

EUROPEAN UNION



Committee of the Regions

A New Skills Agenda for Europe

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List of acronyms

CEDEFOP	European Centre for the Development of Vocational Training
CONS	Council of the European Union
COR	Committee of the Regions
DAE	Digital Agenda for Europe
EaFA	European Alliance for Apprenticeships
EC	European Commission
ECDL	European Computer Driving Licence
eCF	eCompetence Framework
EQF	European Qualifications Framework
ERDF	European Regional Development Fund
ESF	European Social Fund
ESIF	European Structural and Investment Funds
ET	Education & Training
EU	European Union
EUR	Euro
HEIs	Higher Education Institutions
ICT	Information and Communication Technologies
ILM	Intermediate Labour Market
ILO	International Labour Organization
ISCED	International Standard Classification of Education
JVR	Job Vacancy Rate
LFS	Labour Force Survey
LRAs	Local and Regional Authorities
LTU	Long-term Unemployment
MS	Member States
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development
PES	Public Employment Services
QH	Quadruple Helix
TH	Triple Helix
TP	Total Population
VET	Vocational Education and Training

Executive summary

‘A New Skills Agenda for Europe’ was published on 10 June 2016. Its focus is on equipping Europeans with the right skills in order to increase Europe’s workforce employability and to respond to changes in labour market requirements. The agenda is grounded on the evidence of the existence of skills gap and mismatch across the Union and within countries. There is a shortage of basic, digital, transversal, and entrepreneurial skills. A common understanding of key competences on the job is missing. Vocational education and training (VET) is undervalued and its attractiveness and opportunities may be enhanced. Overall, skills intelligence allowing for more informed choices is indispensable for skills policies to make a difference in addressing the extent of mismatch of supplied competences and the occurrence of gaps. All these aspects are relevant at the territorial level. In fact, the outlining of policies and/or interventions in the domains of education and training as well as of youth, employment and migration is not solely a prerogative of national governments. It also occurs at the local and regional level. Furthermore, it is at this same level that labour market needs meet the skills supply and that future trends of job opportunities as well as cooperative approaches among different stakeholders of the labour market are shaped.

A first objective of the study is to provide an overview across Europe of the state of the art of skills (Part 1). While most of this information is available only at the national level, there is evidence of heterogeneous educational attainment of the economically active population across European regions. Differences occur between Member States but even largely within individual countries, as is the case for France, Denmark, Finland the Netherlands and the UK. This also applies to the importance given to VET and lifelong learning.

Second, the study looks into the measure and progress of skills market misalignment, the future demand of skills, and the hypothetical socio-economic consequences that skills gap and mismatch may have at the territorial level (Part 2). Measure of skills mismatch and qualification mismatch is shown at the national and EU level through the description of the Beveridge curve and of the dispersion measures of employment and unemployment rates across skill groups, respectively. Instead, the situation within each country is analysed by looking at commonly used proxies of mismatch, i.e. the dispersion rates of regional unemployment and employment. This information shows, for example, that Italy and Belgium have a differentiated situation across their respective regions. The only comparable information available across the EU for the analysis of the future demand of skills is projected up to 2025 and once again it refers only to country level. Such analysis shows that the European workforce is

expected to get older, with a substantial increase of workers in the age classes 55-64 and 65+; to be better qualified, with a substantial increase of highly qualified workers; to shift towards high level jobs for at least one quarter of the total job opportunities; and to supply mainly replacement demand rather than expansion demand. In terms of sectors, most of the new job opportunities in 2025 will be in the business and other services sector, followed by the distribution and transport sector, and, to a lesser extent, by the so called ‘non-marketed services’ which mainly relate to the public sector. Part 2 concludes with an analysis of the potential socio-economic effect of skills gap and mismatch at the territorial level. To this aim, European regions are classified into six groups on the basis of unemployment and vacancy rates, and then analysed by means of some key indicators (disposable income of private households, regional labour productivity, early leavers from education and training, poverty levels, and attractiveness of the territory in terms of net migration) and from three different perspectives (workers, employers, and society). Low unemployment rates and high job vacancy rates distinguish best performing regions, while the occurrence of very high unemployment and low vacancies rates is found in apparently most impacted regions.

Indeed, skills gap and mismatch in a territory are driven by several concomitant factors which are continuously shaping labour market skills requirements. This complex situation requires LRAs to respond to some key challenges with the uptake of diverse initiatives and solutions, some of which encompass innovative elements. It is through the analysis of an inventory of about 30 of these initiatives and the detailed description of 10 of these cases (Part 4) that within Part 3 challenges and initiatives by local and regional authorities (LRAs) are discussed and framed towards the achievement of three main objectives: filling the skills gap, reducing the skills mismatch, and improving skills intelligence and information sharing. More evidence from the local and regional level across the European Union (EU) is provided throughout the study with the inclusion of several informative boxes.

Finally, recommendations are outlined in Part 5. They are framed within existing employment, education, migration and youth policies, where relevant, and take into account the existence of the several instruments and tools which have already been developed at the EU level to address labour market skills-related issues. The focus of the recommendations is on policy options by LRAs that may add value to what has been or is already commonly implemented, and that take into account recent policy and socio-economic developments (e.g. technological change and related digitalisation). These options relate to:

- Effectively using the skills of extra-EU migrants through enhanced LRAs’ awareness of existing EU instruments (including the upcoming

Skills Profile Tool), of funding opportunities for the integration of third-country nationals, and of local market skills requirements, all of which may translate into suitable local strategies and targeted measures.

- Promoting brain gain of intra-EU citizens at the regional level through an improved dissemination of job vacancy opportunities, an increased attractiveness of available posts, and innovative approaches creating multi-benefits for those involved (public authorities, higher education institutions and training providers, firms/organisations, and talented candidates).
- Improving the effectiveness and reputation of VET as an undervalued approach to address skills gap and mismatch, through increased interaction with potential employers, and production and dissemination of evidence on the outcomes of VET in terms of employability and individuals' satisfaction.
- Promoting a more structured linking of education delivery within firms, for example through the definition of appropriate funding instruments for concerned businesses.
- Working towards the alignment of digital preparedness and recognition with ICT take-up, through the combination of broadband provision with ICT penetration initiatives and the adoption of certification schemes which properly signal competences of the labour force.

Part 1: Introduction

1.1 Background and objectives

On 10 June 2016, the European Commission (EC) published ‘*A New Skills Agenda for Europe: Working together to strengthen human capital, employability and competitiveness*’ (henceforth referred to as the ‘Skills Agenda’ or ‘agenda’). The focus of the agenda is on **equipping Europeans with the right skills to respond to changes in labour market requirements, and hence to increase their employability**. The Skills Agenda is articulated around three main ‘work strands’ or ‘priorities for action’: “1. *Improving the quality and relevance of skills formation*; 2. *Making skills and qualifications more visible and comparable*; 3. *Improving skills intelligence and information for better career choices*” (EC, 2016a)¹. While the first priority of the agenda focuses on the formation of skills, the second and third priorities focus on improving the visibility and comparability of skills and qualifications, and on building up or strengthening skills intelligence, both from the perspective of policymakers and of individuals wishing to enhance their abilities or to apply these abilities in a working environment.

As part of the Juncker Commission’s priority ‘*A New Boost for Jobs, Growth and Investment*’, the Skills Agenda **proposes 10 actions** to be taken forward over the next two years (2016-2017). In particular, the agenda envisages the upskilling of both employed and unemployed adults through the establishment of a Skills Guarantee aimed at securing basic skills for as many low-qualified or low-skilled Europeans as possible. For higher and more complex skills, the agenda points to the strengthening of a common understanding and introduction in curricula of key competences, as well as to the increase of vocational education and training (VET) opportunities and attractiveness. In terms of digital skills, a ‘Digital Skills and Jobs Coalition’ will be launched at the end of 2016 and Member States (MS) will be invited to develop national digital skills strategies to address the uneven development in ‘digital’ human capital across Europe.

The agenda is grounded on the evidence of the existence of skills gap and mismatch across Europe and within countries. Higher and more relevant skills are considered essential in order to face not only technological progress, digitalisation, and global competition, but also demographic dynamics such as population ageing and migration. There is a need to address **shortages in basic**

¹ The Skills Agenda (COM(2016) 381) is part of a ‘Skills package’ which includes, among other propositions, a proposal for a Council Recommendation on the upskilling of adults (COM(2016) 382) and a proposal for the revision of the European Qualifications Framework (EQF) for lifelong learning (COM(2016) 383).

skills (e.g. numeracy, literacy), in **digital** and **transversal** skills (e.g. proficiency in foreign languages, communication, or team-work), and in **entrepreneurial** skills; as well as to emphasise the importance of VET. In fact, in 2015, “23.4% (64 million) of the EU28 population aged 25-64 did not attain an upper secondary education, and a fifth of European adults in the Member States that took part in PIAAC possess only rudimentary literacy and numeracy skills”², where “[n]ot having attained a sufficient basic skills level has a clear effect on labour market participation and employment possibilities” (EC, 2016a). Moreover, digital, transversal, and entrepreneurial skills are expected to be and/or to remain in (high) demand in the future. Language skills are and will be important for both employability and mobility. Meanwhile VET, besides facilitating employability, is increasingly valued towards the reduction of skills gap and mismatch related to job-specific or transversal needs. The **mismatch** between the skills provided by European education and training systems and the labour market needs was already underlined by the Commission in its ‘Rethinking education’ Communication, published in 2012 (EC, 2012). In the staff working document accompanying the Skills Agenda it is noted that *[w]hile most EU Member States have made substantial improvements over the past decade at the level of macroeconomic skills mismatch, including through upskilling of their population, some countries (including Spain, Portugal and Greece) saw a strong deterioration in labour market outcomes for low-skilled individuals as a result of the crisis and therefore a worsening skills mismatch*” (EC, 2016b).

The Skills package is **the last of various initiatives undertaken at the EU level** towards meeting the employment and education targets of Europe 2020 in general³ and skills enhancement in particular. These actions range from strategic policymaking to tailored interventions. For example, in 2014, the Education and Training (ET) 2020 strategic framework was reviewed through a stocktaking exercise and its priority areas were updated with the adoption of the 2015 Joint Report of the Council and the Commission (2015/C 417/04). One of the new identified priorities specifically focuses on lifelong learning as a mean to develop “[r]elevant and high-quality knowledge, skills and competences [...] for employability, innovation, active citizenship and well-being” (EC, 2015a). On the side of tailored interventions, the [Grand Coalition for Digital Jobs](#) launched in 2013 is an example of a collaborative response to the expected shortage of Information and Communication Technologies (ICT) professionals, recently recalculated in 756,000 vacancies in 2020 (empirica, 2015), while the [European Alliance for Apprenticeships](#) (EAfA), launched in the same year, is a platform

² PIAAC is a survey on adults’ skills currently covering only 17 Member States.

³ Benchmarking targets refer, for example, to the employment of 75% of the working age (20-64 years) population; a below 10% rate of early leavers aged 18-24 from education and training; and the attainment of tertiary education by at least 40% of people aged 30-34.

for mobilising and sharing quality work-based learning initiatives at the local, regional and national level, as well as for “*strengthening the anticipation of skills needs*” (EC, 2015a).

The role of local and regional authorities (LRAs) in the shaping of policies and/or interventions in education and training as well as in youth and employment is made explicit in the Skills Agenda. The local and regional level is **where co-operation among relevant stakeholders operating in the skills market may be strengthened**, especially between the business sector and education institutions. This close interaction between industry and academia, sustained and/or facilitated by the government, is referred to as Triple Helix (TH) (Etzkowitz and Leydesdorff, 1995). The TH may gain in terms of innovation and effectiveness, especially at the local and regional level, when civil society is directly involved, i.e. by upgrading the TH to the Quadruple Helix (government, industry, academia, and civil society) in order to realise a regional ‘innovation ecosystem’ where skills may contribute to “*determine competitiveness and the capacity to drive innovation*” (EC, 2016a)⁴. The territorial level is also **where a better and more timely understanding of labour market needs and trends may prove crucial** in supporting improved policymaking and decision taking with regard to individual sectors and/or industries. This is even more relevant in the light of the recent OECD conclusion that, apart from labour market conditions and dynamics, **skills policies also make a difference** “*in the extent of mismatch and the prevalence of shortages across countries*” (OECD, 2016).

The scope of this study is to provide an overview across Europe of the state of the art of skills (Part 1), of the labour market’s requirements, and of disparities/consequences which might have been determined by skills gap and mismatch (Part 2). The focus is on the regional level as far as data availability allows. Furthermore, recommendations are outlined (Part 5) through the analysis of the challenges faced at the local and regional level in responding to changes in labour market skills requirements, combined with a review of local and regional initiatives and adopted solutions (Part 3). Among these initiatives and solutions, collected into an inventory (separated Excel file), ten case studies/good practices are described in detail (Part 4).

⁴ A comprehensive review of the contribution of the QH to regional growth is provided in the study ‘Using the Quadruple Helix Approach to Accelerate the Transfer of Research and Innovation Results to Regional Growth’ (COR, 2016). The study gives interesting insights on the territorial interaction among industry, university, government, and civil society for the development of knowledge in different contexts, including that of formal education.

1.2 Overview of skills at the EU and regional level

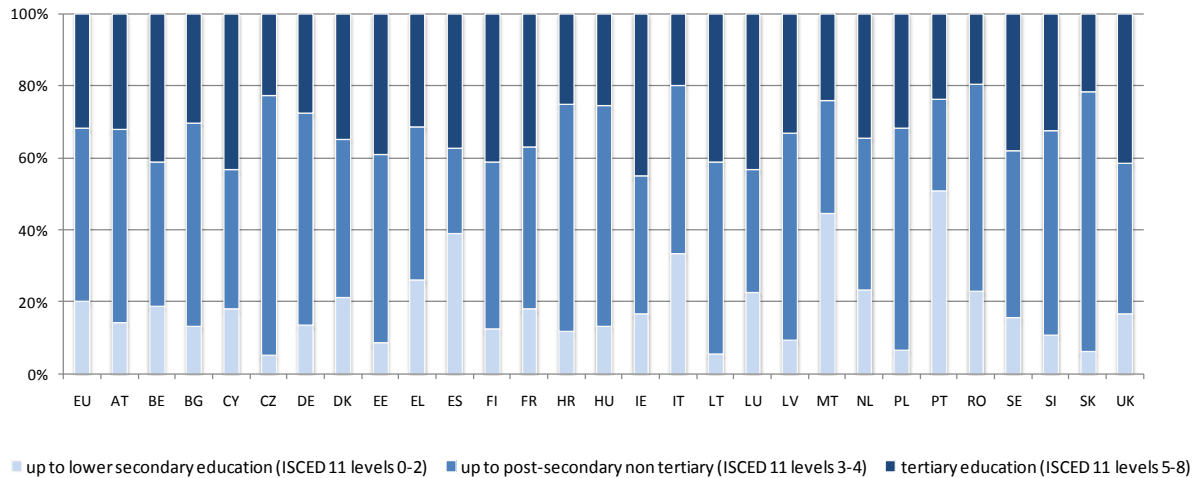
‘Skill’, ‘competence’ and ‘qualification’ are sometimes used as interchangeable terms but, in fact, they refer to different concepts. A ‘**skill**’ is “*the ability to perform tasks and solve problems*” (CEDEFOP, 2014) or, as defined in the Skills Agenda, “*what a person knows, understands and can do*” (EC, 2016a). In line with the proposal for a Council Recommendation on the EQF for lifelong learning, a ‘**competence**’ is “*the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development*”, while a ‘**qualification**’ is “*the formal outcome of an assessment and validation process by a competent body and typically take[s] the form of recognisable documents such as certificates or diplomas*” (EC, 2016c). Unless otherwise specified, for the scope of this study we will use ‘skill’ or ‘competence’ identically, i.e. to generally refer to the ability to do (perform tasks, solve problems, or applying learning outcomes).

Although all of these concepts express different aspects of an individual’s ability, actual skills are generally visible *ex post* to employers, i.e. after the candidate has been recruited and has taken up his/her job. Information asymmetry affects the recruitment phase: the employer cannot properly assess skills and competences of workers and so relies on qualifications, along with past professional experiences, as ‘signals’ of both for making an explicit and formal assessment of a candidate’s ability.

1.2.1 The formal outcome of qualifications: the education levels

The education attainment level of the economically active population (i.e. aged 15 years or over) is a proxy of the workers’ educational qualification. The information is sourced through the Labour Force Survey (LFS) and is reported in Figure 1 at country and EU level.

Figure 1. Education attainment level of the economically active population, share (%) over the total, 2015



Notes: sourced from the online LFS series, code [lfst_r_lfp2acedu]. The economically active population is considered to be aged 15 years or more and includes employed and unemployed persons. Unemployed persons are aged 15-74. For more details and country exceptions, reference is to the regional labour market statistics [metadata](#). Authors' data handling.

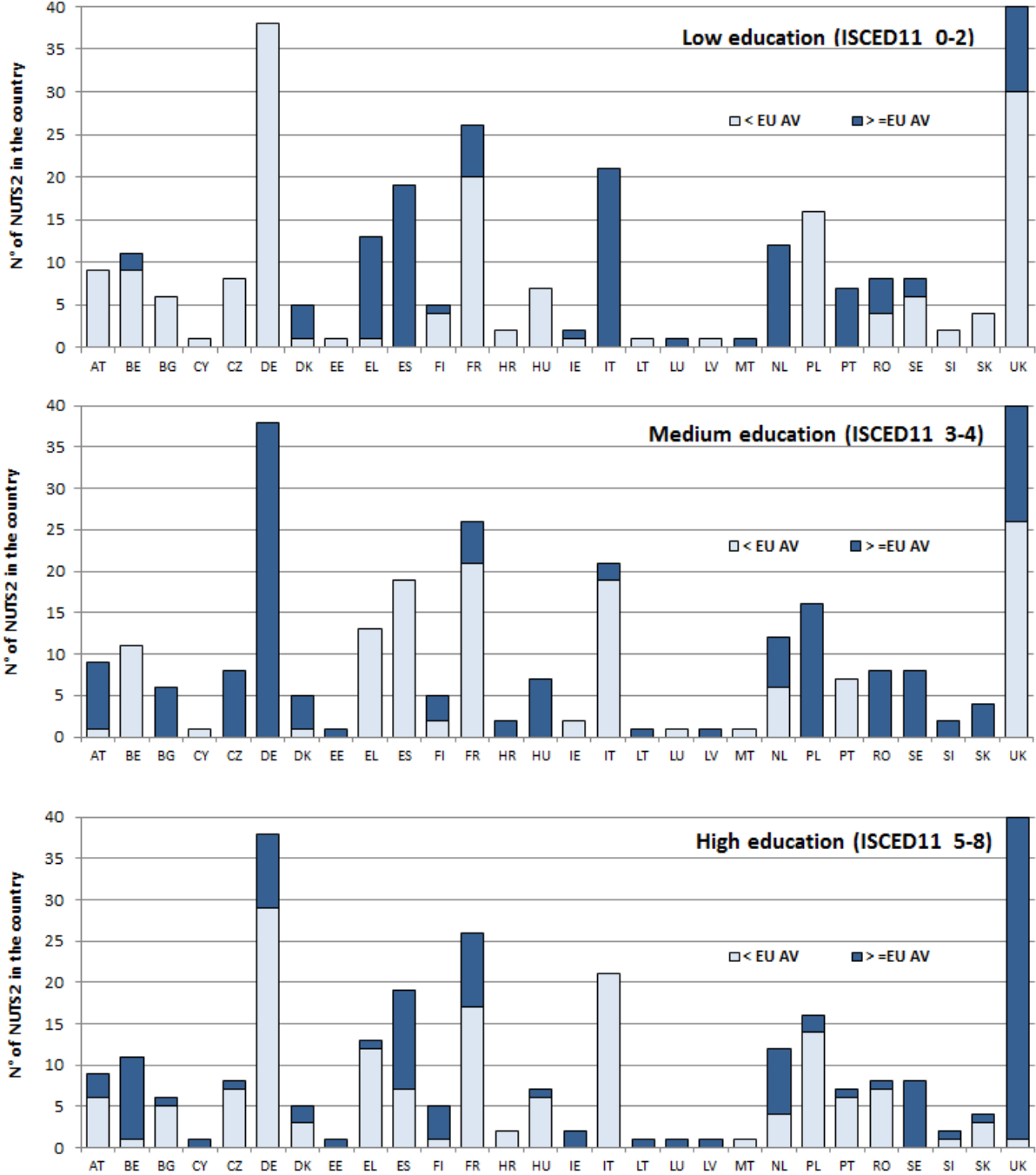
Chart bars show the share of the three main educational levels according to ISCED 2011 (ISCED11) classification, in each MS and in the EU. The most evident results point to Portugal, Malta, Spain and Italy as the countries with the largest share of ‘up to lower secondary education’ (ISCED11 0-2) level (i.e. well over 30% of the total versus a EU28 average of 20%). At the other end, Ireland, Cyprus, Luxembourg, the UK, Lithuania, Finland and Belgium show the largest share of the most qualified workforce segment with tertiary education (i.e. over 40% of the total versus a EU28 average of 32%). Obviously, the education attainment profile of countries provides an idea of the qualification supply side but not of the extent of skills gap and mismatch as these are mostly determined at the local or regional level by the balancing of skills supply and labour demand.

