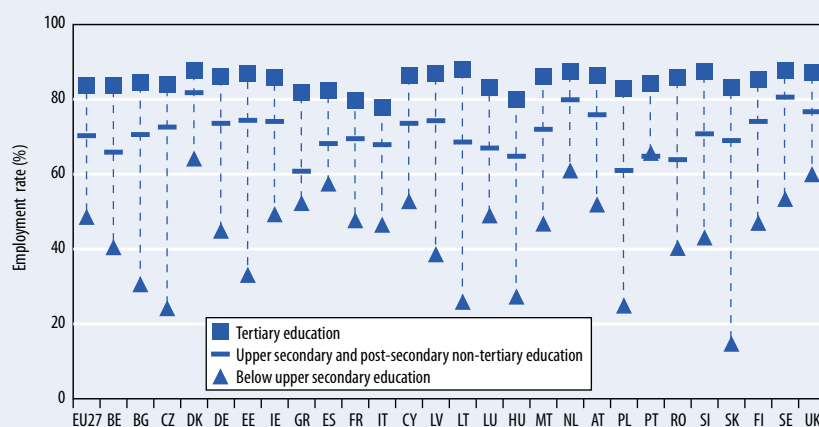
To strengthen policy cooperation and open it to new challenges, the Commission has proposed that future European cooperation in education and training (including schools, higher education, vocational education and training and adult learning) should address the following four strategic challenges:

- Making lifelong learning and learner mobility a reality
- Improving the quality and efficiency of provision and outcomes of education and training
- Promoting equality and active citizenship
- Enhancing innovation and creativity, including entrepreneurship, at all levels of education and training.

The 'updated strategic framework for cooperation in education and training' will ensure that the assessment of future skill requirements and the matching of labour market needs are fully taken on board in all education and training planning processes.

Employment rates and educational attainment

Educational background significantly influences the probability of having a job. In the EU-27, the employment rate is almost twice as high for people with high levels of education than for those who have not completed upper secondary education.



Source: Labour Force Survey (Eurostat)

1.3. Matching skills to labour market needs

To confront rising unemployment matching of skills must be improved. Skills mismatches in the labour market have been a growing concern in most Member States. Due to imperfect information and structural rigidities, workers and businesses are not provided with the right level of skills in the right areas, which damages competitiveness in particular of smaller enterprises. The composition of skills emerging from EU universities and training systems does not fully support a truly innovation-driven economy. The educational and professional choices of young men and women continue to be influenced by traditional gender paths. Reducing gender imbalances in sectors and occupations could partly address future skills shortages, for example in technical and managerial occupations⁴.

The removal of obstacles, including administrative barriers, to the free movement of workers in the EU, as well as more transparent information on labour market trends and skills requirements, would contribute to the promotion of occupational, sector and geographical mobility and allow a better match between peoples' skills and job opportunities. Mobility periods during education and training (e.g. via the Erasmus and Leonardo programmes) help make people more open to mobility later in their working lives. More effective and efficient job search requires enhanced coordination between different policy areas and labour market institutions, notably Public Employment Services and social security systems.

The Commission and the European Pact on Immigration and Asylum highlight that employment and geographical mobility of third-country workers can help reduce skills mismatches, and ensure that their skills can be used at the optimal level⁵. The successful integration of migrants and their descendants is key for EU economies and societies.

4 Commission Report on equality between men and women 2009, forthcoming. Commission Communication "Promoting young people's full participation in education, employment and society" - COM(2007) 498, 4.9.2007.

5 Commission Communication "A Common Immigration Policy for Europe" - COM(2008)359, 17.6.2008.

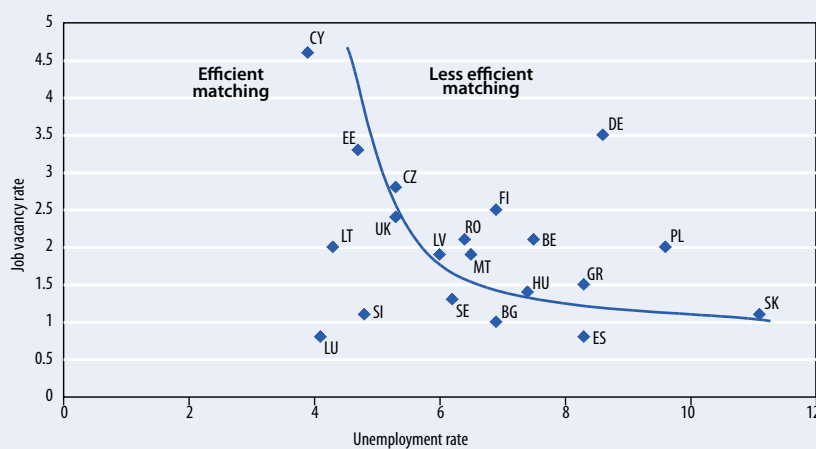
Preventing skills shortages by eliminating gender imbalances

Less than one third of occupations in the EU are 'mixed' occupations, while the remainder are dominated by one gender, according to the Labour Force Survey data. What is more, it is too often the case that female-dominated jobs are at the lower end of the skills spectrum while several male-dominated professions are to be found in highly qualified areas of employment. Avoiding gender imbalances would help ensure the allocation of the supply of labour where it is most needed and therefore avoid skills shortages. As such, efforts should be pursued both ways, encouraging men into what are traditionally more female-dominated areas such as care work, and further facilitating women's access to technical occupations. At the same time, this should achieve a better gender balance between high and low-skilled jobs and more equal opportunities for skills development.

Matching vacancies and job-seekers

It is possible for European labour markets to simultaneously face high unemployment levels *and* a sizeable number of unfilled jobs, where there is inefficient matching between vacancies and job-seekers. In the graph below, the curve shows a typical relationship between the unemployment and the job vacancy rates: the curve slopes downwards, as higher unemployment rates normally go in hand with fewer job vacancies. In countries where unemployment and job vacancies are low (e.g. Luxembourg, Slovenia, Sweden, Lithuania), the matching process seems very good. In contrast, the matching process is not satisfactory when both rates are high (e.g. Germany).

