The Quality of new Jobs and Challenges for Workers' Organisations

The Europe 2020 Employment Package and job quality in the green economy, the ICT sector and the care sector

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Executive summary

With the Europe 2020 strategy, the European Union aims to become a smart, sustainable and inclusive economy. Ambitious objectives are set, such as the target to have 75% of the 20 to 64- year-olds in employment by 2020. The accompanying Employment Package focuses on a job-rich recovery from the crisis and defines three sectors with a large employment potential: the health and care sector, the ICT sector and the green sector. Besides boosting job creation in these sectors, the Employment Package also focuses on ensuring the quality of these new jobs.

This report was drawn up under the EZA-HIVA work programme 2011-2013, with a key focus on how workers' organisations can influence the implementation of the Europe 2020 strategy. In the annual programme for 2013, the focus is on the quality of jobs in sectors where job creation is to be expected and the role of workers' organisations in securing job quality.

Employment growth and job quality in Europe

Employment growth

Between 2000 and 2007, 58 million new jobs were created in Europe. As a consequence of the recent financial and economic crisis, about 6 million jobs have been lost since the onset in 2008 with no signs of real improvement until today. Large differences in the impact of the crisis (on employment) can be seen across European countries. During the crisis, the general employment trend shifted towards polarisation, especially due to large job losses in the middle-level wage groups. However, not all European countries have suffered to the same extent from the crisis. Those countries hardest hit by the crisis primarily showed polarisation or even downgrading of their employment structure. Those less hit by the crisis, on the other hand, exhibited an upgrading of the employment structure, since fewer jobs were lost in the higher wage groups (compared to the other wage groups).

Job quality and job types

Job quality is a multidimensional concept that can be defined by job characteristics that have positive and beneficial outcomes for the workers. The outcomes can be physical and psychological well-being, as well as positive job-related attitudes and results, such as job satisfaction, job security, perceived job sustainability etc. (Green, 2006). Starting from three groups of job characteristics – work organisation, employment conditions and social relations – specific combinations of the presence/absence of these job characteristics can be made, showing eight different job types. Each of these job types has its own combination of job characteristics positively influencing the job quality, such as autonomy, good employment conditions, support etc., as well as job characteristics imposing risks on their job quality, for example high levels of speed-related pressure, emotional pressures, health risks, ... Three of the job types are high-quality jobs: active work, saturated work and supporting work.

Another two job types are of moderate quality: low-strain part-time work and repetitive work. The other three job types – emotionally demanding work, passive work and high-strain work – are of low job quality. However, each of these three last job types has its own typical risks for job quality. For example in emotionally demanding work, the high levels of emotional pressures are linked with

high risks for the (psychological and physical) health of workers. On the other hand, high-strain work is especially demanding due to the high level of speed pressure and risks and limited autonomy these workers have.

Jobs and job quality in sectors with employment potential

Green jobs

Green jobs are a broad group which is hard to define and can in general be split into new emerging eco-industries and greening traditional and emission-intensive industries. With the estimate of 3.4 to 4.8 million new jobs by

2020, these green jobs clearly have a large employment potential. There are few indications that job quality in the greened industries would be very different from before. However, some typical characteristics of the eco-industries seem to impose risks on job quality. First, the industrial character of these industries can be linked to lower levels of job quality. The high percentage of SMEs also has a potential (negative) impact on job quality. SMEs typically have lower levels of workers representation, a rapidly changing and volatile nature etc. Lastly, it seems that the management strategies used in these companies seem to matter most in determining the job quality of their workers.

ICT jobs

The ICT sector is a rapidly changing and growing industry with a considerable demand for highly skilled workers. By 2015, the European Commission expects 700,000 unfilled ICT vacancies. Although this sector is characterised by many high-quality jobs, the growing workload and pressure can lead to deteriorating job quality. Furthermore, the typical nature of the ICT sector, with rapid changes - linked with high (self-)learning requirements - and high numbers of SMEs and self- employed can threaten job quality. The low levels of workers representation in this sector might also hinder the protection of job quality.

Health and care jobs

The health and care sector is one of the largest in the European economy and continued to grow during the crisis. Today this sector is already confronted with large numbers of unfilled vacancies. The ageing of the population will further increase the demand in this sector. By 2020, 8 million jobs will be available, with 1 million new jobs and 7 million jobs becoming vacant due to replacement needs. Apart from the lack of skilled labour, the sector has been confronted with several changes during recent years. Growing privatisation of healthcare, combined with a shift towards more domestic care,

has largely impacted on the employment and working conditions. These changes also seem to lead to an increasing segregation between high-skilled healthcare workers and lower- skilled personal care workers, with large differences in their working and employment conditions.

Workers' strategies

First, each of these sectors defined by the European Commission as having a large employment potential seems to be experiencing substantial and ongoing changes and innovation. On top of these changes, Europe is confronted with societal challenges as well as a shortage of skilled labour. Trade unions and workers' organisations should be convinced that promoting job quality is an essential strategy and crucial in facing these challenges. Hence they can and should play a key role in promoting and improving job quality. Doing so, workers' organisations should abandon their old defensive strategies towards employers, and take a more co-operative attitude and role in the change processes. By participating and creating new forms of social dialogue, workers' organisations can actively work together with employers and other stakeholders in implementing the changes.

Green sector

Climate change puts pressures on companies across a wide range of sectors and each of them will have to engage in the transition to a greener economy. In these transition processes, workers' movements should play an active role and participate fully. To this end, they should broaden their scope of diagnosis of what goes wrong in the organisation. Workers should also be encouraged to participate in the changes to become partners of the employers in the search for strategic answers.

In addition to increasing employee representation within the green sector, workers' organisations can play an important role in raising awareness of and support for the changes among workers, for example by appointing a green representative, setting energy efficiency targets, and providing envi-

ronmental training. Working together with employers to implement green changes and setting up new work processes can help to create good employment conditions and strive for high-quality work as a part of and within the bigger picture of the greening process of a company.

ICT sector

The ongoing changes within the ICT sector cause employment relationships to change and become more flexible. Workers' movements can play a role in the creation of new ways of protecting workers under these specific employment conditions, and ensure job quality. Three key elements should certainly be the focus of workers' organisations. First of all, raising the employability of ICT workers and supporting their learning activities and the development of transferable skills. Secondly, the organisations should try to create a basis for negotiations. This is the first step in creating a platform to discuss and improve working conditions and job quality as well as providing tools to workers to defend their collective interests through formal social dialogue. Finally, trade unions can play an important part in tackling major threats to job quality by supporting job mobility and career planning, improving work-life balance, counteracting pressures and stress issues etc.

Health and care sector

The recent and ongoing changes in the health and care sector certainly confront workers' organisations with specific challenges. With service provision more and more in the hands of the market, the focus has shifted from quality to profit. Regulations are required to protect quality levels and should also include criteria on job quality. The recent changes have had a profound impact on several job quality aspects that should be addressed by workers' organisations. The privatisation trend has led to a deterioration and scattering of workers' representation. Improving and strengthening this should be a primary focus.

Because many care workers see their work as a vocation, ensuring and improving job quality is a main measure to prevent vocation and motivation turning into self-exploitation. Improvements in job quality should be achieved inter alia by securing decent wages, providing sufficient training for the growing number of unskilled staff, raising awareness of racism and harassment risks, training to limit ergonomic risks etc. The privatisation trend is also linked with increasing standardisation and work intensification. Providing flexible working time arrangements and sufficient time for tasks is a key issue. Creating opportunities to build communities with co-workers and strengthen social support would be another valuable action to support workers and provide them with a safety net to deal with the high (emotional) pressures.

List of abbreviations

EC	European Commission
EGSS	Environmental Goods and Services Sector
EJMB	European Job Mobility Bulletin
EU	European Union
Eurofound	European Foundation for the Improvement of Living and Working Conditions
EWCS	European Working Conditions Survey
GDP	Gross Domestic Product
GHG	Greenhouse Gases
ICT	Information and Communication Technologies
ISCO	International Standard Classification of Occupations
JWES	Job content, Working conditions, Employment conditions and Social relations
n.d.	No date
NACE	The statistical classification of economic activities in the European Community
OECD	The Organisation for Economic Co-operation and Development
RES	Renewable Energies Sector
SMEs	Small and Medium-sized Enterprises
STEM	Sciences, Technology, Engineering, and Mathematics
WHO	World Health Organisation

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Introduction

In 2010 the European Union launched the Europe 2020 strategy, which sets the goal of becoming a smart, sustainable and inclusive economy. These three mutually reinforcing priorities were to help the EU and its member states to deliver high levels of employment, productivity and social cohesion. More precisely, the European Union has set five ambitious objectives - on employment, innovation, education, social inclusion and climate/energy - to be reached by 2020. The EU Employment Package contributing to more and better jobs was developed to complement the Europe 2020 strategy and the Agenda for new skills and jobs. With this Employment Package, the European Commission aims to boost job creation and to focus on job-rich growth (European Commission 2013, July 6). One of the main employment targets is to have 75% of the 20 to 64- year-olds in employment by 2020 (COM 2020 final, 2010). In the period before the crisis (2000- 2007), there was job growth across Europe. However, the first years of the crisis resulted in about 6 million job losses, from which Europe had not yet recovered in 2012. Special attention is therefore dedicated to the potential employment growth in specific promising sectors. In 2012, the European Commission adopted the strategy 'Towards a job-rich recovery', in which they identified several sectors with large employment potential: the health sector, personal and household (care) services, information and communication technologies (ICT) and green jobs (COM 173 final, 2012). In addition to boosting the employment rate, the Employment Package also aims to ensure the quality of these new jobs.

Job quality, however, is not an easy concept to define, which makes it even more complex to adequately measure. Job quality is multidimensional, and a wide range of job characteristics influence job quality. Furthermore, most jobs are not simply good jobs or bad jobs. Each job consists of a specific set of positive and negative characteristics, which together determine its overall quality (Ecorys & IDEA, 2009).

The main focus of the EZA-HIVA work programme 2011-2013 is on the question of how worker organisations can influence the implementation of the Europe 2020 strategy. The 2013 annual work programme concentrates on the quality of jobs in sectors where job creation is to be expected and on the role workers' organisations can play to secure job quality and improve jobs where new risks emerge or known risks play an increasing role.

This research report focuses on sectors with the potential for job creation, on the characteristics of these new jobs and on the role social partners can play to improve the quality of these jobs.
In the first part, we discuss employment growth in Europe in recent years and job growth prospects until 2020. Secondly, we discuss how to define the growing sectors within international surveys. Furthermore, the report presents recent literature and models of job quality as well as the job quality indicators and job quality outcomes that will be used. Finally, we constructed eight job types, each with their own specific set of good and bad job characteristics. These job types are described and analysed in detail.
In the second part of the report, the three selected sectors are analysed in detail. Starting with a definition of the sector, we will then look at the employment growth in these sectors and their potential for job creation in the next few years. Then we analyse the distribution of the job types and look into job quality in each sector. More detailed analyses for gender, origin and skill level complement the picture. We also include findings from previous research regarding job quality in these sectors and some examples. This part concludes with some general and sector-specific suggestions for workers' strategies to enhance job quality in their sector.

PART 1 EMPLOYMENT GROWTH AND JOB QUALITY IN EUROPE

1 Employment growth in Europe

Like other parts of the world, Europe has faced a huge financial and economic crisis and recession since 2008. This recession has had a significant effect on employment rates across Europe. Nevertheless, in 2010 Europe set out with ambitious targets in the Europe 2020 strategy, regarding employment rates, greenhouse gas emissions and poverty risks among others. The slow recovery of the European economy after the crisis, however, does not contribute to the achievement of the ambitious Europe 2020 targets.

1.1 Europe 2020 strategy

The Europe 2020 strategy was launched in 2010, including the target of an employment rate of 75% (for the population between 20 and 64-year-olds) (COM 2020 final, 2010). This target is supported by a wide set of working documents and the Employment Package (2012) towards a job-rich recovery (COM 173 final, 2012). This Employment Package aims firstly to encourage the member states to foster good conditions for job creation and labour demand by exploiting the employment potential of key sectors, such as green jobs, jobs in the health and care sector, and jobs for ICT professionals, and mobilising the EU funds for job creation. Furthermore, the member states are to restore the dynamics of the labour markets by way of reforms, investment in skills and the creation of a European labour market. Finally, EU governance is to be enhanced through the greater involvement of social partners, national reporting and co-ordination (with multilateral monitoring). The strategy of the EC focuses not solely on job growth, but also on

the quality of the new jobs. However, Eurostat monitoring of the Europe 2020 strategy does not show a positive trend, since more than 5 million jobs have been lost during the crisis (COM 173 final, 2012).

1.2 Employment growth

To review the employment evolution in Europe in the last decade, a first step is to look at absolute employment figures. This allows us to map the impact of the crisis on employment in general. We will therefore compare employment growth between 2000 and 2007 with the increase between 2008 and 2012. In the EU, employment grew strongly between 2000 and 2007 with more than 58 million jobs, but during the crisis - between 2008 and 2012 - about 6 million jobs were lost. In terms of an average annual growth rate, this implies that before the crisis employment grew by 7.266 million jobs per year and declined by 1.204 million jobs per year from the onset of the crisis. Thus, at EU level the crisis has had a considerable impact on employment and its growth (Eurofound, 2013b).

The general figures for the EU clearly hide important differences between countries across the EU.[1] With the exception of Romania, all countries show an increase in employment in the period before the crisis, with positive annual growth rates. Since the crisis, however, this positive trend has turned negative in most countries. Only those countries that seem to have suffered least from the crisis (until 2012) - such as Poland, Germany, Malta, Austria, Belgium and Sweden (Eurofound, 2013b) - still maintain a positive, but diminished, employment growth. The crisis has had a very different impact in the different EU countries. Some countries, hit very hard by the crisis between 2008 and 2012, such as Greece and Spain, suffered large losses in employment. On the other hand, some limited employment growth can still be found in countries which have been less affected (for the time being) such as Poland, Germany, ... (Eurofound, 2013b).

1 Detailed figures for the EU and the member states can be found in Table a1.1 in the Appendix.

An interesting approach to the employment structure and its changes is presented by the European Jobs Monitor. This method is used by the European Foundation for the Improvement of Living and Working Conditions (Eurofound) in its reports about patterns of employment expansion (Eurofound, 2008), shifts of job structures during the crisis (Eurofound, 2011) and employment polarisation in the crisis (Eurofound, 2013a). This job monitor is a jobs-based approach that starts with classifying all employment within 'jobs'. A job is defined as a certain occupation (based on the ISCO classification) within a certain sector (based on the NACE classification). Next, these jobs are ranked based on median hourly wage and grouped into quintiles ranging from low to high: low paid, mid-low paid, mid-paid, mid-high paid, high paid. Further, the change in numbers of employees in each quintile is represented, showing the employment structure (Eurofound, 2008).

Thanks to the continuous monitoring of the data and the timely reports, it is possible to compare the shifts in employment structure between three periods in time. This clearly demonstrates the impact of the crisis on employment growth. The three time periods are:
- a pre-recession period of employment expansion (1995-2007 or 1995-2006);
- the period of the Great Recession (2008-2010);
- the period of stalled recovery (2011-2012).

Several trends are found:
- *upgrading:* this means there is employment growth in (mid-)high-paid jobs, and less growth or a decline in other groups;
- *downgrading:* in this case there is growth in (mid-)low-paid jobs, and less growth or a decline in other groups;
- *polarisation:* this trend implies growth in both low-paid and high-paid jobs, but no or much less growth in the mid-paid jobs;
- *growth in the middle:* as the name indicates, there is growth in mid-paid jobs, but no or much less growth in other groups.

When looking at the trends in the employment structure across the three time periods, we can make some observations. In the pre-crisis of employment expansion, the predominant trend is growth in the middle, but also trends of upgrading and hybrid upgrading - which is a less pronounced upgrading trend - and polarisation are found. During the crisis, this changed substantially, related to the large job losses across Europe. Employment polarisation became the dominant trend during the crisis. Also more countries face downgrading in their employment structure. Even so, some countries had a hybrid upgrading trend or growth in the middle. Between 2011 and 2012, a period of slow and limited economic recovery, polarisation remained the most important trend. In addition, there was also a lot of downgrading and upgrading of the employment structure. However, and this is an important observation, growth in the middle is no longer found. The trends of employment structure for each EU member state for the three periods are shown in Table a1.2 in the Appendix.

Analysing the evolutions within each country individually makes it very difficult to find clear trends, since these vary largely and each country has apparently followed its own course. A grouping of countries gives some additional insights into the evolution of the employment structure between 1995 and 2012. The crisis has not affected all European countries to the same extent. For example Greece and Spain suffered extensively during the crisis, with a large impact on employment in these countries.
In order to analyse this, we use a preliminary classification as proposed in a Eurofound report on the impact of the crisis on working conditions in Europe (Eurofound, 2013b), ranking Poland as the least impacted country and Greece as having suffered the most. In terms of employment shifts, some differences can be noticed between countries that were more or less impacted by the crisis. Countries that were heavily hit by the crisis (such as Greece, Latvia, Ireland, Spain, Portugal, Estonia and Lithuania) mainly had an employment structure of growth in the middle (or upgrading) before the crisis. This generally changed to polarisation during the crisis, while there were

two different patterns in the period 2011-2012, with on the one hand continued polarisation and on the other a shift towards downgrading of the employment structure. Those countries that were much less hit by the crisis (such as Poland, Germany, Malta, Austria, Belgium, Sweden and Slovakia) generally showed a pattern of hybrid upgrading before the crisis. The crisis caused this employment structure to evolve into two patterns, one of continued hybrid upgrading and one of upgrading, resulting in a general trend of upgrading in the period of 2011-2012. Shifts in the employment structure in those countries averagely affected by the crisis are more diverse, as can be seen in Table a1.2 (in the Appendix). The most recent trends in these countries are polarisation and downgrading (Eurofound, 2008, 2011, 2013a, 2013b).

Overall, we can conclude that the crisis severely affected the employment structure in Europe, with more upgrading of employment structures in countries that were least hit by the crisis, and polarisation (and sometime downgrading) in the countries that were hardest hit during the crisis.

1.3 Three growing sectors

In the working documents accompanying the EC communication 'Towards a job-rich recovery', the European Commission focuses on three different sectors or occupational groups with employment potential: the green jobs, jobs in the health and care sector, and ICT jobs.

The greening of the economy is at the intersection of two key Europe 2020 objectives. Besides the employment target, the objective of sustainable growth includes the flagship for 'a resource- efficient Europe', with targets set for a reduction beyond 20% (or even 30%) of greenhouse gas emissions (GHG) by 2020, as well as an increase of 20% in energy efficiency (COM 2020 final, 2010). As a result, growth of green jobs has become one of the key priorities of the European Union. The EC expects that an increase in indi-

vidual resource efficiency will lead to the creation of between 1.4 and 2.8 million new - green - jobs. Furthermore, new energy efficiency measures will also give rise to 2 million new or retained jobs by 2020 (SWD 92 final, 2012).
In the Europe 2020 employment strategy as well as the Digital Agenda for Europe, the EU identifies ICT as one of the sectors with a large employment potential in one of the flagships under the heading of smart growth. It is expected that there will be about 700,000 vacancies for ICT practitioners in Europe by 2015 (COM 2020 final, 2010; SWD 96 final, 2012).
Finally, the Europe 2020 strategy draws attention to the health and care sector. With 17.6 million employees in 2012, it is one of the largest sectors of the European economy. It accounts for about 8.3% of all jobs in the EU-27. Throughout the crisis, the sector kept growing with about 1.3 million new jobs, despite the overall impact of the crisis on employment (Eurostat 2013, NACE Rev.2 categories 86 & 87). However, the health and (personal) care sector already faces difficulties in filling vacancies, and more problems can be expected. The ageing European population will lead to an increase in the need for health and care services, especially long-term care (Eurofound, 2013c). Between 2010 and 2020, the EC expects another 1 million new jobs to be created and 7 million job vacancies due to replacement needs (CEDEFOP, 2010).

These figures illustrate the large employment potential of these sectors. This is why they deserve a more profound analysis. Above and beyond the very general and speculative figures of the EC, however, it is hard to find a detailed measurement of the employment growth in these sectors. On the contrary, these job groups seem to be distributed across several sectors. For example, an ICT professional can be employed in a hospital and be responsible for its ICT infrastructure. In this case, it is hard to determine if this person works in the ICT sector or the health and care sector. We will discuss this problem of defining the sectors using a survey sample and explain our

methodology in greater detail at the beginning of the second part of this report.

1.4 Conclusions

As a consequence of the financial and economic crisis, about 6 million jobs have been lost since its onset in 2008. Until today, no real improvement of the employment situation has been recognisable. During the crisis, the general employment trend shifted towards polarisation, especially due to large job losses in the medium wage groups. However, this trend is quite different across Europe. Those countries hardest hit by the crisis primarily exhibited polarisation or even a downgrading of their employment structure. On the other hand, there has been an upgrading of the employment structure in the countries that were less hit, since fewer jobs were lost in the higher wage groups. The European Commission points out three sectors with a large potential for job creation between 2010 and 2020: the ICT sector, the green sector, and the health and care sector.

2 Quality of work

Quality of work or job quality is a concept extensively used by researchers, labour unions, politicians etc. Nevertheless, it is hard to find a common definition of job quality in the literature. The question 'How can job quality be measured?' thus leads to a large variety of models and indicators. Using the insights of several leading contemporary models, we will argue for a model of job quality consisting of three dimensions: work organisation, employment conditions and social relations, each composed of different indicators.