Figure 2 provides information on the ‘dispersion’ of the formal⁵ academic skills at NUTS2 level within each country. Each country-bar in the three charts indicates the number of regions having a share of qualifications below (light blue bar) or above (dark blue bar) the EU28 averages for each educational level. For example, in the first chart related to low education (ISCED11 0-2), it is indicated that all NUTS2 of Austria have a share of people with low education which is lower than the EU average. In Portugal, there is an opposite situation

⁵ ‘Formal learning’ “means learning which takes place in an organised and structured environment, specifically dedicated to learning, and typically leads to the award of a qualification, usually in the form of a certificate or a diploma; it includes systems of general education, initial vocational training and higher education” (Council of the European Union, 2012). The same Council Recommendation includes the definitions of ‘non-formal learning’ (e.g. in-company training) and of ‘informal learning’ (e.g. skills acquired through life and work experiences).

with all NUTS2 having a share of people with low education which is higher than the EU average. In Romania, 50% of the NUTS2 have shares below the EU average and 50% above.

Figure 2. NUTS2 ‘dispersion’ of formal qualifications versus EU28 averages, 2015



Notes: EU averages are: for the ISCED11 levels 0-2, 11.4% of the population aged 15+; for the ISCED11 levels 3-4, 27.5% of the population aged 15+; for the ISCED11 levels 5-8, 18.4% of the population aged 15+. The population data are from the online LFS series, code [lfst_r_lfsd2pop]. Authors' data handling.

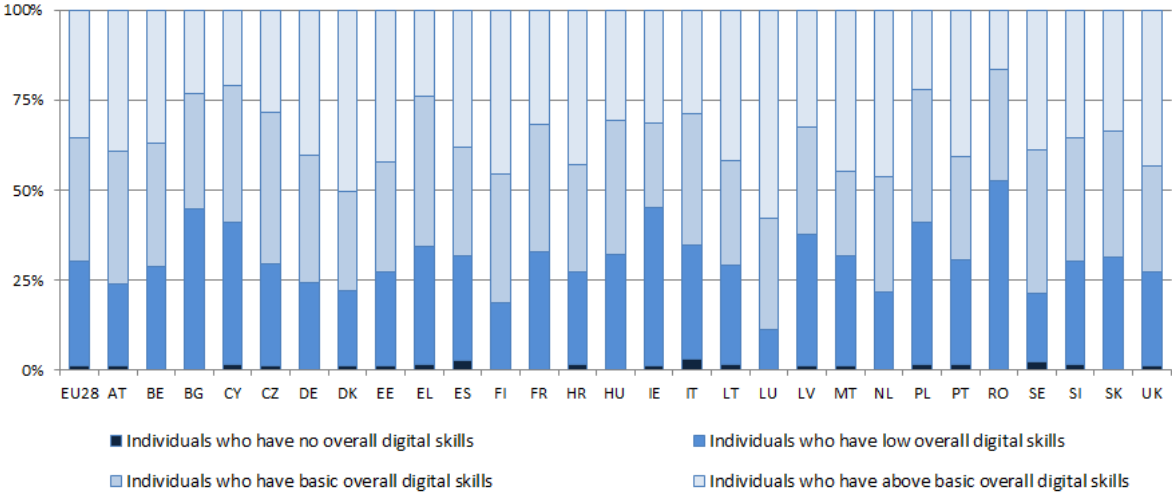
With regard to the ISCED11 0-2 levels (first chart), regions with a higher than the EU average share prevail in Denmark, Greece, Spain, Italy, Luxembourg, Malta, the Netherlands and Portugal. On the other hand, in the UK, Belgium, Sweden, the three Baltic countries, Ireland, Cyprus and Luxembourg, regions with higher than the EU average share of people with tertiary education (ISCED11 5-8, third chart) prevail. Marked differences at the regional level within individual countries are noted for all three considered levels of education. This is evident in France but also in Denmark, Finland and the Netherlands. In the UK, this heterogeneity relates to the low (ISCED11 0-2) and medium (ISCED11 3-4) levels of education only.

1.2.2 Skills and competences: the ability to perform, solve or apply

In line with the requirement of the Digital Agenda for Europe (DAE) to propose new indicators of digital competence and media literacy by 2013, a methodology for the measurement of digital skills was recently developed and data for the new indicators published by Eurostat for the year 2015. These developments acknowledge the importance ICT have in the private and professional spheres of individuals' lives, an importance formally recognised by the European Parliament and the Council as early as 2006 when they defined digital competence as 'essential' in a knowledge-based society (EC, 2014)⁶. According to the Digital Agenda Scoreboard definitions [online](#), digital skills refer to the following: **'Information' skills**, in terms of ability to access, identify and organise relevant digital information; **'Communication' skills**, allowing exchanges in digital environments to, for example, share, interact, participate and collaborate; **'Problem solving' skills**, allowing the identification of online resources, the use of digital means and technologies to solve problems, create, update competences, etc.; and **'Software' skills**, implying the ability to create, edit and re-elaborate new content, produce media outputs and programming. An **'overall digital skills' indicator** summarising all the above aspects is shown in Figure 3, by the four levels of competence considered by Eurostat (i.e. 'no', 'low', 'basic' and 'above basic').

⁶ [Recommendation 2006/962/EC](#) of the European Parliament and of the Council of 18 December 2006 on key competences for lifelong learning.

Figure 3. Individuals’ overall digital skills, by competence level and country, share (%) over the total, 2015



Notes: online Eurostat database, code [isoc_sk_dskl_i]. Authors’ data handling.

Table 1 shows statistics on the ‘above basic’ level of competence for the areas of information, communication, problem solving, and software. It also provides the latest available statistics on **language competence** and on **entrepreneurial skills**. According to the ‘Study on Foreign Language Proficiency and Employability’, published in 2015, foreign language skills are an added value in terms of career (EC-DG EMPL, 2015a). They positively influence the access to jobs and also the capacity to advance in the profession. Nevertheless, the study, which is based on interviews and review of vacancies, highlights the existence of a mismatch between available language competences and employers’ requirements. The mismatch relates not only to the lack of competence of a specific language by candidates but also to the proficiency level. The occurrence of this mismatch delays the filling of vacancies and increases the hiring cost for employers. With regard to entrepreneurship, the ‘sense of initiative and entrepreneurship’ is defined as “*an individual's ability to turn ideas into action. It includes creativity, innovation and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives*” (EC, 2006). Entrepreneurship is measured by means of proxies (EC, 2015b), one of which is the self-employment level reported in Table 1.

Table 1. Share of individuals with digital, language and entrepreneurial skills, by country

% individuals with 'above basic' digital skills, 2015					% individuals with foreign language competence, 2011				% of self-employed individuals, 2015
Information	Communication	Problem solving	Software	No languages	1 language	2 languages	3 languages or more		
EU	65	56	52	39	34	36	21	9	7
AT	71	56	58	48	22	51	19	9	6
BE	70	69	57	38	42	14	24	21	7
BG	41	47	24	20	61	24	12	3	5
CY	56	57	28	25	16	57	19	8	7
CZ	66	52	48	33	31	40	22	7	9
DE	80	64	65	47	22	42	26	10	5
DK	87	71	79	61	6	26	43	25	4
EE	79	67	63	46	14	24	35	26	5
EL	57	45	30	28	42	43	12	3	11
ES	64	54	49	43	49	34	13	5	7
FI	84	65	74	53	8	13	30	49	7
FR	67	50	60	41	41	35	19	5	5
HR	61	48	47	45	...	...	...	...	6
HU	65	63	43	28	63	26	9	2	5
IE	61	58	42	33	73	21	5	1	8
IT	45	42	34	34	40	40	17	4	9
LT	62	55	49	36	3	41	45	12	6
LU	87	79	80	72	1	5	22	72	5
LV	70	62	53	30	5	36	46	13	6
MT	62	61	50	42	11	25	46	19	7
NL	84	73	74	50	14	25	37	24	9
PL	46	44	36	23	38	39	19	4	9
PT	56	52	38	41	42	27	21	12	7
RO	42	42	27	15	...	...	...	...	9
SE	76	70	74	41	8	32	30	31	5
SI	62	46	43	40	8	15	33	45	6
SK	66	59	50	34	15	30	34	22	8
UK	75	73	65	50	...	...	...	...	8

Notes: The source is the online Eurostat database, code [isoc_sk_dskl_i] for digital skills; code [edat_aes_123] for languages; code [lfsa_esgaed] for self-employment. Shaded cells in digital skills columns indicate rates \geq the EU28 averages. The percentage of self-employed individuals is calculated as a share of the population aged 15 and over = code [lfst_r_lfsd2pop].

Box 1 shows how entrepreneurship education is a common area of intervention by both the public and the private sector and hence it may ideally become a vehicle of implementation of Triple and Quadruple Helix (QH) approaches.

Box 1. Lessons learnt on entrepreneurship education: the Youth Guarantee scheme

The Youth Guarantee scheme was launched at the EU level in 2013 with a view to address the unemployment of young people aged less than 25. The scheme is implemented in MS through Youth Guarantee Implementation Plans, several of which include start-up

incentives for young entrepreneurs. According to a recent report by Eurofound (2016), the rise in unemployment rates since 2008, especially among the youth, contributed to a switch of policies. Rather than emphasising the direct promotion of enterprises, the focus is on the promotion of entrepreneurship which is considered capable of simultaneously tackling the reduction of unemployment and the creation of new jobs. However, the study underlines how minimal the evidence is that entrepreneurship is a suitable way out of unemployment for young people. Since the support is often given in a ‘soft’ form (e.g. mentoring and coaching, training, advisory services), young people may gain relevant skills through what is referred to as ‘entrepreneurial learning’ but these skills do not necessarily translate to better business performance. Instead, the Eurofound report highlights how a recent assessment of the scheme by the OECD and the EC points to the need to adopt a holistic approach accompanying individuals along a coherent and comprehensive path, inclusive of follow-up actions, and involving several relevant actors, in the private and public spheres. Collection of good practices and evidence in this sense is currently on-going through the European Entrepreneurship Education NETWORK (EE-HUB). This 3-year project (2015-2018), co-funded by the EC under the COSME Programme, brings together Europe-wide organisations and private companies with the aim of gathering and disseminating know-how, methodologies and research findings towards the implementation of entrepreneurship education.

Sources: Eurofound, 2016; EE-HUB [website](#).

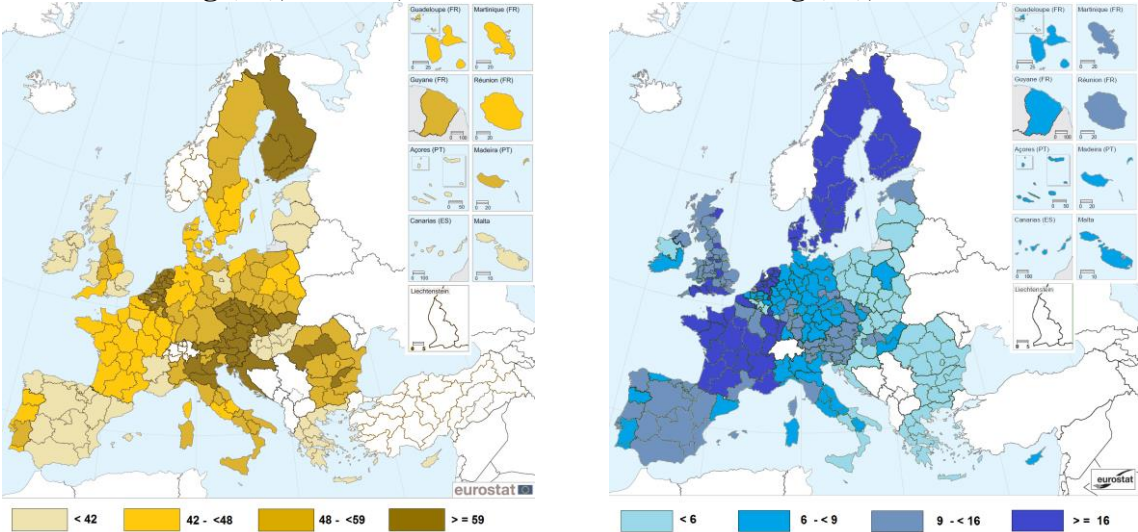
1.2.3 VET to improve abilities, skills and competences

Increasing importance is given by policymakers to vocational education and training as a tool to address gap and mismatch. VET aims “*to equip people with knowledge, know-how, skills and/or competences required in particular occupations or more broadly on the labour market*” (CEDEFOP, 2014). The importance given by countries to vocational programmes in schools is rare at the lower secondary education level (ISCED11 2) but common at the upper secondary education level (ISCED11 3)⁷. Map 1 provides the detail of upper secondary students in vocational training at the regional level in 2014. Almost half of the upper secondary students across the EU (48.9%) followed vocational training programmes. Highest shares (i.e. well over 70%) were reached in almost all regions of Czech Republic and in Croatia, as well as in some regions of the Netherlands, Austria, Slovakia, and Finland. The lowest shares are found in Ireland (less than 2%), Cyprus and Malta (around 13-15%). Within post-secondary non-tertiary education (ISCED11 level 4), participation rates in vocational programmes by students are even higher and, in 2014, reached 100% in several regions (e.g. in all the regions of Bulgaria, Ireland, the Netherlands, and Poland).

⁷ At the upper secondary education level students are prepared for tertiary education or for employment or for both.

Another proxy of the importance given within countries to VET is the participation rate of individuals aged 25-64 in education and training. This indicator is one of the 2020 benchmarks and is considered **a measure of lifelong learning**⁸. It covers participation in formal and non-formal education and training and is reported at the regional level in Map 2. In 2015, the highest participation rates (i.e. well over 20%) were reached in all regions of Denmark, Finland and Sweden as well as in some regions of France, the Netherlands, and the UK. The lowest rates (i.e. below 5%) are found in Bulgaria, Greece, Croatia, Poland, Romania, and most of the regions of Slovakia.

Map 1. ISCED11 3 students in vocational training (%), NUTS2, 2014 **Map 2. Participation rate in education and training (%), 2015**



Notes: Maps created by the authors on the basis of Eurostat data. Code [educ_uae_enr13] for Map 1 (data for DE and UK are at NUTS1 level; data for Ireland refer to 2013). Code [trng_lfse_04] for Map 2.

Students’ vocational training and lifelong learning have both the aim of improving the matching of future workers (i.e. the students) and of existing economically active population aged 25-64 with labour market’s requirements. Both properly address the first two work strands of the agenda (i.e. ‘*Improving the quality and relevance of skills formation*’ and ‘*Making skills and qualifications more visible and comparable*’) and contribute to addressing the challenges related to skills gap and mismatch. These latter concepts are presented in detail in Part 2.

⁸ The benchmark indicates a share of at least 15% of adults aged 25-64 participating in lifelong learning by 2020. In 2015, the average EU share was 10.7% [trng_lfse_04].

Part 2: Skills demand and consequences of skills gap and mismatch in Europe

Part 2 first provides the reference framework for the analysis of the skills' market in Europe, including the main definitions related to the gap and mismatch concepts. It then includes an overview of the measure and progress of skills gap and mismatch by referring to some of the main indicators used in literature. Data behind these indicators are mostly available at the national level but information at the regional level may be derived from the dispersion rates of regional unemployment and employment which are commonly used as proxies to better understand the situation within each country. Next is the analysis of the future demand of skills based on available projections. To this end, the only comparable information available across the EU is at the national level and projected up to 2025. Part 2 concludes with an analysis of the potential socio-economic effect of skills gap and mismatch at the territorial level from three different perspectives (workers, employers, and society).

2.1 Main definitions

Skills-related definitions are generally used consistently throughout literature. However, confusion may arise because of the interrelation of the concerned concepts. The definitions relevant to the scope of this study are reported in Table 2. They are sourced from a 'Skills mismatches and labour mobility' [document](#) from the EC (2013) and from OECD (2016). Apart from the distinction between mismatch, gap and shortage, mismatch may refer to skills, qualifications, or field of study. In addition, the EC (2013) outlines a 'territorial' mismatch type which has a location or sectoral reference.

Table 2. Definitions

Term	Definition
Skills mismatch	Indicates “a situation in which the level and/or type of skills and abilities of an individual is less or more than the required level of skills and abilities in the job” (EC, 2013). The OECD (2016) adds that “Mismatch implies that workers are either over-skilled, being able to deal with more complex tasks than those required by their jobs, or under-skilled and lacking the minimum skills required for their current jobs (OECD, 2014) ”. Skills mismatches may also imply skills gap if the supply of skills is not up to the requirements of a job (see below).
Skills gap	Occurs when “the type or level of skills is different from that required to perform the job adequately” (EC, 2013).

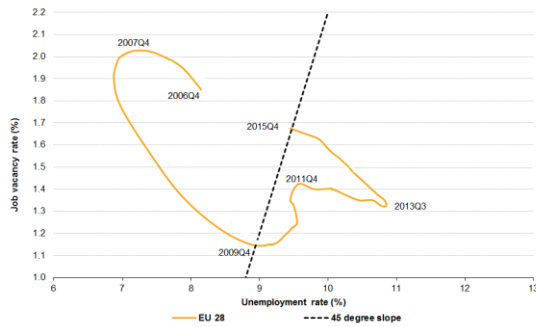
Term	Definition
Skills shortage	Implies that the “ <i>demand for a particular type of skill exceeds the supply</i> ” (EC, 2013). Coherently, the OECD (2016) specifies that skill shortage occurs “ <i>when the skills sought by employers are not available in the pool of potential recruits</i> ”. In addition, it is noted how “ <i>skill shortages can induce mismatch as employers, unable to find the skills needed, recruit mismatched workers</i> ”.
Qualification mismatch	Indicates “ <i>a situation in which the level of an individual's education is less or more than the level of education required by the current job</i> ” (EC, 2013). The OECD (2016) adds that in a qualification mismatch “ <i>a worker has higher (or lower) qualifications than required to get the job. Alternatively, qualifications mismatch can be identified when a worker has a higher (lower) qualification level than the modal educational attainment for workers in the same job</i> ”. The reference in these cases is to <i>over-qualification</i> (or over-education) and to <i>under-qualification</i> (or under-education).
Field of study mismatch	Indicates the mismatch between the worker’s field of study and the type of occupation she/he is employed in (OECD, 2016). The reference for the matching is a list of fields and occupations given at 3-digit of the ISCO classification and reported in Annex 5.A2 of the OECD Employment Outlook 2014 .
Regional or sectoral mismatch	It depends on “ <i>regional and sectoral employment and unemployment dispersion, this arises when the locations and sectors where job openings are available are poorly matched with potential employees</i> ” (EC, 2013).

In the following sections of this chapter, skills mismatch is considered at the macroeconomic level and intended as the absence of the adequate skills endowment that allows coexistence of unemployment with vacancies.

2.2 Outline of the measure and progress of skills mismatch

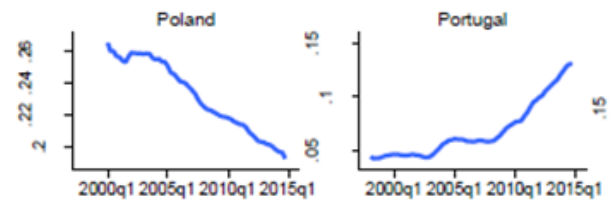
A number of indicators are used to measure skills mismatch at the macroeconomic level. One of these is represented through the **Beveridge curve** which **relates unemployment rates to job vacancies**. Figure 4, reports a recent Eurostat plotting of the curve for the EU, spanning over the period 2007-2015.

Figure 4. Beveridge curve for the EU, 2007-2015



Source: The chart, extracted from Eurostat statistics explained ‘Job vacancy and unemployment rates - Beveridge curve’, has been modified by the authors.

Figure 5. Relative dispersion of employment rates in PL and PT, 1998-2014



Source: The chart is extracted from EC-DG EMPL (2015b), smoothed series, referring to country-specific scales.

The analysis of the Beveridge curve provides information on the efficiency of the job matching process. **In a well-matching situation, the rise in unemployment corresponds to the lowering of vacancies.** Within the EU, this type of relation was observed up to the end of 2009, beginning of 2010. Afterwards, “*the high job vacancy rate did not have an effect on unemployment. The fact that unemployment was still rising when vacancies started to increase reflects problems in the job matching process, which may be related to mismatches in skills/educational qualifications required for a certain job and regional/sectoral mismatches*” (EC, 2013). This **shift of the curve** indicates the occurrence of structural changes⁹.

Other indicators used for the measurement of skills mismatch refer to the “*dispersion measures of employment and unemployment rates across skill groups*” (EC-DG EMPL, 2015b) of workers. In practice, “*if there is a high discrepancy between the employment and unemployment rates of the high, medium, and low-skilled, this suggests that there is a large gap between the skills that the population has and the skills that the economy needs*” (EC-DG EMPL, 2015b). Figure 5 reports an example of relative dispersion of employment rates by skill level for Poland and Portugal, showing opposite mismatch trends since the late nineties (falling for Poland and rising for Portugal). The recent analysis of this ‘mismatch indicator’ by EC-DG EMPL (2015b) provides information on the **progress made since 2008 by each MS**. In summary, the **overall long-term trend of skills mismatch** is:

- Increasing in EL, ES, IT, PT, and SE. Increasing but with evident fluctuations also in LU.

⁹ **Shifts along** the Beveridge curve relate to cyclical changes: for example, higher vacancies and lower unemployment indicate the occurrence of shortages/gap while lower vacancies and higher unemployment indicate an excess of labour supply.