Job vacancy rate and unemployment rate in different countries



Source: Eurostat, 2007 data.

1.4. Improving the Union's capacity for skills assessment, anticipation and matching

Improving the monitoring and anticipation of labour market and skills requirements is necessary to help people return to the labour market, facilitate the matching with existing vacancies and orientate skill development in order to improve long-term job prospects. 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 for the design of efficient employment, education and training policies and individual career choices. Such an improved capacity can play a key role in the success of integrated flexicurity policies within the Growth and Jobs Strategy, as highlighted by the EU Mission for Flexicurity⁶.

The European Council stressed in March 2008 that investing in people and modernising labour markets is one of the four priority areas of the Lisbon strategy, and invited the Commission "to present a comprehensive assessment of the future skills requirements in Europe up to 2020, taking account of the impacts of technological change and ageing populations and to propose steps to anticipate future needs".

In response to the European Council mandate, chapter 2 of this Communication presents a first assessment of future skills requirements up to 2020. But this analysis cannot be a one-shot exercise. It must be followed by a sustained, strategic effort as new sectors increase their potential to spark growth and job creation, assessments need to be updated regularly to integrate these new developments.

To this end, chapter 3 suggests ways to gradually improve capacities, and sets the assessment of skills and labour market needs in the framework of the EU Strategy for Growth and Jobs. Alongside this initiative, the Commission is also proposing an updated strategic framework for European cooperation in education and training to support Member States in raising skills levels through lifelong learning.

⁶ Commission Communication "Towards Common Principles of Flexicurity" - COM(2007) 359, 27.6.2007. Report of the Mission for Flexicurity to the Council, Dec. 2008.

Anticipating skills needs at EU level

In November 2007, the Education, Youth and Culture Council adopted a resolution on *New Skills for New Jobs* which stressed the need to identify new types of job and skills need in Europe and develop regular anticipation exercises based on existing structures at European level.* One month later, the Employment, Social Policy, Health and Consumer Affairs Council cited the *New Skills for New Jobs initiative* as one of five key areas for the future of the European Employment Strategy.**

The [European Centre for the Development of Vocational Training – Cedefop](#) – has begun developing medium- to long-term skills forecasting at EU level, broken down by country, with the first results published in 2008. Forecasts of skills needs as measured by occupation and level of educational attainment will be updated every two years. In addition, skill supply projections will be devised to indicate possible imbalances in the labour market.

The [European Foundation for the Improvement of Living and Working Conditions – EUROFOUND](#) – through its European Monitoring Centre on Change, also conducts research and in-depth studies on change processes in specific economic sectors.

Finally, the Commission is developing a range of ad-hoc studies looking at skills needs, in particular under the [Sixth Framework Programme for Research and the EU's employment and social solidarity programme – PROGRESS](#). In addition to these, the [Institute for Prospective Technological Studies \(IPTS\)](#) analyses the impact of technological change on employment and skills structure.

* Council Conclusions 15813/07

** Council Resolution 14415/07

Why anticipate?

The fundamental rationale for exercises to anticipate future developments is that labour markets are imperfect. In addition, there are long delays between decisions to invest in skills and when these skills are finally available. Without such information there are likely to be more or greater mismatches in labour supply and demand. Hence, by funding data collection and forecasting work, the public sector is providing a facility that both the public and private sectors can use to inform decisions to invest in skills development.

2. A first assessment of skills and labour market needs up to 2020

The unforeseen financial crisis of the second half of 2008 illustrates the limitations of any forecasting exercise. Many of the skills and jobs that will seem common to European citizens in 2020 - e.g. as a consequence of changes in the use of 'clean' technologies - cannot even be imagined today. But while a forecast cannot provide an exact picture of the future, it can provide an indication of general trends, and highlight the need for policy responses⁷.

Three core conclusions stem from the Commission's assessment: first, there is in the medium and long term a great potential for employment creation in Europe – both for new and replacement jobs. Second, the skills, competencies and qualification requirements will increase significantly, and across all types and levels of occupation. Third, there is a need to ensure a better long-term match between skills supply and labour market demand.

This first assessment is largely based on an elaborate forecast of future skills needs, made in June 2008 by the European Centre for the Development of Vocational Training (Cedefop)⁸. Further details, methodology and a description of Member States' forecasts can be found in the Staff Working Document accompanying this Communication.

2.1. Long-term trends in job creation and labour supply

2.1.1. *An expanding labour market, increasingly dominated by the service sector*

The Cedefop analysis suggested that there could be approximately 100 million job openings in EU 25⁹ over the period from 2006 to 2020. In addition to the creation of 19.6 million additional jobs, another 80.4 million replacement jobs could be available as workers retire or leave the labour market.

The slow but steady shift in the sector distribution of EU employment, from agriculture and traditional manufacturing industries towards services, is likely to continue notwithstanding the recent downturn. In 2020, almost three quarters of jobs will be in services.

Job creation in services is likely to be substantial up to 2020, especially in business services. The primary sector could lose 2.9 million jobs while construction should tend to stabilise. Manufacturing would experience a net loss of 800,000 jobs despite an increase in engineering; however, given the impact of a strong replacement demand, there would still be important job openings in manufacturing, which will therefore remain a crucial sector for the EU economies.