2.1 Theories on quality of work

The first question in the discussion about job quality is also the most basic one: what is job quality? What are important dimensions and sub-dimensions of job quality? Today, researchers agree about the complex and multidimensional nature of job quality, and the difficulties to capture it in a conclusive but specific definition. However, no consensus has been found yet on the specific definition and conceptualisation. Holman (2012) defines job quality as:

> *'The extent to which a job has work and employment-related factors that foster beneficial outcomes for the employee, particularly psychological well-being, physical well-being and positive attitudes such as job satisfaction.' (Green, 2006 in Holman, 2012).*

This definition implies that job quality depends on characteristics of the job itself and the employment conditions in which this job has to be done. This definition also suggests some positive outcomes that are indicative of high job quality, such as well-being and job satisfaction (Green & Mostafa, 2012; Holman, 2012).

Throughout the extensive research legacy on job quality, researchers have produced a large set of conceptualisations. Although we will not go into all the different models, we focus on three contemporary models of job quality that served as a basis for the construction of job types that will be discussed below.

Holman and McClelland (2011) produced a classification of job quality dimensions in which they tried to capture the multidimensional nature of job quality. They distinguish three areas, covered by five dimensions and a set of sub-dimensions (Table 2.1). The first area is work quality, covered by the dimension of work organisation. Work organisation can be further divided into two sub- dimensions, with job demands (such as workload, ambient demands, and cognitive demands) on the one hand and job resources (for example social support, job discretion, autonomy) on the other. The second area, employment quality, includes the dimension of wages and payment system (other forms of benefits) and the dimension of security and flexibility (including working time flexibility, job security). The third area focuses on empowerment quality and covers both the skills and development dimension (such as training, career opportunities) and the dimension of involvement and representation (Holman, 2012).

Table 2.1 Classification of job quality

Area of job quality	Dimension	Example indicators
Work quality	Work organisation	Job design, e.g., job discretion, job demands, ergonomics, physical conditions; team design, e.g., off and on-line teams, autonomous work groups
Employment quality	Wages and payment system	Wage level, performance related pay, benefits
	Security and flexibility	Contractual status, flexible working arrangements, working time
Empowerment quality	Skills and development	Skill requirements, training opportunity for development
	Engagement and representation	Employee engagement and communication practices

Source Table taken from Holman and McClelland (2011)

Green and Mostafa (2012) developed another conceptual framework of job quality for Eurofound. In this framework, job quality is based on four blocks or dimensions, of which two are sets of extrinsic job features and the other two blocks cover intrinsic job features. The first block consists of earnings, including both the level and fairness of wages. The second extrinsic job feature covers the prospects, with job characteristics that contribute to a person's need for employment, including aspects such as career opportunities, job security and the development of employability. Above and beyond this, intrinsic job quality covers aspects that are related with the job itself and its environment, such as skill use and discretion, the physical and social environment, and work intensity. The last dimension, working time quality, includes aspects of the job related with the need for a good balance between the demands of work and the private life and non-work activities of the employee. This dimension is related with aspects such as working hours, provision of for example childcare etc. (Green & Mostafa, 2012).

A third approach to job quality, which also shows a large overlap with the previous models, is the Belgian 'Four As' model, also called the JWES model.

This model distinguishes between four dimensions of job quality: job content (J) such as workload and autonomy; working conditions (W) including pressure, risks etc.; employment conditions (E), with factors such as contract type, wages, career opportunities etc.; and social relations (S) as the last dimension, covering aspects like social support, voice etc. (Vandenbrande et al., 2012).

With these models in mind, we define a framework of job quality (Szekér, Vandekerckhove, De Spiegelaere, & Ramioul, forthcoming) with three dimensions, each having several sub-dimensions. The first dimension is *work organisation*, merging job content and working conditions – two dimensions from the JWES model. Sub-dimensions within the work organisation dimension are: task autonomy, task complexity, autonomous team work, planning autonomy, repetitive tasks, emotional pressure and interaction with people, speed-related pressure and risks (such as ergonomic, ambient and bio-chemical risks), and permanent workplace or not. The second dimension, *employment conditions*, covers the legal and contract-related job aspects such as income, contract type, working hours etc., as well as career and training opportunities. *Social relations* is the social dimension of a job, containing social support from colleagues and management on the one hand - or, in the negative case, violence and harassment -, and voice and say on the other hand.

2.2 Job quality indicators

In order to measure job quality, we need to be able to measure each of its three dimensions. Thus we need indicators for each. We have looked for suitable indicators in the data of the EWCS 2010, which will be used throughout this report.
The job quality indicators developed by Vandenbrande et al. (2012) for the report on 'Quality of work and employment in Belgium' will be used for our

analyses. These job quality indicators give a comprehensive and multidimensional representation of job quality and they are based on the JWES model. We will start from our model with three dimensions of job quality, namely work organisation, employment conditions and social relations. Vandenbrande et al. created the indicators either based on theoretical frameworks developed for previous surveys (such as the Eurofound EWCS constructs for risks) or based on ordinal factor analysis of the EWCS 2010 data for Belgium.

Table 2.2 Overview of sub-dimensions of job quality

Work organisation	Employment conditions	Social relations
Task autonomy	Wage	Voice
Task complexity	Permanent contract	Say
Autonomous team work	Full-time work	Social support
Planning autonomy	Variable working time arrangements	Supportive management
Repetitive tasks	Atypical working time arrangements	
Emotional pressure & dealing with people	Career opportunities	
Speed pressure	Training	
Risks		
Permanent workplace		

Source based on Vandenbrande et al. (2012)

Table 2.2 gives an overview of the final selection of job quality indicators, after the exclusion of two indicators, renaming of several indicators and adjustment of some indicators to the European scope of our research. Details about these adjustments can be found in our working paper on job types (Szekér et al., forthcoming). In the Appendix Table a1.3 a detailed overview of the indicators and description of each indicator is included.

2.3 Job quality outcomes

Job quality outcomes are not the same as job quality indicators. While the job quality indicators are aspects intrinsic to the job or the employment environment (cf. Holman's definition), the job quality outcomes are the effects of the job as a whole on the individual in terms of physical and psychological well-being, positive attitudes, job satisfaction etc. When investigating job quality, it is essential to always keep this distinction in mind and to avoid mixing up job quality indicators and job quality outcomes. Vandenbrande et al. (2012) also identified a set of job outcome indicators (subjective security
variables, job attitude and health variables), using the items available in the EWCS 2010, from which several seem useful to consider in our analyses. As a first group, the subjective security variables are: subjective job insecurity, and subjective labour market security. Subjective job insecurity is measured by the question 'I might lose my job in the next 6 months'. Subjective labour market security is measured by the question 'If I were to lose or quit my current job, it would be easy for me to find a job of similar salary'. These questions clearly measure an outcome determined by the job quality. A second group of job quality outcomes are health variables. They include the physical well-being, psychological well-being, general health, health and work and the WHO-5 well- being index. This set of job quality indicators gives a comprehensive overview of the health of the worker. In this report we will limit the analysis to physical and psychological well-being, since these two job quality outcomes can give a broad view on the impact of job characteristics on the worker's health. The third group of job quality outcomes are the job attitudes, including perceived job sustainability ('Do you think you will be able to do the same job you are doing now when you are 60 years old?') and job satisfaction ('How satisfied are you - on the whole - with the working conditions in your main paid job?') (Eurofound, 2010). These two variables help to picture the attitudes and general feelings the worker has regarding his or her job (Vandenbrande et al., 2012).

3 Job types

Job types are a way of grouping workers into different types of jobs that each consist of a typical set of job characteristics. Using these job types, a simplified image is given of the kind of jobs workers have and conclusions can be drawn regarding the quality of these job types. This chapter explains the development of job types using data of the EWCS 2010. The job types are described and the job quality outcomes related with these job types are discussed. Furthermore, the distribution of the job types across sectors, gender, skill level, origin and countries or country groups is described.

3.1 Job types methodology

In his article on job types and job quality in Europe, Holman (2012) developed a taxonomy of six job types, describing sets of jobs with their unique combination of job quality indicators. Using the data of the EWCS 2005 of the 27 EU countries in a two-step cluster analysis, Holman found a six- cluster model the best solution.
In this article, Holman (2012) discusses the relevance and advantages of the use of job types. First of all, he points out the importance for policy-makers and other stakeholders. Job types can help to get a detailed view of the variation of job quality across and within countries and the job characteristics that play an important role in shaping job quality. A better understanding of the complexity of job quality can help policy-makers to target their policies more accurately. Furthermore, job types can also be helpful in investigating differences in job quality across different groups, such as gender, age groups, differences between sectors etc. In addition, job types can be a method of estimating the overall or total quality of a job to see if there is a variety of types of high- quality jobs and low-quality jobs, following from different job quality indicators. For our research, in which we want to look into the job quality of three growing sectors, the use of job types will certainly be useful.

For this research, a latent profile analysis is done using the Latent GOLD software to identify the job clusters. This analysis allows us to identify clusters within the sample that have similar job characteristics. More details about this method can be found in our working paper on job types (Szekér et al., forthcoming).
Our analysis is based on the latest available data of the European Working Conditions Survey (EWCS) at the time of publication, the fifth edition carried out in 2010. The EWCS was launched in 1990 by the European Foundation for the Improvement of Living and Working Conditions (Eurofound). Every five years, data are gathered using face-to-face interviews, which take place at the home of the respondents in the national language(s) of the country. The 5th EWCS covered 34 countries, including the EU-27. Our sample is drawn from the 5th EWCS and contains data from the 27 EU member states (in 2010) with a sample size of 35,372 (Green & Mostafa, 2012).

3.2 Job types in Europe anno 2010

The latent profile analysis indicated that an 8-cluster solution was the best option (Szekér et al., forthcoming). The Latent Gold software requires scores on all variables for an observation to be included in the clustering process. Since employers and self-employed persons in our sample did not score on several of the items of our job quality indicators, the self-employed were consequently excluded from the latent class analysis, as well as the workers' observations with missing values for items of the job quality indicators. This reduced our sample to only workers (N= 22,398). However, thanks to the large total sample size of the EWCS 2010 this reduction of our sample did not significantly impact on our results, and even the smaller clusters, with only 3% of all observations, still consist of sufficient observations (n=629) for further analysis.

The eight job types can each be described by a unique combination of job characteristics. Table 3.1 gives an overview of the profiles of these eight dif-

ferent job types. Using the ISCO-08 classification, it is also possible to identify the most prevalent occupations for each job type. Table a1.4 (in the Appendix) gives the detailed scores of the job types on different job characteristics. The eight job types are: active work, saturated work, supporting work, low-strain part-time work, repetitive work, passive work, emotionally demanding work and high-strain work.

Active work

The first cluster contains jobs that have high task autonomy (highest level), autonomous team work and planning autonomy, high levels of task complexity, high levels of support from management and from colleagues, as well as the highest level of say and a moderate level of voice. Risks and demands are at a moderate level: speed pressure, emotional pressures and risks, repetitiveness in the tasks and fixed workplace. These employees have a lot of career opportunities and receive moderate levels of training. Within this group, the average employee works full-time and has a permanent contract, with moderate levels of variable and atypical working time arrangements. The wage is a little higher than the average. This cluster clearly shows strong resemblance with active job clusters described in previous research (Holman, 2012; Karasek, 1979). This cluster will therefore be called *active work*, as previous researchers called it. A large part of the employees with active work are employed as an ICT professional or another function as professional, technician or associated professional. Also managers within the horeca and retail have this type of job, as well as skilled workers in fishery, forestry and hunting. Some examples of professions are ICT professionals, financial analysts or scientists.

Saturated work

The strongest differentiating aspects of this job type as compared to active work are the very high wages of these employees as well as the high frequency of atypical working hours. In terms of work organisation characteristics, these workers have high levels of autonomy and complexity in their

work and very low levels of repetitive tasks. The risks in these jobs are also very low and speed pressure is somewhat less than average, while emotional pressures are somewhat higher than the average. What is also important is that these workers often have no fixed workplace. The employment conditions in this cluster are at very high levels with a lot of career opportunities, moderate levels of training, as well as full-time and permanent working contracts. Furthermore, this work is characterised by high planning autonomy and variable working times. In their organisation, these employees have a high level of say and voice, but they receive only moderate levels of support. This group will be labelled *saturated work*, since the resemblance with the saturated jobs in the research of other authors (Holman, 2012; Vandenbrande et al., 2012) cannot be denied. Managers and professionals most often work in this type of job. More specific examples of occupations in this cluster include doctors, judges or surgeons.

Supporting work

Supporting jobs have an average score on almost every job quality indicator. As regards work organisation, all indicators are a little bit above average, with the sole, distinctive exception of task autonomy, which is at the lowest level as compared to all other job types. These employees have moderate levels of demands, such as speed pressure, emotional pressure and risks. Furthermore, they have moderately challenging jobs, with moderate repetitiveness, and task complexity, in general a fixed workplace and average levels of autonomous teamwork. The employment conditions are also moderate: career opportunities and training, permanent contracts and full-time work, as well as atypical and variable working time and planning autonomy. Wage is at an average level, as well as say and voice within the organisation. Another distinctive characteristic of these jobs, next to the low level of task autonomy, are the high levels of support that these employees receive, both from their colleagues and from the management, in terms of social and task-related support. This remarkable picture of high scores on all social relation indicators and especially the support indicators gave rise to the name of this

cluster, *supporting work*. Typical occupations in this job type are protective (e.g. police agents) and support services workers, such as call centre operators, health professionals (such as nurses), and science and engineering-related professionals.

Low-strain part-time work

The *low-strain part-time work cluster* consists of jobs with one very typical characteristic, namely the fact that the work of these employees has no (or very few) aspects that (can) cause them stress. They have low levels of speed pressure, emotional pressure and risks, as well as a very low probability of atypical working hours. Autonomy (task autonomy and autonomous team work) is lower than average, as well as task complexity. They have limited variations in their working time but also only limited planning autonomy, which is somewhat below the average. Typically they work part-time and this is also reflected in a below-average wage. They have limited career opportunities and training. A clearly defined workplace is also typical. On the downside, few of them have a permanent contract. All social relation indicators are moderate. These employees often work as teachers, clerks (or clerical support service workers) or sales-related workers.

Repetitive work

This cluster has a general image of moderate levels on all job characteristics. Nevertheless, there is one job characteristic that deviates from this trend: repetitive tasks. These workers have very high levels of repetitive tasks. Therefore, this cluster receives the label of *repetitive work*. With moderate levels of employment conditions and average social relations, this job type does not distinguish itself further on any other level. Occupations with a high incidence in this job type are clerical support workers (e.g. a numerical clerk), machine craft and related trades workers (e.g. a craftsman in a wood factory), health professionals, administrative and commercial managers.

Emotionally demanding work

This job type, labelled *emotionally demanding work*, has a few discretionary characteristics: a high level of emotional pressure and relatively high level of speed pressure, in combination with very little support from both colleagues and management, at the social and work level. Furthermore, they receive a large amount of training and most of these employees have a permanent contract, although their workplace is often not fixed. Regarding their tasks, these employees have high levels of autonomy and complexity, and they work in autonomous teams more than in any other cluster. On the other hand they score above average for repetitive tasks. The risks related with their work are moderate. This job type also includes a high level of atypical working hours combined with high variable working time. The wage of these employees is also much higher than the average. Finally, these employees have moderate say and voice in their organisation. Hence, the combination of low support levels and high emotional demands (such as emotional pressure and working in teams), is reflected in the label of this cluster. In this job type, which we called emotionally demanding work, we find a lot of managers, professionals, and technicians and associated professionals. More specifically, doctors, other health professionals such as psychiatrists, dentists etc., and care providers are very prevalent in this job type.

Passive work

Employees in this cluster, called *passive work*, have very low levels of task autonomy and complexity, and they almost never work in autonomous teams. They have only very little emotional pressure, and speed pressure is on a moderate level. On the other hand, the risks in these jobs are quite high and these employees have to do a lot of repetitive tasks. The employment conditions of these employees are not so favourable, with very low career opportunities and very low levels of training. Furthermore, most of them do not have a permanent contract and a little less than average have a full-time job. In addition, their working time arrangements are characterised by low levels of planning autonomy and moderate levels of variable and

atypical working time arrangements. The wage of this group is the lowest of all clusters. Say and voice are also at a very low level. This cluster receives the label of passive work due to the resemblance with the passive jobs of Karasek (1979), who describes passive jobs as jobs with low levels of control (such as autonomy) combined with low levels of job demands. Occupations in this cluster are, for example, plant and machine operators, workers on the assembly line or low-skilled jobs (e.g. cleaning personnel, refuse collection, street sellers, helpers, drivers and mobile plant operators etc.).

High-strain work

The last job type is labelled *high-strain work*, since these employees have a very high level of speed pressure, high risks and a somewhat higher level of emotional pressure, as well as much repetitiveness in their tasks. The autonomy (task autonomy, planning autonomy and autonomous team work) and complexity in these jobs are rather limited. This cluster is clearly very similar to the high-strain jobs of Karasek (1979) and similar clusters found by other researchers (Holman, 2012; Vandenbrande et al., 2012). These workers are confronted with a moderate level of flexibility in their work, variable working time arrangements and moderate levels of atypical working hours. Although they receive training, these employees have very few career opportunities. They also work less than average with a permanent and full-time contract and their wages are lower than average. In terms of social relations, workers in this job type have very low levels of support and low levels of say and voice. Plant and machine operators and assemblers, as well as clerical support workers can often be found in this job type.

Table 3.1 Job types and their scores on job characteristics

	Active work	Saturated work	Supporting work	Low strain part-time work	Repetitive work	Emotionally demanding work	Passive work	High-strain work
Work organisation								
Autonomy & complexity	H	H	Low autonomy Mod complexity	Low autonomy Mod complexity	M	H	L	L
Repetitive tasks	M	L	M	L	H	H	H	H
Pressures & risks	M	High pressure Low risks	M	L	M	High pressure Mod risks	High risk Mod speed pressure Low emotional pressure	H
Fixed workplace	M	L	M	H	M	H	M/H	H
Employment conditions								
W age	M/H	Very high	M	L	M	H	L	L
Permanent & full-time contract	H	H	M	Moderate permanent Low full-time	M	M/H	L	L
Variable & atypical working time arrangements	M	H	M	L	M	H	M	M
Career opportunity & training	High opp Mod training	H	M	M	M	Mod opp High training	L	Low opp High training
Social relations								
Voice and say	High say Mod voice	H	M	M	M	M/H	L	L
Support	H	M	H	M	M	Low man Mod social	L/M	L

* H = high levels of the indicator; M = Mod = moderate levels of the indicator; L = low levels of the indicator. Opp = career opportunities; Man = managerial support; Social = social support

Source working paper (Szekér et al., forthcoming)

3.3 Quality of work of the job types

Looking at the descriptions of the eight different job types, one can clearly notice that each consists of a typical combination of both good and bad job characteristics. There is no job type having only good or only bad characteristics. However, we can see differences in the overall picture in terms of good and bad characteristics for each job type. Active work and saturated work – and to a lower extent supportive work - combine many good characteristics, and, although some negative job characteristics are also observed (for example the high extent of atypical working time in saturated work), the balance is clearly positive. Therefore, we can say that these three job types are *high-quality jobs*. The job quality of low-strain part-time work and repetitive work is in general on average levels. Therefore the overall job quality of these two job types is also *moderate*. The other three job types, emotionally demanding work, passive work and high-strain work, all have some positive or moderate characteristics. However, the bad characteristics clearly outweigh the good ones, either in number or in impact. These three clusters can thus certainly be seen as *low-quality jobs*.

We will now look at the differences in job quality outcomes across the job types. Figure 3.1 shows the ranking of the job types in terms of their scores on the job quality outcomes. When two or more job types are ranked similarly, this indicates that there are no significant differences between these two job types in terms of the job quality outcome. The rankings presented in the figure are based on a multilevel regression analysis of the job types to predict the levels of each of the job quality outcome for the job types individually (using the betas). More details about this analysis can be found in the working paper (Szekér et al., forthcoming). In the Appendix an overview figure (Figure a1.1) of the different job quality outcome scores of the job types can be found.