- Rising after the beginning of the financial and economic crisis in CY, DK, HR, IE, MT, and, to a lesser extent, NL.
- Decreasing in AT, BE, BG, CZ, DE, EE, HU, LV, LT, PL, RO, SI and SK.
- Falling after the beginning of the financial and economic crisis in FI, FR, and the UK.

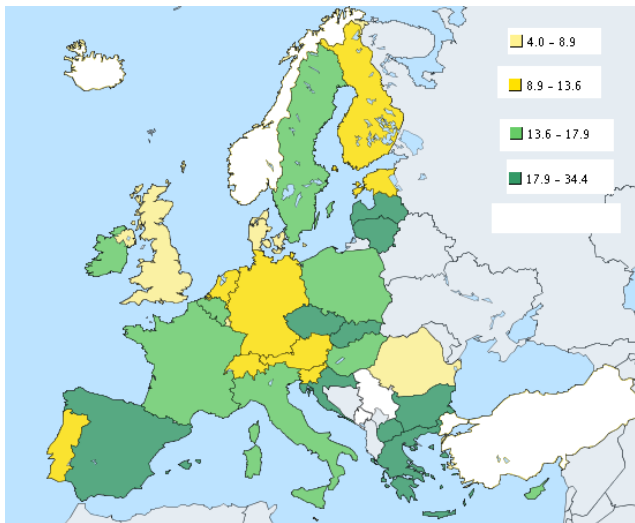
In general, EC-DG EMPL (2015b) notes that high levels of the mismatch indicator usually correspond to low employment opportunities for the low-skilled, caused by either structural or cyclical changes. In addition, notwithstanding the decreasing trend, countries such as BG, HU, LT, and SK show high values of the indicator in 2014, corresponding to low chances for workers with low skills to find employment. In fact, by looking at the **level of skills mismatch**, the indicator in 2014 ranged from 10% to 25% (EC, 2015b). Countries with the lowest level of mismatch (i.e. below 15%) include: UK, PT, AT, NL, EE, DK, and DE. Countries with skills mismatch levels ranging from 15% to 20% include: SI, LV, CZ, RO, FI, SE, EL, FR, CY, LU, and PL. Countries with the highest level of mismatch (i.e. above 20%) include: ES, MT, IT, HR, SK, HU, LT, IE, BG, and BE.

In terms of **qualification mismatch**, it may be measured through the proxy ‘unemployment rate by highest level of education attained’. This indicator “shows the ‘probability’ of being without a job for those who would like to have one”¹⁰ by education level. Data on qualification mismatch available at country level for low and high levels of education are shown in Maps 3 and 4.

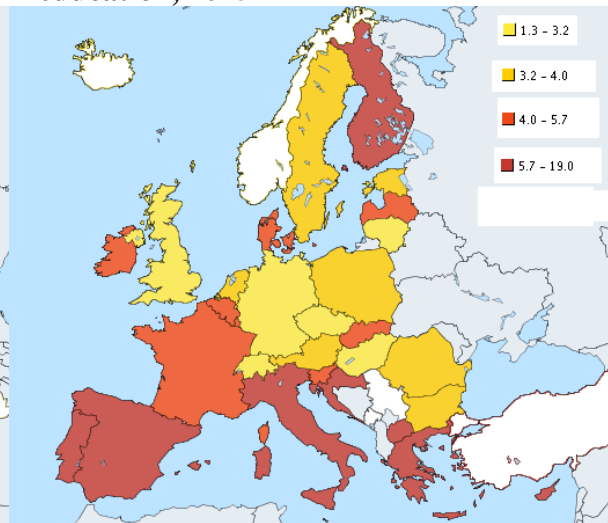
In 2015, Slovakia shows the highest incidence (34.4%) of under-qualification (Map 3). It is followed by Spain (28.9%), Greece and Lithuania (26.2% each), and Bulgaria (24.7). In terms of over-qualification (Map 4), the highest incidence is found in Greece (19%). It is followed by Spain (12.4 %), Cyprus (10.7 %), Croatia (8.9%) and Portugal (8.2%).

¹⁰ This definition is sourced in the Eurostat metadata of the corresponding datasets.

Map 3. Unemployment rates of population aged 25-64, low level of education, 2015



Map 4. Unemployment rates of population aged 25-64, high level of education, 2015

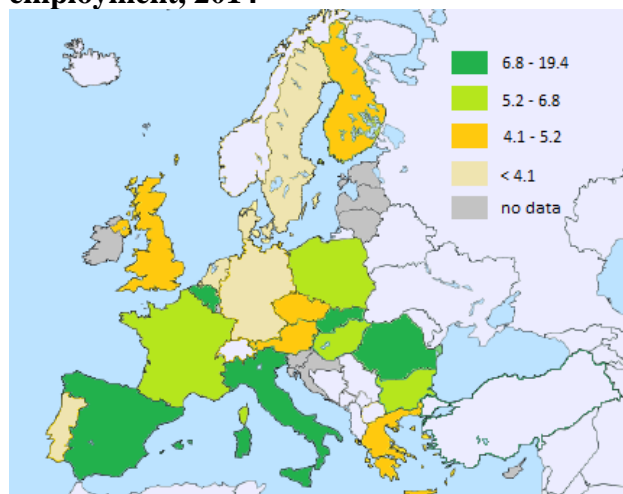


Notes: Eurostat maps created online by the authors, data code [tps00066]. Low education level refers to ‘less than primary, primary and lower secondary education’ (ISCED11 0-2); high education level refers to tertiary education (ISCED11 5-8).

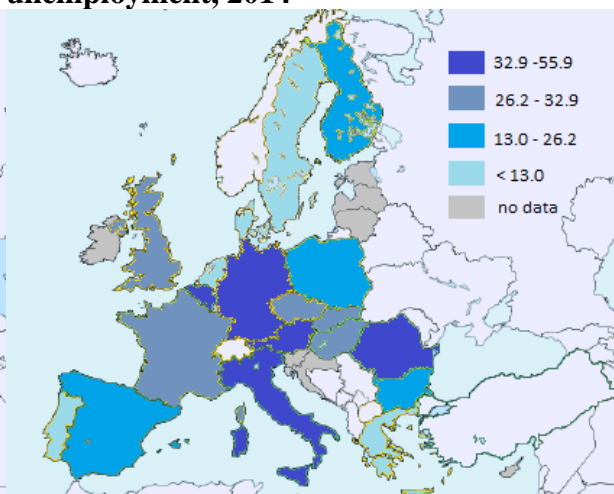
Finally, the **dispersion rates of regional unemployment and employment** are used as **proxies of mismatch within a country** (Maps 5 and 6). The lower the rates, the lower the country’s disparities and the higher the mobility propensity of the labour force within the country. **The rates are zero when all regions within a country have the same unemployment/employment rates.** These indicators are not available for countries having only one or two NUTS2.

Italy has the highest **dispersion rate of employment** (Map 5). This rate continued increasing in the last decade, from 16% in 2005 to 19.4% in 2014. Following are Spain (10.9%), Belgium (9.4%) and Slovakia (7.4%). While the rate increased in both Spain and Belgium over the last ten years, in Slovakia it has decreased by 2.4 percentage points since 2005. This same trend is found in other Eastern European countries such as Bulgaria, Czech Republic, and Hungary. The lowest dispersion of employment is found in Denmark (1.8%), the Netherlands (2.6%) and Sweden (2.8). Finland, the UK and France also experienced a rate decrease.

Map 5. Dispersion (%) of regional employment, 2014



Map 6. Dispersion (%) of regional unemployment, 2014



Notes: Maps created by the authors on the basis of Eurostat data, codes [tsdec440] (employment) and [lfst_r_lmdur] (unemployment). The employment/unemployment rate expresses the employed/unemployed persons aged 15-64 as a percentage of the population of the same age group.

In 2014, Belgium shows the highest **dispersion rate for unemployment** (55.9%), followed by Italy (43.8%), Austria (42.6%) and Germany (39.1%) (Map 6). The lowest dispersion of unemployment is found in Denmark (6.3%), Greece (8.2%), and the Netherlands (10.1%). Several countries show improvements in their unemployment dispersion rates over the last ten years. The most evident exceptions include Romania, where the rate increased from 17.3% to 34.8%, and Belgium (+7.5 percentage points over the same period).

Mismatch between demand and the skills and/or location of potential candidates is **among the drivers contributing to long-term (structural) unemployment**. Long-term unemployment (LTU) is a major concern for policymakers not only for the socio-economic conditions it implies but also for the negative impact it may have on the motivation and self-esteem of those that are out of the labour market for 12 months or more, and for the occurring ‘depreciation’ of their skills during this period. Box 2 reports on recent findings on LTU and mismatch at the EU level which are presented together with some of the latest available Eurostat data for LTU at the regional level.

Box 2. Labour mismatch and long-term unemployment

Long-term unemployment (LTU) concerns those who remain unemployed for 12 months or more. LTU is a complex phenomenon determined by several simultaneous causes among which Bertelsmann Stiftung (2016) includes mismatch. By analysing LTU alongside the occurrence of the economic recession, the Bertelsmann Stiftung study underlines how the recovery pace of jobs as the economy improves is slow compared to the pace at which jobs were lost since the inception of the crisis. This is a common trend shared with past crises. A contributing factor to this trend is that economic restructuring and higher productivity are commonly intensified during recovery and as a consequence: i) not all the lost jobs will be re-established during recovery because the type of demand has in the meanwhile changed; and ii) the skills of dismissed workers do not always match the requirements of the newly created jobs. In general, **persons with low skills are more prone to become long-term unemployed**. During the recent crisis, employment opportunities for this group declined sharply in all countries (the only exception is Poland). In the recovery phase, while the employment rate of the highly skilled started increasing almost everywhere (although with exceptions and differentiation across Europe) the employment rates of the low-skilled continued to decline in all countries but two (Belgium and Estonia) and countries with a significant LTU (Czech Republic, Poland, Slovak Republic, Germany, Sweden, and the UK) experienced a shift of structural employment from the low-skilled to the highly skilled workers. Older workers are also more vulnerable to LTU than other groups; however, in some countries LTU is a problem also for medium and highly skilled individuals (e.g. in Lithuania and Slovakia, as a consequence of lack of aggregate demand) and for the youth (e.g. in Greece, Italia, Croatia, and Slovakia, as a consequence of the magnitude of the crisis). In 2015, 48.3% of the unemployed, corresponding to some 11 million of Europeans, were long-term unemployed (Eurostat data). This rate was 33.5% in 2009. Best performing regions with LTU below 25% of the unemployment are found in Austria (the four regions of *Westösterreich*), in the region of Bucharest in Romania, in most of the Swedish regions (i.e. *Östra Mellansverige, Småland med öarna, Västsverige, Norra Mellansverige, Mellersta Norrland*, and *Övre Norrland*), and in two regions of the UK (Outer London – South and Hampshire and Isle of Wight). The highest shares of LTU (i.e. above 70% of the unemployment) are found in the region of *Severozapaden*, Bulgaria, and in several regions of Greece (*Kentriki Makedonia, Ipeiros, Thessalia, Dytiki Ellada, Sterea Ellada, Peloponnisos, Attiki, and Voreio Aigaiio*).

Sources: Bertelsmann Stiftung, 2016; Eurostat data, code [lfst_r_lfu2ltu].

2.3 Projections of skills requirements

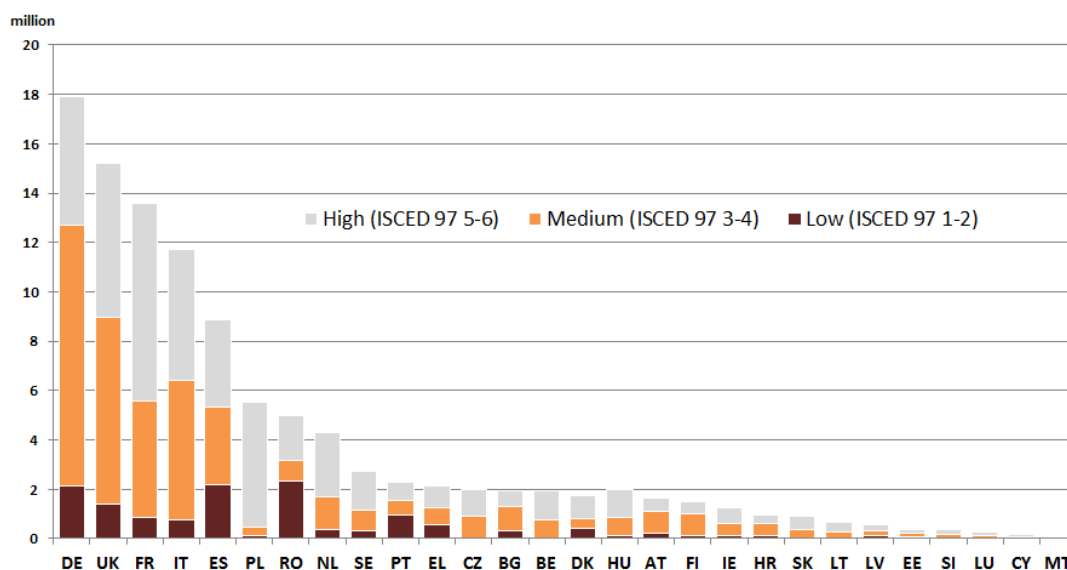
At the EU level, the only source of comprehensive and comparable (across countries) quantitative data for projections of skills needs of the labour market, is CEDEFOP. CEDEFOP provides data **projected to 2025** and related to skill demand and supply. These data are presented in the following sections.

2.3.1 The demand side: CEDEFOP projections

CEDEFOP projections to 2025 include job opportunities by qualification and sector. Net job opportunities represent the sum of new jobs (**expansion demand**) and of jobs determined by the replacement of people retiring or moving to other jobs. The latter is referred to as ‘**replacement demand**’ and according to CEDEFOP this type of demand is projected to be nine times higher than the expansion demand up to 2025 (CEDEFOP, 2015).

With regard to **opportunities by qualification**, at the EU level, around one fourth (25%) of job opportunities are expected to be for high level jobs in the fields of science, engineering, healthcare, business and education. However, some 13% of the opportunities will be for occupations requiring low or no qualifications. Over the same projection period, most of the new job opportunities will be in the business and other services sector, followed by the distribution and transport sector, and, to a lesser extent, by the so called ‘non-marketed services’ which mainly relate to the public sector (CEDEFOP, 2015). By looking at the information at country level (Figure 6), the prominent role highly qualified jobs are expected to have in Poland (92% of the total opportunities), as well as in the Netherlands, Belgium, Slovakia and France (with shares ranging between 59% and 61%) is noted. Romania and Portugal will have most of the opportunities in unqualified or low qualified jobs (47% and 42% of the total opportunities, respectively). They are followed by Spain and Denmark, where one fourth of the jobs will be for low-skilled workers.

Figure 6. Projections of job opportunities by qualification and country, 2013-2025¹¹

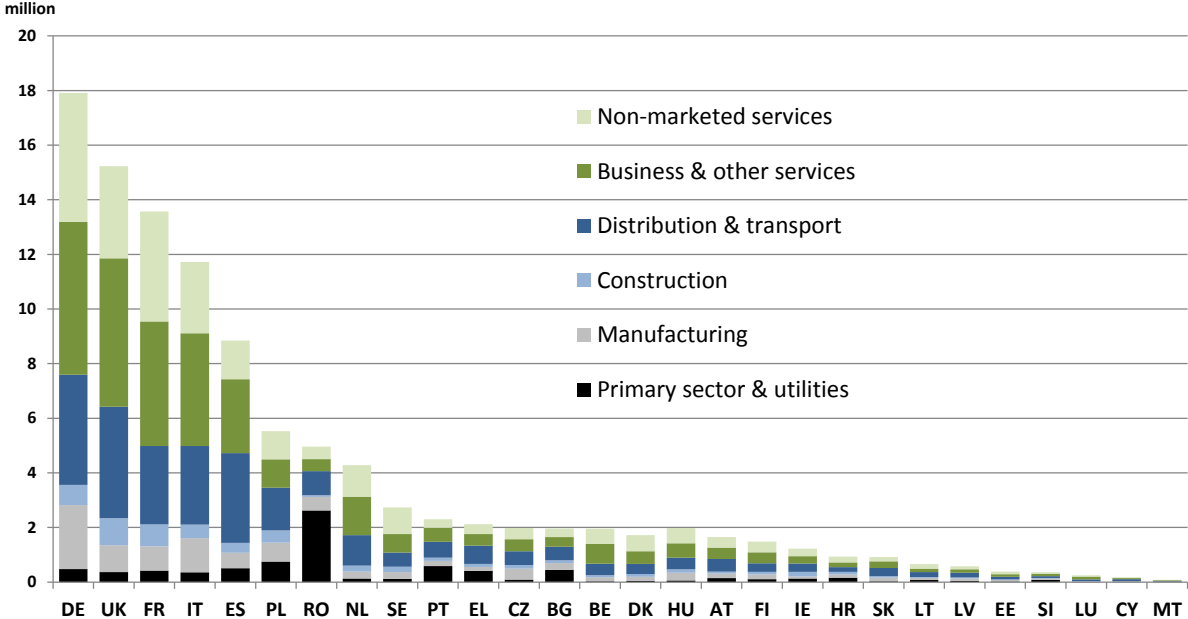


Notes: Data sourced from CEDEFOP online database (registration required). Authors' data handling.

¹¹ CEDEFOP uses the following correspondence: low-level qualifications = ISCED97 levels 1 and 2; medium-level qualifications = ISCED97 levels 3 and 4; and high-level qualifications = ISCED97 levels 5 and 6.

In terms of **opportunities by sector** (Figure 7), in Romania, the primary sector will be leading demand at the national level, offering 53% of the total jobs. Agriculture continues to be important also in Portugal (25% of total jobs), Bulgaria and Slovenia (23% each). Proportionally to the total demand, the manufacturing sector will be very relevant in the Czech Republic, sourcing 20% of the share of the total job opportunities (this is the highest share for manufacturing across the whole EU). The contribution of construction is modest everywhere, apart from Ireland where the sector will provide some 13% of the total job opportunities. With very few exceptions, distribution and transport contribute over 20% in all countries, with a peak in Cyprus and Spain (39% and 37%, respectively), as well as in Malta, Greece and Slovakia (32% each). Business and other services are dominant in several countries, from Luxembourg (41% of the total job opportunities) to Belgium, UK, Italy, France, the Netherlands, Spain and Germany (ranging from 37% to 31%). Finally, the non-marketed services are expected to be leading demand in Sweden (36%) and Denmark (34%) but have an important role in many other countries such as France, Belgium, Hungary, Finland, the Netherlands, and Germany (all over 25%).

Figure 7. Projections of job opportunities by sector and country, 2013-2025



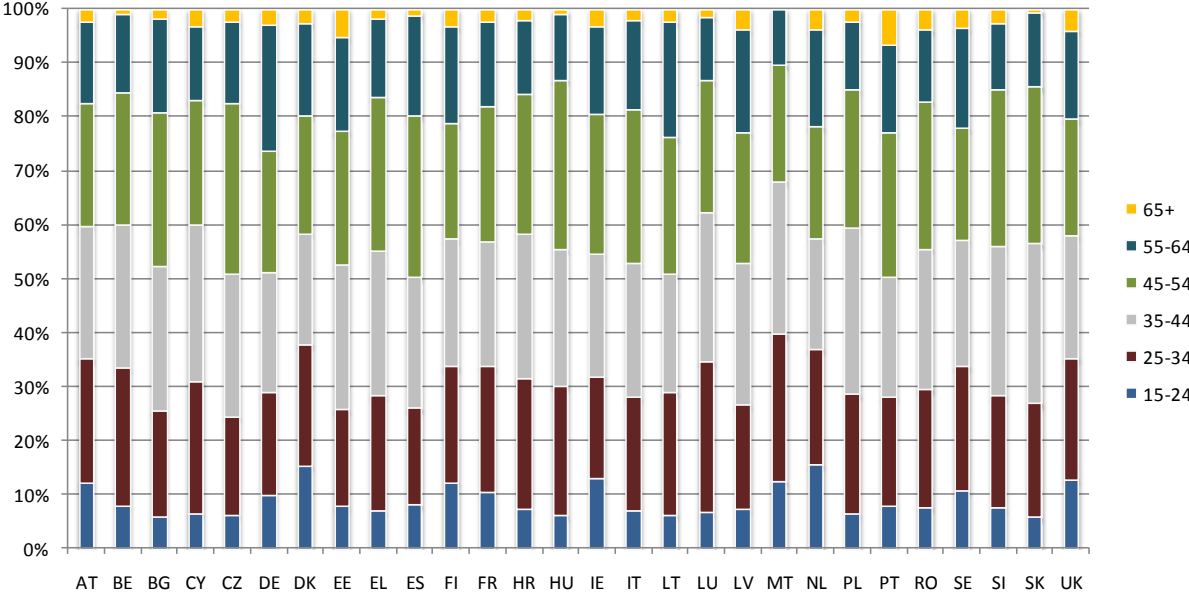
Notes: Data sourced from CEDEFOP online database (registration required). Authors’ data handling.