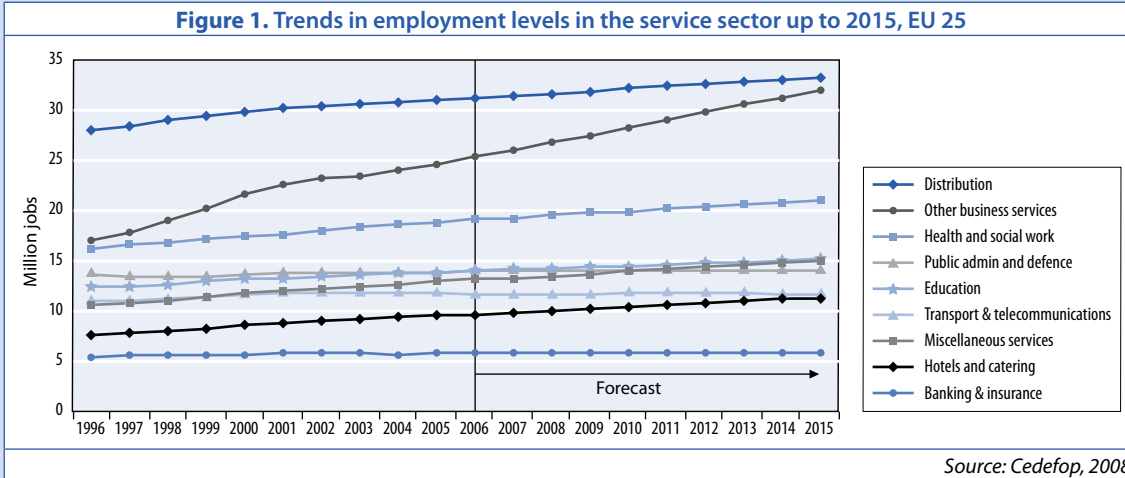
With a shorter-time perspective, a more detailed forecast of trends in services can be provided. The best prospects of job creation up to 2015 are expected in business services (such as IT, insurance or consultancy), health care and social work, distribution, personal services, hotels and catering, and to a lesser extent education (**Figure 1**). The prospects for business services and other sectors may need to be adjusted in the light of the financial crisis.

⁷ On the constraints and methodology of forecasting, see the Commission Staff Working Document (SWD).

⁸ Cedefop, *Skill Needs in Europe. Focus on 2020*. Luxembourg, 2008.

⁹ This preliminary assessment does not include Bulgaria or Romania. They will be included in the first update of projections.

Figure 1. Trends in employment levels in the service sector up to 2015, EU 25



The Cedefop forecast: in detail

The [Cedefop forecast](#) is based on a multisectoral macroeconomic model, called E3ME (Energy-environment-economy model of Europe). This model provides consistent projections of employment levels by sector using Eurostat national accounts estimates. These employment projections are translated into implications for job creation by occupation, and in terms of formal education attainment requirements. The occupational and qualifications shares within sectors are based on the patterns observed in the Labour Force Survey data. The forecast also includes an estimation of the 'replacement demand' – job openings due to retirement, job mobility and migration. In combination, the Cedefop forecast delivers a comprehensive, consistent and detailed picture of future skills needs and job openings across Europe up to 2020.

The transition towards a low-carbon economy will also have an important impact on employment, especially in energy, water and waste treatment, construction, transport, industry, agriculture and forestry. According to the International Labour Organization, the global market for ecological services and products should double and reach 2740 billion dollars in 2020¹⁰.

2.1.2. A risk of labour shortages and a need for higher employment rates

Demographic trends will have a major impact on labour supply, although for several years this will be partly compensated by the increase of activity rates¹¹. Eurostat estimates that the EU working age population (15-64 years) will peak in 2012 and then start shrinking as the “baby-boom” cohorts retire. As the participation rate of women and of older workers will continue to increase, until 2020 the effective labour force should continue to grow slowly; then the “ageing effect” will outstrip the increase in participation rates, resulting in a slight but continuous decline of total EU labour supply; this will affect Member States in different ways.

Migration flows might compensate for some of the decline in birth rates, but they will not solve the demographic deficit - not least because in the long run immigrant populations tend to acquire the demographic patterns of their country of residence. Qualitative EU labour market mismatches are likely to be exacerbated by quantitative shortages: the matching of skills and labour market needs will be essential for an effective use of human capital.

10 ILO, *Green jobs : facts and figures*, 2008.

11 See Commission's first Demography Report - SEC(2007) 638, 11.5.2007.

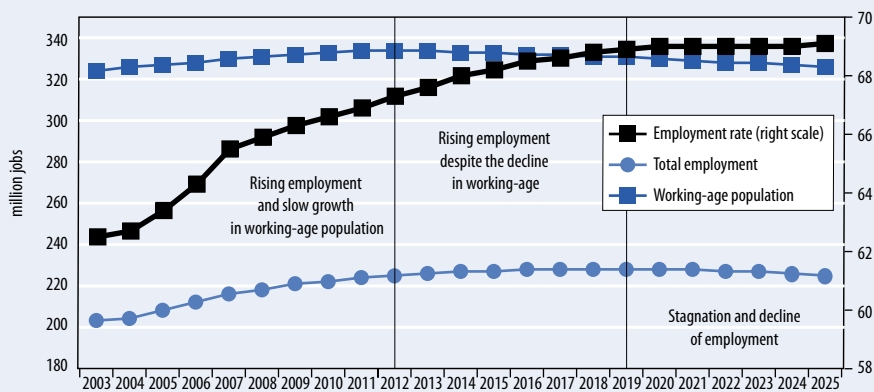
New jobs and skills needs in a greening economy

As a result of investments to mitigate and tackle the effects of climate change, new markets and job opportunities may emerge, especially in sectors related to environmental services, clean technologies, renewable energies, recycling, urban and rural renovation or nature conservation.

However, while new employment opportunities will arise, some jobs might become obsolete or be redeployed in the process of restructuring of industries directly affected by countermeasures to tackle climate change. For instance, moving from fossil fuel plants to renewable energy will create jobs and yet might equally mean that some workers lose their jobs, both in the 'traditional' energy sector and in other linked industries. However, the skills required for the jobs that are lost may differ significantly from those needed for those that have been newly created. Moreover, many existing professions (for example in the construction and agriculture sector) will be transformed and redefined as their day-to-day skill sets and work methods are 'greened'.