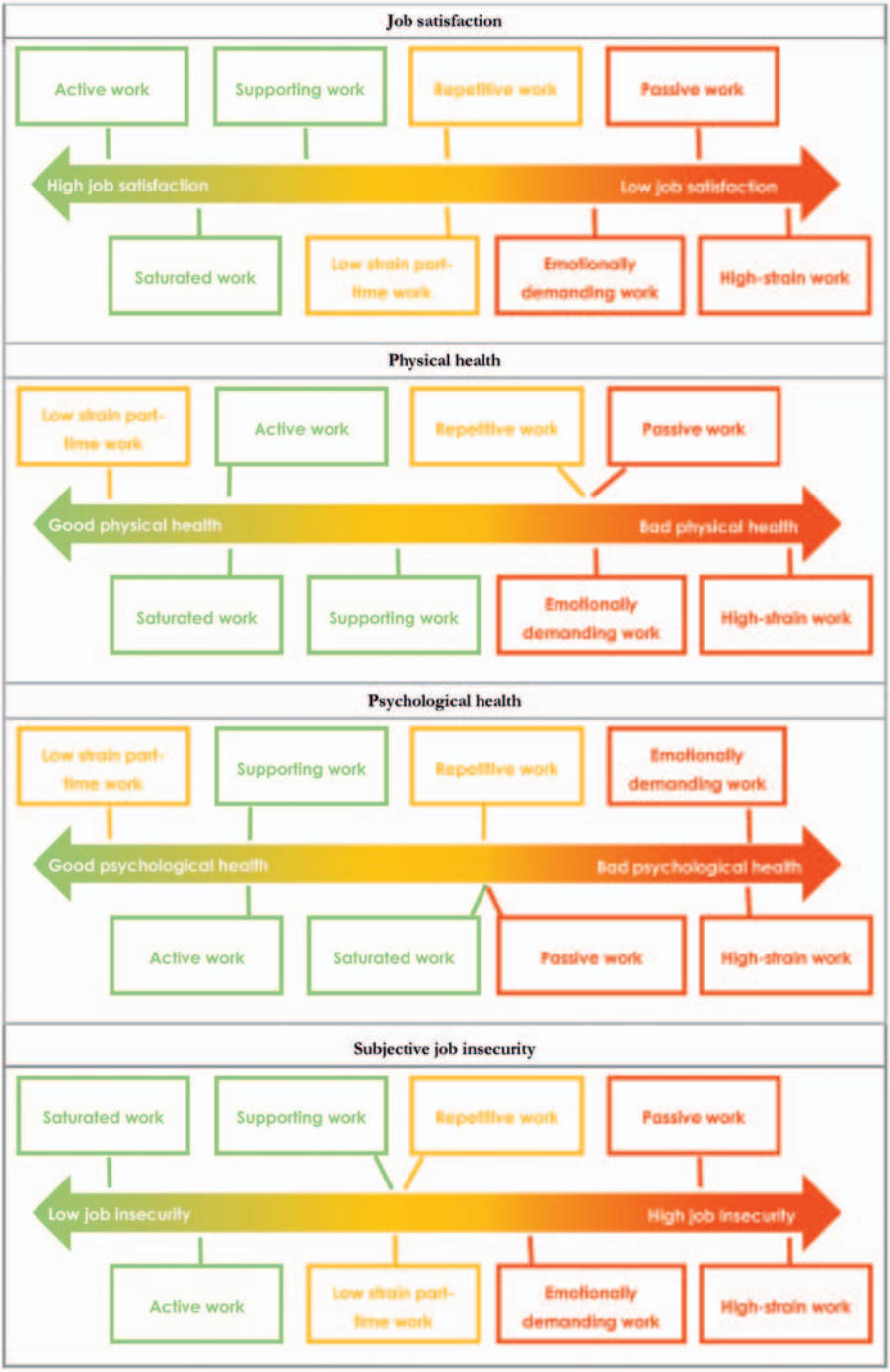
Job satisfaction

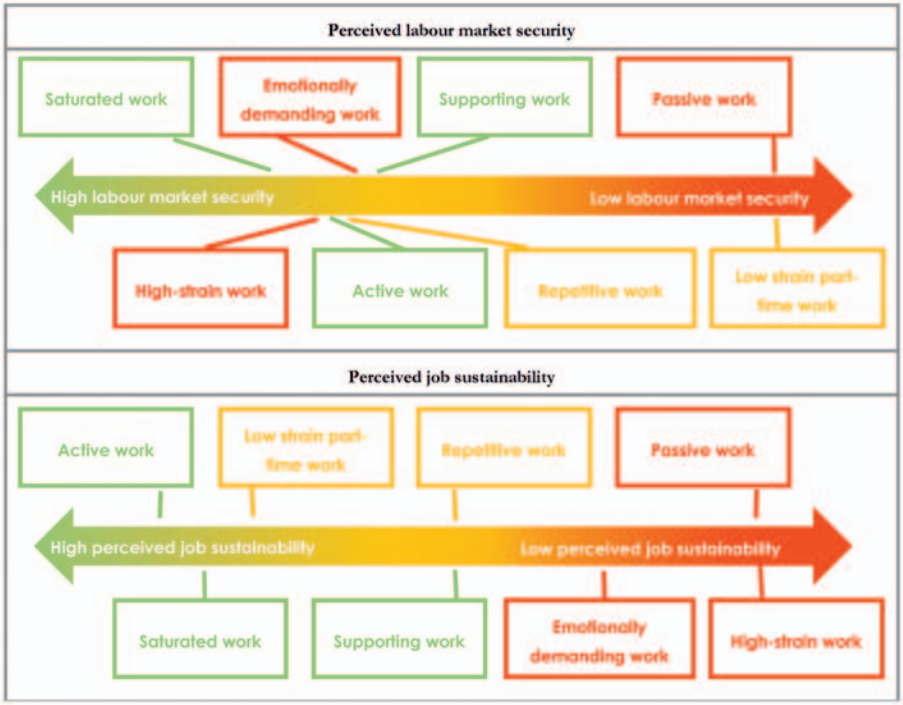
Job satisfaction is an important job outcome that can be associated with job quality (Loher, Noe, Moeller, & Fitzgerald, 1985; Spector, 1997). In our sample, workers in jobs with a higher quality are also found to be more satisfied with their jobs. Active work is associated with the highest level of job satisfaction, followed by saturated work and supporting work. The jobs with a moderate level of job quality, however, do not differ significantly in terms of job satisfaction. The bad-quality jobs on the other hand have significantly lower levels of job satisfaction as compared to good and moderate-quality jobs. The lowest job satisfaction can be found in high-strain jobs.

Physical health and psychological health

The relation between work and health cannot be neglected. Researchers have frequently demonstrated that quality of work has an important impact on both physical and psychological health (Green, 2006; Van der Doef & Maes, 1999). Based on our sample for the EWCS 2010, this relation is also confirmed. Overall, employees with a good or moderate job quality have significantly better physical and psychological health than those in bad quality jobs.

Figure 3.1 Ranking of job types in terms of job quality outcomes


Job satisfaction
Active work
Supporting work
Repetitive work
Passive work
High job satisfaction
Low job satisfaction
Saturated work
Low strain part-time work
Emotionally demanding work
High-strain work
Physical health
Low strain part-time work
Active work
Repetitive work
Passive work
Good physical health
Bad physical health
Saturated work
Supporting work
Emotionally demanding work
High-strain work
Psychological health
Low strain part-time work
Supporting work
Repetitive work
Emotionally demanding work
Good psychological health
Bad psychological health
Active work
Saturated work
Passive work
High-strain work
Subjective job insecurity
Saturated work
Supporting work
Repetitive work
Passive work
Low job insecurity
High job insecurity
Active work
Low strain part-time work
Emotionally demanding work
High-strain work



Low-strain part-time workers have the highest scores on both physical and psychological health. In terms of physical health, the three good-quality jobs rank 2nd to 4th in terms of good health although the differences between these job types are sometimes small and not significant. Workers subject to high strain see their physical health most negatively affected by their work. Interestingly, the psychological health of employees in active work and supporting work (which is at the same level) is a little bit lower than for low-strain part-time work. Furthermore, the low score of saturated work on psychological health is striking. Nevertheless, the psychological health of those in emotionally demanding work or high-strain work is still significantly worse.

Subjective job insecurity and perceived sustainability

In times of crises, like the current Great Recession, job outcomes such as subjective job insecurity and subjective labour market security are of considerable importance to workers (more so than in times of economic growth). There are major differences between the job types in terms of job insecurity. Passive work and high-strain work suffer the highest subjective job insecurity as well as those in emotionally demanding work. The lowest job insecurity, on the other hand, can be found in saturated work.

The subjective labour market security in the different job types is hard to analyse since most job types do not significantly differ from one another (as can be seen in Figure 3.1). However, we can clearly identify the two job types with the worst labour market security, namely low-strain part-time work and passive work. On the other hand, those in saturated work and to a lesser extent emotionally demanding work have the highest labour market security. The other job types have a more moderate level of labour market security and do not differ significantly.

The perceived sustainability of a job, or in other words 'does the employee think (s)he will be able to do the same job when (s)he is 60', is certainly also a relevant indicator. Again, high-strain workers and passive workers are in the poorest situation, while active work, saturated work and low-strain part-time work appear to have high perceived job sustainability.

3.4 Job types under the microscope

Differences in job types across gender, origin and skill level

The general picture of job types in Europe gave us a first image of job quality in Europe. However, as always, this picture hides several substantial differences. Looking at the distribution of the job types for separate groups described in terms of some personal characteristics helps to uncover some of these hidden differences. Table 3.2 presents the distribution of the job types for gender, origin and skill level.

In general, 53.1% of all jobs are high-quality jobs, 26% workers are in a low-quality job and the remaining 20.7% have a job with moderate job quality. The largest groups of employees can be found in active work (24.6%), passive work (19.7%) and supporting work (19%). Besides this overall distribution of employees across the job types, substantial differences in these distributions are found for different groups of the population, as shown in Table 3.2.

Breaking up the sample by gender, some differences can be observed. Although 56.6% of all male employees have a high-quality job, not even half of the women (49.5%) are in the same situation. This difference is mostly related with a smaller number of women in saturated jobs and supporting work. On the other hand, there are more women in moderate quality jobs, related with the higher number of women (16.7%) in low-strain part-time work compared to men (10.5%). Furthermore, the percentage of women in passive work (20.3%) is somewhat higher than that of men (19.2%).

Differences between native and non-native workers are even larger than the differences by gender. Despite the fact that non-native workers were less represented in our sample, their distribution across the different job types can be compared. Non-native workers are less often found in high quality work (48.3%) as compared to native workers (53.8%), and also less represented in moderate quality work (non-native: 17.1%, native: 21.3%). This also implies that more non-native workers can be found in low-quality jobs, especially in passive work (non-native: 26.8%, native: 18.8%).

A split of the data in terms of highest level of education successfully completed, shows yet another picture of the distribution across the job types. Those workers with a lower secondary education or less can be found much more than average in low-quality jobs (34.1%), with high physical demands and speed pressure, especially in passive work (28.6%) and high-strain work

(3.4%). On the other hand, they are less represented in high-quality jobs (45.1%). Although they are more than averagely represented in supporting work (20.4%), their lower presence in both active work (20.1%) and especially saturated work (4.6%) can explain this. The second group, with workers who completed an upper secondary education or post-secondary non-tertiary education, is the largest one and also shows the most average distribution across the job types. Compared to the average, there are fewer workers with saturated work (6.3%) and more with supporting work (21.0%) and passive work (21.4%). The last group consists of those workers who completed tertiary education. This group has a much larger share of high-quality jobs (64%) compared to the other two groups and to the average. More concretely, many more are in active work (30%) or saturated work (19.1%) while fewer are in supporting work (14.9%). Low-quality jobs on the other hand are less prevalent (15.7%), with only 2.3% of these workers performing high-strain work, and only 8.2% in passive work (on average 19.7% do passive work). Emotionally demanding work, however, is more prevalent in this group (5.2%).

To summarise one can say that there are more men in high-quality jobs than women, who are more represented in the moderate quality jobs, and especially in low strain part-time work. Non-native workers are much more often in low-quality jobs than native workers, and they usually do passive work. With regard to education, the job quality is clearly related with the level of education. Workers with tertiary education are more often found in work with high emotional pressures and stress, while those with only lower secondary education are more often found in jobs with high speed pressure and physical risks.

Table 3.2 Job types by gender, origin and skill level

	Total	Gender		Origin[1]		Skill level[2]		
	% of total employed	Men	Women	Native	Non-native	Low-skilled	Mid-skilled	High-skilled
High quality								
Active work	24.6	24.5	24.8	25.0	21.2	20.1	23.6	30.0
Saturated work	9.5	11.4	7.5	9.7	8.3	4.6	6.3	19.1
Supporting work	19.0	20.7	17.2	19.1	18.8	20.4	21.0	14.9
Total	*53.1*	*56.6*	*49.5*	*53.8*	*48.3*	*45.1*	*50.9*	*64.0*
Moderate quality								
Low strain part-time work	13.4	10.5	16.7	13.9	10.3	12.6	14.0	13.6
Repetitive work	7.3	7.5	7.2	7.4	6.8	7.6	7.6	6.7
Total	*20.7*	*18.0*	*23.9*	*21.3*	*17.1*	*20.2*	*21.6*	*20.3*
Low quality								
Emotionally demanding work	3.4	3.4	3.4	3.3	4.3	2.1	3.1	5.2
Passive work	19.7	19.2	20.3	18.8	26.8	28.6	21.4	8.2
High-strain work	2.9	2.9	3	2.9	3.6	3.4	3.1	2.3
Total	*26.0*	*25.5*	*26.7*	*25.0*	*34.7*	*34.1*	*27.6*	*15.7*

1 Origin: Native: interviewee and both of his/her parents born in country of residence; non-native: interviewee, one or both parents or all born in country other than country of residence.

2 Skill level: low-skilled = no education, primary education and lower secondary education; mid-skilled = upper secondary education and post-secondary including pre-vocational or vocational education but not tertiary; high-skilled = tertiary education – first level and tertiary education – advanced level.

Source working paper (Szekér et al., forthcoming)

Job types across Europe

Scholars usually distinguish different groups of countries within the EU-27 (Holman, 2012; Van- denbrande et al., 2012). This grouping can simplify the comparison of job types and job quality across Europe. The question of how to group the European countries, however, has no straightforward answer. For the sake of brevity we will use the grouping developed by Holman (2012), who categorises countries by institutional regime. The results can be found in Table 3.3.

To start with, we notice that - despite some minor shifts - the proportional distribution of the job types is rather similar in the separate country groups, with some outliers. Important exceptions are the very high level of saturated work in the social democratic countries and very low levels in the Southern European and transitional countries. In the social democratic countries, the level of passive work (9.9%) is also very low compared to the average percentage of 19.7% in the whole of Europe. Likewise, the Southern European countries show a very high percentage (27.45%) of passive work.

Table 3.3 Job types by institutional regime

	Total	Social Democratic	Continental	Liberal	Southern European	Transitional
High quality						
Active work	24.6	28.7	22.1	28.9	24.3	26.6
Saturated work	9.5	15.5	10.7	10.1	6.8	6.3
Supporting work	19.0	16.4	18.3	22.2	17.1	21.8
Moderate quality						
Low strain part-time work	13.4	7.1	13.4	10.4	13.6	17.6
Repetitive work	7.3	10.4	8.4	7.5	5.9	5.3
Low quality						
Emotionally demanding work	3.4	8.7	4.1	3.9	2.1	1.5
Passive work	19.7	9.9	19.8	12.1	27.5	18.6
High-strain work	2.9	3.4	3.2	3.0	2.8	2.3

1 Note: countries by institutional regime: social democratic = Denmark, Finland and Sweden; continental = Austria, Belgium, France, Germany, Luxembourg and Netherlands; liberal = United Kingdom and Ireland; Southern European = Cyprus, Spain Greece, Italy, Malta and Portugal; transitional = Bulgaria, Czech Republic; Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovakia (Holman, 2012).

Source working paper (Szekér et al., forthcoming)

Looking at the distribution of the job types within each country group permits some observations for each job type (Table 3.3). The highest levels of active jobs can be found in social democratic and liberal countries, the lowest levels in continental countries. Saturated work is much more frequent in social democratic countries than in the rest of Europe. The Southern European countries and transitional countries have the lowest levels of these job types. Supporting work is most prevalent in the liberal and transitional countries and has the lowest percentage in the social democratic countries.

We find the highest share of low-strain part-time work in the transitional countries, and the lowest in the social democratic countries. Repetitive work, high-strain work and emotionally demanding work on the other hand are more represented in the social democratic countries and less in the transitional countries. Finally, passive work is least observed in the social democratic countries, but most in the Southern European countries.
Some overall tendencies can also be discovered in this distribution across country groups (Table 3.3). The representation of job types in social democratic countries and transitional countries seems to mirror each other. Where the social democratic countries have the highest levels of a job type, the transitional countries have the lowest level of that job type, and the other way around. The liberal countries have higher levels of both active work and supporting work, while they have around average levels of all the other job types.
In the Southern European countries, on the other hand, passive work is much more prevalent than in Europe in general. Furthermore, saturated work is less found in these countries. Finally, the continental countries have around average levels of all job types, except for active work, which is less prevalent in continental countries compared to all other country groups.
Table a1.5 (in the Appendix) shows the distribution of job types in each EU member state (with the exception of Croatia, which was not yet a member of the EU at the time of the survey).

Job types in the growing sectors

This brings us to a next key question: Which job types are observed in the sectors studied in this report? Table 3.4 gives an overview of the total distribution, the distribution of the job types across the sectors with employment growth potential (called 'growing sectors') and across the remaining group of all other sectors. At this stage we already present a first view of the distribution of the job types in the growing sectors. In the second part of the report, we go into more detail about the job types and their quality in each

of the growing sectors and we look for potential explanations and suggestions for improvement of job quality.

In the health and care jobs, all job types are more represented than on average, except for passive work, which is observed to a much lower (10.3%) extent than the average (19.7%). More than half of the jobs (59.2%) in health and care are high-quality jobs and more than a third of the jobs are active jobs (36.3%). Supporting work is the second most prevalent job type in this sector. Only 19.2% of the jobs are low-quality jobs.
In the ICT sector, almost 70% of the jobs are of high quality, due to very high levels of active
work (38.7% as compared to 24.6% on average) and of saturated work (16.6% as compared to 9.5% on average). These are also the two largest job types in the ICT sector. Supporting work on the other hand is less prevalent. The ICT sector offers good prospects in terms of job quality, given the high amount of high-quality jobs and the fact that only 10.3% of the jobs are of low quality.
The green sector, on the other hand, presents a less bright picture. Only 43.1% of the jobs are of high quality, while the average is 53.1%. The differences are to be found in the lower levels of active work and supporting work, since saturated work is also higher than on average. Furthermore, the group of moderate-quality jobs is much larger in the green sector (26.4% as compared to 20.7%) as well as the group of low-quality jobs (30.4% compared to 26%). Passive work and high- strain work are much more prevalent in this sector.

Table 3.4 Job types by sector: health and care, ICT and green jobs

	Total	Growing sectors			Other sectors
	% of total employed	Health and care jobs	ICT jobs	Green jobs	
High quality					
Active work	24.6	26.3	38.7	17.7	23.8
Saturated work	9.5	10.3	16.6	12.5	9.0
Supporting work	19.0	21.6	13.9	12.9	19.9
Total	*53.1*	*58.2*	*69.2*	*43.1*	*53.7*
Moderate quality					
Low strain part-time work	13.4	14.0	12.8	17.7	13.3
Repetitive work	7.3	8.2	7.6	8.7	7.2
Total	*20.7*	*22.2*	*20.4*	*26.4*	*20.5*
Low quality					
Emotionally demanding work	3.4	5.8	3.9	3.4	3.0
Passive work	19.7	10.3	5.6	22.2	21.9
High-strain work	2.9	3.1	0.8	4.8	3.0
Total	*26.0*	*19.2*	*10.3*	*30.4*	*27.9*

Source working paper (Szekér et al.. forthcoming)

To sum up, we can state that two of the three growing sectors offer more high-quality jobs than the European economy in general, which sounds promising. However, it must be emphasised that the data do not allow the new jobs in these sectors to be captured, as the growth cannot be isolated from the existing jobs. As a consequence it is not possible to draw conclusions about the quality of the new jobs in these sectors. We can only observe the overall quality of all jobs in these sectors. For instance, although the ICT sector has high levels of active and saturated work, it cannot be ruled out that a considerable number of the new jobs created today are passive or high-strain work. To make a statement on the job quality of the new jobs, a comparison over time could be helpful to a certain extent. However,

it is not possible at this stage to perform a longitudinal analysis of the clustering using different editions of the EWCS.

3.5 Conclusions

First of all, we can conclude that there are different types of good and bad jobs, which can be captured in job types. These job types each describe a unique set of job quality aspects typical of that type of job and associated with a certain level of job quality and a unique set of positive and negative outcomes. These job types are unevenly distributed across countries, sectors, ... Clear differences can also be noted between men and women, native and non-native workers and in terms of skill level of the workers regarding the distribution across the job types.

PART 2 JOBS AND JOB QUALITY IN THE GROWING SECTORS

4 Defining a sector

Our aim is to define each of the three sectors with large employment potential in a broad sense so that they capture all jobs related with these activities. For example, an occupational health professional in an industrial factory is - from our viewpoint - also part of the health and care sector. On the other hand, we also try to include those with atypical jobs within our growth sectors, such as a worker in a pharmaceutical factory who is considered to be employed in the health and care sector. Further, we can identify several specific jobs where the employee can be counted in more than one of the sectors considered. An ICT specialist can be employed in a company producing windmills, which implies that this worker can be attributed both to the ICT sector and to the green sector. Waste recycling workers can be found in hospitals; consequently these workers should be included in both the green sector and the health and care sector.