2.3.2 The supply side: CEDEFOP projections

The European workforce is **expected to get older**. Compared to 2013, 2025 projections indicate, at the EU level, a reduction of workers in the age classes 15-24, 25-34, 35-44 and 45-54 (-4%, -8%, -6%, and -1%, respectively). Instead, workers are expected to substantially increase in the age classes 55-64 and 65+

(+20% and +42%, respectively, over the period 2013-2025). Figure 8 shows the proportion of each age class within the 2025 workforce of each country. The highest share of the oldest workforce (aged 65+) will be in Portugal (7%) and Estonia (5%), followed by Latvia, the Netherlands, Romania, Sweden and the UK (4% each). The highest share of the youngest workers (aged 15-24) will be in Denmark and the Netherlands (15% each), followed by Ireland and the UK (13% each), Austria, Malta and Finland (12% each).

Figure 8. Forecast of labour force by age class and country, 2025



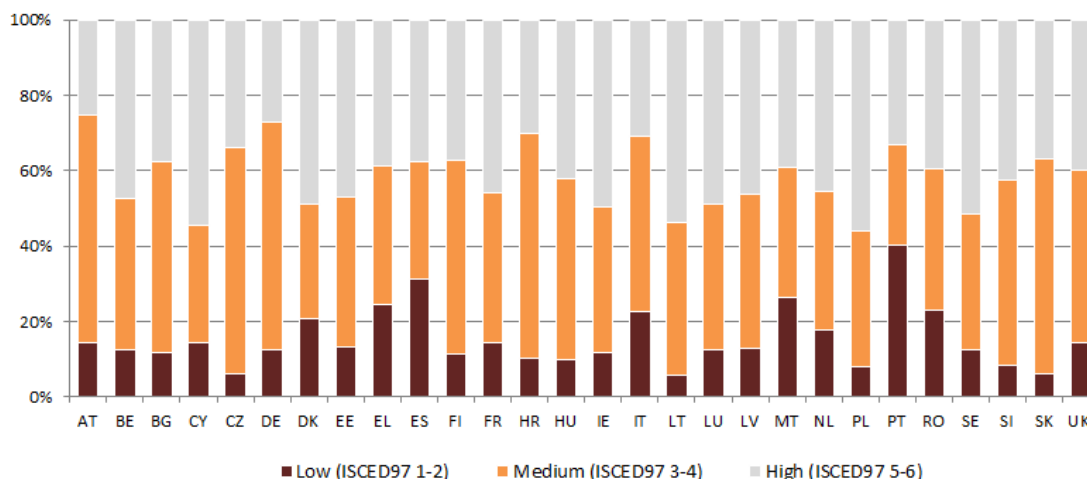
Notes: Data sourced from CEDEFOP online database (registration required). Authors’ data handling.

The European workforce is **expected to be better qualified**. Compared to 2013, 2025 projections indicate, at the EU level, a substantial reduction of workers in the low qualification level (-36%) and a substantial increase of highly qualified workers (+22%). The number of workers with medium qualification is expected to remain mostly unchanged (+1% over the period 2013-2025).

Figure 9 shows the proportion of each qualification class within the 2025 workforce of each country. The highest share of qualified workforce will be in Poland (56%), followed by Lithuania and Cyprus (54% each). The highest share of low qualified workers will be in Portugal (40%), followed by Spain (31%), Malta (26%), Greece (25%), Italy and Romania (23% each), and Denmark (21%).

According to a recent OECD work based on questionnaires sent to relevant ministries, employer organisations and trade union confederations of 29 OECD countries (OECD, 2016), assessing and anticipating skills needs is an exercise currently undertaken in many countries and at different levels (national, regional, and sectoral).

Figure 9. Forecast of labour force by qualification and country, 2025



Notes: Data sourced from CEDEFOP online database (registration required). Authors' data handling.

The OECD found that across countries these exercises vary in scope, use different definitions, refer to different methodologies and data sources¹², consider different time spans and are conducted with diverse frequency (a few examples of skills forecasting exercises at the regional level are given in Part 3 of this study). Hence, overall, they are not suitable to provide a comparable overview at the EU level. When there are difficulties in the linking of skills supply to occupational needs, skills gaps and mismatch arise. This in turn leads to socio-economic consequences, the occurrence and extent of which depend on the conditions of the local labour market. This is further analysed in the following section.

2.4 Consequences of skills gap and mismatch

The potential socio-economic consequences of skills gap and mismatch at the territorial level are considered from three different perspectives: workers, employers, and society. Skills lack in general implies costs for all. In particular, because of the skills mismatch workers may suffer from lower wages and lower job satisfaction; and employers, as a consequence of skills gap, may have to face higher hiring costs and lower productivity. In addition, direct consequences for society possibly include lower economic output and lower quality of life.

Our analysis is run by using a range of indicators as proxies of the consequences of a not well-matching job market. In addition, it is framed within a **classification of regions** developed according to two features strictly linked to

¹² According to the study, “Common quantitative sources of information include analyses of labour market information (e.g. flows in and out of employment by occupation and sector, trends in wages by occupation, trends in hours worked by occupation, etc.), vacancy surveys, employer surveys, surveys of recent graduates, and administrative data (e.g. data on enrolments in and graduation from various levels of education)” (OECD, 2016).

the demand and supply of skills in the labour market: **unemployment** and **vacancy rates**. NUTS2 regions are classified against these two rates into six classes. Then, the consequences of skills mismatch and gap are hypothesised per class by means of some key indicators. In particular: (i) to overcome the lack of relevant data (i.e. wages and labour costs) at NUTS2 level the analysis related to workers and employers is based on information on **disposable income of private households** and on **regional labour productivity**, respectively; (ii) from the perspective of society, indicators related to economic and social conditions such as **early leavers** from education and training, **poverty**, and attractiveness of the territory in terms of **net migration**, are considered.

2.4.1 Classification of regions versus unemployment and vacancies

In line with the logic behind the Beveridge curve, the relation between unemployment levels and job vacancies may provide some insights into the incidence of skills mismatch/gap in the labour market. The intention to classify regions at NUTS2 level according to these two indicators is importantly hampered by the limited statistics available at the regional level for the job vacancies rate (JVR). The deriving classification should therefore be considered **inaccurate and should be used only to illustrate the different situations which may be found at the territorial level**. Six different groups of regions are outlined (Table 3). Group 1 includes regions with low unemployment rates and above the EU average JVR. Groups 2 and 3 have contained unemployment levels. They distinguish because Group 2 has an above the EU average JVR while Group 3 has a below the EU average JVR. Groups 4 and 5 include regions with a high unemployment rate; similarly to Groups 2 and 3 they distinguish for the level of JVR. Finally, Group 6 is characterised by very high unemployment levels and below the EU average JVR.

Table 3. Classification of regions according to unemployment and job vacancies rates

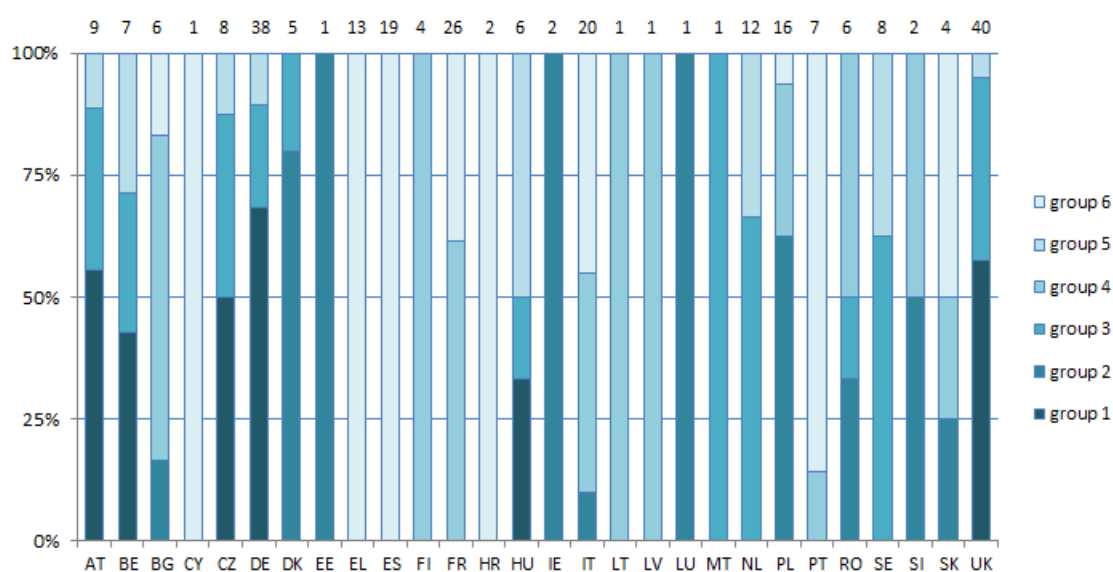
Group 1: Low U – High V	
unemployment < 5.2%	63 NUTS2 belong to this group, including: BE (3), CZ (4), DE (26), HU (2), AT (5), and UK (23).
JVR > EU average	
Group 2: Medium U – Low V	
5.2% < unemployment < 7.7%	25 NUTS2 belong to this group, including: BG (1), DK (4), EE , IE (2), IT (2), LU , PL (10), RO (2), SI (1), SK (1).
JVR < EU average	
Group 3: Medium U – High V	
5.2% < unemployment < 7.7%	48 NUTS2 belong to this group, including: BE (2), CZ (3), DK (1), DE (8), HU (1), MT , NL (8), AT (3), RO (1), SE (5), and UK (15).
JVR > EU average	
Group 4: High U – Low V	
7.7% < unemployment < 10.8%	46 NUTS2 belong to this group, including: BG (4), FR (16), IT (9), LT , LV , PL (5), PT (1), RO (3), SI (1), SK (1), and FI (4).
JVR < EU average	

Group 5: High U – High V	
7.7% < unemployment < 10.8%	20 NUTS2 belong to this group, including: AT (1), BE (2), CZ (1), DE (4), HU (3), NL (4), SE (3), and UK (2).
JVR > EU average	
Group 6: Very High U – Low V	
unemployment > 10.8%	64 NUTS2 belong to this group, including: BG (1), EL (13), ES (19), FR (10), IT (9), HR (1), CY , HU (1), PL (1), PT (6), and SK (2).
JVR < EU average	

Notes: The JVR measures the proportion of total posts that are vacant. It is expressed as a percentage, i.e. as number of job vacancies *100 / (number of occupied posts + number of job vacancies). The EU average for JVR is 1.7%. When data were not available at the regional level, national averages were used. Denmark's regional rates have been gathered from the Danish statistics website. Each NUTS2 belongs to one class only. All NUTS2 have been classified **with the exception of nine regions**, including Åland (for which data are not available) and other eight NUTS2 having Low U-Low V or Very High U-High V, i.e. not falling in any of the six groups identified.

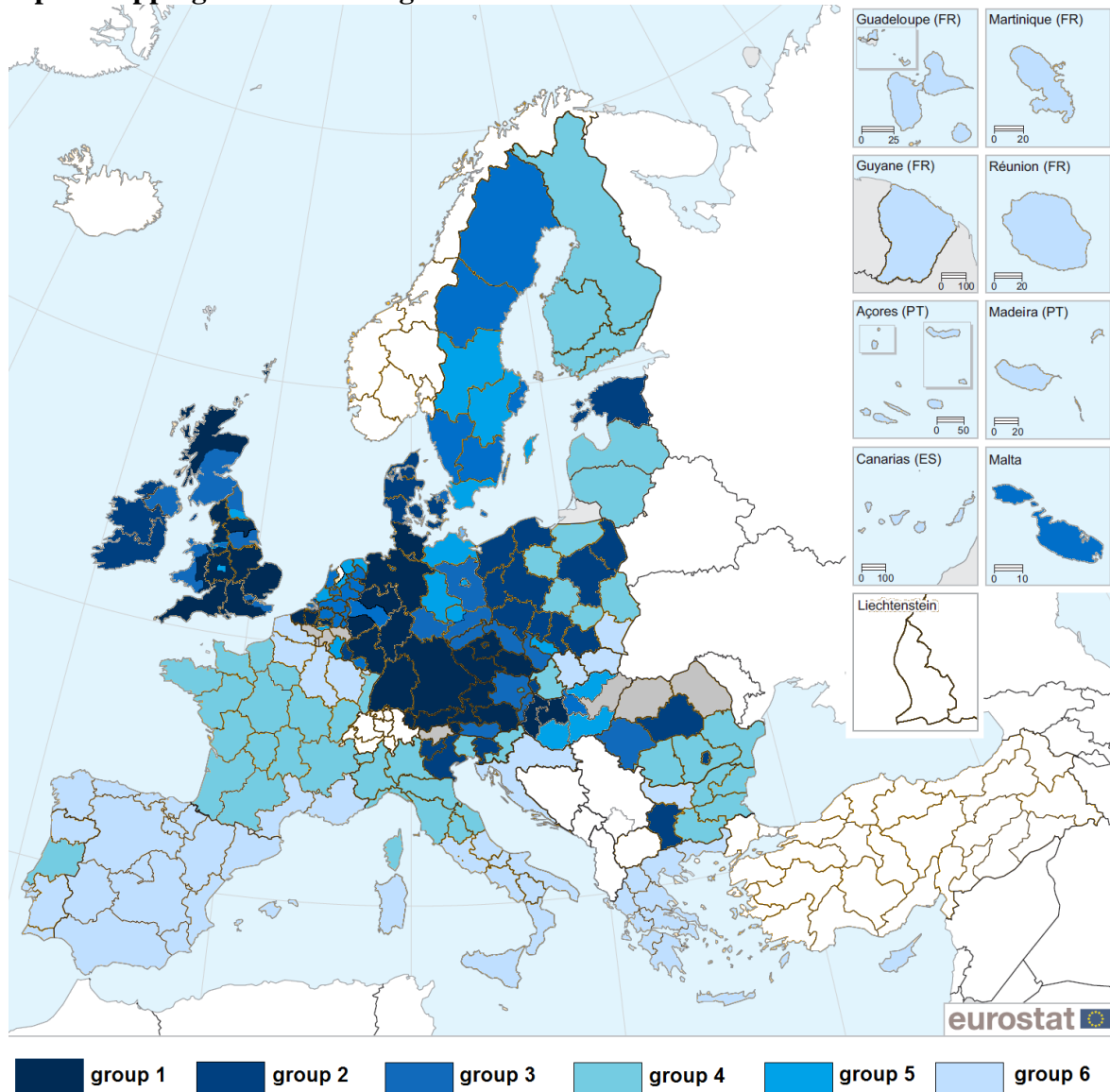
The distribution of classified NUTS2 by country is reported in Figure 10 and in Map 7. **Keeping in mind the limited accuracy determined by the low quality of available data at the regional level**, Figure 10 clearly shows that some countries have higher diversity of conditions at the regional level than others (e.g. Austria, Belgium, Bulgaria, Czech Republic, Germany, Hungary, Italy, Poland, Romania, Slovakia and the UK). Some countries do have all their NUTS2 belonging to only one class (e.g. Greece, Spain, or Finland). A good correspondence of the heterogeneity level shown in Figure 10 with the dispersion rate for unemployment represented in Map 6 is noted. There is also a fair correspondence of the classification regions compared to the 2014 country levels of skills mismatch reported under section 2.2 and sourced from EC, 2015b.

Figure 10. Distribution of NUTS2, by classification group and by country



Notes: Numbers at the top of the bars indicate the total number of classified NUTS2 belonging to the corresponding country (a total of nine NUTS2 have not been classified).

Map 7. Mapping of classified regions



Notes: The nine unclassified NUTS2 are coloured with grey.

2.4.2 Regional disparities in terms of economic and social conditions

Regions belonging to **Group 1** have low unemployment rates and over the EU average job vacancy rates. In comparison to the averages of the total population of NUTS2 (henceforth referred to as ‘**TP average**’), this group is characterised by a higher than the TP average disposable income of households and higher than the TP average labour productivity (both being ‘well above’ the average). Poverty levels shares are below the TP average and net migration is positive and three times the TP average, meaning that these territories are highly economically attractive. The share of early school leavers is just below the TP average. The analysis of the indicators allows assuming Group 1 regions as ‘**highly dynamic regions**’ on the basis of:

- Evidence of a boosting labour demand.
- Evidence of skills gap.
- No evidence of skills mismatch.

Regions belonging to **Group 2** have higher unemployment rates than Group 1 and below the EU average JVR. This group differentiates substantially from Group 1 because of the much lower (well below the TP average) disposable income level of households and of the much lower labour productivity (well below the TP average). Poverty rates are in line with the TP average while the share of early school leavers is below the average of the total population of NUTS2. Net migration in this group is positive on average but several of the regions (32%) belonging to the group have a negative crude migration rate. The analysis of the indicators allows assuming Group 2 regions as ‘**sufficiently dynamic regions**’ on the basis of:

- Evidence of a static labour market.
- No evidence of skills gap.
- Evidence of skills mismatch.

Regions belonging to **Group 3** have unemployment rates in the same range as Group 2 but over the EU average JVR. The values of the indicators of this group are similar to those of Group 1. Group 3 is characterised by a higher than the TP average disposable income of households (although lower than in Group 1) and higher than the TP average labour productivity (well above the average). In addition, the group shows almost the same TP averages of Group 1 for poverty and early school leavers. The other only difference with Group 1 is that the crude migration rate is positive but only twice the average of the total population of NUTS2 (it was three times the TP average in Group 1). The analysis of the indicators allows assuming Group 3 regions as ‘**dynamic regions**’ on the basis of:

- Evidence of a positive labour demand.
- Evidence of skills gap.
- No evidence of skills mismatch.

Regions belonging to **Group 4** have high unemployment rates and below the EU average job vacancy rates. They have both the income level and the labour productivity below the TP average. Actually, this group is characterised by a low level of productivity (similar to the low level found in Group 6, see below). Poverty rates and the share of early school leavers are in line with the TP average. Net migration in this group is positive on average but several of the

regions (46%) belonging to the group have a negative crude migration rate. The analysis of the indicators allows assuming Group 4 regions as ‘**static regions**’ on the basis of:

- Evidence of an excess of labour supply.
- No evidence of skills gap.
- Evidence of skills mismatch.

Regions belonging to **Group 5** have an unemployment level in the same range as Group 4 but above the EU average job vacancy rates. What characterises this group with respect to Group 4 is the high labour productivity (well above the TP average), a lower than the TP average poverty rate and a crude rate of net migration which is positive and double the TP average rate. The income level and the share of early leavers are similar to those of Group 4. The analysis of the indicators allows assuming Group 5 regions as ‘**potentially dynamic regions**’ on the basis of:

- Evidence of specialised labour market.
- Evidence of skills gap.
- No evidence of skills mismatch.

Finally, regions belonging to **Group 6** have very high levels of unemployment and job vacancy rates which are below the EU average. In addition, they have a much lower than the TP average income level, a much lower than the TP average labour productivity, much higher than the TP average poverty levels, a negative crude migration rate and higher than TP average share of early school leavers. The analysis of the indicators allows assuming Group 6 regions as ‘**highly static regions**’ on the basis of:

- Evidence of a consistent excess of labour supply.
- No evidence of skills gap.
- Evidence of skills mismatch.

Figure 11 summarises the level of the indicators used as proxies of the consequences of a not well-matching job market on workers, employers and society versus different combinations of unemployment and vacancies rates (i.e. the six groups). In terms of **impact on workers**, a good availability of job opportunities apparently nullifies potential mismatch negative effects and where unemployment rates are contained (i.e. low or medium unemployment) skills gap may have positive effects on socio-economic growth and, as a consequence, on workers’ conditions (Groups 1 and 3). In any other situation characterised by either severe unemployment rates and/or low job opportunities, skills gap and

mismatch may contribute to determine a lower than the TP average disposable income of households. From the **perspective of employers**, there is an apparent reverse relation between vacancies and the TP average productivity levels, regardless of the unemployment level. Instead, the negative effects of skills mismatch on productivity may apparently occur with lower than the EU average JVR combined with medium-to-very-high unemployment levels. Low job vacancy rates also seem to rule the occurrence of static economic growth and negative effects **on society**. Unsurprisingly, the worst combination in terms of consequences on early leavers share, poverty levels and crude rate of net migration is given by lower than the EU average JVR and very high unemployment levels (Group 6). Medium to high unemployment still combined with low JVR are negatively reflected in poverty levels and net migration balances (Groups 2 and 4).

Figure 11. Summary of the level of the indicators used as proxies of the consequences of a not well-matching job market, by group of regions

Perspective	WORKERS	EMPLOYERS	SOCIETY		
Group	income	productivity	early leavers	poverty	migration
1 Low U – High V	😊😊	😊😊	😊	😊	😊😊😊
2 Medium U – Low V	😞😞	😞😞	😊😊	😞	😞
3 Medium U – High V	😊	😊😊	😊	😊	😊😊
4 High U – Low V	😞	😞	😞	😞	😞
5 High U – High V	😞	😊😊	😞	😊	😊😊
6 Very High U – Low V	😞😞	😞	😞😞	😞😞	😞😞

Notes: U = unemployment; V = vacancies; income = disposable income of private households; productivity = regional labour productivity (gross value added per person employed); early leavers = early leavers from education and training; poverty = people at risk of poverty and social exclusion; migration = crude rate of net migration plus statistical adjustments. The number of smileys is proportional to the level of the corresponding indicator with respect to the average of the total population of NUTS2, i.e. two smileys mean well-above/below, three smileys mean very well-above/below.