The transition to a low-carbon economy could be hampered due to the slow pace of diffusion of new skills among the labour force and low awareness about new techniques, products and materials. Adequate training policies will be therefore needed to avoid skills gaps and shortages that would render green investments ineffective.

Projected working-age population and total employment, EU-27



Source: European Commission and Economic Policy Committee, The 2009 Ageing Report: Underlying assumptions and projection methodologies for the EU-27 Member States (2007-2060), *European Economy*, No. 9, 2008.

2.2. Trends in skills needs and occupations

2.2.1. Higher skills requirements across all occupations

Several correlated factors will stimulate demand for better and adapted skills: globalisation and increased international trade; the transition towards a low-carbon economy; the application of technologies, especially ICT; and changes in work organisation which are themselves in part a consequence of technological change and skills upgrading¹².

The next decade will see an increasing demand for a high-qualified and adaptable workforce and more skills-dependent jobs. The general upward trend in skills demand can be illustrated by looking at required levels of education attainment, although these are a very approximated variable for skill levels.

In EU 25, between 2006 and 2020, the proportion of jobs requiring high levels of education attainment should rise from 25.1% to 31.3% of the total; jobs requiring medium qualifications would also increase slightly, from 48.3% to 50.1%. This would amount respectively to 38.8 and 52.4 million high-and medium-level job openings. At the same time, the share of jobs requiring low levels of education attainment would decline from 26.2% to 18.5%, despite 10 million job openings (**Figure 2**).

Most jobs in non-manual skilled occupations will require highly qualified workers; workers with medium educational attainment will increasingly fill skilled occupations. Since overall education rates increase at a faster rate than labour market changes, only half of elementary jobs will be held by workers with low educational attainment (**Figure 3**).

In the service sector, there is a clear tendency towards the broadening of the required skills portfolio at all occupational levels, linked to “non-routine” tasks. For example, ICT professionals have to develop skills in marketing or management; services workers have to develop customer orientation skills and digital literacy. In many knowledge-intensive sectors, both managerial skills and scientific knowledge are needed. In social care and education, further skills upgrading is needed to improve the quality of services.

This reflects the growing demand from employers for transversal key competencies, such as problem-solving and analytical skills, self-management and communication skills, linguistic skills, and more generally, “non-routine skills”.

¹² SWD page 18.

Skill demand is changing

Technological change – in particular Information and Communication Technologies (ICT) – is one reason for the shift towards higher skills. The use of ICT is very often associated with cognitive and analytical tasks, for example formal writing, together with interactive tasks requiring ‘soft skills’ like persuading, selling or managing others. Demand for problem-solving and communication skills has risen – capacities that are mainly found in the high-skilled workforce. Across Europe, the proportion of workers undertaking non-routine tasks is already very high. About 60% of European workers estimate that they have to undertake complex tasks at work; a greater percentage consider that they have to solve unforeseen problems (80%) or learn new things at work (70%).*

* Source: European Foundation for the Improvement of Living and Working Conditions, Fourth European Survey on Working Conditions, EU-27, 2005.

Figure 2. Past and future structure of jobs by education attainment level, EU 25

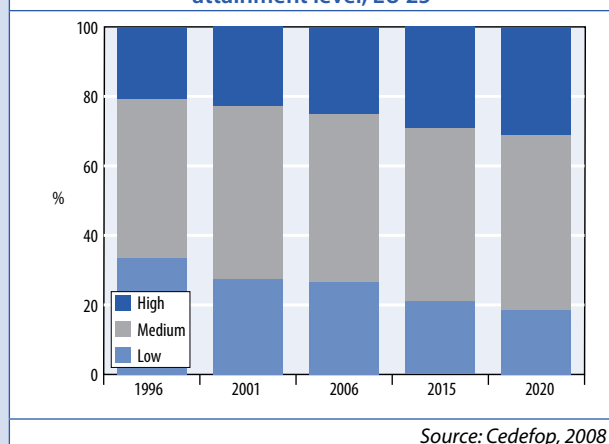
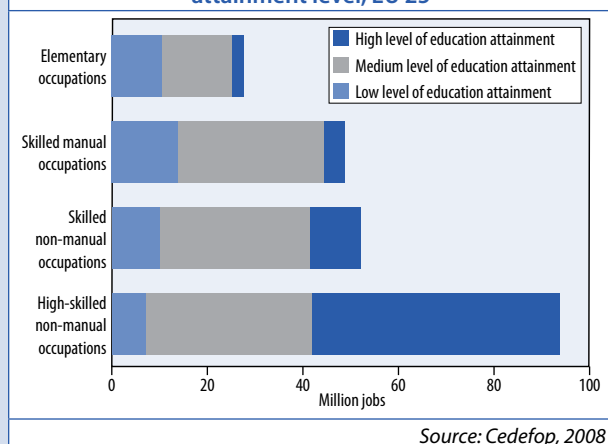


Figure 3. Projected employment levels in 2020, by broad categories of occupations and education attainment level, EU 25



Key competences

Key competences refer to the knowledge, skills and attitudes that all young people should develop during their initial education and training, and that adults should be able to learn and maintain through lifelong learning. The European reference framework for key competences defines eight core competences for lifelong learning:

- Communication in the mother tongue
- Communication in foreign languages
- Mathematical competence and basic competences in science and technology
- Digital competence
- Learning to learn
- Social and civic competences
- Sense of initiative and entrepreneurship
- Cultural awareness and expression

2.2.2. A significant creation of high-skilled jobs, and a risk of labour market polarisation

Net job creation projections show a polarised job expansion among occupations, with a strong bias in favour of high-skilled jobs. Up to 2020, in EU25 17.7 million additional jobs could be created in high-skilled non-manual occupations such as administrative, marketing, logistics and sales managers, IT systems administrators, teaching professionals and technicians. At the same time, forecasts highlight a low or even negative job creation prospects for some skilled occupations, but also a considerable net creation of elementary jobs (5 million), especially in the service sector – e.g. security staff, domestic helpers, cashiers or cleaning workers. **(Figure 4)**.