To identify those employees with jobs in the growth sectors, we need indicators. In most national and international surveys, several international indicators for occupations, jobs and sectors are used. The NACE rev. 2 sectoral classification and ISCO-08 occupational classifications are widely used indicators. The NACE rev. 2 classifies all sectors and sub-sectors up to four sublevels. Similarly, the ISCO-08 classifies occupations into classes with again four levels of detail. Since we want to create a broad definition of our sectors, we cannot rely solely on either a purely occupational categorisation of jobs, as provided by the ISCO-08 classification, or a sectoral categorisation, provided by the NACE rev. 2 indicator. A combination of these two classifica-

tions can, however, help us to capture these workers that otherwise would fall by the wayside. Using this methodology, described in detail in our working paper (Szekér et al., forthcoming), we obtain a sectoral indicator which exclusively appoints each employee to a sectoral group: the health and care sector, the ICT sector, the green sector or a remaining group including all other sectors. In the following chapters of this report this sector indicator will be used to look at the job quality of employees in these sectors and at the separate job types.

5 Green jobs

The greening of the economy is at the intersection of two key Europe 2020 objectives, the first one focusing on employment and the second one on greening. In terms of employment and inclusive growth, the EU wants to create more and better jobs by improving conditions for job creation, improving quality of jobs and ensuring better working conditions, investing in the creation of necessary skills for (future) jobs, ... In addition, the objective of sustainable growth includes the flagship for 'a resource-efficient Europe', with targets set for a reduction beyond 20% (or even 30%) of the greenhouse gases (GHG) by 2020, as well as an increase of 20% in energy efficiency (COM 2020 final, 2010). Therefore, the growth of the green sector and green jobs is one of the key priorities of the European Union.
In this chapter green jobs are defined, and we attempt to delimit green jobs as much as possible.
Secondly, the job growth of these green jobs is investigated, as well as the employment potential (until 2020). Since not only more, but also better jobs are important, we will then look at the job quality of these green jobs. We conclude with an example of greening in construction and how this impacts on job quality.

5.1 What are green jobs?

Defining green jobs is not an easy or straightforward exercise, although these green jobs are at present a prominent research topic. The European Commission (SWD 92 final, 2012) defines green jobs as follows in its working document 'Exploiting the employment potential of green growth':

> *'Green jobs are all jobs that depend on the environment or are created, substituted or redefined (in terms of skills sets, work methods, profiles greened etc.) in the transition process towards a greener economy' (Ecorys, 2012; 'Green jobs: employment potential and challenges', 2012; SWD 92 final, 2012).*

Newly created green jobs are, for example, workers that install solar panels or water pumps in the construction sector or energy auditors. Substituted jobs are related with increased attention to the environment and climate, in companies shifting to more energy-efficient or environment-friendly production processes. These jobs can for example be found in the waste and recycling sector, with companies shifting from waste incineration to recycling. Other jobs are transformed or redefined in the greening process, as the work methods, skills and job profiles are greened. For example, insulation workers in construction who have to work with different standards in comparison with ten years ago. Owing to rising energy prices and increasing costs and taxes related with the waste processing and storage, a lot of manufacturing industries faced a shift towards more energy- efficient production and cradle-to-cradle production,[2] which often implied greening of the jobs in these companies (UNEP/ILO, 2009).

Building further on this definition, two kinds of industries can be distinguished within the green economy: the eco-industries and the emission-intensive industries which make efforts to reduce their GHG emissions. The latter industries are mainly situated in the energy supply and energy use sectors, as well as in transport. Each of these green(ing) industries is associated with particular employment-related challenges and requires different strategies ('Green jobs: employment potential and challenges', 2012).

The *eco-industries* include a broad range of activities within the fields of environmental protection (such as waste management) and resource management (such as the renewable energy sector (RES) and renewable raw materials and products), as well as environment-dependent activities (such as organic farming, forestry and fishing, water extraction and supply etc.).

2 In contrast to the standard cradle-to-grave approach (in which by-products resulting from processing raw materials that are not directly useful for the factory become waste), the cradle-to-cradle production system aims to create closed-loop systems. In these closed-loop systems, the unwanted by-products of one company become the input materials for another company. In this way factories try to limit their waste production (UNEP/ILO, 2009).

The employment growth in these eco-industries is linked with increasing labour shortages, especially for low-skilled workers. Tackling the skill shortages of existing workers (by training) and potential young workers (through educational and training systems) has to be the key focus of these industries.

On the other hand, the growing attention to climate and environment, such as the Europe 2020 climate and energy targets (COM 2020 final, 2010), also fostered the *greening of traditional and emission- intensive industries*. The Europe 2020 targets are important challenges for those industries that have a high ratio of GHG (greenhouse gases) emission in comparison to their added value ('Green jobs: employment potential and challenges', 2012) such as the water and air transport sector as well as other inland transport activities; industries producing coke, petroleum products and nuclear fuel; companies providing gas and water supply etc. (OECD, 2012). Starting from the Europe 2020 strategy and targets, several emission-reduction strategies have been implemented. These obviously have an effect on both GDP and employment. In general the impact of these policies depends a great deal on the regional concentration of these industries (highest in Eastern European new member states) and the re-investment of the taxes and other revenues (collected for example from carbon taxes, the trade in emission rights) in the economy and labour market through a reduction, for example, of the labour costs or investment in training policies for these workers. A recent impact assessment of the EC concluded that a reduction of the GHG should be possible through unilateral actions of the EU, such as creating revenues from taxation and investing to reduce labour costs, without seriously affecting the GDP and employment. In the most optimistic scenario, these policies could even lead to a net job growth of 1.5 million new - green - jobs by 2020 (COM 112 final, 2011; SEC 288 final, 2011).

In the report on the competitiveness of eco-industries (Ecorys & IDEA, 2009) a third definition of the eco-industries is provided - building on the definition of Eurostat (Eurostat, 2009) - which specifies these industries further:

> *'Eco-industries are those sectors within which the main – or a substantial part of – activities are undertaken with the primary purpose of the development of technologies and the production of goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and ecosystems' (Ecorys, 2012)*.

This definition sheds new light on the broad set of green jobs that can be found in our modern economy. It can thus be concluded that it remains difficult to find one umbrella definition of green jobs, which covers all the different aspects, occupations, industries, ... mentioned by scholars active in these fields.

Likewise, and consequently, it is not easy to define green jobs from a methodological viewpoint. Green jobs are spread out over different occupations and sectors and especially hard to capture and measure in a common survey (such as the European Labour Force Survey or the European Working Conditions Survey, ...) since there are no separate categories provided for green occupations or sectors within the NACE rev. 2 and ISCO-08 coding (Szekér et al., forthcoming). Devogelaer (2013) discusses the problem in defining renewable energy technologies. Companies working in this field are often divided across a wide range of traditional economic activities. To correctly assign all individual workers to either a green job or not is a decision that can be based on the occupational group which most of their activities match, or a specific activity within the company that is transformed into a green activity.

Although several studies on green activities and sectors provide definitions of the green sector, it still remains difficult to fully measure and define these green jobs in surveys. This subsequently leads to an underestimation of the employment in the green sector, since both direct and indirect employment are difficult to measure. So a green jobs indicator was constructed using a combination of both the NACE rev. 2 and ISCO-08 classifications for the analysis of the job types (Szekér et al., forthcoming).

5.2 Employment growth of green jobs

The broad nature of green jobs makes it difficult to find comprehensive measurements of the employment level and growth of green jobs. Nevertheless some studies, often focusing on a specific aspect of green jobs and greening, can give us an idea of the job growth of green jobs. Table 5.1 gives an overview of the main findings of these studies.

In the Ecorys report (2012) an overview of the employment growth in the eco-industries (using their definition) is provided. The focus is on the eco-industriy, which employed 2.2 million people in the European Union (EU-27) in 2000. By 2008, this increased to 2.7 million people and grew further to a total of 3.4 million people working in eco-industries in 2012. These figures probably underestimate the actual size of the eco-industries due to measurement problems, as discussed earlier. In 2008, the eco-industries accounted for 1.22% of total employment in the EU-27 (Ecorys & IDEA, 2009; Ecorys, 2012).
The emission-intensive industries, on the other hand, employed about 15.8 million people in 2010, which is 7.45% of the total employment in the EU-27. There are large differences across the EU in the size of these industries. Cyprus has the smallest percentage (about 4.5%) of employees active in these sectors, while these sectors include about 11% of the total working population in the Czech Republic. The greening of these industries thereby

certainly offers large growth potential (although not evenly distributed across Europe) for the green sector (OECD, 2012).

The green economy is one of the few sectors with continuing job growth throughout the recession, a trend which is expected to be continued more strongly after the crisis (COM 173 final, 2012). The EC provides some estimates of green job growth in its working document (SWD 92 final, 2012). Increasing individual resource efficiency could create between 1.4 million and 2.8 million jobs in Europe (GWS, 2011). New energy efficiency measures, moreover, can give rise to 2 million new or retained jobs by 2020, and the boosting of renewable energies can create an extra 3 million jobs by 2020 (COM 109 final, 2011; COM 31 final, 2011; SWD 92, 2012). Furthermore, 1 million extra jobs can be created by 2030 with the implementation of the revised Energy Taxation Directive (COM 168/3 final, 2011). This transition into a greener and resource-efficient economy will initially benefit especially high-skilled workers. However, once more sustainable, the greener manufacturing and services sector will also lead to the creation of a large number of medium-skilled jobs, and the transformation of jobs of lower-skilled and older workers (COM 173 final, 2012).

Table 5.1 Overview of employment potential and employment in green sectors

Employment in green sectors				
Industry	**Year**	**Absolute numbers**	**% of total working population (15-64 years)**	**Remarks & source**
Eco-industry	2000	2.2 m.		(Ecorys, 2012)
	2008	2.7 m.	1.22	(Ecorys, 2012)
	2012	3.4 m.		Projection (Ecorys, 2012)
Environmental Goods and Services Sector (EGSS)	2011	1.6 m.	0.77	EGSS = 4 sectors: water collection and supply; sewerage; waste collection, treatment and disposal activities, and materials recovery; and remediation activities and other waste management services. But large differences across EU (Eurostat, 2009)
Renewable Energies Sector (RES)	2010	1.1 m.	0.5	('European Renewable Energy Council: Jobs', n.d.)
Environment-dependent activities	2007	28.4 m. (of which 10.7 m. in agriculture)	16.7	= direct and indirect green employment (Ecorys, 2012)
Traditional emission-intensive industries	2011	15.8 m.	7.45	(OECD, 2012)
Employment growth in green sectors				
Industry	**Period**	**Absolute number of additional/lost jobs**		**Remarks & source**
EGSS	2008-2010	+ 45,000 jobs		(Eurostat, 2009)
RES	2005-2009	+ 300,000 jobs		Fast growing sector ('European Renewable Energy Council: Jobs', n.d.)
Employment potential of green sectors and measures for greening of economy				
Measure/activity	**Employment potential**		**By (year)**	**Remarks & source**
Raise energy efficiency in construction sector by 20%	+ 400,000 jobs		2020	('Green jobs: employment potential and challenges', 2012)
More resource efficiency on waste	+ 526,000 jobs		2025	
2020 target for RES	+ 2.8 m. jobs		2020	
Investment (200 billion euros) in sustainable land transports	+ 650,000 jobs			
Resource efficiency policy interventions: reduce material requirements by 17%	+ Between 1.4 and 2.8 m. jobs			(GWS, 2011)
Energy efficiency measures	+ 2 m. jobs (or retained)		2020	(COM 109 final, 2011)
Development RES	In total 3 m. jobs		2020	(COM 31 final, 2011)
Implementation of revised energy tax directive	+ 1 m. jobs		2030	(COM 168/3 final, 2011)
Carbon pricing	+ 1.5 m. jobs		2020	(SEC 288 final, 2011)
Full implementation of the EU waste acquis	+ 400,000 jobs		2020	(Friends of the Earth, 2010)
Achieving objectives of EU Biodiversity Strategy to 2020	Directly and indirectly: in total 14.6 m.			(GHK, 2011)

Several researchers have looked into the employment potential of the transition towards a greener economy. This transition and, for example, more (up to 100%) renewable energy usage, have a large employment creation potential (Table 5.1). Nevertheless, Devogelaer (2013) warns against the so-called innovation effect (Lachenmaier & Rottmann, 2011). This effect implies that innovation in industry at first might create a lot of new jobs, but that this innovation over time will lead to a decrease in the total number of jobs when work practices are more optimised. This idea is also suggested in 'The employment in Europe 2009' report (European Communities, 2009) stating that

> *'developments in the RES might also have additional costs, that will counterbalance the positive employment effects, therefore making their impact on the net employment uncertain'*.

Devogelaer (2013) also notes that the employment growth due to greening might not necessarily be local. For example, manufacturing solar panels might be less expensive abroad and prone to relocation. Nevertheless, some new green jobs - such as jobs in construction, installation of solar panels etc. - cannot be off-shored. More specifically Kannelos (2008 in Devogelaer, 2013) states that the most prominent jobs created and needed within the green sector are jobs in construction, engineering and the food and health (agriculture) industry. Other occupations might also benefit from greening such as IT professionals, biologists and chemists, land use planners, engineers and architects. All these professions will be in great demand and are currently facing labour shortages.

Despite this relatively positive outlook in terms of job creation, the large employment potential of the green sectors poses some policy challenges. First of all, policies should help boost the demand for workers in eco-industries through greater investments. Governments should create a favourable

investment climate and opportunities to receive public funding for investments in greening or the research on and development of green activities. In addition, they should raise the climate-change- related standards in public investments and provide stimulus measures for companies to meet climate-related standards. Secondly, the green transition in companies and the economy requires new skills and investment in the adaptation of existing skills. Policies for anticipating and managing these skill changes are therefore essential in many aspects. The entry of young graduates should be facilitated, providing training and education (e.g. in the so-call STEM skills)[3] that allow for a smooth transition into green jobs, inter alia through closer collaboration between companies and the educational system. The existing workforce should be provided with targeted vocational training, tackling the skill bottlenecks and giving employees the necessary skills to stay employable throughout the greening process. Additional attention should be given to the large proportion of low-skilled workers as well as older workers, to prevent skill shortages and polarisation of the employment opportunities towards high-skilled workers. A third point of attention for policy makers in this greening trend should be the preservation of employment in traditional industries. This can be done by stepping up the reinvestment of revenues (created through, for example, CO2 taxation and auctioning of ETS allowances) in cutting labour costs. Moreover, women are underrepresented in green industries. Their employment should be promoted by policy measures such as anti-discrimination laws, quotas, targeted recruitment, reducing the gender wage gap etc. And finally, the quality of these new and transformed jobs has to be secured, for low-skilled, medium-skilled and high-skilled occupations (COM 112 final, 2011; Eurofound, 2012; 'Green jobs: employment potential and challenges', 2012).

3 STEM skills are skills in science, technology, engineering and mathematics (Eurofound, 2012), all fields that are important for the activities of the eco-industries and for greening traditional industries.

5.3 Job quality and job types in the green sector

The steady growth of green jobs is certainly an important contributing trend for Europe, enabling us to reach our employment target of creating 'more jobs'. However, the quality of these jobs is also an important and certainly not a secondary target of the employment agenda of the EU.
Not much research has been done yet regarding the quality of green jobs. Eurofound (2012) summarises some observations and estimations of research into the quality of green jobs across Europe, focusing mostly on the emerging eco-industries. Looking at four dimensions of job quality - skills development, career and employment security, health and well-being, and reconciliation of work and private life - they find several indications for both a positive or negative effect of greening on job quality.

The Eurofound report suggests that job quality in these new (emerging) green sectors is likely to be worse than in traditional industries owing to several aspects and characteristics of these green jobs. A first aspect is the high level of SMEs in the green sectors (Eurofound, 2012, p. 28). SMEs can be linked with direct and indirect effects on job quality. SMEs tend to have poorer working conditions, especially regarding risk prevention and management as well as expertise in health and safety etc. Employee representation is usually lower in SMEs, leading to limited employee organisation and protection, little coverage through collective agreements and weaker social dialogue. However, social dialogue can play an important role in the development of joint strategies by social partners, amongst others to enhance job quality (Eurofound, 2012, p. 28; ILO, 2012; SWD 92 final, 2012). SMEs can be linked with higher levels of undeclared and temporary work as well as more self- employment, which can all be associated with inferior working conditions (Eurofound, 2012, p. 28). Secondly, the green sector is a fast developing industry with large numbers of volatile companies compared to more traditional industries. These - mostly very small - companies emerge

quickly, taking advantage of a newly developed technology with high growth and revenue potential. Once their activities become less profitable (owing to for example changes in legislation, quality requirements, taxes, cuts in public funding etc.), they also disappear very quickly or change their course focusing on other, profitable activities. This volatile nature can create more job insecurity for employees, since they might lose their jobs (or experience drastic changes in their job) when these companies stop or change their activities. The higher job insecurity can have a negative impact on job quality (Eurofound, 2012, p. 29).

In the same vein, the timing and the speed of the changes in greening companies can be important. Job quality tends to be lower in companies and industries which were forced to implement greening very quickly and were less prepared for these changes. On the other hand, the job quality in those industries with a longer tradition of greening initiatives seems to be less (negatively) affected (Eurofound, 2012, p. 29).

Fourthly, the changing nature of the green sector is reflected in health and safety hazards present in these industries. Industrial activities are linked with certain health and safety hazards for the workers, which is not different for green and greening industries. The change process and implementation of new technologies create new and unknown health and safety hazards. Existing hazards may also be transformed during this change process. Workers have little experience of these new and transformed hazards, which increases their risks. Furthermore, the fast changes in and the volatile nature of these industries brings a continuous stream of changes in health and safety risks, of which these companies have little experience (Eurofound, 2012, p. 35). This is confirmed by findings in recent studies of the European Agency for Safety and Health at Work. They found that greening and the development of new technologies may lead to the creation of new combinations of risks. Therefore it is important that these new risks are also properly assessed and managed. In addition to new risks, existing risks from the traditional industries can also be found in green industries.

Installing solar panels on a roof, for example, implies a similar risk to other - non-green - work on roofs. Other risks are removed. For instance, the risks associated with
the use of certain traditional and unhealthy construction materials (such as asbestos) decrease when they are replaced with less noxious (green) alternatives. Employers should invest in anticipating and adapting to these new, transformed and changing risks in green sectors, with investments focusing on the identification, evaluation and control of these hazards (EU-OSHA, 2011a, 2011b).

On the positive side, the greening of industries is associated with the development of new technologies and new skills. This could be beneficial for working conditions and job quality, especially of higher-skilled workers (Devogelaer, 2013; Eurofound, 2012, p. 29). The green sector seems to have a tendency to create mostly technical, scientific and skilled jobs. However, in some areas of the green sector, such as the installation of solar panels, lower-skilled workers are certainly needed (ASES, 2008). This upgrading of skills can have a positive effect on job quality. The need for new skills requires investments in training employees. More training as such has positive effects on job quality. In addition, skills development has a positive impact on other job quality dimensions, such as higher income, better career opportunities, better health, more satisfaction with work-life balance etc. Nevertheless, the increased requirements will initially lead to an increased demand for highly skilled employees and less demand (decrease or no effect) for medium and lower-skilled workers, which might create a large gap in the job quality of low-skilled versus highly skilled workers. Greening organisations are often more aware of the need for a highly skilled workforce and tend to devote more effort to attracting and retaining them (Eurofound, 2012). In the longer run, demand for low and medium-skilled workers is expected to rise, reducing the gap again. In this way, the greening trend might eventually result in higher standards of living and working

for all workers (CEDEFOP, 2011a, 2011b; Eurofound, 2012; European Communities, 2009; SWD 92, 2012).

To summarise, job quality seems to be both negatively and positively impacted by greening. The large number of SMEs - linked with poorer working conditions - in this sector impacts on overall job quality. Other aspects which negatively influence job quality are the large number of volatile companies and the job insecurity they entail for their employees, the widespread use of temporary contracts and undeclared work, and large numbers of self-employed. Furthermore, the green jobs are subject to new and unknown health and safety hazards, increasing the risks for workers. The high skill requirements of the green sector are detrimental to the job quality of lower-skilled workers, who end up more and more in very bad quality jobs.

The distribution of the job types within the green sector can be examined using the job types described earlier (Table 5.2). Looking at the distribution of the job types within the green sector, this sector clearly has high numbers of passive work, active work and low-strain part-time work. High-strain work and emotionally demanding work are less prevalent. The comparison with the average distribution of job types in the whole economy is especially relevant. Green jobs are much more likely to be saturated work (12.5% instead of 9.5%) and low-strain part-time work (17.7% instead of 13.4%) compared to all jobs in the economy. Higher levels of high-strain work, passive work and repetitive work are also found. Emotionally demanding work is at the average level, and active work and supporting work are found less than average in the green sectors. The lower prevalence of these two high-quality job types can explain to some extent the lower share (only 43.1%) of high-quality jobs in the green sectors in comparison to the whole economy (53.1%). This lower share of high-quality jobs is mirrored in the higher shares of moderate quality and low-quality jobs. The difference is to be found in the lower levels of active work and supporting work, since saturated work is also above

average. Passive work and high-strain work are much more prevalent in the green sector. The explanation for this typical sector profile can again be found in the nature of the jobs and activities. Within the green sector, high levels of industrial activities (such as the production of windmills, solar panels, green energy in general, and recycling of waste) can be found.
In general, industrial jobs tend to be more often high-strain work or passive work, as compared to jobs in the services sector (Vandenbrande et al., 2012).
This picture can be partly explained by the way the green job indicator is constructed. Using the ISCO and NACE classifications, it was difficult to identify green jobs and activities. Hence, the selection may be somewhat biased by the higher specification within the classification of industrial activities, compared with services. This allowed for a better selection of the green industrial jobs out of the sample, while an extensive amount of green jobs in the services sector and primary sector probably slipped through the net because they could not be identified with the NACE and ISCO variables. A better classification of green jobs within these overall classifications would obviously be useful for future research. Since these numbers do not allow us to say in which job types the new green jobs are created, only a general conclusion about green jobs can be made, more precisely that green jobs have lower job quality than average jobs.