Part 3: Challenges met by local and regional authorities

This part discusses the challenges met by LRAs in developing the skills needed in their labour markets. To this end, the main concepts presented in the previous sections of the study are herewith considered from a micro-level perspective and in line with the indications derived from recent policy documents (OECD, 2016; EC, 2016a). **Skills mismatch** concerns the difference between the skills and/or competences of an individual and what is demanded for the post. Skills mismatch refers to the perspective of the worker. **Skills gap** refers to the lack of quantity (i.e. shortage) and quality of skills and/or competences. It refers to the perspective of the employer, is suffered by employers at the market, sectoral and firm levels, and generates open vacancies.

3.1 Factors determining the skills demand

Global competition, technological change and related digitalisation, productive specialisation (e.g. Smart Specialisation Strategies), education systems, labour market dynamics and demographic paths (e.g. ageing and migration flows) are the main factors which determine the actual aggregated skills demand from the private and public sector, as well as the working competences available in a territory, taking into account its socio-economic conditions. All these factors are evolving and interacting with each other, making it a complex task to have a clear picture of the skills endowment of a territory and of its usage. LRAs are continuously challenged in assessing the actual situation and in trying to anticipate the future one.

Global competition requires larger efficiency of productive processes and their location where skills are available at lower costs. For example, a transfer of productive plants to a region where labour cost is lower generates an increase of demand for sector-specific skills in the hosting region and excess of supply in the region of origin. Unemployment in the region of origin and skills gap in the region of destination are the most probable short-term effects. Medium-to-long-term effects on both the origin and destination locations depend on other contextual conditions (e.g. productive specialisation in the region of origin, readiness of the education system in the region of destination) and on the capability of the concerned territorial administrators to take action with initiatives/solutions related to both education and unemployment. **Technological change** and related digitalisation generate gains in terms of productivity in regions where hard and soft assets have reached a certain critical mass. Low

levels of digital literacy and preparedness in a region generate skills mismatch in the short term, especially among the older workers (Macik and Macik, 2013), with a reduction of productivity due to the adoption process. At micro-level, “[t]echnology replaces certain tasks, changing the skill requirements to carry out a particular job” (OECD, 2016). Such effects can be mitigated in the medium to long term with educational initiatives to increase basic and intermediary digital skills (for both younger and older people). Digital skills acquired by a region through migration flows may also represent an opportunity to fill the skills gap. **Productive specialisation** is usually derived from the traditional industrial vocation of the territory. However, a territory may be forced to demand skills which are not available if the traditional sectors are affected by an economic crisis, or due to the occurrence of global competition, or to specialisation driven by structural funds policies (e.g. within the framework of Smart Specialisation Strategies). In all these cases, gap and mismatch can occur which has effects on migration and brain gain. **Education systems** have the main role of supplying the right skills to the labour market. Compulsory and higher education (i.e. formal education) together with VET and lifelong learning define a dynamic and heterogeneous mix of training supply options which have specific employability objectives in the short to medium term and are characterised by waves of competences creation over time. Given the time misalignment between the actual demand of skills and the period needed to generate them, the skills gap may be addressed quickly or affect the labour market for months. Additionally, skills mismatch in the medium term may be a direct consequence of an inadequate education system. **Labour market dynamics** are affected by changes in structural conditions such as those related to retirement regulation or growing engagement of women in the actively job-seeking population, both of which may suddenly affect demand and supply of workers and create skills gaps. Micro-effects, in terms of quality of working conditions, may also occur, affecting productivity and generating mismatch. **Demographic paths**, including ageing and migration flows, may expand or reduce the structural quantity of available labour force, generating gaps or unemployment. Older workers are those more affected by the mismatch due to evolving needs of competences on the job. **Migration flows** are a complex phenomenon and their effects on the labour market may be contrasting. In general, migration increases supply of workers and, when demand-driven, fills the skills gap. However, migration may also generate a substitution effect with respect to local workers, determining a reduction in wages and leading employers to tolerate skills mismatch. Box 3 provides some insights on the main characteristics of migrants in Europe according to their origin (intra-EU or from third-countries), destination choice, and education profile.

Box 3. Main characteristics of migrants in Europe

In 2014, there were 33.9 million foreign citizens in the EU. Among them, 26.4 million were economically active (i.e. belonging to the 15-64 years age class) and originating from another Member State (11.1 million) or an extra-EU country (15.3 million) (data are from CoR (2016a), where Eurostat is quoted as the primary source). The majority (76.1%) of these foreign citizens were concentrated in five countries: Germany, the United Kingdom, Italy, Spain and France. With the exception of Luxembourg, Slovakia, Cyprus, Ireland, Belgium, Hungary, the Netherlands, Malta and the United Kingdom, in the other MS the foreign citizens originating from extra-EU countries prevailed. Work is, after family, the second main factor determining migration. Unemployment in the place of origin drives the move of non-EU migrants, while wage improvement is one of the main reasons behind the move of EU citizens to another Member State. In 2014, among the 26.4 million economically active foreign citizens in the EU, 7.2 million of EU citizens and 7.8 million of non-EU citizens were employed in one of the Member States, generating an overall employment rate of about 57%. Among the reported barriers to getting a suitable job by foreign people with EU citizenship, language skills are indicated as critical in most of the cases. Less relevance is given to the lack of recognition of qualifications, to issues related to citizenship or residence permits and to difficulties generated by origin, religion and cultural background. Language barriers were also the main obstacle for unemployed and inactive migrants from third-countries.

Sources: CoR, 2016a; Friedrich-Ebert-Stiftung (2015).

3.2 Unemployment, skills gap and mismatch

The institutional (e.g. level of competence and responsibility of local administrators) and regulatory frameworks (e.g. social protection for workers) of each territory represent the basic endowment that may favour or hamper interventions by LRAs in the labour market. However, also in the most favourable set of the basic endowment, the perfect alignment of actual demand and supply of skills never occurs. This is due to the rigidity of wages and to other working conditions, the consequence being the creation of unemployment and/or vacancies. In the medium- to long-term period, **structural unemployment** in a territory is the result of changes in market conditions (e.g. decline of an industrial sector in a country due to the shift of the production in countries where human resources costs are lower) which lead to an excess of supply with respect to the actual demand due to a misalignment of existing skills. Obstacles to aligned labour markets in the short term have been largely studied and, although different causes have been identified, the lack of information among the involved stakeholders (i.e. workers and employers) is at the root of **frictional unemployment**. The search intensity of workers and employers seems also to be relevant (Mortensen and Pissarides, 1999), where search processes for workers imply the turnover of individuals looking for better

working conditions and generate a job destruction-creation process whose frequency and duration is affected by the available information on better working opportunities.

While unemployment relates to an excess of labour supply given the demanded skills, vacancies are a consequence of lack of adequate labour supply with respect to the demanded skills. This last shortage is only partially ‘genuine’ (i.e. effective lack of adequate labour supply). According to a Eurobarometer survey elaborated by CEDEFOP (2015b), a genuine skill shortage is suffered by only 12% of the firms, while what is referred to as ‘apparent’ skills shortage regards 46% of the firms. The difference between the two shares is due to deficiencies from the employers’ side and, in particular, the inability to offer competitive wages and human resource management inefficiency. Genuine skills shortage corresponds to the **skills gap**, i.e. the lack of appropriateness of labour supply from the point of view of the employers. Box 4 describes the effects of information barriers on the decision making process of both employers and workers, and highlights some tools that LRAs may use to overcome such barriers.

Box 4. Information barriers for the skills market: the role of LRAs

All actors of the skills market may be conditioned by information barriers. Future workers (e.g. current students) may lack information on the medium- and long-term demand of skills and qualifications. Training institutions (e.g. higher education institutions) may not have the proper information to design courses that fill in the skills gap and reduce the skills mismatch in the medium term. Employers themselves may be only partially aware of the evolution of the demand of goods and services in the medium and long term, which then affects the skills mix they (will) require. Current unemployed (e.g. potentially adequate workers) may ignore actual vacancies if these are not disseminated with the proper channels/tools. This implies that although there is no actual lack of skills, incomplete information makes employers suffer from skills gap, a circumstance that implies additional hiring efforts and higher costs. Employers face an inter-temporal choice with regard to costs: they may raise wages to attract workers with the proper skills but who are already employed in other posts (e.g. favouring turnover) or may, as a short-term solution, prefer to bear a skills mismatch by hiring workers not completely adequate to the expected tasks. In the latter case, additional costs would not be caused by higher wages but by the lower productivity of mismatched workers. LRAs have a direct threefold role in reducing information barriers suffered by the actors of the skills market: i) through skills assessment and anticipation exercises; ii) through the direct exploitation of results of the skills assessment and anticipation exercises by means of policies/strategies that reduce information barriers among actors; iii) through the sharing of results of the skills assessment and anticipation exercises with the other social partners (e.g. trade unions, employers organisations, or universities). This is further discussed under section 3.2.3 on ‘Challenges to improve skills intelligence and information sharing on labour market conditions’.

Sources: Ibsen et al. (2008), and authors’ analysis.

Barriers to complete information may bias the prospect estimation of employability and suggest, especially to new generations, wrong educational investments leading to unemployment or to mismatching with respect to the skills' demand of a territory. In such cases, opportunities for mismatched workers to adjust/improve their skills endowment may be provided by the employer, investing formally or informally in on-the-job training; or by the educational institutions/entities (including VET providers), aimed at developing skills according to the demand of the market (OECD, 2016)(Mortessen and Pissarides, 1999). LRAs and their policies/strategies play a crucial role especially if *“it may not always be economically sensible for firms to invest in such training, given its general nature and the limited skills of the potential trainees. A variety of market failures might also limit their willingness to provide such training, or to create high-paying (or “high road”) jobs, where their ability to be competitive is based on high worker productivity and low turnover rather than just low labor costs* (Holzer, 2015 referring to Appelbaum *et al.*, 2003).

Although European and national policies rule most of the aspects related to employment, education and migration, there is room for policies/strategies by LRAs **to fill skills gap by addressing the filling of vacancies and diminishing unemployment and to reduce the skills mismatch of the already employed individuals**. These interventions mean, overall, the fostering by LRAs of a better alignment between skills demand and skills supply. In turn, this implies the need to address a series of challenges in line with the **three work strands** of the **Skills Agenda** (EC, 2016a). These challenges are presented in the following sections 3.2.1, 3.2.2 and 3.2.3.

An **inventory of 32 initiatives and solutions** related to the first and second work strand of the Skills Agenda served as a primary source of information for mapping the main types of approaches adopted at the local and regional level with regard to skills gap and mismatch. Since most of the identified initiatives and solutions related to the third Skills Agenda's work strand for *‘improving skills intelligence and information for better career choices’* are characterised by features that do not fit with the information requirements of the proposed inventory structure, they are not included in the inventory and are, instead, presented in the study within boxes (section 3.2.3).

The initiatives and solutions **included in the inventory have been selected according to a large number of criteria**, among which is the type of challenge faced, the type of involved authorities, the scale of the initiative (i.e. NUTS level), the period of implementation (i.e. ending after 2010), the presence of innovative elements, and the financing source. Only initiatives and solutions providing sufficient information to fill the inventory tags were considered. Box

5 depicts the main characteristics of the initiatives and solutions included in the inventory.

Box 5. The inventory of initiatives and solutions

The compiled inventory (separate deliverable) includes 32 initiatives and solutions participated in by LRAs either as promoters or as funding institutions. Involved authorities belong to NUTS3 (18) and NUTS2 (14) levels and are from 21 Member States (AT, BG, BE, CY, CZ, DE, DK, EL, ES, FI, FR, HU, IT, LU, MT, NL, PL, PT, SE, SK, UK) plus Norway. Among the sources of financing of the initiatives ERDF prevails (16), followed by ESF (9). Twenty-two (22) of the identified initiatives aim at filling the skills gap, four (4) at reducing skills mismatch, and six (6) at achieving two objectives simultaneously. Unemployed individuals (general category) are the target of 7 initiatives, students of 4, and disadvantaged groups of 12. There are ten (10) initiatives and solutions addressing the improvement of skills of already employed individuals. Lifelong learning and VET are the prime implementation method (31). Looking at the challenges related to filling the skills gap, 17 initiatives focus on developing new skills for the unemployed (Ch1.1); 7 on providing and/or formally recognising the qualifications of the unemployed (Ch1.2); and 14 on increasing the labour active population (i.e. labour force) (Ch1.3). There are eight (8) initiatives to increase the skills of the employed (Ch2.1) while three (3) are aimed at providing and/or formally recognising the qualifications of the employed (Ch2.2). In terms of content, in only a few cases do the skills addressed by the initiatives/solutions match with the sectors indicated as priorities in the Smart Specialisation Strategies (7). Digitalisation is one of the most requested competences (7).

Source: Inventory compiled for this study.

3.2.1 Challenges to fill the skills gap

Skills gap is due to the difficulty of the labour demand to be satisfied. According to CEDEFOP (2015a), skills demand is and will be mainly determined by replacement (e.g. retirement, turnover) rather than by expansion of business. As mentioned, the term ‘gap’ refers to the **actual quantitative lack of competences** and to the **lack of competences on the market as perceived by employers**. Employers facing skills gap have a trade-off: employ workers with different/partial competences with respect to the ones needed and thus risk mismatch effects including lower productivity (*de facto*, reducing unemployment); or keep the vacancy open with a negative impact on the production output and on the increasing cost of hiring (*de facto*, not impacting on unemployment). In this situation, LRAs’ actions and strategies should be focused on supporting the injection of new workers in the skills market, both by activating existing competences in the territory which are still not used and/or by attracting workers with the right competences (e.g. migrants). Basically, the challenges met by LRAs to fill the skills gap refer to:

- i) developing new skills for the unemployed (Ch1.1);
- ii) providing and/or formally recognising the qualifications of the unemployed (Ch1.2);
- iii) increasing the labour active population (i.e. labour force) (Ch1.3).

Table 4 reports on the work strands addressed by each of the identified challenges. The concerned target group(s) and the implementation method(s) have been derived from the information provided in a selection of initiatives from the inventory.

Table 4. Challenges to fill the skills gap

Challenge	Work strand	Target group	Implementation method
Ch. 1.1. Develop new skills for the unemployed	WS1 Improving the quality and relevance of skills formation.	Unemployed in general, young people, women graduates, university students.	VET (through workshops, courses), formal education, lifelong learning.
Ch. 1.2. Provide and/or formally recognise the qualifications of the unemployed	WS2 Making skills and qualifications more visible and comparable.	Unemployed in general, young people, undergraduate students.	VET (through courses, workshops).
Ch. 1.3 Increase the labour active population (i.e. labour force)	WS1 Improving the quality and relevance of skills formation & WS2 Making skills and qualifications more visible and comparable.	Unemployed in general, people with disabilities, ex-offenders, Roma, young people, women, immigrants.	VET (through workshops, courses), lifelong learning.

Notes: Information based on 13 relevant initiatives/solutions included in the inventory and aimed at filling skills gap.

► **Initiatives and solutions to develop new skills for the unemployed (Ch1.1)**

For developing new skills for the unemployed, LRAs have to focus on what is needed by the demand side of the local labour market. The ‘Ashfield training centre’ in North Nottinghamshire (inventory case UK_02) provides training in a **variety of topics** including engineering, construction, health care, tourism, culture, leisure, hospitality, food and drink production, financial and business services. Partnership with industry and commerce actors allows the centre to design, develop and deliver specific training in response to real life working needs. **Professional skills** in fields of natural science and technology are targeted in the ‘FEMCOOP’ project (MIX_01 and CS_09). **Entrepreneurial skills** needed to create successful businesses were the training objectives of ‘The Grant Scheme for Youth Entrepreneurship’ (CY_01) supported by the Ministry

of Commerce, Industry and Tourism of Cyprus. The ‘*Torno subito*’ project of the Regione Lazio (IT_01 and CS_07) is addressed to students to benefit from training followed by a work experience where the gained skills are immediately used and, ideally, specifically requested by the organisations (firms or institutions) participating to the programme to fill their gaps. Concerning **target groups**, the **unemployed** are the most targeted with a view to fill skills gaps. These unemployed individuals may have a general profile as is in the case of the ‘Ashfield training centre’, be **graduates or university students** prior to their entry in the labour market as in the Lazio Region case of ‘*Torno subito*’. Specific target groups are found in ‘FEMCOOP’ (**young women**) and in ‘The Grant Scheme for Youth Entrepreneurship’ project (**people aged 20-39**). As for **implemented methods/approaches**, they range from VET (Ashfield, FEMCOOP) to adult learning (‘The Grant Scheme for Youth Entrepreneurship’) and formal education (‘*Torno subito*’).

► **Initiatives and solutions to provide and/or formally recognise the qualifications of the unemployed (Ch1.2)**

When addressing the challenge to provide new qualifications to the unemployed or to formally recognise existing qualifications, **skills to be provided** largely vary according to the perceived needs of the territory. The ‘CENFORGIL - *Les Ateliers du Midi*’ project (BE_06 and CS_03) directly addresses competences needs, giving adults the opportunity to complete their unaccomplished secondary education and to earn a diploma **in specific sectoral domains** (electricity, sport, administrative/secretary, hotel/restaurant/catering, entertainment and events). In Luxembourg, ‘Valiflex’ (LU_01) is a project of the Agency for the Development of Employment aimed at training registered unemployed people to enter the **childcare profession**, in response to known sectoral skills gaps. The ‘*Progetto idrologo*’ (IT_02), developed with the support of *La Spezia* Province, requires participants to have a specific bachelor or master’s degree because afterwards they are trained to become **technical professionals on territorial environmental risks**. The ‘Licensed to Skill’ project (MT_03) focuses on the need of **technical skills**. Within the project, the Malta Employers Association and Malta Enterprise established a facility for guaranteeing skills provision to the Maltese population through courses related to office-based activities, hospitality/caring, management and trade. Concerning the **target groups**, identified initiatives address the skills needs of a very heterogeneous range of unemployed categories. These vary from a **general target group of unemployed** (i.e. in the ‘CENFORGIL - *Les Ateliers du Midi*’ project, in the ‘Licensed to Skill’ project, or in the ‘Valiflex’ project), to specific unemployed categories such as the **under-graduate students** of the ‘*Progetto idrologo*’. **Implemented methods/approaches** are essentially based on VET courses.

► **Initiatives and solutions to increase the labour active population (i.e. labour force) (Ch1.3)**

The challenge to **increase the labour active population** (Ch1.3) in the identified initiatives is addressed more by providing skills to individuals and support to categories which are out of the labour force than by enhancing technical competences. The project '*Emplea tu capacidad*' of the Community of Madrid (ES_03) aims at including people with disabilities by providing, for example, **training on new technologies. Personal situations, competences and ambitions** are the key aspects to be considered by different public administrations (one of which is Prague, in the Czech Republic) for defining the training needs of ex-offenders in the 'Working Chance' project (CZ_01). The 'We Learn Again' project in Hungary (HU01 and CS_04) offers training to disadvantaged and vulnerable groups to improve their operational competences and practical experience, for example in the **maintenance of internal water channels, public roads and gardening. Training on technical** issues is provided both for supporting personal motivation of trainees and for matching labour market needs. The 'Learning Neighbourhood' project (DE_02 and CS_01) of the Robinsbalje Centre of Bremen uses education to foster the social inclusion of the target groups. In the initiative, physical premises are used for **general purpose training and skills improvement but also for improving employability** through the provision of support services (e.g. healthcare, job counselling), allowing reconciliation between work and family life. The project '*Lanzaderas de Empleo y Emprendimiento Solidario*' (ES02 and CS_05) focuses on providing transversal skills and on stimulating cooperative approaches among young unemployed to make them active job seekers.

Initiatives supported by LRAs and collected in the inventory to **increase the labour active population** (Ch1.3) **focus more on target groups** than on training content. **People with disabilities** are the main target group of the project '*Emplea tu capacidad*'. Both labour inclusion and social integration are targeted but the initiative also provides specialised training to the **operators of the contact points** in order to properly support the disabled. Employability of **ex-offenders**, together with decreased chances of recidivism, is the objective of the 'Working Chance' project. Among the disadvantaged and vulnerable groups targeted by the 'We Learn Again' project, is the **Roma community. Young people, women, immigrants** (and, in general, persons who have difficulties in (re-)entering the labour market) are targeted by the 'Learning Neighbourhood' project. People aged less than 35 are also the target of the project '*Lanzaderas de Empleo y Emprendimiento Solidario*'. **Implemented methods/approaches** are essentially based on VET and lifelong learning.

3.2.2 Challenges to reduce the skills mismatch

Skills mismatch implies dissatisfaction of the workers who have lower or higher skills than those required to perform the assigned tasks (i.e. under-skilled and over-skilled workers, respectively). According to the OECD survey within the Programme for the International Assessment of Adult Competencies (PIAAC), “roughly one-third of workers in OECD countries are over- or under-qualified for their job” (EC, 2016b). The reduction of skills mismatch relates to the implementation of initiatives mainly aimed **at addressing the inadequate skills of the employed**. In practice, this means reducing the risk for workers of remaining employed in unfavourable conditions or of becoming unemployed. Whether dealing with under-skilled or over-skilled workers, in both cases LRAs should also gather sound information on skills needs and trends and then focus on reducing the lack of information on labour demand, allowing workers to find jobs with the adequate level of skills. With the exception of cases where learning on the job (directly supported or indirectly facilitated by the employers) may gradually provide skills to mismatched workers, additional interventions by LRAs may be required in case of workers believed to need more competencies to cope with their duties. The challenges met by LRAs to address the skills mismatch refer to:

- i) increasing the skills of the employed (Ch2.1);
- ii) providing and/or formally recognising the qualifications of the employed (Ch2.2).