New technologies and developments in work organisation seem to result in an important job expansion at the ends of the job spectrum (especially at the higher level). New technologies cannot substitute either the “non-routine” tasks typical of high-skilled occupations (e.g. cognitive and communication tasks), or low skilled jobs, especially in the service sector (e.g. care or truck driving). However, medium-skilled routine tasks and repetitive work can be replaced by automation and computerization, or outsourced.

Such polarisation is perceptible in some Member States. However, it is not a clear-cut phenomenon, and the polarising trend in net job creation should be largely offset by a high replacement demand for middle-skilled workers, though replacement demand will also accentuate the upward trend in skill demand.

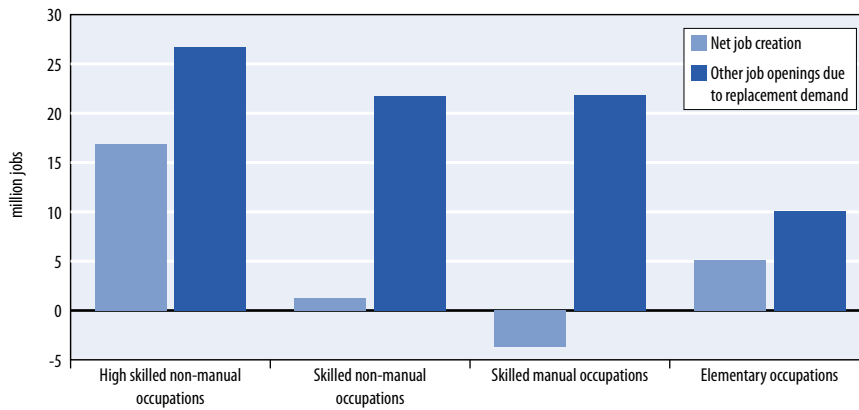
Such shifts in labour market demand already raise concerns about wage differentiations between jobs. The trend in labour income shares in the EU since 1980 has been clearly upwards for the high skilled, but downwards for the low skilled, while the wages levels of the low and middle skilled tended to converge¹³.

Service sector “low-skilled” jobs increasingly include more demanding non-routine tasks; yet there is still little financial recognition of the new competencies and skills necessary for these jobs in the wage structure. This has also an impact on gender inequality, since women, especially migrant women, disproportionately hold service sector jobs¹⁴.

13 SWD page 30.

14 SWD page 31.

Figure 4. Job openings between 2006 and 2020 by broad categories of occupations, EU 25



Source: Cedefop (2008).

Rising inequalities in EU labour markets?

According to a report of the European Foundation for Living and Working Conditions* the new jobs created in Europe between 2000 and 2006 tended to improve in quality, but distinct patterns of employment expansion can be found among European countries:

- **Polarisation** – in this situation, job creation is intense at the extremes of the job spectrum: most new jobs are either low- or high-paid jobs – Cyprus, France, Hungary, the Netherlands and Slovakia.
- **Upgrading** – job creation is more concentrated at the higher end of the job spectrum – Denmark, Finland, Ireland, Luxembourg and Portugal.
- **Growth in the middle** – Estonia, Greece, Lithuania and Latvia.
- **Polarisation combined with upgrading** – Austria, Belgium, Germany, Slovenia and the United Kingdom (UK).
- **Upgrading combined with growth in the middle** – Czech Republic, Spain, Italy and Sweden.

Trends towards polarisation bring concerns of inequality. Moreover, the persistence – or even development – of high numbers of the ‘working poor’ poses a challenge to providing a decent living standard to all workers and to the wider objective of social cohesion enshrined in the EU Treaty.

* European Foundation for Living and Working Conditions, ‘More and better jobs: Patterns of employment expansion in Europe’, 2008.

3. Anticipating and matching: A New Skills for New Jobs Agenda

To better face the challenges described, it is crucial to promote more comprehensive information on the Union's future skills and job requirements and to facilitate matching and anticipation. It places at the centre of the EU strategy for growth and jobs the need to upgrade skills of the EU population and to ensure a better match with labour market needs, to address the immediate employment and social impacts of the crisis and contribute to the Union's competitiveness and equity in the longer term. Drawing on existing budgets and EU programmes, it is organized under four strands.

3.1. Addressing mismatches

Public authorities at national, regional and local level, business, social partners, training providers and individuals would benefit from regular information on EU short-term labour market changes, job vacancies available across the EU, and projections of skills requirements. To promote professional and geographical mobility, the Commission will:

- Establish as of 2009 a "European Labour Market Monitor" with periodical, up to date information on short-term trends on the European labour market. The Monitor will collect, analyse and disseminate data on vacancies and registered job seekers through the EU network of Public Employment Services and, in time, from wider sources such as sectors, companies and recruitment agencies;
- Develop as of 2009 a standard multilingual dictionary of occupations and skills, to enhance the quality and transparency of vacancy information to improve matching between job seekers and vacancies;
- Create in 2009 Match and Map, a user-friendly, transparent online service for citizens, providing qualitative information on occupations, skills, learning and training opportunities across the EU. As part of EURES, and linked to the PLOTEUS and EURAXESS portals¹⁵, it will provide a clear geographic mapping of the EU job offers matching a user's profile, feedback on why jobs and skills do not match, and information on learning opportunities.

¹⁵ EURES, the European Employment Services portal, (<http://eures.europa.eu>) currently includes 1.2 million job vacancies, over 300,000 CVs and 17,700 registered employers. It also provides information needed for professional mobility in Europe. PLOTEUS, the Portal on Learning Opportunities throughout the European Space, (<http://ec.europa.eu/ploteus/>) receives over 800,000 visits per year. EURAXESS, the Researchers in Motion web-site, contains a Jobs Portal (<http://ec.europa.eu/euraxess/jobs>) dedicated to employers and employees with a research profile; it publishes 5000 vacancies per year.