5.4 Job types in the green sector under the microscope

In general, green jobs seem to be more often of lower (or moderate) quality. In addition, the general distribution across the job types hides some important differences between men and women, native and non-native workers and between workers with different skill levels (Table 5.2). Before going into the details, it is important to note that our sub-sample of the green sector contained a higher share of men than our general sample (which might reflect the industrial character of the green jobs in our sam-

ple), as well as a larger amount of native workers as compared to non-native workers.

There are many more men in the green sector in low-quality jobs (35.9%) than women (21.5%), with large differences especially in passive work and high-strain work. This can be linked to the large proportion of industrial activities in the green sector definition. There are also more men in low-strain part-time work and emotionally demanding work. These higher proportions of men in low-quality work are mostly at the expense of active work and supporting work. The largest proportion of the women can be found in moderate quality work (40.4%), and mostly in low-strain part-time work (31%). Another 30% of the women are in active work, which is higher than on average.

In terms of skills and educational level, three groups of workers can be distinguished: low-skilled (lower secondary education or less), mid-skilled (upper secondary education and post-secondary education (not tertiary); and high-skilled (tertiary education). Each of these groups has its job types in which it is much more represented than the other groups. Comparing them with the average, low-skilled workers in the green sector are much more often in saturated work (14.8%) and passive work (32.1%). Mid-skilled workers have the smallest percentage of high-quality jobs, which can be partly explained by the extremely low percentage of saturated work (1.2%). 26.3% of these workers have a moderate quality job, which is mainly low-strain part-time work (24.3%). Amongst the low- quality jobs, emotionally demanding work (6%) and high-strain work (8.1%) are more often done by mid-skilled workers. Finally, 69.7% of the high-skilled workers in the green sector are in high- quality work, especially in active work (40.1%) and saturated work (28.7%). The number of high- skilled employees in supporting work is very low (0.9%) and high-skilled green workers are nearly absent in low-quality work (5%).

The differences in the job quality of native workers versus non-native workers in the green jobs cannot be overlooked. Only 20.1% of non-native workers have a high-quality job, while this is the case for 48.6% of the native workers. Non-native workers are especially less prevalent in saturated and supporting work. Two additional aspects are important here: first of all the fact that 99% of the non-native workers in the green sector are men, who are more often in low-quality jobs in the green sector compared with the general economy. Secondly, 62% of the non-native workers (compared to 40% of the native workers) are mid-skilled, a group of workers with a below-average level of active and saturated work in the green sector. The combination of these high proportions of non-native workers in the groups that are already at a disadvantage in terms of job quality in the green sector can explain to some extent the large difference between native and non-native workers in high- quality jobs. More than half of the non-native workers have passive work, which also supports previous findings (Eurofound, 2012) that these non-native workers seem to be employed in a limited and specific set of low-quality jobs within the green sector, such as cleaning personnel, waste and recycling workers etc.

Table 5.2 Green jobs and job types by gender, origin and skill level

	Total	Gender		Origin[1]		Skill level[2]		
	% of total employed in green jobs	Men	Women	Native	Non-native	Low-skilled	Mid-skilled	High-skilled
High quality								
Active work	17.7	16.2	31.4	19.7	16.9	13.1	18.9	40.1
Saturated work	12.5	13.3	0.6	12.7	1.3	14.8	1.2	28.7
Supporting work	12,9	15.7	6.1	16.2	1.9	15.2	17.1	0.9
Total	*43.1*	*45.2*	*38.1*	*48.6*	*20.1*	*43.1*	*37.2*	*69.7*
Moderate quality								
Low strain part-time work	17.7	15.3	31.0	17.2	24.3	15.5	24.3	10.6
Repetitive work	8.7	3.7	9.4	5.8	0.3	4.1	2.0	14.8
Total	*26.4*	*19.0*	*40.4*	*23.0*	*24.6*	*19.6*	*26.3*	*25.4*
Low quality								
Emotionally demanding work	3.4	4.3	1.2	3.9	2.8	2.3	6.0	0.5
Passive work	22.2	25.1	20.3	18.2	52.5	32.1	24.5	4.5
High-strain work	4.8	6.5	0	6.3	0	3.8	8.1	0
Total	*30.4*	*35.9*	*21.5*	*28.4*	*55.3*	*38.2*	*38.6*	*5.0*

1 Origin: Native: interviewee and both of his/her parents born in country of residence; Non-native: interviewee, one or both of parents or all born in country other than country of residence.

2 Skill level: Low-skilled = no education, primary education and lower secondary education; Mid-skilled = upper secondary education and post-secondary including pre-vocational or vocational education but not tertiary; High-skilled = tertiary education – first level and tertiary education – advanced level.

Source working paper (Szekér et al., forthcoming)

To conclude, the most striking differences can be listed: being high-skilled in the green sector clearly pays off in terms of job quality: 70% of the high-skilled workers in the green sector have high-quality jobs. Only 5% of them are in a low-quality jobs. Non-native workers in this sector are in a very unfavourable position, with 53% doing low-quality passive work. Compared to the economy in general, men in the green sector more often do low-quality work (passive work and high-strain work), which again can be linked to the industrial nature of the jobs. Women are very prevalent in moderate quality work, and especially in low-strain part-time work, a typical job type for clerical workers.

5.5 The construction sector: an example of good and bad practice

The greening of our economy has had a large impact on the construction sector, by focusing attention on energy-efficient and eco-friendly constructions, and zero-energy houses. This imposes new requirements on the construction sector, such as greater accuracy and quality requirements, greater complexity of the building process, with more specialisation and standardisation, and stricter planning. These changes might influence the job and job quality of the workers in this sector. Ramioul and Van Peteghem (2012) describe two different management strategies to deal with these changes and their possible impact on job quality as illustrated with the following case study (see Box 5.1).

Box 5.1 **Autonomy and learning in green construction: the high road is possible**

New production requirements ...

The greening of construction, accelerated by increasingly strict requirements on energy-efficiency imposed by EU and national regulation, has a far-reaching impact on the way the construction of private dwellings is organised. Accuracy, quality and a sense of detail are paramount in all process stages. Matching building elements; finishing off corners, doors, sockets and ducts; taping insulation mats in-between cavity walls; mounting standard triple glazed windows; ... it all has to be done with extreme caution, otherwise cold bridges are inevitable and air-tightness tests fail.

... Generate new ways of organising

This leads to a number of changes in the organisation of the construction process: Detailed work preparation is more and more done by technicians at central departments. There is a growing standardisation of construction modules such as roofs and walls.

More of these are prefabricated in central workshops to be assembled as building blocks on the spot in a just-in-time schedule.

There are a growing number of small and independent subcontractors specialised in one aspect (such as heat pumps).

As a result, the construction value chain is becoming increasingly long and complex, with a growing number of firms and people involved. This leads to strong requirements of co-ordination and logistics (just-in-time delivery, short lead times) and banning 'dead time' as much as possible. Such a process, however, becomes also much more sensitive to disturbances and problems with materials, tools, traffic etc. and the degrees of freedom to resolve these on site are reduced to a minimum. Corrective actions on the building site or in the next step of the construction process have become virtually impossible...

Autonomy and craftsmanship at risk?

In such an organisational environment, the tempting managerial response seems to be to maximise control and minimise risks, which would lead to more centralisation, standardisation and bureaucratised, top-down process-co-ordination. These, in turn, may lead to higher levels of division of labour, standardised and short- cycled off-site production, continued strategies of productivity increases and rationalisations. In such work organisations, a decent job quality with sufficient opportunities for learning and minimal stress risks is not easy to achieve.

But the high road is possible

Nevertheless, some companies understand that under such production conditions precisely the opposite strategy leads to more success and, in addition, fosters better job quality and more learning opportunities for the workers. For example a company which systematically bases its strategy on participatory policies and practices. The need for contextualised knowledge, decentralised co-ordination and problem-solving capacities and high involvement of all prevails in this corporate strategy. Here, the work organisation combines the centralised design and off-site prefabrication of some components with an on-site team- based work organisation with ample decentralised discretion. The management is convinced of the benefits and even the necessity of the active involvement and participation of all present at the construction site. Subcontractors are included as partners in on-site construction teams on the basis of their specific skills and high-quality delivery. Workers are closely and timely informed about production schedules, changes to plan, adaptations of work preparations, technical details, new tools and materials etc. The company invests in skill development of all staff. At regular intervals they receive both on-the-job and off- the-job training aiming at raising their awareness and knowledge of ecological construction methods, materials and tools. Additional HRM practices, such as evaluation talks and staff events,

further underpin this employee-centred corporate strategy.

Taken from Ramioul & Van Peteghem (2012) in Holtgrewe & Sardadvar (2012b).

A first corporate strategy to deal with the requirements for energy-friendly constructions is to maximise control and minimise risks. This leads to an increase in the standardisation of the work. Building houses boils down to assembling standardised elements that are prefabricated. Tasks become more short-cycled and repetitive. Workers are rotated between building sites performing the same tasks day after day. Outsourcing is maximised, for example for the prefabrication of the different building elements. Top-down management and increased bureaucracy are prevalent, with considerable adherence to detailed instructions, strict timetables and high process control, leading to a deterioration of the worker's autonomy and control.
An alternative management strategy to deal with the new construction requirements is to maximise worker involvement and participation. This starts with engaging experienced builders and valuing their craftsmanship, and by providing workers with sufficient training, for example to increase their insight into eco-friendly construction techniques. These builders work together in construction teams with mutual responsibilities and a high degree of autonomy. This implies a decentralisation of the decision-making, with on-site planning and regulation, involving all the team workers providing time for information sharing, fine-tuning of plans etc.
These contrasting management strategies lead to totally different ways of organising work and tasks, which impact on the job characteristics of these green construction jobs and consequently on the job quality of these jobs. The greening of construction can lead to an improvement or deterioration of the job quality and it appears that it is the company policies that matter most in this respect (Ramioul & Van Peteghem, 2012).

5.6 Conclusions

The green sector is very broad and differentiated, offering employment potential in several types of activities, both for high and (to a lesser extent) low-skilled workers. The quality of the green jobs is very difficult to examine, since the activities and sectors are so widespread and differentiated. A common aspect of green jobs is that they face serious challenges to job quality, which can mostly be linked to the volatile and insecure nature of the emerging SMEs in the green sector. These are - more than large companies - associated with more precarious working conditions. However, the example also shows that the job quality largely depends on the company policies (in particular in terms of work organisation).

6 ICT jobs

In a modern economy, information and communication technologies (ICT) play an important role in the globalisation and innovation of economic processes. ICT also play a key role in the increasing international competition. With global communication becoming more flexible and simple thanks to the Internet, management strategies such as outsourcing, off-shoring and relocation become easier and within reach for each organisation. Therefore, today's economy becomes more and more technological, and companies wanting to survive in this environment have to adapt to these changes and embed ICT within all aspects of their work processes. This omnipresence and universal availability of ICT explains the growing demand for ICT professionals all across Europe.
Within the Europe 2020 Employment Strategy (COM 2020 final, 2010), as well as in the Digital Agenda for Europe (*Digital Agenda: ICT for jobs*, n.d.), one of the flagships in the priority for smart growth, the EU defined the ICT industry as one of the sectors with a large employment potential. However, it is important that companies react quickly and ensure that EU workers develop the necessary skills and competencies in order to prevent loss of the ICT employment potential to other regions of the world. Furthermore, as stated above, the EU wants not only more but also better jobs (COM 2020 final, 2010; SWD 96 final, 2012). This chapter starts with defining the ICT sector and ICT jobs more clearly and examining the job growth potential. Next, the quality of these jobs is discussed.

6.1 What are ICT jobs?

The ICT sector comprises many different activities and is spread out over many different sectors and business activities. Nowadays, almost every company has some ICT activities included in its daily processes (such as website development, HR management tools etc.). In the working document of the

European Commission (SWD 96 final, 2012) three types of workers are distinguished with a different relation to ICT in the execution of their jobs. The first group are the ICT practitioners, which have 'ICTs as the focus of their work. For example they develop, sell and maintain or support ICTs systems'. The ICT users, on the other hand, are workers using ICT only as a support tool and not as a core task. This means that they use 'common software tools and specialised tools that support business functions within an industry'. Thirdly, there is the group of - often - *entrepreneurs* and individuals in management positions who look for strategic opportunities in terms of ICT and potential innovations which require a particular set of skills, focusing on the e-business. However, not all of these workers using ICT in their jobs have ICT jobs in strict terms. Therefore, to look at ICT jobs, we will restrict our analysis to the ICT practitioners since ICT is the core business of their jobs.

Despite this description of the role of ICT in occupations, it remains difficult to clearly delimit the ICT sector, since it comprises a wide set of services, starting from the manufacturing of ICT products (with both the engineers developing new technologies and workers producing the products), over the wholesale and retail sale of ICT products, the support and creation of software, websites (for professional or individual use) and other related products, up to the repair services when problems arise (Lumio, 2006; Szekér et al., forthcoming). Mas, Robledo and Pérez (2012) list three types of ICT industries in their technical report about the ICT sector definition, using the NACE rev. 2 classification. The first group are the ICT manufacturing industries, including both the manufacturing of finished ICT products as parts and components. Secondly, there are the ICT services industries, such as software development, programming and consultancy, web development, repair services, ... The third group are the ICT trade industries, including both the wholesale and retail sale of ICT products. This distinction is a good starting point for developing an indicator for the ICT sector. Using further input from

the ISCO-08 classification, an indicator for the ICT sector was made for the ICT sector based on both the NACE and ISCO coding (Szekér et al., forthcoming).

6.2 Employment growth of ICT jobs

In the working document of the EC regarding the ICT sector (SWD 96 final, 2012) attention is paid to the acute shortage of skilled ICT workers. Although the young generation are, as they say, digital natives, they lack many IT skills to make them competent, professional, critical and professional ICT users. Often they have only basic ICT skills for using the Internet and its applications and general software applications. Although these skills are very basic, today's youngsters are ahead of the game in comparison with older workers, who often lack this basic experience of new ICT applications. Companies will need to invest in the development of ICT and ICT-related skills to ensure that their workforce have the necessary skills to be able to keep working in a constantly changing and developing ICT environment. The EC expects that by 2015, 90% of jobs will require at least basic computer skills. In comparison, in 2010, on average 18.5% of the workforce needed advanced ICT skills in their job. As can be expected, there are still large differences across the EU countries, with percentages of advanced ICT users ranging from 9% in Romania to 31% in Luxembourg (Eurofound, 2013a; IDC White paper, 2009; SWD 96 final, 2012).

The European Commission states in their working document about a job-rich recovery (COM 173 final, 2012) that employment of ICT professionals grew 3% each year during the current economic crisis and that a lot of ICT vacancies remain unfilled. Therefore, by focusing on the development of the necessary ICT skills, the EU can exploit the large employment potential of ICT to boost the international competitiveness of European companies. The EU-27 labour market needs to be prepared to fill the rising number of ICT vacan-

cies. In the European Job Mobility Bulletin (EJMB, 2013), computing professionals were listed as number five in the list of the jobs with the highest numbers of vacancies all across Europe (for example 27,290 jobs in the UK, 11,300 jobs in Germany, 2,500 in Belgium). By 2015, the EC expects up to 700,000 unfilled ICT practitioner vacancies in the EU (*Digital Agenda: ICT for jobs,* n.d.). Besides the creation of new ICT jobs, the pressure to fill vacancies will also rise due to the large and increasing number of retirements of ICT practitioners (up to 120,000 ICT practitioners are expected to leave the workforce by 2015), since the number of ICT students and young graduates remains low. European companies and countries need to invest in attracting young people to a career in ICT. They should also set up policies and initiatives for the re-orientation of mid-career job seekers towards ICT. Furthermore, general ICT training and education should be provided to all workers, if companies want to remain competitive in an increasingly digitized world (COM 173 final, 2012; IDC White paper, 2009; Rubery & Grimshaw, 2001).

Clearly, these figures demonstrate that there is a large employment potential in ICT jobs and that a further increase in the labour demand in this sector can be expected. Since Europe already struggles to fill many ICT vacancies, this sector deserves additional attention to enhance employment and encourage (future) workers to choose this sector.

6.3 Job quality and job types in the ICT sector

Within Europe little research has been done on the job quality of workers in the ICT sector specifically. Looking more globally, some studies focus on one or several aspects of ICT jobs that can be related to job quality. Based on these studies some general trends and conclusions regarding the job quality of ICT jobs can be formulated.

The ICT sector is a rapidly growing and changing sector with high growth opportunities for emerging companies. The number of small and medium-sized companies (SMEs) in this sector is rising above average. Hence a lot of ICT workers are employed in these SMEs, which in general are associated with more uncertain and unstable employment conditions and high job insecurity for the employees as compared to larger firms. The ICT sector has large numbers of temporary and self- employed workers (partly due to the fact that they work in SMEs), and workers with non-standard employment contracts. These contracts entail more and other risks for the workers, such as greater uncertainty, as compared to standard, permanent contracts. This is however not only a demand-side effect but might also be related with the often pre-supposed higher job-hopping mentality of ICT workers, developing a boundary-less career with less loyalty to one firm (Carnoy, Castells, & Benner, 1997; McMullin & Marshall, 2010).

Valenduc (Valenduc, Vendramin, Krings, & Nierling, 2007; Valenduc, Vendramin, Pedaci, & Piersanti, 2009) looked at the careers of ICT workers and found evidence for the presence of both organisational careers and boundary-less careers. Some ICT workers opt for one of the three types of organisational careers: a classical, technical or institutional career. In a classical career, workers follow a path of increasing managerial tasks throughout their career. The technical career implies more challenging and complex tasks and increasing specialisation. These workers become an expert in their domain. The institutional career is typical of workers who (have to) change from a job in a public administration towards the private ICT sector (for example due to restructuring or mergers). Their main career focus is trying to preserve their career despite these changes. All of these ICT workers with an organisational career path choose to pursue a career within an organisation, with loyalty to this company. The ICT workers with a boundary-less or nomadic career path, on the other hand, are more individualisticd and have careers that consist of reorientations, returns to training, career breaks, periods of unemployment or work as a freelancer, attempts to start up their

own company etc. Boundary-less careers are also linked with a focus on knowledge building and network building activities. Linked with this, the reputation of these ICT workers and their networks are very important and valuable assets for their careers (Rubery & Grimshaw, 2001). The career path ICT workers choose to follow will also determine to some extent the job characteristics they value most in their employment. For example an ICT worker developing a boundary-less career will see temporary contracts and job insecurity more as an inherent and even favourable part of their job, while this job insecurity might have a negative impact for workers pursuing an organisational career, who care more about job security.

The rapidly changing nature of the ICT sector places major demands on the workers' skills and capacities, regardless of the career path they follow. Workers in the ICT sector have to be life-long learners, flexible and quickly adaptable, constantly up to date with the latest developments. And since a large part of them are workers with temporary contracts or self-employed, the responsibility for this learning lies often with the worker him- or herself (certainly for those pursuing a boundary- less career). This continuous demand for self-learning can impose large pressures on the employee. These pressures are especially high for workers with other responsibilities outside their working life, such as children. Older workers can also experience increased pressure because it may become more difficult to keep learning new skills. Workers in the ICT sector are and have to be (more than in other sectors) self-programmable workers, focusing themselves on their own career, employability and the development of their skills to keep up to date and attractive for the labour market (McMullin & Marshall, 2010; Rubery & Grimshaw, 2001; Valenduc et al., 2007).

Other studies discuss the high-pressure work environment of ICT employees. Working in the ICT sector is often linked with a heavy and increasing work-load (due to increasing competition and internationalisation), putting pres-

sure on employees to get more work done in less time and to work to tight deadlines (McMullin & Marshall, 2010; Valenduc et al., 2007). Long working days up to 16 hours a day and doing all-nighters are considered normal in many ICT companies and are often embedded in the company culture. Valenduc et al. (2007) asked ICT workers about their perception of this workload and concluded that they consider this heavy workload sustainable and unavoidable within a job that consists of project work, with deadlines and high quality standards. Nevertheless, this heavy workload can lead to job stress and increasing problems of reconciling work and life. Some studies found indications of stress-related health problems in ICT workers and high levels of burn-out (McMullin & Marshall, 2010). ICT workers have high levels of autonomy in task organisation, in working time arrangements, in learning etc. and they appreciate this autonomy highly. Working time arrangements are flexible and streamlined with workload, allowing workers to compensate long working hours before or after peak periods. The work-life balance is in general positively evaluated by the workers, although they indicate that the workload puts some pressure on it (Valenduc et al., 2007).