Table 5 reports on the work strands addressed by each of the identified challenges. The concerned target group(s) and the implementation method(s) have been derived from the information provided in the cases of the inventory.

Table 5. Challenges to reduce the skills mismatch

Challenge	Work strand	Target group	Implementation method
Ch. 2.1. Increase the skills of the employed	WS1 Improving the quality and relevance of skills formation.	Employed in general, care professionals, staff of public and private migration support services, professionals of the ILM.	VET (workshops), mentoring services, lifelong learning.
Ch. 2.2 Provide and/or formally recognise the qualifications of the employed	WS2 Making skills and qualifications more visible and comparable.	Elderly workers, self-employed.	VET, mentoring services, lifelong learning.

Notes: Information based on 7 relevant initiatives/solutions included in the inventory and aimed at reducing skills mismatch.

► **Initiatives and solutions to increase the skills of the employed (Ch2.1)**

Mismatch is suffered by those workers who feel inadequate for the assigned job tasks. Workers having more skills than required need efficient mechanisms for sharing information about the actual job opportunities available (see section 3.2.3 where examples of such initiatives are reported). Workers with fewer skills than required need education and training. In this last case, **skills to be provided** vary in line with the mismatch suffered by the concerned worker(s). The ‘Empowerment for integration’ project developed by the Municipality of Odemira (PT_01 and CS_02) has the objective of generating integration and social inclusion of immigrants through the empowerment of the local actors. The project provides **soft skills** to local professionals dealing with immigrants to properly manage their working relationships for which they do not feel adequately trained. The ‘Valke’ project (FI_01 and CS_08) aims at proving **transversal skills** to deliver effective services expected, in turn, to enhance job opportunities for the unemployed. Improvement of **entrepreneurial skills** is the main goal of the ‘BECENET’ project (MIX_04 and CS_06) carried out through the establishment of two identical centres for entrepreneurial promotion in the municipality of Traianoupolis (EL) and in the municipality of Smolyan (BG). The ‘Capacity Building in care for the Elderly Persons with Disability’ project (MT_02) aims at investing in **professional specialised skills** for nursing and care professionals in the area of elderly care and disability, in order to reduce hospitalisation. **Technical skills** (including digital ones) are provided to care professionals for people with disabilities in the project ‘*Emplea tu capacidad*’ (ES_03). **Target groups** are mismatched workers in general (the ‘BECENET’ project); individuals who work directly with immigrants in the ‘Empowerment for integration’ project in Odemira; professionals working in the Intermediate Labour Market (the ‘Valke’ project); nurses and care-takers of the Mater Dei Hospital in the ‘Capacity Building in care for the Elderly Persons with Disability’ project and in the ‘*Emplea tu capacidad*’ project. **Implemented methods/approaches** are essentially based on lifelong learning.

► **Initiatives and solutions to provide and/or formally recognise the qualifications of the employed (Ch2.2)**

Also in this case, **skills to be provided** vary in line with the mismatch suffered by the concerned worker(s). Among the examples, the ‘Training opens new doors for farmers’ project (UK_01 and CS_10) aims at demonstrating to Northern Ireland’s farmers how **digital skills** can support them in making their job more efficient and profitable. Recognition of the delivered skills is achieved through the acquisition of the European Computer Driving Licence (ECDL). The ‘*Obudź w sobie olbrzyma*’ (‘Wake the Giant in Yourself’) project (PL_01) provides a core of skills recognition/awareness initiatives including

coaching, psychological and motivational support, as well as job-specific vocational and ICT training, to employed individuals with recognised competences and professional experience. **Target groups** include Northern Ireland's **farmers and their families** in the 'Training opens new doors for farmers' project and elderly workers (aged 50+) suffering mismatch for different reasons in the '*Obudź w sobie olbrzyma*' project. The latter have difficulties in keeping pace with the changing digital skills requirements of their jobs and recognition/awareness of the soft skills is used also to increase motivation and to reduce the workers' perception that they are forced to work on tasks that are not aligned with their skills. VET, mentoring services, or lifelong learning approaches are selected according to the required type of qualification acknowledgment (e.g. third parties awareness of competences (soft) or formal certifications).

Box 6 highlights the importance of equipping senior workers with digital skills as this age group is amongst those most affected by technological mismatch.

Box 6. Keeping senior workers up to date on the emerging challenges of digitalization, Poland

Digital divide is currently perceived as a significant threat to the capacity of the elderly to remain active and in line with the fast-changing needs of the labour market. The '*Obudź w sobie olbrzyma*' (*Wake the Giant in Yourself*) project was implemented in the Polish province of Lublin between 2010 and 2012 with the aim of developing an innovative methodology to train people over 50 and, as a direct consequence, to help them to remain economically and professionally active. Various types of courses for people aged 50+ (with a specific focus on ICT competences) were organised. Learning objectives were based on a gradual acceptance of new technologies (e.g. computer, internet or mobile phones) allowing participants to overcome psychological barriers and progress from digital beginners to active users of ICT, also for private and domestic purposes. An in-depth analysis of the working situation of people aged 50+ and of the legal solutions available to extend their professional activity preceded the implementation of the project's training activities.

Sources: Macik D. and Macik R. (2013); *Obudź w sobie olbrzyma* [website](#).

3.2.3 Challenges to improve skills intelligence and information sharing on labour market conditions

To properly understand skills actual needs and future trends LRAs have to directly implement intelligence activities and share the outcomes of these activities with the other concerned stakeholders (i.e. social partners such as employer organisations, individual employers, professional associations, trade

unions, general education providers, VET providers, and sector skills councils¹³).

Skills assessment and anticipation exercises (i.e. forecasting and foresight exercises) are tools which provide up to long-term information support to LRAs towards their intervention in the skills market but which require a relevant intelligent effort at the local level. The OECD work on “*Assessing and anticipating changing skills needs*” (OECD, 2016) underlines that projections at the regional (or sectoral) level are **for the most obtained by disaggregating data collected by means of national exercises**. More precisely, this happens in 16 EU MS out of the 29 countries surveyed by the OECD¹⁴. Only in some cases (i.e. Belgium, Finland, France, Spain and Sweden), are regional analyses reported to be conducted independently from the national exercises. However, evidence suggests that, although not revealed by the survey, regional or even local initiatives are commonly undertaken in other Member States. Boxes 9, 11 and 13 below report on cases from Poland, the Czech Republic and Germany, respectively, but other cases may be found, for example in the UK (e.g. the Learning and Skills Observatory for Wales).

Box 7 illustrates a case of centralised production of forecasts which, however, is producing regional and sub-regional profiles of demand and supply.

Box 7. Excelsior, the information system for occupation and training, Italy

Excelsior is a long-standing initiative supported by the European Social Fund and promoted by the Italian Union of the Chambers of Commerce and the Italian Ministry of Labour. The project has developed a nationwide information system able to produce job opportunities' forecasts on a quarterly and annual basis, disaggregated at the regional and sub-regional level (i.e. Provinces). The system relies on phone-based surveys conducted by the individual chambers of commerce throughout the country. About 300,000 interviews are carried out yearly, involving enterprises of any size and of any sector. Enterprises are asked about their recruitment plan for the following 12 months and also about the number of dismissed people in the previous quarter. Apart from future business vacancies, other information towards the identification of future skills gaps is collected, including characteristics of the employing firm, reasons for not employing new staff for those firms that report no job opportunities, supply and demand flows by level of qualification, forecasts of job opportunities by type of occupation and level of

¹³ ‘Skills councils’ are employer-led or tri-partite organisations involving representatives from employers, workers and government or educational institutions...[...]...Several countries have established such sectoral councils (either national or regional), commissions or committees. Skills councils are usually independent organisations that provide a platform for the discussion of skills-related challenges of specific sectors or regional areas, as well as the development of joint policy responses. They provide recommendations on education and labour market policy, which can be general in nature, or specific to a certain region, sector or individual education and training institution and its programmes”(OECD, 2016).

¹⁴ The OECD survey was conducted by means of questionnaires sent to Ministries of Education, Ministries of Labour, employer organisations and trade union confederations.

qualification, type of qualifications required, type of skills required, whether there is any plan to employ immigrants, professional and training-related vacancies, vacancies for students, and size of investment of the firm in training activities. The information system is instrumental to policymakers, public and private entities working towards the matching of supply with demand, those working in the education system, and job seekers.

Source: Excelsior [website](#).

The challenges met by LRAs to improve skills intelligence and information sharing on labour market conditions refer to:

- i) investigating actual skills needs (in the short term) and facilitating proper information sharing (Ch3.1);
- ii) investigating skills needs in the medium term (forecast) and in the long term (foresight) and facilitating the proper information sharing (Ch3.2);
- iii) systematically involving social partners (Ch3.3).

Table 6 reports the identified challenges addressing the third work strand of the Skills Agenda. The concerned target group(s) and the implementation method(s) have been derived from the information provided in the boxes included in this section.

Table 6. Challenges to improve skills intelligence and information sharing on labour market conditions

Challenge	Work strand	Target group	Implementation method
Ch. 3.1 Investigate actual skills needs (in the short term) and facilitate proper information sharing	WS3 Improving skills intelligence and information for better career choices	Unemployed (including students and school leavers), employed, training and educational institutions, business sector, advisory systems, employment offices, local and regional labour offices.	PES of the concerned region, vocational training service of the concerned region, regional labour market observatory, web-based system/online tool.
Ch. 3.2 Investigate skills needs in the medium term (forecast) and in the long term (foresight) and facilitate the proper information sharing		Unemployed (including women, young people), employed, central authorities (including Ministry of Education), agencies responsible for professional and vocational education, business sector, training and educational institutions (including vocational training providers), occupational advisors.	PES, web-based system/online tool.

Challenge	Work strand	Target group	Implementation method
Ch. 3.3 Systematically involve social partners		Unemployed (including students), employed, training and educational institutions (including vocational training providers), central authorities, local and regional authorities.	Joint project-based initiatives (including cross-border ones), web-based system/online tool (including surveys).

Notes: Information based on 8 initiatives/solutions described in this section in Boxes numbered from 8 to 15.

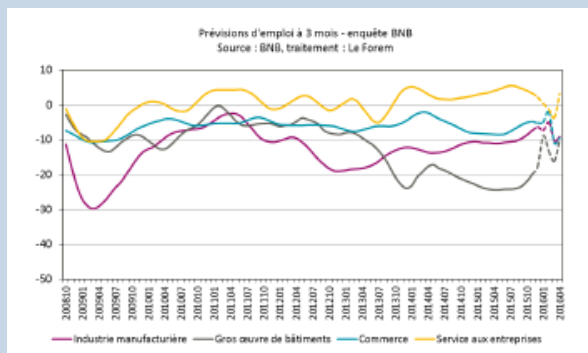
► Initiatives and solutions to investigate actual skills needs (Ch3.1)

These initiatives or solutions are needed in order to reduce the actual gap in the skills market, a gap that in the short to medium term may also generate mismatch. Examples of ‘structured’ investigation about actual needs (i.e. in the short term) at the regional level are represented by the case of the Skills Centres of the Walloon Region (Box 8) and by the Malopolska Labour Market Observatory case reported in Box 9. Instead, the Finnish *ForeAmmatti* web-based solution described in Box 10 and the RISA initiative from Czech Republic reported in Box 11 are good practices of information sharing with the public at large (including students deciding on their education career, workers and unemployed people) on the outcomes of intelligence processes related to the labour markets.

Box 8. The Skills Centres of the Walloon Region, Belgium

In Belgium, employment and vocational training policies are the competence of the regional level. Since 1998, the government of Wallonia re-organised its public employment services with the creation of Skills Centres and a Skills Centre network coordinated by FOREM, the Walloon Public Employment and Vocational Training Service. In 2010, 25 Skills Centres are reported (Ecorys, 2010). These centres represent a concrete link of training activities to the territory (each, at the sub-regional level) and to regional economic development. Their main tasks include improving the general qualification level of the population; developing lifelong learning strategies; and matching training to the needs of the sub-regional labour market, including through the filling of available vacancies. Activities supporting the scope of the centres include partnering with territorial stakeholders to make the link to economic development concrete; engaging not only the employed and the unemployed, but also the training and educational institutions and stakeholders; surveying the evolution of skills requirements, regularly reporting and forecasting, disseminating information and awareness raising. FOREM regularly produces informative reports on the labour market situation in the region. The most recent is dated May 2016 and includes medium-term trends of demand, distribution of employment opportunities, quantification of unemployment and jobseekers, progress of the three main training and employment initiatives at the regional level (i.e. the ‘*Plan Formation* –

Insertion, the *‘Programme de Transition Professionnelle’* and the *‘Aides à la Promotion de l’Emploi’*), and short-term forecasts of demand by manufacturing (purple line), construction (grey), trade (blue) and business services (yellow) (figure, extracted from Le Forem, 2016).



Sources: Ecorys (2010); Le Forem (2016).

Box 9. The Malopolska Labour Market Observatory, Poland

In Malopolska, the regional government has the responsibility for employment policies, including those related to skills matching. The Malopolska Labour Market Observatory (LMO) was started in 2006 as a pilot with the specific aim of providing labour market information for regional development policymaking. The ‘observatory’ approach is not unique to employment. Three other regional observatories cover economy, education and social matters. These observatories are expected to consolidate over time into an intelligence network supportive of the regional decision making process. The LMO produces analytical work on the basis of statistics, administrative data and ad hoc data collection exercises. Among the latter are: the Occupational Barometer, for the monitoring of labour market developments in support to the role of local labour offices towards occupation, mobility and adult learning; the Vocational School Leavers Survey, to track the employability of students having received vocational training, information which is then inputted into the making of education policies; and the Survey of Employers and the Business Sector Analysis, for the analysis of demand. The Occupational Barometer is the instrument for short-term (12 months) forecasting by occupation. It is developed at the county level by the labour offices which are, among other tasks, also responsible for linking with businesses and education institutions. Forecasts are obtained yearly through the discussion of collected/available data by an expert panel. This ‘qualitative-based’ approach is then supported by ex post assessments of forecasts, including their accuracy.

Source: Branka J. (2014).

Box 10. Information on skills needs at the regional level in Finland

In Finland, skills assessment and anticipation exercises are of use to both students and workers. A web-based system named *ForeAmmatti* provides information on current and expected vacancies, regional supply and demand of labour, as well as on skills needed by occupation. Students and workers can search job openings by occupation in each of the 15 identified Finnish regions. First, the system returns the average number of job openings in the region per month (based on both historical and projected data), and then the region where the selected occupation has the largest gap. Such assessment is based on data sourced from the public employment services, the analysis of job announcements, and forecasts.

Sources: [ForeAmmatti website](#) (in Finnish).

Box 11. Information on skills needs at the regional level in the Czech Republic

RISA is a regional information system filling the information gap related to the skills market. This online tool collects information on the open positions by region. RISA can be a reference point for school leavers, students taking enrolment decisions, unemployed people, employers, schools, advisory systems, employment offices, and municipal and regional labour offices. A RISA website has been available for the Liberec region since June 2007 and is still online.

Sources: [RISA website](#) (in Czech).

► Initiatives and solutions to investigate skill needs in the medium and in the long term (Ch3.2)

Looking into the medium term (2-5 years) and the long term (over 5 years) means conducting forecast and foresight analyses. This investigation is usually carried out through skills assessment and anticipation exercises. Even if national exercises which also have a local and/or regional focus require an information collection and sharing effort for local partners, initiatives directly designed and implemented at the local level may be hampered by limited funds, limited political support, lack of human resources, and/or poor availability of information collection/sharing infrastructures (OECD, 2016). In general, Public Employment Services (PES) gained a strategic role at the local level, given their proximity to the territory. They “*potentially play a vital role in anticipating skill needs and/or deploying knowledge on future skill needs in their services to jobseekers and employers. PES are responsible for delivering employment services to jobseekers and employers to enhance the match between supply and demand of labour*” (Andersen *et al.* 2010). Box 12 illustrates an effective approach based on the presence of PES at the regional level in Slovenia. Box 13 describes the Regio Pro initiative in Germany using a web-based tool to share information about medium-term forecasting of the skills demand.

Box 12. Alignment of skills supply and demand: the Slovenian integrated system for the use of information on skills anticipation at the regional level

In Slovenia, assessment of the future development of the labour market (i.e. skills demand by sector and skills supply by education domain) is not systematically conducted at the central level. On the demand side, Public Employment Services (PES) at the regional level have the capacity and responsibility to carry out anticipatory activities through surveys addressed to employers which focus on expected short-term skill needs. Information collected and analysed by PES on skills anticipation are shared with the Slovenian Ministry of Education and Sport and other agencies responsible for professional and vocational education. Most of the interest is on the profiles of lacking skills. Additionally, regional employment officers visit those employers who have a surplus of workers with a contract close to expiration, with the aim of presenting new opportunities for re-

employment, training and re-training, or self-employment. On the supply side, occupational advisors at the regional level monitor enrolment in (upper) secondary school programmes and in other education programmes through, for example, the number and type of graduates entering the labour market. Occupational advisors also have the role of interacting with educational institutions, including those which develop vocational programmes.

Source: Andersen et al. (2010).

Box 13. Regio pro, Region Hesse, Germany

In 2007, the federal government of Hesse established a web-based tool to provide medium-term (5-7 years) forecasts in each of the 26 districts of the region. The tool provides information on supply and demand, by occupation and target group (e.g. women or youth). The instrument is based on data collected at the federal level by branches of the statistical and employment offices, and then analysed and validated (*ex post*) at the district level by a panel of experts. These experts usually belong to different groups of stakeholders in the concerned territory. Since its launch, Regio pro was intended to encourage the development of local labour market strategies which address the meeting of future skills needs as well as the need to diversify the productive structure of the territory according to actual labour market and economic developments. In the future, these local strategies are expected to contribute to regional development policymaking. Currently, [Regio pro](#) provides forecasts up to 2020.

Source: Branka J. (2014).

► Initiatives and solutions to systematically involve social partners (Ch3.3)

The systematic involvement of social partners is intrinsic to all the intelligence activities performed by LRAs as it facilitates both the information collection on skills demand and the alignment activities of supply to demand. According to the Skills Agenda, “*EU-level action alone will not suffice. Success depends on the commitment and expertise of many players: national governments, regions, local authorities, businesses and employers, workers and civil society, and people themselves, taking up opportunities to make the best of their talents*” (EC, 2016a). Systematic involvement of social partners is essential to create consensus on the needed skills, to guarantee readiness of national policy response, to align decision makers in charge of employment, education and migration matters, and to make citizens (as potential suppliers of skills) and businesses (as potential demanders of skills) aware of the upcoming market trends. The interaction itself between industry, academia and government with insights of civil society (e.g. students, unemployed, employed) may generate, according to the knowledge creation process behind the Quadruple Helix

approach, innovative solutions to address skills gap and mismatch in the short to long term. An example of an effective response to the labour market needs identified through the interaction of different stakeholders is provided through the ET-struct project described in Box 14.

Box 14. International integrated assessment of regional skills needs: ET-struct

The ‘Economic Educational Territorial – Structure’ (ET-struct) project, funded through the ERDF from the ‘Central Europe’ Operational Programme (2007-2013), proposed an innovative way of forecasting regional skills requirements and of tackling regional employment problems and brain drain effects in the eight regions of the project’s partners (i.e. *Střední Morava* (CZ), *Moravskoslezsko* (CZ), *Mecklenburg-Vorpommern* (DE), *Veneto* (IT), *Emilia-Romagna* (IT), *Dolnośląskie* (PL), *Kujawsko-Pomorskie* (PL), *Vzhodna Slovenija* (SI), *Zahodna Slovenija* (SI)) and in two countries (Ukraine and Austria). For these territories, surveys addressed to employers on needed skills allowed the creation of a predictive model ‘ET-Inventory’ which relied on regional political, economic and educational parameters and which provided an assessment of employment requirements.

Sources: ET-struct Info Regio [webpage](#); ET-struct project [webpage](#).

Additionally, LRAs may have a role as facilitators when dialogue between the local providers of structural skills (e.g. HEIs) and the business sector is not effective. Box 15 illustrates a case where the skills supply side tries to be automatically aligned with the demand requirements in terms of occupational profiles.

Box 15. A tool to facilitate the matching of skills with occupational profiles: the careers and employability service of the University of Kent

The University of Kent offers to its students a tool to investigate their employability opportunities. The service develops the analysis of the employability skills of each student based on 32 questions and suggests the skills needed for matching 12 job profiles (i.e. teacher, bank manager, chartered accountant, solicitor, marketing manager, museum curator, police officer, patent examiner, computer systems analyst, research scientist, TV researcher, and personnel manager). Examples of matching exercises are done both through a matrix and a map showing the main competences requested for a set of several occupations. Sections on *How to develop employability skills*, *Practice aptitude tests*, or *The skills game* allow students to be aware of their employability potential and to improve it through practical suggestions on how to manage applications and interviews as well as on how to write their *curriculum vitae*.

Source: [webpage](#) of the University of Kent service.