The role of Public Employment Services

Public Employment Services help match supply and demand in the labour market by providing support services to both employers and job-seekers. They help employers to fill vacancies, provide job-seekers with job guidance and placement service, and can assist them in meeting skills and training needs. Public Employment Services offer access to more comprehensive and individualised services (including adequate retraining measures) in situations where, for example, there are not enough vacancies for every job seeker to find work immediately, where a job seeker has skills that do not fit with current vacancies, or where other problems make finding a job difficult. Therefore, they play a key role in detecting and addressing skills mismatches, and preventing the risks of structural and long-term unemployment.

EURES and PLOTEUS



Set up in 1993, **EURES** is a cooperation network between the European Commission and the Public Employment Services of the Member States of the European Economic Area (the EU countries plus Norway, Iceland and Liechtenstein*) which aims at helping citizens to benefit from the principle of the free movement of workers.

Its online Job Mobility Portal acts as a job-search tool based on job vacancies that are posted by Public Employment Services. Through this tool, job-seekers can, for example, access many work and learning opportunities, upload their own CVs for potential employers and obtain advice about living and working abroad. EURES is also a network of more than 700 advisers in daily contact with job-seekers and employers across Europe. In European cross-border regions, EURES has an important role to play in providing information about, and helping to solve, all sorts of problems related to cross-border mobility that workers and employers may experience.

PLOTEUS – the portal on learning opportunities throughout Europe – aims to help students, job-seekers, workers, parents, guidance counsellors and teachers to find out information about studying in Europe. It covers universities and higher education institutions, schools, vocational training and adult education courses. Provided by National Resources Centres for Vocational Guidance (Euroguidance), the information is permanently expanded and updated.

*Switzerland also participates in EURES cooperation.

3.2. Strengthening the Union's capacity for forecasting and anticipation

Most Member States are already developing forecasting and anticipation tools¹⁶. However, these initiatives vary significantly in scope and methodology and need to be brought together into an orchestrated effort. The resources and expertise of Cedefop and the European Foundation for the Improvement of Living and Working Conditions must be harnessed for this purpose. The Commission will:

- Establish a regular, systematic assessment of long-term supply and demand in EU labour markets up to 2020, broken down by sectors, occupations, levels of qualification and countries. Updated projections will be published every two years starting in 2010, along with ad-hoc early-warnings of potential labour market imbalances;
- Increase EU methodological, analytical and mutual learning capacities for skills and jobs anticipation. As of 2009, the Commission will concentrate efforts under the PROGRESS and Lifelong Learning programmes to develop new ways of measuring competences;
- Increase EU capacity for assessing the employment effects of a transition to a low carbon economy.

Businesses have a key role to play in the assessment of skills needs, and should be actively involved in this initiative. The Commission will:

- Promote dialogue between business and education and training providers, for the establishment of partnerships to meet medium-term skills needs; and provide insight on the expectations of employers with respect to students and graduates, through qualitative prospective studies such as 'Tuning Educational Structures in Europe';
- Enhance knowledge, awareness and involvement of businesses in forecasting skills needs, through an employers' survey tool and qualitative studies on the skills needs of business, notably SMEs;
- Support platforms of companies, training providers and recruitment specialists to jointly design targeted training courses and organise an annual "Partnership for skills and employment" event, to recognize the most innovative partnerships matching skills supply and demand.

¹⁶ For a comprehensive overview of national initiatives, see SWD, chapter 3.

Anticipating skills needs at national level

There is a long tradition of forecasting skills needs in Europe, but national experiences differ in terms of the periodicity, level of detail and methodology used. The main methodological approaches employed to assess changing skills needs are:

- Surveys of employers and employees
- Quantitative projections of employment based on econometric models (by occupation, sector and required level of education)
- Foresight qualitative analysis, including, for example, the development of alternative future scenarios for employment and skills needs


In-depth studies focusing on a particular sector or occupation can use a variety of approaches.

Some countries have decentralised systems for anticipating skills needs, developed mostly at trade, sector or local level (for example Denmark, Spain, Greece, Hungary, Lithuania, Latvia, Portugal, Slovakia and Slovenia). Others, in contrast, coordinate a comprehensive system at national level, combining forecasts for the country and regional and sectoral studies (for example Austria, Germany, France, the Netherlands, Sweden and UK).

Tuning Educational Structures in Europe

The [Tuning Educational Structures in Europe](#) project, which began in 2000, was developed by universities for universities and supported by the European Commission. The project allows universities to better adapt their curricula and define degree programmes in terms of learning outcomes, which leads to qualifications that are more transparent and ultimately better attuned to the needs of the labour market. Surveys undertaken by this project examined the perceptions of graduates, academics and employers regarding skills requirements, curricula and learning outcomes, and address issues such as teaching methods, student workload and quality enhancement.

The name 'Tuning' reflects the idea that universities do not – and should not – look for uniformity in their degree programmes or any sort of unified, prescriptive or definitive European curricula; rather they should simply look for points of reference and a common understanding.



The sector level is of special relevance when looking at adaptation to change. The Commission, in cooperation with EU institutions, social partners and EU agencies Eurofound and Cedefop, has already developed a foresight cross-sector methodology for the anticipation of sector skills needs, which delivers scenarios for the sectors' evolution and the impact on occupation and employment. The Commission will

- Provide an analysis of the skills and labour market needs of key sectors. Comprehensive results for 16 sectors covering 75% of total EU private sector jobs will be available in mid-2009, providing a full picture of labour demand and its implications for restructuring;
- Discuss with stakeholders, notably the existing sector social dialogue committees, the possibility of establishing "sector councils on employment and skills" at EU level, to collect information available in Member States and regions and provide guidance drawn from stakeholders and from education and training systems.

In order to draw on the expertise of Member States, business and social partners, education and training providers, academics and international institutions, the Commission will establish a small group of experts in support of the New Skills for New Jobs initiative. Over the course of one year, the group will provide expertise and advice on analysis, common methodologies and policy responses.