The job typology based on the EWCS 2010 can give some additional insights into the quality of ICT jobs (Table 6.1). Looking at the percentage of high-quality ICT jobs, we can clearly state that ICT jobs are good jobs. 69% of ICT jobs are of a high quality in comparison with an average of only 53%. The percentage of moderate quality ICT jobs is similar to that of jobs on average. The number of low-quality jobs, however, is much lower (10%) than on average (25%). This again confirms the high quality of ICT jobs. This can be explained by the typical occupations within this sector. A large part of the ICT sector employees are professionals or highly skilled technicians, occupations that are often found in these job types.
Looking in more detail at the individual job types, one can see that especially active work represents a large part of the employees in the ICT sector (39%) as well as saturated work (17% compared to 10% on average). These

are the two largest job types in the ICT sector. On the other hand, high-strain work and passive work are much less present in this sector, as well as supporting work (Table 6.1). These findings seem to contrast with the image the literature creates about the ICT workers as self-programmable workers, with high job insecurity, heavy workload and high pressures. However, one can notice that also in this sample the level of workers in saturated work and emotionally demanding work (to a smaller extent) and active work – job types associated with higher levels of work pressures – are higher than average.

In general it seems that ICT workers have high-quality jobs, with favourable job characteristics. However, there are some factors that might threaten this job quality, such as the heavy workload and high pressures for continuous skill development that are typical in this sector.

6.4 Under the microscope

The distribution of workers in the ICT sector can be split up for different groups within the population, based on gender, origin and the skill level of the workers. The results are summarised in Table 6.1.

The ICT sector is a male-dominated sector (Habtu, 2003; SWD 96 final, 2012), which is also reflected in our sample, containing 987 male and only 209 female workers. Of these men 71% have a high-quality job, with 42% working in active jobs. Women are less employed in high-quality work (only 58%), with higher than average numbers found in supporting work (21%). Apart from that, 22% of the women have low-strain part-time work, and women are more than average (and more than men) found in emotionally demanding (4.5%) and passive work (8.8%).

Regarding the differences between native and non-native workers, the workers in the ICT sector show a rather unusual pattern. 67% of the native workers have a high-quality job, while 87% of the non-native workers are in a similar situation. 53% of the non-native workers have an active job, as do 36% of the native workers. Non-native workers are clearly less represented in the moderate quality jobs (7%) compared to native workers (22%). This difference is especially reflected in the number of native workers in low-strain part-time work (14%) compared to only 5% non-native workers. This can be partly explained by the very low number of non-native female workers in the ICT sector, since low-strain part-time work is a job type generally more often done by women.

The ICT sector has a large number of high-skilled workers (Habtu, 2003; McMullin & Marshall, 2010). They are mostly represented in high-quality jobs (73%), followed by low-skilled workers (64%) and medium-skilled workers (55%). What is striking is the low number of medium-skilled workers (21%) in active work compared to the low-skilled (42%) and high-skilled (42%) workers. The medium-skilled workers are much more often found in supporting work and low-strain part- time work. Also, these workers have much higher levels of emotionally demanding work (5%).

To summarise, workers in ICT are in general very often in high-quality jobs (compared to other sectors). Especially men, non-native workers and high-skilled workers are in 70% of the cases in high-quality work. The numbers of workers in low-quality jobs are very low, especially for high- strain work. Finally, women as well as medium-skilled workers are more than average in low-quality jobs, especially in emotionally demanding and passive work.

6.5 Conclusions

The ICT sector is a complex sector due to the distinction between ICT practitioners (which here are ICT workers) and ICT users, which cover a very large and growing proportion of the labour force but cannot be seen as ICT workers. The employment potential of this sector is certainly large and can create millions of new jobs, if ways are found to tackle the large amount of unfilled vacancies and if young people can be encouraged to choose a career in ICT. The job quality of these workers appears to be very high. These workers are often in jobs with high levels of autonomy and complexity, good wages etc. However, this is also linked with problems of high time and work pressures, which can put their job quality at risk. Hence it is certainly important to devote sufficient attention to these workers to prevent these rather high-quality jobs being lost owing to problems of recruiting and retaining ICT workers. An active policy to fill the rising number of ICT vacancies is essential to achieve the objective of the Employment Package to make the ICT sector an engine for job growth and competitiveness. This requires not only that training efforts should be supported and must not be left to the individual responsibility of the workforce, it also requires active policies to improve work-life balance, e.g. by providing flexible working time arrangements geared to the needs of the workforce and accompanying policies such as sufficient high-quality childcare facilities.

Table 6.1 Job types in the ICT sector by gender, origin and skill level

	Total	Gender		Origin[1]		Skill level[2]		
	% of total employed in ICT	Men	Women	Native	Non-native	Low-skilled	Mid-skilled	High-skilled
High quality								
Active work	28.7	41.7	25.1	36.3	52.5	42.3	20.7	41.7
Saturated work	16.6	17.8	11.5	16.1	21.5	7.3	16.3	19.2
Supporting work	13.9	12.3	21.2	14.3	12.7	13.9	18.1	11.8
Total	*69.2*	*71.8*	*57.8*	*66.7*	*86.7*	*63.5*	*55.1*	*72.7*
Moderate quality								
Low strain part-time work	12.8	10.7	21.8	13.8	4.9	10.1	14.5	12.6
Repetitive work	7.6	8.1	5.3	8.5	2.1	12.7	5.9	7.2
Total	*20.4*	*18.8*	*27.1*	*22.3*	*7.0*	*22.8*	*20.4*	*19.8*
Low quality								
Emotionally demanding work	3.9	3.7	4.5	4.1	2.6	1.3	5.1	3.9
Passive work	5.6	5.0	8.8	6.1	3.4	12.4	8.9	2.5
High-strain work	0.8	0.6	1.9	0.9	0.3	0	0.5	1.2
Total	*10.3*	*9.3*	*15.2*	*11.1*	*6.3*	*13.7*	*14.5*	*7.6*

1 Origin: Native: interviewee and both of his/her parents born in country of residence; Non-native: interviewee, one or both of parents or all born in country other than country of residence.

2 Skill level: Low-skilled = no education, primary education and lower secondary education; Mid-skilled = upper secondary education and post-secondary including pre-vocational or vocational education but not tertiary; High-skilled = tertiary education – first level and tertiary education – advanced level.

Source working paper (Szekér et al., forthcoming)

7 Health and care jobs

The Europe 2020 strategy, with the Agenda for new skills and jobs (COM 2020 final, 2010) and the subsequent Employment package for a job-rich recovery (COM 173 final, 2012) have turned attention to the health and care sector. The health and care sector is one of the largest sectors in the European economy, accounting for 8.3% of all jobs in the EU-27, and it has continued to grow throughout the crisis. However, this sector is also confronted with employment-related challenges that need to be addressed, especially in long-term care services (Eurofound, 2013c). This sector is defined as one of the sectors with a large employment potential in the EU. A focus on this sector, with attention on both creating new jobs and filling the vacancies, and improving job quality, can be a valuable strategy to achieve the objective of job-rich recovery from the crisis (COM 173 final, 2012).

7.1 What are health and care jobs?

Defining the health and care sector intuitively seems a simple and straightforward task. Never- theless, researchers use different definitions of the health and care sector. Dijkgraaf et al. (2009) focus their definition on the direct health and care jobs, situated in health and social services. This comprises veterinary activities and human health and care activities, such as human health activities (hospitals, medical or dental practitioners and other activities), residential care activities (nursing activities, care activities for the mentally retarded, mental health and substance abuse, care for the elderly and disabled, and other activities) and social work activities without accommodation (for the elderly and disabled, child day-care and other activities).

In the working document of the European Commission (SWD 93 final, 2012) another definition of the health and care sector is adopted. On the one hand, the health sector is more strictly defined in terms of direct health and

care jobs (excluding veterinary activities and social work activities). On the other hand, they indicate that there is a large group of people who work indirectly for the health care sector (for example: medical device industries, occupational health practitioners, ...) (Alchimed, 2010 in SWD 93, 2012). To be able to obtain a comprehensive and qualified view of the health and care sector, those indirectly employed should also be included. Other classifications of the sector and jobs are therefore useful to broaden our definition.

The European Job Mobility Bulletin (EJMB, May 2013) refers to job vacancies in the health and care sector as white jobs. The top vacancies in white jobs consist of jobs for health professionals, nursing and midwifery professionals, modern health-associated professionals, nursing and midwifery associated professionals and personal care and related workers. This listing of key occupations within the health and care sector served as a guidance to identify health and care jobs in the ISCO-08 classification, for jobs directly and indirectly related with the health and care sector. Starting from this methodology and using a combination of the occupational classification of ISCO-08 and the sectoral classification of NACE Rev.2, the health and care sector is delimited in the working paper on job types in Europe (Szekér et al., forthcoming), creating an indicator for the health and care sector.

7.2 Employment growth of health and care jobs

With 17.6 million workers in 2012, the health and care sector is one of the largest sectors in the European economy. This sector accounted for about 8.3% of all jobs in the EU-27. Between 2000 and 2010 about 4 million new jobs were created in health and care. Even throughout the crisis, when Europe suffered 5 million job losses, this sector kept growing with about 1.3 million new jobs (Eurostat Labour Force Statistics for NACE Rev. 2 sectors 86 and 87). It is expected that about 1 million new jobs will be created between 2010 and 2020. An additional 7 million jobs will become vacant due

to the replacement needs within this sector, since the health and care workforce is relatively old and aging. Between 2000 and 2009, the number of employees above 50 years of age increased from 20% to 28%. Besides this, the inflow of young, newly graduated employees is too low to fully replace retiring employees (CEDEFOP, 2010; European Commission, 2010, SWD 93 final, 2012).

For a long time this sector has been confronted with the problem of unfilled vacancies and shortages of suitable, skilled workers (EJMB, May 2013). Already in several European countries, employers are recruiting personnel from abroad, creating a large group of migrant workers in this sector. This problem will certainly not diminish with the creation of additional jobs in health and care. Workers in the health and care sector are often medium or highly educated (Eurofound, 2013c; European Commission, 2010). This is also reflected in the employment prospects up to 2020. Most of the jobs will need highly educated (more than 5 million) workers, and another 3 million jobs will be created for medium-skilled workers. Only 200,000 jobs will become vacant for low-skilled workers, however (SWD 93 final, 2012).

An additional note on these employment figures refers to the large group of workers indirectly employed in health and care jobs. Since these workers are usually left out of statistics, the figures above may be an underestimation of the total employment in the health and care sector (COM 173 final, 2012; Eurofound, 2013c). Despite the large employment potential of this sector, it also faces important challenges that need to be addressed to be able to exploit its potential.

7.3 Job quality and job types in the health and care sector

7.3.1 Trends

Before focusing on the job quality and job characteristics of the health and care workforce, some important trends and changes within this sector deserve particular attention: increasing privatisation and outsourcing, a shift from institutional to domiciliary care, and skill-based segmentation.

During recent years privatisation has become prevalent owing to a decrease in direct public service provision. The crisis and pressures from public austerity programmes on public spending have accelerated this trend.
Governments and public services have installed new models of purchasing care services through public procurement and outsourcing, with private and non-profit organisations covering an increasing share of employment.
Besides this, the crisis has increased pressures on costs of services and hence on wages and contracts.
Privatisation and outsourcing often complicate employment relations, with triangular and quadrangular relationships. For example, a domestic care worker can be employed by a private care provider, which is paid by the government to provide this care, and actually work at the home of individual clients. In this complex relationship it becomes more difficult for the worker to determine who their actual client and employer is.

A second trend is the shift from institutional care (in hospitals, medical centres etc.) to domiciliary care (where care is delivered to an individual at his or her home), which implies a personalisation of
the care. This care is offered by a wide range of providers: public, private, and non-profit providers as well as self-employed. The labour force experiences a shift from (high-)skilled workers to a growing unskilled workforce, as well as the creation of new types of jobs, which are often less regulated and protected than the traditional health and care jobs in public services.

The third and related trend is the increasing segmentation of the health and care workforce based on skills. A growing skills gap exists between workers providing personal care and those performing household tasks. On the one hand, there is the growing differentiation between types of and professionalism in specific (medical) activities, with strict regulations and usually requiring a high- skilled workforce. On the other hand, household tasks, support with personal hygiene, cleaning etc., are more often provided by lower-skilled workers. This enhances a skill-based and often ethnic segmen-

tation of the health care workforce, as migrant workers in this sector usually are either low- skilled or do not have the required certifications for the medical care tasks. But the boundaries between personal care and household tasks are under constant negotiation and may be blurred in practice. Tasks done by workers of both groups overlap, and patients' needs evolve over time, requiring a changing combination of personal care and household services. In addition, relational, social and emotional support for clients is not a part of the tasks of either of these two groups, leaving it to the implicit task agenda (Holtgrewe, Sardadvar, & Wagner, 2012; Holtgrewe & Sardadvar, 2012a).

7.3.2 Impact on job quality

The three trends discussed above clearly have a large impact on the sector and the working conditions of its employees.

Firstly, these trends lead to an erosion of public employment, which is/was a favourable model, offering high employment security and protection, good wages etc. The increasing privatisation and associated competition in the market have put huge pressures on the employment conditions, leading to lower wages, more precarious contracts, such as temporary, part-time, zero-hour contracts and very small contracts, working in split shifts etc. This has an impact on both income security and job security and makes the situation of health and care workers more and more precarious (Eurofound, 2013c; European Commission, 2010; Holtgrewe & Sardadvar, 2012a; SWD 93 final, 2012).

The unskilled workforce is increasing, associated with the skill-based segmentation of the care services. Along with this, there is also an increase in the number of migrant workers, who are more prepared to do semi-legal or undeclared work, with lower wages and little employment protection. Consequently, formal and informal labour coexists (Holtgrewe & Sardadvar, 2012a). This also puts the skilled workforce under pressure, as they are comparatively more expensive.

Furthermore, the gender pay gap in the health and care sectors is much larger than on average. The few men working in this female-dominated sector are more often than women in higher hierarchical functions with higher wages (SWD 93 final, 2012).

Secondly the growing number of small private/non-profit companies entering the health and care sector, as well as the shift to domiciliary care weakens employee representation and the collective bargaining power of the employees, since they are more spread out in small companies with often little or no representation. Voice and collective action become more difficult, owing to the triangular employment relationships (Holtgrewe & Sardadvar, 2012a).

Thirdly, care workers are confronted with (increasingly) demanding working conditions. They have shift, night and weekend work, and anti-social hours, as well as unforeseen changes in the work schedule and split shifts. Long and extra working hours are common in this sector. These unusual working times create work-life balance problems, especially for women combining a care job with family responsibilities (Eurofound, 2013c; European Commission, 2010; Holtgrewe & Sardadvar, 2012a; SWD 93 final, 2012).
Care tasks are increasingly standardised and time is strictly allocated to each of the different tasks, increasing the workload and limiting the time for unexpected tasks, such as providing emotional and relational support. The segmentation and blurred boundaries between personal care and household support workers create unclear priorities in the work agenda (Eurofound, 2013c; Euro- pean Commission, 2010; Holtgrewe & Sardadvar, 2012a).

The relationship with the client is a very important aspect of the work, with considerable potential for personal meaning and rewards for care workers. Many of them see care as a vocation. However, the intensified workload, standardisation and time pressure threaten this relationship and consequently the intrinsic job motivation and job satisfaction of care workers

(Eurofound, 2013c; European Commission, 2010; Holtgrewe & Sardadvar, 2012a; SWD 93 final, 2012).
Migrant workers are often confronted with rejection by clients. The private sphere of domiciliary care puts these workers in a very vulnerable position when working alone at a client's home. The migrant workers are also more prone to bullying, harassment and racism, which puts a large burden on them (Eurofound, 2013c; Holtgrewe & Sardadvar, 2012a).

A fifth aspect related with job quality is the nature of care work. This is usually hard physical work, lifting people, carrying heavy loads, working in unhealthy positions, being in contact with sometimes dangerous diseases or infections (such as hospital bacteria). This entails serious health and safety risks (such as backaches, musculoskeletal injuries) (Holtgrewe & Sardadvar, 2012a; SWD 93 final, 2012).
In addition, the emotional demands are high, since these workers are frequently confronted with illness and death. Furthermore, domiciliary care workers usually work alone at the client's home, with limited opportunities for social contact and support from colleagues and management. Consequently, care workers are at high risk of emotional exhaustion and burn-out (Eurofound, 2013c; Holtgrewe & Sardadvar, 2012a).

Taking the data of the EWCS 2010, the job quality and job types of workers in the health and care sector can be analysed from another viewpoint (Table 7.1). First of all, we observe that all job types are more represented than on average, except for passive work, which is much less represented (10.3%) than on average (19.7%). More than half of the health and care jobs are high-quality jobs (59%), and about a quarter are active jobs (26,3%) Next, supporting work is the second most prevalent job type. This is already a positive indication of the job quality of health and care jobs. However, 19% of the jobs are low-quality jobs. Our top two job types can logically be legitimated by the nature of a large part of jobs within the health and care sec-

tor. These job types give a more balanced and positive image of the job quality of jobs in health and care, which can counterbalance in some ways the focus of the literature on job characteristics that have a negative impact on job quality.

Table 7.1 **Job types in the health and care sector by gender, origin and skill level**

	Total	Gender		Origin[1]		Skill level[2]		
	% of total employed in health and care	Men	Women	Native	Non-native	Low-skilled	Mid-skilled	High-skilled
High quality								
Active work	26.3	28.3	26.0	26.9	23.1	28.0	25.5	26.5
Saturated work	10.3	16.6	8.9	10.1	14.9	6.1	8.0	15.5
Supporting work	21.6	20.0	21.8	21.7	19.4	25.0	21.7	19.2
Total	*58.2*	*64.9*	*56.7*	*58.7*	*57.4*	*59.1*	*55.2*	*61.2*
Moderate quality								
Low strain part-time work	14.0	9.4	15.6	14.8	17.3	14.9	16.1	12.3
Repetitive work	8.2	8.2	8.2	8.5	5.9	9.3	7.9	7.6
Total	*22.2*	*17.6*	*23.8*	*23.3*	*23.2*	*24.2*	*24.0*	*19.9*
Low quality								
Emotionally demanding work	5.8	7.1	5.4	5.7	6.3	1.9	5.5	8.4
Passive work	10.3	8.0	10.9	10.1	10.9	11.8	12.6	7.2
High-strain work	3.1	2.5	3.3	3.2	2.2	3.1	2.8	3.4
Total	*19.2*	*17.6*	*19.6*	*19.0*	*19.4*	*16.8*	*20.9*	*19*

1 Origin: Native: interviewee and both of his/her parents born in country of residence; Non-native: interviewee, one or both of parents or all born in country other than country of residence.

2 Skill level: Low-skilled = no education, primary education and lower secondary education; Mid-skilled = upper secondary education and post-secondary including pre-vocational or vocational education but not tertiary; High-skilled = tertiary education – first level and tertiary education – advanced level.

Source working paper (Szekér et al., forthcoming)

7.4 Under the microscope

The health and care sector has a very atypical workforce, with a large number of women (78% of the labour force) and the largest group of workers being high-skilled or medium-skilled (Eurofound, 2013c; SWD 93 final, 2012; SWD 95 final, 2012). It is therefore useful to have a closer look at the distribution of the job types for different groups of the workforce (Table 7.1).

First of all, men and women can be compared. Men have clearly more often high-quality jobs (65% compared to only 57% women), and especially saturated work (17%), which is a job type with a low percentage of women (8.9%). Women on the other hand are, as in many sectors, more represented in low-strain part-time work (15.6%) than men (9.4%). Men are more often than women confronted with emotionally demanding work. This job type is also generally more prevalent in the health and care sector, compared with the whole economy.

Looking at the distribution of job types for native and non-native workers is relevant, because this sector attracts large numbers of migrant workers. In general, there seem to be only very small differences between these two groups. Looking in more detail, some differences can be noted: non- native workers are more often in saturated work, low-strain part-time work and emotionally demanding work. Native workers on the other hand are more often employed in repetitive work.

As regards skill levels, high-skilled workers are more often (61%) in high-quality jobs, followed by low-skilled workers (59%) and mid-skilled workers (55%). However, there are differences between the types of high-quality jobs. High-skilled workers are more prevalent in saturated work than other workers, while low-skilled workers are more represented in both active work and supporting work. Low-strain part-time work is most prevalent for mid-skilled workers, while the low-skilled workers are found more in repetitive work. Low-quality work accounts for 21% of the mid-skilled workers, 19% of

the high-skilled and 17% of the low-skilled workers. For high-skilled workers, emotionally demanding work is the bogeyman, with 8.4% of these workers, while only 2% of the low-skilled workers have emotionally demanding work (Table 7.1).

7.5 Good practice examples from Italy

Boxes 7.1 and 7.2 provide two good practice examples for health care organisations in Italy. The first example shows how a municipality increases the professionalism of their low-qualified caregivers by providing training programmes during working hours and allowing employees to attend these courses. The second example discusses a training programme that focused on reducing racism and discrimination of migrant workers. Through training and free try-outs at clients, this project offered the elderly people experience and opportunities to overcome their prejudices. The first results from this training are positive, with a large number of the trainees starting their internships and positive reaction from the elderly people towards migrant workers.

Box 7.1: Example 1 – Providing training for low-qualified care-givers: the case of a municipal elderly home care service in Italy

Situation

Personal assistants (unqualified generic caregivers) working in Italian elderly home care services do not need to have any formal qualification. A municipality in the North Western part of Italy, which runs the service of elderly home care, organises training courses for personal assistants. The aim is to improve their competencies and skills. Such courses represent a national formal qualification of competencies that foreign personal assistants (the majority of personal assistants) may have acquired abroad. Moreover, these courses are a first step on the ladder towards qualifying as Social Care Operator (trained caregivers) if workers continue along this career.

With this programme the local council has been able to train hundreds of personal assistants.