Part 4: Case studies

This part presents 10 case studies/good practices on **initiatives/solutions** promoted and financed by LRAs to understand future skills trends and/or to cope with the challenges related to skills gap and mismatch. The ten cases/practices have been selected on the basis of the following criteria: i) they represent a response to one or more of the three priorities of the Skills Agenda as detailed in Part 1; ii) they respect a geographical balance across the EU; and iii) they are amongst the **most innovative** within the inventory compiled for this study (separate deliverable). Some of the selected cases/practices are characterised by a specific territorial feature related to governance (i.e. federal) and/or geography (i.e. border conditions, remoteness and/or sparsely populated).

CS_01 Robinsbalje, Bremen's Learning Neighbourhood, Germany (DE50)

Work strands of the Skills Agenda: Improving the quality and relevance of skills formation; Making skills and qualifications more visible and comparable.
Authorities involved: City of Bremen, Huchting District Administration, Municipal Health Services
Implementation period: 2008-2011
Belonging group of the region within our classification: Group 3: Dynamic
Features of the territory: The Free Hanseatic City of Bremen, which includes the cities of Bremen and Bremerhaven, is one of the federal states of Germany. They are both classified as smaller metro regions.
Target group: Women with children, Immigrants, Young people
Financing source(s): Total budget: EUR 2,764,500, out of which ERDF (2007-2013) contribution for EUR 1,319,000 and national and federal budget for EUR 1,445,500.
Objective: Fill the skills gap. Addressed challenges: Develop new skills for the unemployed (Ch1.1); Increase the labour active population (i.e. labour force) (Ch1.3).

1. Description

The Robinsbalje centre was established in 2010 in one of Bremen's areas characterised by both social tension and physical decay (i.e. Mittelschuchting neighbourhood, in the district of Huchting). The aim was to pursue social inclusive growth and urban regeneration through the education of local communities. The centre provided different target groups, especially from disadvantaged categories (e.g. ethnic minorities, low-income households), with access to education and training (19 different courses to date, related to, for example, language or culture). The employability of citizens was also enhanced through the provision of work and family life reconciliation guidance. The activities of the centre developed around the construction of a physical location

which also addressed the lack of a public presence in the neighbourhood. The building ('architectural shell'), hosting relevant institutions, and a nearby school and kindergarten (representing the heart of a 'campus') represented the key assets, together with municipal departments, NGOs and other social support institutions, to provide services such as healthcare, support in social matters (i.e. with childcare facilities), and job counselling. Hence, the centre also became a meeting point for the neighbourhood, with activities also organised on weekends or during school holidays, in co-operation with different relevant associations and public authorities. Overall, the engagement of citizens through education allowed the re-qualification of a poor urban area with empowered social and economic assets.

2. Policy context

This initiative is framed within national and regional strategic planning. At the national level, the German National Strategic Reference Framework (NSRF 2007-2013) sets the objectives for ERDF-funding, among which is the creation of more and better jobs. Within the Regional Operational Programme for Bremen (2007-2013), the initiative is under Priority axis 2 'Activating urban commercial and residential areas', sub-priority 2.1 on 'neighbourhood centres and development'. The emphasis of policy planning on residential areas and neighbourhoods is grounded on the evidence that some parts of the city are characterised by severe social segregation and long-term unemployment, determined mostly by the dynamics of economic change undergone by the city in the last decades.

3. Impact

The centre still provides educational and social services for the neighbourhood and its focus is still on the needs of minorities and of low-income families. Among the main effects achieved by this 'learning neighbourhood' is the creation of a supportive network among all involved stakeholders, including institutions, which is based on local synergies, mutual understanding, and co-operation. The physical premises include a building of 841 m², where 365 m² are for multi-functional and shared purposes, and 245 m² for the offices of the stakeholders. The initiative is widely considered a success. However, apart from the 6 jobs created during its implementation, there is no information on the number of persons trained and/or supported since the establishment of the centre in 2010.

4. Innovative elements

The Robinsbalje Centre goes beyond the traditional delivery of **education and training to local communities, as it aims at social inclusion** through an open ‘learning neighbourhood’ approach. First, it provides education and training for increasing employability of disadvantaged people (e.g. migrants) or of people having family reconciliation problems in becoming active population (e.g. women), pursuing *de facto* jobs also as an instrument for achieving social participation. Second, the centre itself represents a social aggregation site which fosters integration through participation. The established cooperative approach between educational institutions, public authorities and local stakeholders was a brand new example of interaction not experienced before in Bremen. The project idea was a proposed improvement of the approach adopted in the EU-funded INTERREG IIC project ‘Modern School’ aimed “*at using public schools as multifunctional institutions for urban neighbourhoods*”.

References: DG REGIO project description: [Robinsbalje, Bremen's Learning Neighbourhood](#); Press release dated 08.02.2012, Soziale Stadi Bremen, [Quartiersbildungszentrum Robinsbalje: Aufnahme in die EU-Bestenliste](#).

CS_02 Immigrants integration through the empowerment of local actors, Alentejo, Portugal (PT18)

Work strand of the Skills Agenda: Improving the quality and relevance of skills formation
Authorities involved: Municipality of Odemira
Implementation period: 2014-2015
Belonging group of the region within our classification: Group 6: Highly Static
Features of the territory: Four out of five NUTS2 of the Alentejo region (PT18) are classified as ‘remote’.
Target group: Staff of public and private migration support services
Financing source(s): European Fund for the Integration of non-EU immigrants (EIF). Total budget of the project is EUR 28,478.31, out of which co-funding is EUR 27,054.39.
Objective: Reduce the skill mismatch. Addressed challenges: Increase skills of employed (Ch2.1).

1. Description

This initiative stems directly from the needs identified while implementing the project ‘Integrating’, funded by Action 1 of the European Fund for the Integration of Third-Country Nationals. In particular, it was found necessary to create skills among the staff of public and private support services dealing with the welcoming and inclusion of immigrants. The goals of this capacity building initiative were: i) to provide trainees with essential tools for the carrying out of

immigrants' integration, acceptance, inclusion and employability; ii) to empower trainees to recognise the presence of activities related to the trafficking of human beings; iii) to facilitate the linkage between labour demand and supply; and iv) to facilitate the social inclusion process. The project was structured around three main types of intervention: 'thematic practical workshops', one seminar, and training sessions. The seminar was the occasion to present the Municipal Plan for the Integration of Immigrants, conceived by the Odemira City Council in co-operation with several local actors (see below). The main financial source of the project was the High Commission for Migrations through Action 5 (Empowering of Support Services) of the European Fund for the Integration of Third Country Nationals. For its strategic relevance at the local level, the formal partnership included the Odemira City Council, the civil parishes of Saint Teotónio, Longueira, Almogrove and Vila Nova de Milfontes, and the agricultural enterprise SUDOBERRY. Other entities supporting the initiative were the school Ferreira de Castro in Mem Martins, the central services of the Aliens and Borders Office (SEF), the Association for Family Planning of Alentejo (APF), the school EB 2.3 of Saint Teotónio, and the bank Caixa Agricola of Saint Teotónio.

2. Policy context

Odemira's prosperity is based on intensive agriculture, characterised by an increasing labour demand that local supply cannot satisfy. In fact, about 75% of agricultural workers are immigrants. This initiative is thus framed within the local strategy for the integration of immigrants of the municipality of Odemira (Odemira Integra) which is based on the development of a municipal plan where inclusion targets go along with the cultural, social and economic enrichment of society. The 'Integra' document specifies that *"47% of immigrants registered in the district of Beja live in Odemira. Of these, 16.6% are from third countries (outside the European Union). 12% of the resident population in Odemira are foreigners"* and that, among other targets, the dedicated City Council of Immigrant Commission shall *"Ensure a better match between needs and migration offer"*.

3. Impact

Some 184 individuals working in public or private institutions directly involved in the integration of immigrants in Odemira were reached by the project. They belong to the following: agricultural enterprises, Odemira City Council, civil parish councils of the municipality of Odemira, the local tax office, the local unit of the Social Security, schools, and the Institute of Employment and Vocational Training – IEFV.

4. Innovative elements

The innovative value of the initiative lays in the approach selected to address the reception and integration of immigrants. Targeted needs were those of the staff dealing with reception and integration activities, and not those of the immigrants. Similarly, training and education actions were addressed to local actors dealing with immigrants. This allowed generating effective results with a limited budget. Apart from addressing the mismatch of skills suffered by the staff of public and private support services, the involvement in the initiative of the agricultural sector's stakeholders facilitated the integration of immigrants in the local labour market.

References: DG Migration and Home Affairs, European Web Site on Integration, project description: [Empowering - Immigrants integration through the empowerment of local actors](#); [Integra](#), Municipal Plan, Odemira municipio.

CS_03 Les Ateliers du Midi, Brussels, Belgium (BE100)

Work strands of the Skills Agenda: Improving the quality and relevance of skills formation; Making skills and qualifications more visible and comparable
Authorities involved: Commune de Saint-Gilles
Implementation period: 2007 – on-going
Belonging group of the region within our classification: unclassified
Features of the territory: -
Target group: Unemployed
Financing source(s): Total investment EUR 1,750.000, out of which EU investment (ERDF 2007-2013) is EUR 1,222,500.
Objective: Fill the skills gap. Addressed challenges: Provide and/or formally recognise qualifications of unemployed (Ch1.2); Increase the labour active population (i.e. labour force) (Ch1.3).

1. Description

The ‘CENFORGIL-Les ATELIERS DU MIDI’ project was set up in 2007 with the aim of giving adults the opportunity to complete their unaccomplished secondary education. Main topics of the offered courses (whose lengths range from 4 to 10 months) related to electricity, sport, administrative services, hotel/restaurant/catering services, entertainment and events organisation. In 2014, ERDF funding allowed widening the scope of the initiative in response to labour market instances. New training courses focussing on ecological construction and new technologies were added, as well as courses specifically aimed at reducing the gap between skills required by the labour market and skills available within the Commune de Saint-Gilles’ workforce.

2. Policy context

The project is strongly supported by the municipal authorities of Saint-Gilles and, in fact, is the follow up of an association between the Municipality of Saint-Gilles and CENFORGIL which dates back to the year 2000. Since then, the Municipality purchased and restored a parcel of land as part of the Objective 2 of the European Social Fund, while CENFORGIL took on the responsibility for the development of the buildings and for the management of the activities of the *Ateliers du Midi*. The *Ateliers* is dedicated to the delivery of training and to the development of social economy towards integration. The political will and commitment of local authorities to develop economic activity in and around the area of Midi station in Brussels, is reflected by the presence of other municipal assets, services and infrastructures, such as the House of Employment, the business centre, and the House of Cultures.

3. Impact

The renewal of the initiative and the enlargement of its scope is itself an indication of the effectiveness of the initiative. Each year, CENFORGIL creates more than 200 skilled people ready to enter the job market. The courses on ecological construction and on ICT connected to live performances and events established in 2014 provided training for a total of 48 people.

4. Innovative elements

The ‘Ateliers du Midi’ is a centre of almost 1,000 m² for the training of job seekers. This location is the outcome of a joint initiative of the Municipality of Saint-Gilles and CENFORGIL association put forward through an innovative partnership agreement aimed at addressing skills gap and mismatch in the Brussels’ area, where each of the two partners has a well-defined role in line with its ‘institutional’ scope. Since 1996, CENFORGIL has delivered vocational training towards the professional integration of low-skilled job seekers from the Brussels region.

References: DG REGIO project description: [CENFORGIL trains job seekers in ecological construction and new technologies](#); CENFORGIL [website](#).

CS_04 The ‘Community public work programme’ and the ‘We learn again programme’, a case from Hungary (HU323)

Work strands of the Skills Agenda: Improving the quality and relevance of skills formation; Making skills and qualifications more visible and comparable
Authorities involved: Municipality of Tiszadob
Implementation period: February-December 2012
Belonging group of the region within our classification: Group 6: Highly Static
Features of the territory: -
Target group: Disadvantaged or vulnerable groups (Roma’s community)
Financing source(s): European Union’s Fundamental Rights and Citizenship Programme
Objective: Fill the skills gap. Addressed challenges: Provide and/or formally recognise qualifications of unemployed (Ch1.2); Increase the labour active population (i.e. labour force) (Ch1.3).

1. Description

The ‘Community public work programmes’ are considered suitable instruments to shorten the distance between disadvantaged or vulnerable groups (e.g. longer-term unemployed, or migrants) and the labour market (CEDEFOP, 2015). Such a ‘distance’ is, in practice, considered a general mismatch of the skills of these groups with respect to the needs of the market. These programmes imply temporary (a few months only) employment of the unemployed in community work. They are usually connected with practical training to increase the unemployed qualification levels, improve their basic skills and build practical professional experience. In Hungary, these programmes are implemented by local governments and are usually related to community work. The case of the Municipality of Tiszadob is exemplary. The project took place in Tiszadob Village from February to December 2012. A total of 102 persons of the Roma’s community were offered a full-time job and 9 persons a part-time job in the public sector, with functions ranging from maintenance works (e.g. water channels, agricultural roads) to cultivation of gardens. A ‘We Learn Again’ training programme was run in parallel for a total of 414 theoretical and 1,156 practical lessons.

2. Policy context

In Hungary, the public sector is an important employer and in some places, as in the case of Tiszadob, it is also one of the few sources of employment opportunities. These labour market instruments are essential to reach disadvantaged areas and have the particularity of being linked to national policies and of being under the responsibility of local councils for their

operationalization, i.e. a formal and regular channel to the labour market. The training component which is usually implemented in parallel is funded through the ESF.

3. Impact

In general, these programmes provide an impact in terms of attitude towards the ‘employed’ condition, rather than an impact in terms of skills’ enhancement. In addition, when the ‘We learn again’ component provides a vocational certificate at the end of the course, greater self-esteem has been reported by trainees. With regard to the Tiszadob Village case, most of the temporary employed learned what work discipline means. Through training related to plant cultivation technology and animal-husbandry, the work led to very small scale entrepreneurship initiatives and to the upgrading of skills for a sub-group of these employees (i.e. an agricultural unit composed of 18 women and 1 man). This, in turn, could result in helping the families’ financial situations. Furthermore, both the knowledge and the certificates obtained increased the possibilities for concerned individuals to gain employment at the neighbouring farm.

4. Innovative elements

These instruments combine a local dimension with an official framing at higher administrative levels (national policies). The first provides flexibility for implementation and the capacity to adapt to situations, usually in disadvantaged contexts. The second allows the issuing of certificates, acknowledges recognition by society, and, as a result, builds the self-esteem of participants. When disadvantaged groups are concerned, the motivation component may be as important as the technical/professional one in bridging the gap they experience with the labour market. The combination of two types of interventions (public employment and training) which also use different sources of funding is another good scheme to maximise benefits and returns for participants.

References: CEDEFOP (2015a); Roma SOURCE (2012).

CS_05 *Lanzaderas de Empleo y Emprendimiento Solidario*, Spain (ES130, ES414)

Work strands of the Skills Agenda: Improving the quality and relevance of skills and formation; Making skills and qualifications more visible and comparable.
Authorities involved: Aguilar de Campoo (Palencia) and four municipalities of Cantabria (Torrelavega, Castri Urdiales, Astillero and Santanter)
Implementation period: 2013-on-going
Belonging group of the region within our classification: Group 6: Highly Static
Features of the territory: -
Target group: Young people
Financing source(s): Foundation Santa María la Real
Objective: Fill the skills gap. Addressed challenges: Develop new skills for the unemployed (Ch1.1); Increase the labour active population (i.e. labour force) (Ch1.3).

1. Description

The ‘*Lanzaderas de Empleo y Emprendimiento Solidario*’ is an initiative aimed at providing an alternative solution to the escalating problem of unemployment. The baseline assumption of this initiative is to change the approach typically used to address unemployment, which is characterised by the passivity of the unemployed subject, to a more collaborative and proactive approach combined with modern coaching techniques. In particular, the programme selects – in each location where it is implemented – a heterogeneous group of young unemployed people (about 20 participants, typically aged below 35 years) which is then involved in an intensive training programme dealing with coaching and emotional intelligence, communication, 2.0 job search, preparation for working interviews, and creation of ‘employability maps’. The underpinning idea is to improve the confidence of involved participants, provide them with transversal skills for job hunting and improve collaborative and cooperative team attitude. The group is run as a small enterprise with knowledge exchange activities, distribution of tasks for mutual support in job hunting, and daily meetings. At the end of the experience, the participants gained valuable transversal knowledge and experiences, improved their collaborative capacity and attitude, and consolidated their communication skills and self-confidence. The initiative was launched in 2013 by the Foundation Santa María la Real in Aguilar de Campoo (Palencia) and four municipalities of Cantabria (Torrelavega, Castri Urdiales, Astillero and Santanter). Over time, other public and private organisations got involved as financial supporters of this programme. Among these are the Foundation Barclays, the ‘Obra Social la Caixa’, and the Foundation Telefonica (which is currently the major supporter of the initiative).

2. Policy context

The initiative is in line with the priorities set in the Annual Plan of Employment Policies 2015 (*Plan Anual de Polica de Empleo - PAPE*), among which is the improvement of the employability of young people and the improvement of the active and passive employment policies. The Spanish National Plan for Social Inclusion (*Plan Nacional de Acción para la Inclusión Social del Reino de España 2013-2016 - PNAIN*) is another relevant policy reference. In fact, in line with the objectives of Europe 2020, the PNAIN includes as a priority the adaptation of the labour intermediary services to the needs and characteristics of each person (Objective 5).

3. Impact

The satisfying results obtained in the pilot phase of the initiative induced a significant level of its replication in many other cities and municipalities of Spain. By 2015, 55 *Lanzaderas* were launched in 32 Spanish cities involving more than 1,100 young participants. By the end of February 2016, the Telefonica Foundation presented an evaluation of the social impact of the initiative based on the comparison of the performance of the *Lanzaderas'* participants against a control group. The results indicated the existence of a statistically significant impact of the initiative on the working inclusion rate of participants: 60.1% of the *Lanzaderas'* participants obtained a working contract of more than 2 months length compared to 39.2% of the control group. Furthermore, 32.2% of the participants of the *Lanzaderas* found a job related to their knowledge background compared to 12.1% of the control group. Other reported impacts regarded personal and professional satisfaction, quality of life, improved employability attitude and aptitude as well as self-confidence. Based on both quantitative and qualitative considerations, it has been estimated that the return of the investment of this initiative is EUR 2.8 for each EUR invested. So far (2016), 87 Spanish cities joined the programme or are currently selecting the first round of participants. The organisers set a target of 454 *Lanzaderas* to be launched by 2019, also taking into account the support of the European Social Fund. Additionally, a number of public and private organisations joined the programme as collaborators due to its acknowledged added value: among these organisations are the Spanish Ministry of Employment and Social Security, Google, Deloitte, Humania, University Complutense de Madrid, University of Alcalá, University of Burgos, and many others.

4. Innovative elements

The innovative aspect of this initiative is the change in paradigm of traditional unemployment initiatives in order to encourage a more active and collaborative

approach towards the inclusion in the labour market. Rather than providing job-hunting services, the initiative tries to improve the employability of young people by stimulating knowledge sharing, mutual support and collaboration, as well as self-confidence under the co-ordination of coaching professionals. A concrete outcome is the improvement of self-confidence and self-esteem of the participants, who throughout the programme acquire valuable transversal skills and appreciate the value of their capabilities for themselves and for the others.

References: *Lanzaderas de empleo* programme [website](#); [Plan Nacional de Acción para la Inclusión Social del Reino de España 2013-2016](#); [Plan Anual de Polica de Empleo 2015](#).

CS_06 BECENET - Better Employment opportunities through Co-operation, Education and NETworking (GR111, BG424)

Work strand of the Skills Agenda: Improving the quality and relevance of skills formation
Authorities involved: Municipality of Alexandroupolis, Municipality of Smolyan
Implementation period: June 2011-June 2013
Belonging group of the region within our classification: Group 6 (EL): Highly Static & Group 4 (BG): Static
Features of the territory: The municipality of Traianoupolis is part of the municipal unit of Alexandroupolis and is located in the north of Greece, in the Evros region (classified as predominately rural and remote). The municipality of Smolyan is part of the predominantly rural, remote province of Smolyan, located in the south of Bulgaria.
Target group: Unemployed, Women, Young people, Employed
Financing source(s): Total budget: EUR 1.249.351 out of which ERDF (European Territorial Co-operation Programme Greece-Bulgaria 2007-2013) contribution is EUR 1.061.948. National funding: 15%.
Objectives: Fill the skills gap & Reduce the skills mismatch. Addressed challenges: Develop new skills for the unemployed (Ch1.1); increase the skills of employed (Ch2.1).

1. Description

The BECENET project was aimed at creating two identical centres in the two concerned municipalities. These centres provided different training activities and initiatives which supported entrepreneurship (especially targeted to women) and fostered cross-border co-operation. The aim was twofold: to increase employment opportunities within the Smolyan-Traianoupolis cross-border area and to increase the area's capacity to compete in the regional/international market. Specifically, during the project the following activities were carried out: (i) establishment of the two centres including the design, reconstruction and furnishing of already existing municipal buildings; (ii) definition of an operative plan for each centre; (iii) creation of a training/e-learning platform addressing the educational needs of the local communities; (iv) establishment of networking

opportunities with other training centres; and (v) definition and implementation of a plan in order to increase local (eco- and agro-) tourism entrepreneurship, green economy initiatives and the sustainable exploitation of natural resources of the territories.