The EU Forum for University-Business Dialogue

In 2008, the European Commission launched a forum for a [structured dialogue for cooperation between university and business](#), to look at ways to reinforce the links between higher education and companies in areas such as governance, curriculum development, entrepreneurship, continuing education, knowledge transfer and mobility. This platform on European level provides a basis for dialogue on common issues and challenges, supports mutual learning and the identification of innovative solutions. The Commission Communication 'A new partnership for the modernisation of universities: the EU Forum for University-Business Dialogue'*^{*}, takes stock of what has been learned from the first year of the Forum and other relevant activities at European level about the challenges and barriers to university-business cooperation, the issues to be addressed and good practices and approaches which could be more widely used. The Communication makes proposals for the next steps in the Forum's work and outlines concrete actions to strengthen university-business cooperation.

*COM(2009)158 final

Determining emerging competences by sector

The European Commission has developed a common approach to identify emerging competences across sectors, which is being applied to 18 economic sectors. For each, the most important economic and employment trends, drivers of change and emerging or changing skills and competences are mapped. On this basis, several alternative scenarios are created for how they may plausibly evolve and their implications for competences and occupation profiles in terms of jobs expanding, altering or declining are defined. The ultimate goal of these studies is to outline strategic choices to meet the sector's skills needs, specific implications for education and training, and recommendations addressing social partners and public authorities at all levels.

3.3. Deepening international cooperation

The EU and other economies are affected by global trends and challenges, which in turn have a direct impact on EU labour markets; policy dialogue and exchange of experiences with our global partners can contribute to meeting the challenges of today and tomorrow. In addition to the ongoing cooperation with the 46 member countries of the Bologna process for reform of higher education, the Commission will intensify cooperation with third countries and international institutions. In particular, it will:

- Actively participate in the OECD's new Programme for the Assessment of Adult Competences (PIAAC), alongside the ongoing PISA and AHELO Programmes on student and higher education outcomes. The Commission will also co-operate with the OECD in the development of qualitative studies on the evolution of skills demand and indicators of mismatches;
- Cooperate with the International Labour Organisation (ILO), particularly with a view to developing a knowledge sharing platform and to assess the global impact of climate change policies on skills and jobs;
- Enhance the current bilateral dialogues with third countries, particularly with China, India, the USA and Canada, leading to joint research and cooperation on forecasting and methodology;
- Develop the policy dialogue with neighbourhood countries and within the Eastern Partnership and the Union for the Mediterranean supported by the European Training Foundation, notably to develop the vocational education and training sector (VET) and national qualifications frameworks.

Programme for the International Assessment of Adult Competencies

With its results due in 2011, **PIAAC** aims to assess the level and distribution of knowledge, skills and attitudes across countries. It will assess different areas of competency including problem-solving in a technology-rich environment, aptitude to evaluate information and construct new knowledge, reading literacy, and numeracy. Data from PIAAC will enable the links to be investigated between key cognitive skills and the use of skills at work and a range of demographic, economic and social variables. As a result, our understanding of labour-market returns to education and the role played by cognitive skills in enhancing labour market prospects should be improved.

Towards a wide 'European Higher Education Area'

The 'Bologna Process' aims to create a 'European Higher Education Area' that will offer broad access to quality higher education and facilitate the mobility of students, graduates and higher education staff. Encompassing 46 countries, it seeks to advance reforms leading to comparable degrees organised in a three-cycle structure (bachelor, master, doctorate), to improve further quality assurance in accordance with agreed standards and to promote fair recognition of foreign degrees and other higher education qualifications.

The Bologna Process is intergovernmental, but all relevant stakeholders are involved in the discussions and decision-making, in particular higher education institutions and students. The European Commission helps Member States and neighbouring countries in the implementation of the Process through EU policies and programmes, such as Erasmus, Tempus and Erasmus Mundus programmes.

Best practice outside the EU: examples from the US and Canada

The US Bureau of Labor Statistics produces biennial detailed projections of employment by sector and occupation broken down by state. Further activities complement the project, including the O*NET system for monitoring changing skills needs within occupations. O*NET is an online database developed by the US Department of Labor offering detailed information on occupations, such as definition and description of the tasks and work activities, knowledge, skills and abilities required, wages and employment trends.

In Canada, 'Sector Councils' have been put in place in almost 30 economic sectors. These organisations comprising business, labour, education and other key stakeholders examine current and projected human resource challenges (including how training is developed and delivered), identify solutions, and coordinate and implement strategies to help firms to meet changing demands. Through their work, national occupational standards and certification programmes are devised, new entrants in the labour market are identified and prepared, and career and occupational information is enhanced.

3.4. Mobilising Community instruments

Preparing for recovery through a radical skills upgrading will only succeed through a concerted effort of all stakeholders in the Member States, with the contribution of Community policies, financial instruments and processes:

- The Growth and Jobs Strategy and the Mutual Learning programmes within the Open Method of Co-ordination provide an overall policy framework for the New Skills for New Jobs initiative. The Commission's Recovery Plan underlines that a stronger emphasis on flexicurity policies, with a focus on activation measures, retraining and skills upgrading, is essential to promote employability and reintegration into the labour market;
- The updated strategic framework for cooperation in education and training can stimulate innovative partnerships between education and training providers and social and economic actors, to promote more flexible and demand-led systems. The implementation of the European Qualifications Framework should increase the transparency of qualifications and facilitate access to further learning. The Copenhagen process on cooperation in VET will include a new priority to improve the links with the labour market;
- The "Fifth Freedom" – the freedom of movement of knowledge - called for by the 2008 Spring European Council, will support the deployment of the New Skills for New Jobs initiative. It will foster the mobility of knowledge workers across borders and sectors and thus help match demand and supply at the high skill level;
- The New Skills for New Jobs initiative is fully within the scope of the European Social Fund (ESF). Several Member States have already identified as a priority in their 2007-2013 ESF programming the development of policies and services to address skills needs and labour market mismatches, including actions aiming at a better gender balance and guidance on educational choices. The Commission will provide policy guidance for Member States on an optimal use of ESF funds;
- The European Regional Development Fund (ERDF) can also contribute to developing skills and anticipation, by promoting technology forecasting, innovation, research and development and communication infrastructure and through cross-border cooperation between education and training organizations;