Prerequisites

An important role in the success of the training courses has been played by the users of the municipal elderly home care service and their relatives who have allowed 'their' personal assistants to attend these courses during their working time.

Limitations

The training provided by the council has enhanced the professionalism of personal assistants but at the same time led to pressure from the bottom on the occupational profile of social care operators (trained caregivers) for whom further training courses, once they reach the qualification of social care operator, are not provided.

Taken from Bizzotto, Villosio, & Revelli (n.d.) in Holtgrewe et al. (2012).

Box 7.2: Example 2 – Reducing racism and discrimination against migrants through a 'try-out' stage: an ESF training project in Italy's care sector

Situation

COOPCARE (case-study pseudonym) is a private elderly home care service provided in the North-East of Italy by a consortium of co-operatives (not-for-profit firms). This private service was set up to offer integrated private home care services to households with dependent elderly relatives outside of the public home care service.

In 2011, one of the co-operatives involved in the service and specialising in training launched a training project for caregivers to be financed by the European Social Fund. The project includes around 100 hours of classes, a few hours of counselling and tutoring and a final stage of 64 hours at elderly people's homes.

This final stage has two aims: on the one hand, it provides a way of acquiring job experience for caregivers. On the other hand older people can receive care at no cost but cannot choose their personal assistant. In this way, the project also represents an opportunity for elderly people to appreciate the value of a person that otherwise would face many difficulties in being accepted because of his or her ethnicity. The project represents an important step in making clients overcome prejudices about migrants and minority workers. In most cases, once the care is provided by a migrant, the attitudes of the care users become more positive over time, older people feeling more comfortable with their migrant carers when they get to know them.

A first round of training courses has just finished: 24 personal assistants, 90 per cent of them foreigners, have been trained and half of them have started their traineeships. Feedback from the people receiving care has been particularly positive.

According to the project manager interviewed 'Once the process starts, the positive experiences will start growing and people embrace a culture of integration'.

Prerequisites

Personal assistants do not need to have any formal qualification to be employed. The co-operatives involved in this private home care service, however, are concerned about the importance of training for caregivers, especially on safety and hygiene issues.

Taken from Villosio & Revelli (n.d.) in Holtgrewe et al. (2012).

7.6 Conclusions

The health and care sector is a broad sector focusing on providing health, care and personal services. This female-dominated and high-skilled sector is confronted with several threats and challenges for the job quality of the workers. What is observed is that a number of new and fundamental developments in care provision have led to increased vulnerabilities at work. Especially work intensification, understaffing and standardisation may induce home care workers to self-exploitation when their concern for their patients wins over the standards they have to adhere to. Hence there is a growing risk that in the ambiguous relationship with the patient, the 'resource' and satisfaction that the care work intrinsically may provide the worker with is increasingly under pressure and at risk of shifting to increasing vulnerability and self-exploitation. However, the job types also show that a large percentage of the employees are in high-quality jobs. Health and care work is much more often emotionally demanding work, which can be linked with the emotional demands inherent in these care jobs. Employment figures show the large employment potential, but the large numbers of unfilled vacancies and the lack of skilled employees can threaten

employment growth in health and care. Governments, trade unions and employers should devote the necessary attention to this to ensure that the employment potential is fully utilised. This labour market situation makes the concern for decent job quality all the more pertinent. Not only should jobs be good enough to attract new workers in order to face the huge increasing demand for quality care services, the efforts should also result in more 'sustainable' jobs, that is: jobs where workers are able and willing to stay until the retirement age. The job quality of care workers is directly related with public procurement regulations and the regulation of the 'care market'. When care activities are no longer provided by public authorities but bought on the private market, particular attention should be paid to the quality of the service. This obviously implies that enough time and resources are provided to care workers, as well as support by colleagues and superiors and training, to meet the increased demands of more complex, varied and changing domiciliary care tasks.

8 Workers' strategies

The previous parts of this report focused on the job quality of the European labour market in general and on three sectors that are at the core of the European Employment Package, more specifically the green economy, health and care and the ICT industry. The overall job quality of each sector has been analysed and discussed, and obstacles to high quality work have been identified. In this part, attention will be paid to how trade unions and workers' organisations can contribute to higher job quality. First, general workers' strategies are discussed. Then specific suggestions are made for each of the sectors.

8.1 General workers' strategies for enhancing job quality

Trade unions and workers' organisations have to play a key role in promoting and improving job quality. They have a longstanding tradition, adequate structures and well-developed practices to defend the interests of workers and their families. These provide a necessary foundation to develop effective strategies and actions on new issues, such as job quality. To be effective, a change of focus might be needed. Traditionally, trade unions in particular have been mainly concerned with coping with the consequences of economic changes and restructuring. The focus has been on securing existing benefits and employment conditions, wages and the current employment levels. Attention to other dimensions of working life such as job quality and participation in innovation and corporate change has too often been left out of proactive strategies.

In our rapidly changing world, workers' organisations need to shift perspective more than ever. Developing strategies to promote decent work is not obvious in an era when mass unemployment, especially of young people, and in-work poverty affecting the quality of life of many EU citizens, call for pertinent action. The Great Recession has also put additional pressures on com-

panies to innovate in order to preserve and increase their competitiveness. However, here too, attention seems to narrow down more than ever to wage costs and flexibility as the first concerns and objectives. Finally, the crisis puts pressure on public finances. The foundations of the welfare state are questioned, and public opinion and policy orientations tend to shift from solidarity and compassion to individual responsibilities. Austerity programmes rule the policies as far as public service provision is concerned. Demanding priority for decent work for all is not obvious against such an economic and political background. The temptation is to be contented with more jobs rather than with more and better jobs. Nevertheless, workers' organisations should be convinced that promoting good job quality is an essential strategy and a cornerstone to face the current societal challenges such as climate change, the ageing population and the need for high-quality care for all and the need for a skilled workforce in a knowledge-based society.

Innovation and constant change are speeding up for all sectors and industries, hence for all workers, and they play a key role in all three sectors that are targeted by the European Employment Package. The green sector is in constant evolution with new technologies being developed for greener and greening production. Resource-efficiency needs to be a concern of everyone, and no- one can afford to neglect the huge challenge that climate change poses. For companies this means that concern for the environment needs to be structurally embedded in all product and process innovations. The ICT sector can also be characterised by its volatile and rapidly changing nature, following the developments in ICT-based processes and products and irreversible globalisation. The health and care sector is confronted with a range of fundamental societal changes which will have a profound impact on the job quality of care workers. The ageing population urgently demands increasing levels of high-quality care. Finally, it seems that all three sectors will be confronted with increasing labour and skill shortages caused by these emerging changes. The problem of a large number of unfilled vacancies is

considerably intensified by the need to replace an older and often insufficiently skilled workforce.

The combination of fundamental and urgent societal challenges on the one hand and labour and skill shortages on the other, should provide sufficiently solid arguments to place job quality high on the agenda of policymakers at all levels, as well as companies and stakeholders including the labour movement. Only when jobs are of good quality will organisations be able to attract and retain the (skilled) workforce required to meet demands, produce innovative products and deliver high-quality services. In this respect, job quality plays a key role in achieving synergies between societal change and labour market challenges. This synergy is currently sought by the European policy makers in the Employment Package, but it should also be the key strategy for stakeholders including workers' organisations at all levels, among them the workplace level.

At the EU policy level the synergy between economic and societal needs is not quite fully achieved. At least, such a synergy would require job quality to be fully integrated into the monitoring of the EU Member States' economic and social reforms to reach the Europe 2020 targets, as is provided for in the framework of the European Semester, the EU's economic policy-making cycle. Perhaps there may be grounds for prudent optimism in this respect: in 2014 the Joint Employment report as an annexe of the Annual Growth Survey contains a social scoreboard for the first time. It should identify major employment and social problems in the framework of the European Semester. This should allow for a better analysis and a swifter identification of major problems. No sanction is foreseen, however, for countries that breach the indicators. The Social Protection Committee and the Employment Committee have meanwhile updated and strengthened their monitoring instruments. New indicators and data are used to observe social inclusion. These developments are organised within a governing framework that since 2012 has included among others a social investment package and youth guarantee plan. In a report, the European Parliament Committee on

Employment and Social Affairs makes a plea for additional employment-related indicators. The Committee regrets that the employment and social indicators proposed by the Commission are insufficient to cover the Member States' employment and social situations comprehensively. It calls for the scoreboard to include additional indicators in order to allow a proper assessment of the social situation in the Member States, in particular child poverty levels, access to healthcare, homelessness, and a decent work index.
On the level of organisations and companies, workers' organisations should engage in change processes in dialogue with management. Innovation and change can be defined as opportunities, rather than threats, for both job creation (which is very much needed to recover from the crisis) and for a common interest and shared goal with the employers. Also workers (and their organisations) benefit from a more competitive and innovative firm.

8.2 Workers' strategies in the green sector

As discussed, the greening of the industry is a prevalent trend across a wide range of sectors. With the climate targets in mind, it is also clear that companies cannot ignore the challenge of climate change, and every company will have to engage in the transition towards a greener and low-carbon economy and society (ACV VRC, 2013; Ramioul & Roskams, 2011).
Trade unions and workers' movements should play an active role in such transition processes, above all by fully participating in the change process, and involving all the workers in it. Such an active participation starts from three basic perspectives. First of all, trade unions should be prepared to broaden the traditional diagnoses of what goes wrong in the company and not limit themselves to an analysis that considers solely wage costs, productivity and lack of skills. A broader view of the company's performance includes looking at quality issues, developing awareness of the use (and waste) of materials and energy, and monitoring unsafe working environments and risks for workers.

Secondly, employers should be encouraged to actively include workers in the innovation of products and processes. Employees are key experts as far as work is concerned, hence they also know well how to innovate, improve job quality and reduce waste. It is therefore relevant to involve them in the change process of their jobs. Hence workers and workers' organisations can become partners of the employers in their search for strategic answers. From this perspective, it is important that trade unions participate in innovation processes and are not hindered by collective bargaining on working conditions. Conversely, unions should participate in diagnosing, analysing and seeking solutions for problems as well as implementing changes. Trade union representatives have an important role in motivating colleagues and raising awareness of what is happening in the company (ACV VRC, 2013; Ramioul & Roskams, 2011). In short, trade unions should reconsider an overly defensive strategy and adopt a co-operative strategy, willing to participate fully in innovation and change, such as induced by the challenge of a greener economy.

Their usual practices and strategies are obviously an essential foundation but are also inspirational in fostering the greening of their company. A number of straightforward actions can be identified:

- Appointing a 'green' employee representative can enhance employee participation in the transition to an energy-efficient company;
- Giving green responsibilities to employees, such as monitoring the greening/green requirements;
- Including energy efficiency targets in collective agreements can help to show the commitment of the employees to the mutual goal of a greener company that is able to meet its targets. In this way the greening efforts are not unilaterally imposed by the employer, but employees have additional incentives to engage in this process as well;
- Environmental training at the workplace can be planned and developed by both the employer and trade unions. This training creates more awareness of environmental issues within the organisation and can make sure that

employees acquire and develop the necessary skills to cope with the transition process and be able to perform within the changing and greening work situation;
– Finally, trade unions can support energy audits and awareness initiatives to create broad support basis for the greening among the workers.

These types of interventions can contribute to a more innovative social dialogue at the workplace, strengthening trade union and worker participation. This may contribute to decent employment conditions and better quality work as a part of and within the bigger picture of the transition process of the company towards greener production (ACV VRC, 2013; Holtgrewe & Sardadvar, 2012a; Ramioul & Roskams, 2011).

8.3 Workers' strategies in the ICT sector

Studies on job quality in the ICT sector and related studies are relatively scarce. Although most jobs in the ICT sector can be considered of good quality, some specific risks can be identified: stress, difficult work-life balance, the constant need to adapt skills and qualifications to changes, the sometimes underdeveloped representation and social dialogue in this sector. Some studies on the ICT sector include inspirational suggestions for workers' strategies. These propose that trade unions should devote more attention to the changing employment relationships in the ICT sector, which are becoming much more flexible. Trade unions can play a role in creating new ways of protecting workers within these specific employment relationships (Digital Agenda: ICT for jobs, n.d., 'The Grand Coalition for digital job creation: Closing the gap by 2020', 2013). Rubery and Grimshaw (2001) list three main topics in which trade unions can invest to enhance job quality for ICT workers. First of all, trade unions should provide workers with support to help them develop and ensure their employability and to gain transferable skills that make them quickly and easy employable

in the event of restructuring. Second, trade unions should create a basis for negotiations for all ICT workers in order to ensure that they are represented in formal social dialogue structures that can defend their collective interests against an increasing individualisation of the employment relationship. This permits mutual assurances to be created for both employer and employee to protect them against the economic insecurity which is characteristic of the industry. Third, they should invest in the job quality of all workers, and devote particular attention to job mobility, career planning and work-life balance.

Other scholars suggest that trade unions should invest in training and matching young entrants in the sector and older workers who are making career changes. This can be achieved through close co-operation with educational institutions. Students and employees/the unemployed, and especially women, should be encouraged to choose the ICT sector. Also, job mobility should be facilitated, for example by creating a European Certification System (McMullin & Marshall, 2010). A key issue is that training efforts are supported and are not left to the individual responsibility of the worker. McMullin and Marshall (2010) also formulate additional targets. Workers' organisations can play a role in encouraging employers to actively engage in strategies to tackle the high levels of stress and work-related pressure. This can be done by creating a pleasant work atmosphere, encouraging workers to take time off, providing flexible working time options etc. In addition, they should also make employers attentive to the changing needs and capacities of their employees throughout their life. Together with the employer, solutions to enable workers to remain productive over a longer period and tackle life-work issues should be developed. Strategies to combine work and life better are essential for the many young people working in this sector. This includes flexible working time arrangements geared to the (changing) needs of the workforce and providing accompanying policies such as sufficient high-quality childcare facilities.

An active policy to reduce all these specific risks and to secure job quality is needed in order to attract sufficient workers and to fill the rising number of ICT vacancies. This is a prerequisite if Europe wants to achieve the objective of the Employment Package to make the ICT sector a key engine for job growth and competitiveness.

8.4 Workers' strategies in the health and care sector

Owing to privatisation and liberalisation, public service provision is increasingly left to the market. While this may be necessary in order to meet the increasing societal need of care, it also implies that a different rationale takes over and that profit rather than the quality of the service may become the main motive in organising care. In order to prevent privatisation and the shrinking public budgets affecting the quality of the service, pro-active and explicit government regulations are required. These should also include clear criteria about job quality: a high quality of care presupposes a decent job quality and working environment for all caregivers, whether employed on a labour contract or working voluntarily.

The number of fundamental changes in the organisation and regulation of care have a profound impact on job content, working conditions and employment relations, the three core dimensions of job quality. Given the intrinsic vulnerabilities of care workers, working in close contact with patients, often in the private sphere of their homes, awareness of such (old and) new risks is crucial. Standardisation and work intensification are a major issue and they are highly likely to affect the quality of the service that can be provided by care workers. Enough staff, feasible working time arrangements (avoiding split shifts, for instance) and enough time and flexibility to respond to unexpected care demands or problems are basic. Although working in this sector is a vocation for many of the carers and their main driver for their commitment and motivation, ongoing attention should be devoted to safeguarding the job content and working conditions.

These are essential measures for preventing vocation and motivation turning into self-exploitation.

Improvements in job quality should further be achieved by securing decent wages and making them less unpredictable for workers. Trade unions should devote attention to the regulation of flexibility in terms of working hours and overtime, as well as contracts, tackling the trend of increasing precariousness in this sector and providing more job security for workers.

Another key strategy is to provide the growing number of unskilled staff with sufficient training in order to enable them to perform their work with more quality. This is of benefit to both themselves and their clients/patients. In these skill strategies, future and changing needs of (older) patients should be anticipated. With the growing number of migrant workers and the specificities of domestic care in particular, racism may become an acute problem. Care providers should be aware of it, and they need to find creative solutions to let patients experience the benefits and richness of diversity. Health and safety deserve additional measures, too, especially concerning training employees to work in more ergonomic ways and protect themselves against the risks in their work environment.

A further valuable action would be to create more opportunities for workers to build collectives with co-workers, both volunteers and colleagues. This strengthens social support, which is the most essential solution to respond to emotional demands and provides workers with some kind of safety net (Eurofound, 2013c; Holtgrewe & Sardadvar, 2012a; SWD 93 final, 2012).

Finally, the health and care sector has a substantial need to improve employee representation. Privatisation has created a lot of scattered small firms with limited employee representation, and disturbed the existing system of representation of the public health care providers. Therefore trade unions should invest in the establishment of effective social dialogue structures and practices.

9 Conclusions

The European Employment Package aiming at job-rich growth is essential if Europe wants to tackle the profound impact of the Great Recession and to fight against social exclusion and poverty. The focus of the Employment Package on the potential employment growth in the health sector, personal and household (care) services, the ICT sector and the green economy is highly relevant, too. Two of these industries, the care sector and the green economy, not only have to contribute to job growth, they are also expected to tackle two urgent and far-reaching societal challenges: the aging population with its growing need for quality care services, and climate change. The ICT sector in turn needs to contribute to a strong, innovative and knowledge-based European economy that is sufficiently competitive against irreversible economic globalisation. The focus of the EZA work programme 2011-2013 on the employment potential of these sectors, on the quality of jobs they offer, and on the workers' organisations' role to foster both is therefore well chosen. Indeed, for all three sectors the estimates of job creation are impressive: by 2020 the expectations amount to 3.4 to 4.8 million new jobs in the green economy and 8 million new jobs in care (of which a large majority are related with replacing the ageing workforce), while the ICT industries are estimated to be confronted with 700,000 unfilled vacancies in the very short term (2015). It is also remarkable that in the three sectors, employment continued to grow during the crisis.

But the EU ambitions are not only about more jobs. Since 2000, the Lisbon goals have also promoted 'better' jobs. Against the background of sustained economic insecurity and budgetary austerity, the challenge to improve job quality, and even to preserve its current levels, is all the more pertinent. It is obvious from the insights presented in this report that workers' organisations should firmly resist the temptation to be contented with 'any' job, despite the large numbers of unemployed all over Europe and in particular young people.

With this report we aimed to better equip workers' organisations with arguments why it is crucial to systematically promote and monitor the objective of more and better jobs. We focused on the employment potential of the ICT sector, the care sector and the green economy, and we analysed in detail job quality in these sectors. From our investigations it first appeared that there is reason for sustained concern about the impact of the Great Recession. Until today, no real recovery has been observed after the massive job losses during the crisis. While countries least hit by the crisis still record some relative growth of jobs in better paid segments of the labour market, the countries that were hardest hit by the crisis deserve our special concern. These countries definitely have higher proportions of low-paid jobs. Furthermore, there is a growing polarisation in the employment structures in a large number of EU Member States. This is firstly caused by accelerated job destruction in the middle wage groups, where jobs in the more traditional industries such as manufacturing are typically to be found. These jobs with average wages often offer relatively stable jobs for a (an aging) workforce with low to medium initial skill levels. But the polarisation trend secondly indicates a relative increase in jobs that are very low paid, often because they are only available in part-time employment. These jobs are found inter alia in the lower segments of services, where we see few signs of the so-called knowledge-based economy. An accumulation of negative job characteristics is observed in these labour market segments: low wages, short contracts, temporary employment, poor job content, no autonomy, little support and voice, and few opportunities for workers to be trained or to move up. Obviously, the workers in these jobs are particularly vulnerable, not only because of their low income but also because of the quality of their life, which is deeply affected by their labour market precariousness and bad job quality. These workers should therefore be the first and foremost concern of workers' organisations in their search for action and strategies to improve workers' work and life.