Cooperation in vocational education and training

Cooperation in vocational education and training (VET) takes place within the 'Copenhagen Process', named after the Copenhagen Declaration endorsed in November 2002 by the Education Ministers of 31 countries. At its last review in November 2008 in Bordeaux, the Ministers in charge of VET agreed to include a new priority in the cooperation process related to the improvement of the links between VET and the labour market. This includes in particular the development of tools to improve sectoral identification and anticipation of skill and competence needs, the promotion of guidance and counselling, adult training and validation and recognition of informal learning.

The *Leonardo da Vinci* strand of the *Lifelong Learning Programme 2007-2013* provides substantial financial support for the implementation of the VET policies and Copenhagen process and notably for projects aiming to make VET more responsive to labour market needs.

Another important priority of the Copenhagen process is the development of European tools to enhance the transparency, recognition and quality of qualifications in VET, such as the European Credit System for VET (ECVET) and the European Quality Assurance Reference Framework for vocational education and training (EQARF).

The European Qualifications Framework for Lifelong Learning

The *European Qualifications Framework* (EQF) is a European reference framework aiming at making qualifications more readable and understandable across different countries and systems in Europe, facilitating workers' and learners' mobility and lifelong learning. The EQF relates different countries' national qualification systems to a common European framework with eight reference levels, encompassing all levels of qualifications acquired in initial and continuing education and training (either general, vocational or academic). The eight levels are described in terms of learning outcomes, defined as a statement of what a learner knows, understands and is able to do on completion of a learning process.

This approach also promotes the validation of experiences obtained in informal and non-formal learning settings or through work. EU countries are to relate their national qualifications systems or frameworks to the EQF by 2010 and make reference to the appropriate EQF level in all new qualification certificates and diplomas by 2012.

- The European Agricultural Fund for Rural Development (EAFRD) invests in innovation, new technologies, research and development, and supports the skills upgrading of farmers, foresters and food processors as well as of the broader rural population through training, information and diffusion of knowledge actions.
- The Commission's proposal to amend the European Globalisation adjustment Fund (EGF) Regulation will allow for strengthening skills upgrading activities;
- The European Fund for the integration of third country nationals can also contribute – complementing the ESF - in upgrading and adapting immigrants' skills, in particular by supporting pre-travel measures (e.g. vocational and language training) in the country of origin, and language courses in the Member State of residence;

European social dialogue is a key instrument for mobilising social partners to invest in the right skills through education and lifelong learning. The Commission will invite social partners to develop joint initiatives to promote skills forecasting and upgrading, and to accompany short-term restructuring.

Skills upgrading is critically important for Europe's future; so too, especially today, is a better match between skills and labour market needs. The New Skills for New Jobs initiative stresses the need for more effective education and training policies and modernisation of labour markets through flexicurity policies. It proposes a concerted effort towards a comprehensive assessment of future skills and labour market needs, in partnership with Member States, companies and other stakeholders. The initiative aims to contribute to economic recovery and the Growth and Jobs strategy, to attenuate the impact of the current crisis in terms of jobs and skills, and enhance long-term competitiveness and equity. In partnership with the Member States, the Commission will evaluate the effectiveness of the measures on an ongoing basis, beginning with a first report in 2010.

The European Social Fund

One of the EU's Structural Funds set up to reduce differences in prosperity and living standards across EU Member States and regions, the [European Social Fund \(ESF\)](#) aims at improving the lives of EU citizens by giving them better skills and job prospects. Over the period 2007–13, €76 billion will be distributed to the EU Member States and regions to achieve this goal.

ESF funding supports projects that improve access to training, in particular for the low-skilled and older workers, to prevent and anticipate unemployment, and support career and individual guidance; or back outplacement and mobility schemes that encourage workers to move across regions or across the EU, to where their skills are needed. The ESF trains, and supports the employability of, approximately 9 million people a year.

In addition, ESF funding can help identify future occupational and skills requirements, support the design and introduction of reforms in education and training systems that make initial and vocational training more relevant to employers' needs, and update educators' and trainer' skills.

The ESF financial procedure has been simplified for the benefit of Member States and citizens. Under its European Economic Recovery Plan, the Commission has proposed further simplifications to help Member States to utilise the ESF in a flexible way to support the most affected citizens.

Find out more

On the website of the Commission *Directorate General for Employment, Social Affairs and Equal Opportunities*

Employment, Social Affairs and Equal Opportunities Homepage	http://ec.europa.eu/social/home.jsp?langId=en
New Skills for New Jobs	http://ec.europa.eu/social/main.jsp?catId=568&langId=en
European Employment Strategy	http://ec.europa.eu/social/main.jsp?catId=101&langId=en
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European Framework of Key Competences	http://ec.europa.eu/education/school-education/doc830_en.htm
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European Qualification Framework	http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm
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European Centre for the Development of Vocational Training - Cedefop	www.cedefop.europa.eu/default.asp
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OECD - PIAAC	http://www.oecd.org/document/57/0,3343,en_2649_33927_34474617_1_1_1_1,00.html

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New Skills for New Jobs
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The Communication *New Skills for New Jobs: Anticipating and matching labour market and skills needs* outlines an initial evaluation of the future needs of the EU with regard to skills and jobs up to 2020. 'New Skills for New Jobs' aims at improving our understanding of the skills challenge and the matching between workers' skills and the needs of the EU employment market. This initiative will help Member States' and other bodies to evaluate, match and anticipate the skills needs of their citizens and businesses. This publication presents the full Communication, together with additional information explaining the context and providing further details.

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