Our more sophisticated analysis of the quality of today's jobs demonstrated that the range of characteristics that make up a job may have diverse effects on and outcomes for workers. The three dimensions of job quality - work organisation (job content, autonomy, working time discretion,...), employment conditions (contracts, wages,...) and social relations (voice and support at work, individually and collectively) – may each offer either opportunities or entail risks or combinations of both. One work feature may compensate for another: some groups face serious stress risks and have long working hours but also good wages. Others have few career possibilities and boring work but manageable working time arrangements and a stable contract. Others have a job where contacts with clients or patients are central. Here, a major risk is linked to the emotional demands put on workers, which can be set off by sufficient social support, which is unfortunately not given to all workers concerned. This multi-dimensional approach to job quality and its outcomes has the potential to design more effective policies to improve work situations because these can be better targeted at combating specific risks and threats and at strengthening advantages and opportunities.
Overall, the analysis of the latest figures of the European Working Conditions Survey (2010) shows that 26% of workers in Europe are in a low-quality job and 21% have a job with moderate job quality. This means that only about half of the working population in Europe today have a job that meets the criteria of what is generally considered a 'good job'. Substantial differences in job quality are found for different groups: gender and in particular ethnicity and educational level are personal characteristics that still highly discriminate worker groups from each other with respect to job quality. Workers with tertiary education tend to face high levels of emotional pressure and stress, while those with only lower secondary education are more often found in jobs with high speed pressure and physical risks.
Obviously, workers in the three sectors of the Employment Package also experience different job quality. We observed that two of the three growing sectors offer more high-quality jobs than within the overall economy. In the

ICT sector almost 70% of the jobs are of high quality and in the health and care jobs sector this is more than half of the jobs (59%). In the latter only 19% of the jobs are of low quality. These good scores for two important sectors sound promising, but should not distract us from the specific risks that workers in these industries face, in particular emotional demands, stress risks and difficulties combining work and family. The green sector shows a less bright picture. Only 43% of the jobs are of high quality, while the average is 53%, and also the group of moderate quality jobs is much larger (26% as compared to 21%). Almost one third of the jobs are of low quality (30%). When looking in detail at recent trends in the three sectors, it is possible to better identify specific vulnerabilities and, hence, suggest strategies for improvement. Of those three sectors, the jobs belonging to the so-called green economy are the most diverse. A large number of green jobs belong to the traditional manufacturing industries (including construction, energy and transport) and these are in a transition towards more resource-efficiency and the reduction of greenhouse gas emissions, which are also prominent EU policy objectives. It is clear that the transition to greener production in these industries does not necessarily affect job quality fundamentally.
Often, a concern expressed here is how to confront fiercer competition with regions in the world where similar environmental requirements are absent or underdeveloped. In these industries, globalisation and relocations are a serious threat. A major question, then, is to what extent the reduction of GHG emissions may be achieved without affecting overall competitiveness and related employment levels. Studies on this issue conclude that investing green taxes in cutting labour costs can be an effective compensating mechanism.
But, in addition, intensified innovation efforts and proactive investments in upskilling in order to enable workers to participate in these innovations are equally important strategies. Passive work and high-strain work, especially for the lower-skilled, are prevalent in the green sectors because of their industrial character. Being high-skilled clearly pays off in terms of job quali-

ty because 70% of the high-skilled workers have high-quality jobs while only 5% of them are in a low-quality job. Therefore attention should be given to the large proportion of low-skilled workers as well as older workers, to prevent skill shortages and polarisation of the employment opportunities towards high- skilled workers. Increased training as such has positive effects on job quality. Worker organisations should continue to promote investment in training, the participation of workers in innovations of products and processes, and in greater resource-efficiency. It is essential to systematically include workers' knowledge at work about how to innovate, how to improve job quality and how to combat waste. Workers should have an active role in innovation, work organisation design and greening, not only as well-trained and motivated individuals, but also collectively.

New companies in the green economy, the so-called eco-industries, face specific challenges. For many of the new firms in these areas of activity their concern for resource-efficiency and climate change may indicate a similar care for the worker's well-being. However, this is not necessarily the case. In these eco-enterprises serious job quality risks are observed, too: precarious or undeclared work, low salaries, temporary contracts, low levels of employee participation and representation. Several of these risks are related with the volatile nature of these small and young companies. There is also a growing concern for new occupational health and safety hazards. Employers should invest in the anticipation and adaptation of these new, transformed and changing risks in green economies by investing in identifying, evaluating and controlling these hazards.

We may conclude that today a green label is not enough to secure good quality jobs. Both goals need to be addressed explicitly, actively and structurally. While the joint EU objectives to create more and better jobs in the green economy and simultaneously reduce GHG emissions are essentially designed at the macro-economic level, similar synergies between greening and better job quality should be aimed for at the workplace level. In order to achieve cleaner production, the concern for resource-efficiency should be

embedded in the company's structures and in its regular practices, just as this is needed for achieving better job quality. In this respect, workers' organisations' strategies for the transition towards low-carbon industries basically have much in common with their more traditional defence of their interests: in both areas the participation of workers and their representatives is crucial to achieving both objectives and creating synergies between them.

Besides the green economy, the Employment Package also pins its hopes on job creation in the ICT sector. This sector is emblematic for the knowledge-based economy that needs to provide a stable basis for Europe's competitiveness in a global economy. Here, job quality risks hardly concern precarious contracts or poor wages. On the contrary, these are mostly at a high level but also need to compensate for other identified risks: stress and low levels of employee representation and voice. The rapidly changing nature of the ICT sector entails major demands on the workers' skills and capacities. Workers in the ICT sector have to be life-long learners, flexible, quickly adaptable and constantly up to date with the latest developments. And since a large part of these employees are workers with temporary contracts or self-employed, the responsibility for this learning lies often with the employee him- or herself. This can lead to stress and serious problems of combining work and life requirements. At the same time, the industry is confronted with a large, and growing, number of unfilled vacancies. An active policy to fill the rising number of ICT vacancies is essential to achieving the objective of the Employment Package to make the ICT sector an engine for job growth and competitiveness. This requires not only that training efforts should be supported and must not be left to the individual responsibility of the worker, it also requires active policies to improve work-life balance, e.g. flexible working time arrangements geared to the needs of the workforce and accompanying policies such as sufficient high-quality childcare facilities. The most recent figures show that these specific job quality risks for this generally higher-skilled workforce do not decrease,

and consequently the challenge for the worker movement remains to reach out to these groups and include them more actively in their actions and strategies.

Finally, the study of job quality in the care sector shed light on the specific situation of the large and growing number of, predominantly female, care workers in Europe. The analysis of their job quality enabled us to better describe 'old' and intrinsic vulnerabilities and to identify new risks. These old vulnerabilities refer to high emotional demands and also to ambiguous relations with patients. This ambiguity finds its origin in the close personal contact and, in the case of home care, in the private sphere where the care service is provided. While the relationship with the patient or client may be a source of true job satisfaction and very high levels of motivation for the care workers, it also puts them in a vulnerable position and makes them prone to bullying, harassment and racism. More importantly, what is observed is that a number of new and fundamental developments in care provision turn these intrinsic ambiguities into increased vulnerabilities at work.

First, decent care provision is under threat because of growing privatisation, a decrease in direct public service provision, and shrinking public budgets. Increasingly, care services are provided by the market through public procurement. Often the price is the only/key criterion used in public procurement. In this labour-intensive sector this ultimately boils down to harder work for less pay and under shorter contracts. Second, there is a growing shift from institutional to home care offered by a wide range of providers: public, private, and non-profit as well as self-employed. Third, an increasing segmentation of the health and care workforce based on skills is observed, with high- skilled workers providing personal care and the lower-skilled carrying out household tasks. This enhances a skill-based and often also ethnic segmentation of the healthcare workforce. Fourth, and related with the growing importance of market-based care provision, care tasks are increasingly standardised, and time is strictly allocated to each of the different

tasks, increasing the workload and limiting the time for emotional and relational support of patients or for unexpected care requests.
All these trends may increase the vulnerable position of the home care worker. Especially work intensification, understaffing and standardisation might induce home care workers to selfexploitation when their concern for their patients wins over the standards they have to adhere to. Hence there is a growing risk that in the ambiguous relationship with the patient, the 'resource' and satisfaction that care intrinsically may give the worker is increasingly under pressure and at risk of turning into growing vulnerability and self-exploitation.
The fact that the health and care sector in Europe is already confronted with a large number of unfilled vacancies, and the expectation that this labour market shortage will increase at a fast rate, makes the concern for decent job quality all the more pertinent. Not only should jobs be good enough to attract new workers in order to face the huge and increasing demand for quality care services, the efforts should also result in more 'sustainable' jobs, that is: jobs where workers are able and willing to stay until their retirement age. The job quality of care workers is directly related with public procurement regulations and the regulation of the 'care market'. Care activities are no longer provided by public authorities alone but are also bought on the private provider market. While this might be necessary and unavoidable to meet the huge and increasing demand for care services, it requires awareness and active interventions to secure the quality of the service. It is therefore essential to enshrine market provision of care in sufficient and comprehensive government regulations to secure access and high-quality care for every citizen in need. Decent job quality should be a key element in these regulations and should be guaranteed not only for the paid caregivers but also for the large number of voluntary workers in the sector. This obviously implies that sufficient time and resources are given to care workers, as well as support by colleagues and superiors and sufficient training to meet the increased demands of more complex, varied and changing care tasks.

We may conclude by turning again to the EU level, where the goals and ambitions are ultimately designed. If Europe really wants to become an inclusive society, the concern for job quality should be intrinsically connected with economic, employment and labour market issues and remain equally high on the policy agenda at all levels. The major challenge is to achieve true synergies between societal demands and economic and labour market developments. Job quality is a cornerstone in this ambitious goal.

Appendices

Table a1 **Employment growth (1,000) across time and average annual growth1 (1,000) by country between 2000 and 2007 and 2008 and 20122**

	Employment growth		Average annual growth			Employment growth		Average annual growth	
Country	2000-2007	2008-2012	2000-2007	2008-2012	Country	2000-2007	2008-2012	2000-2007	2008-2012
EU	58,129.4	-6,023.7	7,266.2	-1,204.7	LT	124.1	-238.7	15.5	-47.7
BE	255.1	67.3	31.9	13.5	LU	22.7	33.4	2.8	6.7
BG	374.6	-381.9	46.8	-76.4	HU	115.5	10.6	14.4	2.1
CZ	238.6	-104.2	29.8	-20.8	MT	13.1	10.0	1.6	2.0
DK	62.7	-206.6	7.8	-41.3	NL	538.6	-222.6	67.3	-44.5
DE	1,420.5	1,196.2	177.6	239.2	AT	315.2	107.8	39.4	21.6
EE	77.9	-28.2	9.7	-5.6	PL	851.1	-281.6	106.4	-56.3
IE	435.4	-274.1	54.4	-54.8	PT	131.2	-509.8	16.4	-101.9
EL	419.5	-820.2	52.4	-164.0	RO	-922.5	-29.4	-115.3	-5.9
ES	4,878.3	-3,030.4	609.8	-606.1	SI	84.1	-8,807.0	10.5	-17.7
FR	2,396.2	-197.5	299.5	-39.5	SK	272.2	-130.2	34.0	-26.0
IT	2,226.3	-593.3	278.3	-118.7	FI	108.6	-59.5	13.6	-11.9
CY	81.9	807	10.2	1.7	SE	402.9	6.9	50.4	1.4
LV	156.9	-200.3	19.6	-40.1	UK	1,673.3	-67.1	209.2	-13.4

1 Average annual growth = absolute growth in period of time/number of years within that period of time.

2 2008 = Q3 2008; 2012 = Q3 2012

Source Eurostat (EU-LFS)

Table a2 Shifts in employment structure between 1995 and 2011

Country	1995-2006	2008-2010	2011-2012*
Poland	unknown	hybrid upgrading	upgrading
Germany	hybrid upgrading	upgrading	upgrading
Malta	unknown	unknown	upgrading
Austria	hybrid upgrading	hybrid upgrading	upgrading
Belgium	hybrid upgrading	hybrid upgrading	polarisation
Sweden	growth in middle	upgrading	upgrading
Slovakia	polarisation	upgrading	downgrading
Romania	unknown	growth in middle	downgrading
Netherlands	polarisation	growth in middle	downgrading
Luxembourg	upgrading	upgrading	polarisation
Czech Republic	growth in middle	downgrading	polarisation
France	polarisation	polarisation	upgrading
Finland	upgrading	hybrid upgrading	polarisation
Bulgaria	unknown	polarisation	downgrading
Cyprus	polarisation	polarisation	polarisation
United Kingdom	hybrid upgrading	polarisation	polarisation
Denmark	upgrading	downgrading	upgrading
Hungary	polarisation	downgrading	downgrading
Slovenia	hybrid upgrading	polarisation	downgrading
Italy	growth in middle	downgrading	downgrading
Lithuania	growth in middle	downgrading	upgrading
Estonia	growth in middle	unknown	downgrading
Portugal	upgrading	polarisation	polarisation
Spain	growth in middle	polarisation	polarisation
Ireland	upgrading	polarisation	polarisation
Latvia	growth in middle	polarisation	downgrading
Greece	growth in middle	polarisation	polarisation

Data for 2011-2012 are used from Q2 2011 and Q2 2012.

Source European Jobs Project Database (Eurofound, 2008) and European Jobs Monitor (Eurofound, 2011, 2013a)

Table a3 Final selection of job quality indicators

Indicator	Description
Work organisation	
Task autonomy	Extent to which employee has control over method and timing of tasks
Planning autonomy	Extent to which employee has control over planning of working time arrangements, important decisions for work, ...
Autonomous team work	Extent to which a team works autonomously and has control over methods of work, division of tasks etc.
Task complexity	Extent to which the job involves unforeseen problems, complex tasks and learning new things
Repetitive tasks	Extent to which the job involves short repetitive tasks
Speed pressure	Extent to which employee has to work under speed pressure, tight deadlines, ...
Emotional pressure	Extent to which employee has to deal with people (not colleagues) during work and is confronted with emotional pressure, stress, ...
Risks	Risks related with execution of work (bio-chemical, ergonomic and ambient risks)
Fixed workplace	Extent to which workplace (location) is fixed (rather than varying during the month)
Employment conditions	
Wage	Level of net monthly earnings from main paid job (quintiles)
Permanent contract	Do you have a permanent contract?
Full time work	Do you work full-time?
Atypical working time arrangements	Extent to which employee works atypical working hours (evening, night, Saturday, Sunday, more than 10 hours a day)
Variable working time arrangements	Extent to which number of working hours varies across days, variable starting and finishing times, on call, shifts, changes in schedule
Career opportunities	Extent to which job offers good prospects of career advancement
Training	Extent to which employee has followed training related to job
Social relations	
Voice	Extent of employee representation, participation of employees, ...
Say	Extent to which employee has say in changes relating to his/her own work (targets, choice of working partners, ...)
Social support	Extent of social support from colleagues and management
Supportive management	Extent of work-related support offered by management

Source working paper (Szekér et al., forthcoming)

Table a4 Profiles of job types

Cluster	M	1	2	3	4	5	6	7	8
Cluster size		24.6%	9.5%	19%	13.4%	7.3%	3.4%	19.7%	2.9%
Work Organisation									
Task autonomy	0.636	1.000	1.000	0.353	0.563	0.596	0.671	0.390	0.370
Planning autonomy	0.377	0.457	0.557	0.331	0.332	0.397	0.501	0.240	0.232
Autonomous team work	0.336	0.423	0.397	0.388	0.246	0.395	0.432	0.225	0.303
Task complexity	0.678	0.769	0.825	0.719	0.641	0.718	0.799	0.487	0.589
Repetitive tasks	0.342	0.379	0.000	0.450	0.000	0.557	0.507	0.502	0.523
Speed pressure	0.355	0.333	0.329	0.399	0.266	0.391	0.439	0.386	0.494
Emotional pressure	0.460	0.484	0.526	0.479	0.396	0.492	0.566	0.404	0.499
Risks	0.183	0.165	0.115	0.217	0.115	0.224	0.195	0.235	0.269
Fixed work place	0.592	0.575	0.322	0.613	0.743	0.570	0.508	0.639	0.641
Employment conditions									
Wage	2.704	2.881	3.755	2.697	2.543	2.813	3.160	2.120	2.443
Permanent contract	0.793	0.828	0.876	0.797	0.808	0.820	0.890	0.732	0.777
Full-time work	0.760	0.762	0.852	0.795	0.687	0.803	0.779	0.731	0.737
Atypical working time arrangements	0.316	0.281	0.480	0.424	0.000	0.412	0.451	0.320	0.428
Variable working time arrangements	0.282	0.270	0.422	0.312	0.150	0.337	0.374	0.251	0.339
Career opportunities	0.440	0.513	0.533	0.491	0.428	0.466	0.464	0.247	0.249
Training	0.367	0.455	0.546	0.505	0.303	0.522	0.664	0.000	0.675
Social relations									
Voice	0.502	0.572	0.656	0.571	0.465	0.565	0.611	0.295	0.472
Say	0.489	0.661	0.638	0.521	0.439	0.502	0.552	0.226	0.146
Social support	0.695	0.784	0.706	0.766	0.684	0.710	0.619	0.558	0.453
Supportive management	0.832	1.000	0.716	1.000	0.850	0.750	0.438	0.689	0.369

Results from the latent profile analysis using Latent Gold software.
1 = Active work; 2 = Saturated work; 3= Supporting work; 4= Low strain part time work; 5 = Repetitive work; 6 = Emotionally demanding work; 7 = Passive work; 8 = High-strain work

Source working paper (Szekér et al., forthcoming)

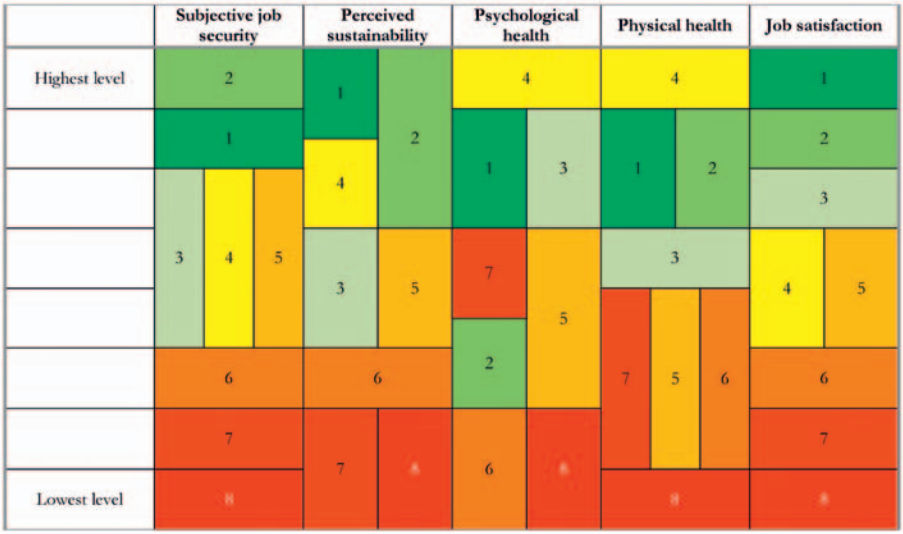
Table a5 Job types by country and institutional regime

	Aktive Arbeit	Anspruchsvolle Arbeit	Unterstützende Arbeit	Leichte Teilzeitarbeit	Monotone Arbeit	Emotional belastende Arbeit	Passive Arbeit	Anstrengende Arbeit
Sozialdemokratie								
Dänemark	30,8	22,5	12,4	7,1	7,9	8,1	9,1	2,1
Finnland	34,5	13,3	16,0	6,0	11,2	9,0	6,3	3,8
Schweden	24,0	11,8	19,4	7,6	11,7	8,9	12,4	4,1
Kontinental								
Österreich	20,9	10,6	24,9	14,2	7,5	3,1	16,4	2,4
Belgien	22,6	12,5	14,7	13,2	10,2	5,1	18,5	3,3
Frankreich	18,1	9,7	15,2	14,9	9,7	5,4	23,4	3,7
Deutschland	23,8	9,9	20,4	12,6	8,1	2,6	19,6	3,0
Luxemburg	21,0	12,2	15,2	15,9	9,3	6,9	17,4	2,1
Niederlande	26,2	16,4	15,9	12,5	6,3	6,8	13,2	2,7
Liberal regiert								
Irland	27,1	9,9	26,9	13,6	6,9	2,8	10,2	2,6
Vereinigtes Königreich	29,0	12,2	21,9	10,2	7,5	4,0	12,2	3,0
Südeuropäisch								
Zypern	28,3	4,2	25,2	27,4	1,0	0,2	13,0	0,7
Spanien	23,7	5,6	21,4	9,7	7,0	2,7	26,5	3,4
Griechenland	21,2	3,4	25,9	17,9	1,5	0,5	28,5	1,3
Italien	24,3	9,5	9,5	16,3	6,4	1,7	29,8	2,5
Malta	54,9	9,6	7,7	10,6	2,4	2,0	11,0	1,7
Portugal	27,1	4,1	23,1	13,2	4,4	2,1	23,3	2,8
Im Übergang								
Bulgarien	23,9	1,8	21,6	21,7	4,2	0,0	25,0	1,7
Litauen	28,8	4,5	15,4	14,9	3,6	2,1	26,9	3,7
Ungarn	25,5	8,5	17,9	18,3	4,5	2,4	21,4	1,7
Rumänien	27,3	4,4	23,9	15,3	4,7	1,0	22,8	0,6
Tschechische Republik	28,7	9,0	22,1	13,8	5,4	1,8	15,0	4,3
Estland	41,0	9,5	15,3	12,4	3,9	4,1	11,9	1,8
Lettland	32,0	9,5	17,3	14,9	5,7	3,4	15,9	1,4
Polen	25,5	6,4	21,9	20,4	6,2	1,1	16,2	2,4
Slowenien	29,4	7,6	23,0	8,0	6,8	5,2	16,0	4,0
Slowakei	24,1	5,7	27,9	17,7	5,0	1,2	13,9	4,6

* Note: countries by institutional regime: Social Democratic = Denmark, Finland and Sweden; Continental = Austria, Belgium, France, Germany, Luxembourg and Netherlands; Liberal = United Kingdom and Ireland; Southern European = Cyprus, Spain Greece, Italy, Malta and Portugal; Transitional = Bulgaria, Czech Republic; Estonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovakia.

Source based on Holman, 2012

Figure a1.1 Overview of the ranking of job types on different job quality outcomes



* 1 = active work, 2 = saturated work, 3 = supporting work, 4= low strain part-time work, 5 = repetitive work, 6 = emotionally demanding work, 7 = passive work, and 8 = high-strain work.
In this figure the job types are ranked based on their scores on job quality outcomes and juxtaposed to get an overview of their job quality. The higher a job type is placed in the ranking, the better it scores in terms of the job quality outcome. When job types are placed next to each other, this indicates there are no significant differences between these job types in their scores on that job quality outcome.

Source working paper (Szekér et al., forthcoming)

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