2. Policy context

The BECENET project has been funded within the European Territorial Co-operation Programme Greece-Bulgaria 2007-2013. This programme aimed at ensuring cohesion and competitiveness in the border areas of the two countries through targeted initiatives in the regions of Eastern Macedonia-Thrace (Evros regional unit is part of this region) and Central Macedonia in Greece; and the districts of Blagoevgrad, Smolyan, Kardjali and Haskovowere in Bulgaria. The BECENET project addressed the third of four priority axes: competitiveness and human resources. More in detail, it addressed the first specific objective of such axis, i.e. ‘support and valorisation of human resources – support of preparatory actions in view of the open labour market’.

3. Impact

During the project, the following stakeholders were impacted: unemployed, women, and the youth. Enhanced employment opportunities and competitiveness capacity of the cross-border area was achieved. However, no quantification of trainees or more detailed information on the project’s outcomes is apparently publicly available.

4. Innovative elements

The BECENET project applied a sustainable approach to tackle the economic issues of the area. This was done by focusing on green and touristic entrepreneurship, promoted, for instance, through widely accessible distance learning tools such as an eLearning platform. Furthermore, within the project, the use of the EU eco-label and of green financing was promoted.

References: KEEP EU cooperating [project’s description](#); European Territorial Co-operation Programme 2007-2013 [project’s description](#).

CS_07 *Torno Subito* ('I'll be right back'), Lazio, Italy (ITE4)

Work strand of the Skills Agenda: Improving the quality and relevance of skills formation
Authorities involved: Regione Lazio, Laziodisu
Implementation period: 2014-on-going
Belonging group of the region within our classification: Group 6: Highly Static
Features of the territory: One of the five NUTS3 of the Lazio Region (i.e. <i>Frosinone</i>) is classified as 'predominantly rural, remote'.
Target group: Graduates, University students
Financing source(s): Regional Operational Programme of the Lazio Region, ESF 2014-2020
Objective: Fill the skills gap. Addressed challenges: Develop new skills for the unemployed (Ch1.1).

1. Description

'*Torno Subito*' is a programme developed by the Lazio Region and implemented with the support of Laziodisu, a public entity in charge of promoting access to learning and knowledge. The programme finances projects submitted by university students or graduates aged 18-35 wishing to participate in higher education courses or in an internship in a national or international context. The aim is to increase their employability within the region's firms once they return from the education or work experience. Hence, each financed project is implemented in two steps: 1) attending an advanced training, course or a master programme somewhere outside of the Lazio region (in Italy or anywhere in Europe or in the world), or a work experience in an organisation/company; 2) upon return, activating an internship in an organisation/company located in the Lazio region where the skills acquired in the first step are put into practice/used. Every project must include the direct involvement of a training firm and of a firm for the re-use of skills. On the programme website, there is a list of public and private firms that voluntarily applied to participate in the programme. Participation in the programme for firms may imply the processing of a specific or professional course for the participant, a course which matches the skills that are actually missing in the firm's context. There are three main types of projects which may be submitted by candidates: '*Torno Subito Formazione*' (i.e. dealing with training), '*Torno Subito WorkExperience*', and '*Torno Subito Cinema*' (i.e. dedicated to the film-making industry).

2. Policy context

With the label '*Torno subito*' (I'll be right back) the Lazio Region launched an initiative to limit brain drain. This phenomenon implies highly skilled or qualified individuals moving away from their place of origin in order to find better pay and/or conditions. In this way, skills and expertise are lost for the benefit of the place(s) of destination. In Italy, brain drain involves not only

researchers and graduates but also young professionals who want to develop and use their capacities and abilities and do not find the right balance between skills, remuneration and empowerment in their place of origin.

3. Impact

In 2014, the Lazio Region invested EUR 5.4 million in the programme. The programme was accessed by some 800 participants and 513 projects were finally selected. In 2015, the investment grew to EUR 15 million, with a total of 1,500 participants and 1,100 projects selected. Up to now, 900 programme participants have returned to work in firms located in the Lazio region after undertaking their training/work experiences elsewhere.

4. Innovative elements

The innovative element in this type of programme is the willingness of the regional authority to not lose the human resources in which it invested on in terms of education and skills. Hence, the programme creates the necessary conditions for getting a return of investment on sponsored individuals. At the same time, with the involvement of firms/companies where the acquired skills will be re-used, the programme encourages the creation of a ‘demand’ which is tailored to the needs of the firm/company. All in all, this type of mechanism seems to create a win-win situation for all those involved: the sponsored individuals who receive support to implement their experience ‘abroad’; the participating institutions and firms who shape supply according to their requirements; and the regional authority who retains a qualified workforce.

References: ‘Torno Subito’ [website](#).

CS_08 Valke Project, Finland (FI197)

Work strands of the Skills Agenda: Improving the quality and relevance of skill formation; Making skills and qualifications more visible and comparable.
Authorities involved: City of Tampere, Tampere unemployment office
Implementation period: 2008-2012
Belonging group of the region within our classification: Group 4: Static
Features of the territory: -
Target group: Unemployed, Employed, Professionals of the ILM
Financing source(s): ESF
Objectives: Fill the skills gap & Reduce the skills mismatch. Addressed challenges: Develop new skills for the unemployed (Ch1.1); Increase the labour active population (i.e. labour force) (Ch1.3); Increase skills of employed (Ch2.1).

1. Description

The project targeted the strengthening of the region's intermediate labour market (ILM). In general, ILMs are meant to facilitate the transition of the unemployed back into regular labour markets. ILM is thus considered a temporary support ideally able to move individuals to an unsubsidised condition. The project had two main components, each addressed to two different target groups: professionals working in the ILM and the unemployed. The first component of the project was administered by the Tampere Region, the second by the Employment and Economic Development Office (TE Office) of *Pirkanmaa*. The three project objectives included clarifying roles and service delivery at the intermediate level; improving the efficacy of the ILM; and increasing the job opportunities generated in the ILM. These objectives were mainly tackled by facilitating co-operation, co-ordination and development of new services as well as through the implementation of combined measures aimed at creating a timely and quality orientation of the unemployed. Specifically, on the top of training and individual coaching, as well as of wage subsidies, new services and measures included co-ordination among the labour market actors (e.g. municipalities, TE office, local NGOs), involvement of firms in the co-operation framework, analysis and control of the ILM, and building of permanent structures.

2. Policy context

The project is framed within national policies, which point to the *“development of co-operational models and partnership in employment services for disadvantaged groups. A poorly structured intermediate labour market is considered a weakness in national Finnish labour market policy”*.

3. Impact

The effectiveness of the project was assessed by means of follow-up studies. Out of 700 participants, 637 individuals were surveyed and results showed that *“immediately after the project 22 % of participants were in work in the open labour market, 9 % in education, 13 % in subsidized work and 56 % were unemployed”*. On the measures adopted by the TE office, *“3 months after the completion of the project 21 % are in work in open labour market, 13 % in education, 16 % in wage-subsided work and 50 % unemployed. 6 months after project 21 % are in work in open labour market, 13 % in education, 17 % in subsidized work and 59 % unemployed and after 12 months after project 24 % are in work in open labour market, 12 % in education, 18 % in subsidized work and 46 % unemployed”*. If, in general, subsidies without other support measures lead to a transfer to the open labour market of about 5%-10% of the participants, this

share in the Valke project reached 50% by combining subsidies to other support services.

4. Innovative elements

ILM programmes do not represent a novelty and are part of those active labour market policies aimed at increasing employability. They are usually addressed to hard-to-reach groups, and to the long-term unemployed in particular, as these groups include actively job-seeking individuals. The novelty of the Valke project is grounded in the comprehensiveness of the approach, based on a ‘working together’ principle and providing tailored, diverse and combined solutions (services) which go beyond the provision of subsidies and achieve higher efficacy. In general, the project shows that traditional models no longer fit more modern and complex labour markets and that more varied and co-operative services are required.

References: European Commission, Directorate General for Employment, Social Affairs and Inclusion (2016), *ESF 2007-2013 Ex-post evaluation: Supporting the integration of disadvantaged groups into the labour market and society*, Final Report: Volume IV - Good practices; Mauri V. (2011), *Lisäpalveluilla palkkatukityöstä ja työvoimakoulutuksesta vaikuttavampaa Tampereen seudun välityömarkkinoilla*, Bachelor’s Thesis, Tampere University of Applied Science, September 2011.

CS_09 FEMCOOP project, Steiermark (Austria, AT22) and Nyugat-Dunántúl (Hungary, HU22)

Work strand of the Skills Agenda: Improving the quality and relevance of skills formation
Authorities involved: Innovation Region Styria GmbH
Implementation period: 2012 – 2014
Belonging group of the region within our classification: Group 1(AT & HU): Highly Dynamic
Features of the territory: Two out of the six NUTS3 of the region are classified as remote.
Target group: young women
Financing source(s): ERDF 2007-2013
Objective: Fill the skills gap. Addressed challenges: Develop new skills for the unemployed (Ch1.1).

1. Description

In the recent years, Austria and Hungary experienced an increasing shortage of skilled workers in the technical industries. This generated the growing interest of local authorities and the industry to find new ways to attract young people to these professions. At the same time, the female rate in technical and scientific occupations remains low, with the trend being mostly determined by stereotypes. The FEMCOOP project, implemented from 2010 to 2012, aimed at

encouraging young women to pursue a career in the field of natural sciences and technologies in order to counteract the shortage of skilled employees in these professions while boosting confidence and skills among women. The project implemented a pilot ‘engaging model’ which targeted girls in secondary education. This allowed the girls to accumulate practical experience in technical occupations and increased motivation by showing them occupational and career prospects. The young participants were involved in both learning activities concerning the different technical fields, and coaching activities, which involved female professionals from the metal and electrical industry. In particular, the latter were conducted through workshops which provided the participants with a new perspective on science occupations. Additionally, under the project framework, a brochure and a manual were produced in order to showcase the science jobs opportunities currently available in the market, and dissemination campaigns were launched to promote the initiative via social media, job fairs and a final event that involved multiple stakeholders, including political representatives and social partners. The implemented activities contributed to the reduction of the stereotypes associated with technical and scientific professions and facilitated the access of young women into these working and studying fields.

2. Policy context

The initiative is in line with the objectives set out in the regional development programme of the Austrian Bundesland of Styria for the period 2007-2013, and in particular with the ‘Regional competitiveness and employment’ objective. The uniqueness of this case is that the aim to strengthen the competitiveness and innovation potential of the region was combined with a significant attention to the principles of sustainable development and gender equality.

3. Impact

The project involved about 150 young females and provided them with practical information and first-hand experience in technical and scientific fields through role models and workshops. According to the results of an *ex post* survey conducted among the involved participants, the prejudice against technical professions was significantly reduced and students were able to improve their self-confidence, identify and choose among a broader range of career opportunities, and meet potential future employers operating in the region. Additionally, the project was able to establish 15 partnerships with schools and companies to facilitate the implementation and replication of these experiences, and had a relevant impact in terms of awareness raising among both the general public and the decision makers on the themes of ‘women’s equality in the economy’ and ‘women in technical and scientific professions’.

4. Innovative elements

The innovative aspect of this initiative is its focus on young women in higher education as a primary target group to reduce technical and scientific skills gap. By showing experiences and role models, the project helped overcome the stereotypes and the diffidence towards these fields of study and occupation among women, while addressing the regional need of competences and skills in these sectors.

References: DG REGIO project description: [Encouraging women to explore science and technology fields](#); Institute of Systemic Development [project's description](#).

CS_10 Training opens new doors for farmers, Northern Ireland, UK (UKN0)

Work strands of the Skills Agenda: Improving the quality and relevance of skills formation; Making skills and qualifications more visible and comparable.
Authorities involved: Department of Agriculture and Rural Development Northern Ireland
Implementation period: 2001-2007
Belonging group of the region within our classification: Group 3: Dynamic
Features of the territory: -
Target group: Farmers
Financing source(s): European Agricultural Guidance and Guarantee fund (EAGGF)
Objective: Reduce the skills mismatch. Addressed challenges: Increase skills of employed (Ch2.1); provide and/or formally recognise the qualifications of the employed (Ch2.2).

1. Description

The proposed ICT training programme provided a productivity boost for Northern Ireland's farmers. The initiative relies on a combination of computer training, face-to-face mentoring, and financial assistance. This programme was specifically designed to help farmers and their families improve their ICT skills, and to promote the use of ICT in the day-to-day farm business. The programme consisted of ten weeks of training, based around four modules of the European Computer Driving Licence (ECDL) and three two-hour visits to each participating farm by a mentor. Mentoring visits had the purpose of helping farmers apply the competence gained in the classroom to their own farm situation. Even if this ICT training programme is back dated to 2007, it is still relevant if the low uptake of digital skills in some parts of the EU, especially in rural and remote environments, is considered.

2. Policy context

Funded under the Northern Ireland Rural Development Programme, this initiative targeted low-skilled ICT actors in a domain (agriculture) which has become increasingly modernised with the support of new technologies.

3. Impact

The main direct impact was the improvement of the farmers' ICT skills. The programme provided training to 4,213 participants (i.e. farmers and their family members). More than 3,100 trainees successfully achieved the four modules of the ECDL. In the evaluation phase of the initiative, 80% of participants stated that such training contributed to the adoption of new practices making their business more efficient. Being considered as a best practice, the ICT programme for the Northern Ireland farmers had an indirect impact in terms of transferability. In fact, it has recently been considered as one of the best practices on which to build the 'Growing Goradže Region' project (2014-2025) in Bosnia Herzegovina.

4. Innovative elements

The ICT programme for the Northern Ireland farmers provided higher skills to workers and employers with an immediate direct impact on their day-to-day activities in terms of productivity. This initiative provided the opportunity to make the traditional farmers' world more connected and to increase the competitiveness and visibility of their farming business through the ICT competences.

References: DG REGIO project description: [Training opens new doors for farmers](#); Growing Goradže Region [brochure](#).

Part 5: Recommendations

REC 01 – Using the skills of extra-EU migration flows

Objective: Fill the skills gap (related to both low and high skills) in the short-to-medium term.

Work strands of the Skills Agenda: Improving the quality and relevance of skills formation; Making skills and qualifications more visible and comparable.

Main addressed challenges: **Ch1.2 Provide and/or formally recognise the qualifications of the unemployed; Ch.1.3 Increase the labour active population; Ch3.2 Investigate skill needs in the medium term (forecast)/long term (foresight) and facilitate proper information sharing.**

Regions belonging to countries that are mostly targeted by extra-EU migration flows and that are facing skills gap (i.e. regions with high JVR belonging to Group 1, Group 3, and Group 5 of our classification) may have a local workforce which is not sufficient or not endowed with the skills/qualifications required within the local labour market. Lack of interest in specific jobs may also contribute to make some of the opportunities not attractive enough for the local workforce. Societal challenges for these territories are often two-fold: economic, requiring the boosting of growth through the increased competitiveness of business sectors which lack adequate human resources; and societal, requiring the management and inclusion of an unplanned increase of individuals (including potential workers) having diverse cultural backgrounds.

Related EU policies/instruments: There have been several policies and instruments recently put forward at the EU level to address and manage migrants' flows, also from the point of view of better use of their employability potential. However, the issue remains complex also because access to the labour market implies regulatory aspects which may not be overlooked (for example, the Reception Conditions Directive 2013/33/EU lays down minimum standards for refugees' access to work but actual conditions are to be set within these standards at the national level). Among recent initiatives pointing to concrete instruments are the [European Agenda for Migration](#) (COM(2015) 240) where the need to improve the use of existing EU tools such as the EU Migration portal and the Europe's Job Mobility Portal (EURES) is stressed, and the [Action Plan on the integration of third country nationals](#) (COM(2016) 377). The latter underlines how instruments do not necessarily need to be migrant-specific and that, for example, initiatives such as the European Alliance for Apprenticeships, the European Pact for Youth, Erasmus+, or the Youth Guarantee framework may be used to foster work-based learning, education on-the-job, apprenticeships, or traineeships. Finally, the Skills Agenda emphasises the need to implement the early profiling of the skills and qualifications of migrants through existing (i.e. Europass), under revision (i.e. the EQF), or new tools (i.e. the Skills Profile Tool).

Option(s) available to LRAs

LRAs need to **become well acquainted with existing EU policies/instruments** related to the social and economic inclusion of third-countries migrants. This also includes awareness of **EU funding opportunities** supporting social

inclusion in general and the integration of third-country nationals in particular. Usually, this awareness is common in border territories but it is less common in others, especially in light of several of the latest developments of the migration crisis and of EU policymaking on skills improvements (the most recent being the Skills Agenda). Concurrently, LRAs need to have a **clear picture of the local skills market requirements** before implementing any initiative towards the understanding and use of the employability potential of immigrants. The municipal plan ‘Integra’ of the *Odemira* City Council in Portugal (CS_02) is a good example of **local strategy developed towards the integration of third-country nationals** to be tackled together with the cultural, social and economic enrichment of society.

The upcoming ‘*Skills Profile Tool for Third Country Nationals*’ is meant for identifying and documenting skills, competences and qualifications of the newly-arrived migrants and will most likely be implemented at specific welcome spots or at least in a centralised manner. LRAs or their representatives may **deem it appropriate to call for the linking of the Profile Tool to national and/or regional forecasting/foresight exercises** and corresponding information systems so as to have the information readily available and usable at the territorial level.

At the same time, LRAs are in the position to implement **targeted and specific measures**. The *Bremen’s Learning Neighbourhood* (CS_01) represents a **comprehensive approach** to simultaneously address skills gap and social inclusion aspects. Through education and training in, among other topics, language and culture, vulnerable categories (including migrants) are empowered to signal their competences in the local labour markets. The German case implies a substantial investment. On the other hand, the Portuguese case of the *Odemira* Council (CS_02) provides a **cost-effective solution** through the capacity building of the staff of public and private support services dealing with the welcoming and inclusion of immigrants. In the *Odemira* case, the added value is given by the framing of the initiative into a knowledge-based strategy and by the participation in the initiative of those agricultural entrepreneurs concerned by the skills gap. Finally, ‘*Les Ateliers du Midi*’ initiative (CS_03), implemented in a municipality of Brussels characterised by a high concentration of third-country migrants, is an example of work-based training, **tailored to the needs of the market** (i.e. having a certain degree of adaptation according to prevailing skills gap) **and systematically run** to foster both economic and social goals.

REC 02 – Promoting brain gain of intra-EU citizens

Objective: Fill the skills gap in the medium term.

Work strands of the Skills Agenda: Making skills and qualifications more visible and comparable; Improving skills intelligence and information for better career choices.

Main addressed challenges: **Ch1.3 Increase the labour active population; Ch3.1 Investigate actual skill needs (short term) and facilitate proper information sharing; Ch3.3 Systematically involve social partners.**

Brain drain means the loss of talented or highly skilled people who decide to move away from their place of origin. Reasons behind this decision may include better economic prospects (i.e. higher wages), higher living standards, better recognition of skills or qualifications, or more innovative and/or motivating working environments in the place of destination compared to the place of origin. Regions showing high JVR (i.e. Group 1, Group 3, and Group 5 of our classification) and being characterised by a gap of highly qualified skills have an attractive potential for talented workers of other areas. Figure 6 under section 2.3.1 provides an overview of where this potential is likely to occur in the near future. Furthermore, brain drain is not just a loss of human capital. It is a loss of knowledge and of innovation capacity which may negatively impact the competitiveness as well as the Research & Development potential of a territory. Thus, LRAs have direct and specific interest in retaining (or attracting) talented individuals.

Related EU policies/instruments: The free movement of persons is one of the cornerstones of the EU citizenship. The principle has its legal basis in the Treaty on the Functioning of the European Union (TFEU). Contrary to the situation of third-country nationals who have “*a huge potential but few opportunities*” of freely contributing to societies and economies, EU citizens are “*full beneficiaries but limited users*” of intra-EU mobility opportunities (EPC, 2013). If on the one hand EU policies aim at encouraging labour mobility also with a view to improve the matching of jobs and fill skills gaps where they occur, on the other hand less economically attractive territories are faced with the challenge of brain drainage and related side-effects. [EURES](#), the European Job Mobility Portal, is one of the main tools facilitating intra-EU working mobility. LRAs are asked to contribute to the functioning of this tool by linking their own job vacancies database with the EURES portal. Other instruments aimed at ensuring a fair movement of workers and fair competition across the Union include the platform to fight undeclared work, the enforcement directive on free movement of workers (Directive 2014/54/EU), and the enforcement directive on posting of workers (Directive 2014/67/EU). All of these instruments aim at eliminating “*unfair practices leading to social dumping and brain drain by ensuring that the same work in the same place is rewarded by the same pay*” (COM(2015)610 final). Finally, the Skills Agenda confirms the concurrent aim of EU policies to reduce brain drain and to facilitate mobility of EU citizens. Regarding brain drain, it identifies the “*further analysis and sharing of best practices*” (EC, 2016a) as an effective way forward. It also highlights that “*Cooperation is more effective when it builds on regional and local strengths and specialisms. Better local interaction between education and training on the one hand and the labour market on the other, supported by targeted investment, can also limit brain drain and help develop, retain and attract the talent needed in specific regions and industries*” (EC, 2016a).

Option(s) available to LRAs

One of LRAs' main tasks is to facilitate, in tight connection with social partners in general and with the business sector in particular, the meeting of the skills demand and supply of the territory. As a first option, sectors and industries with higher innovation capacities, such as those identified in the Smart Specialisation Strategies, should be targeted in terms of **dissemination of their job vacancy opportunities** through tools allowing information sharing, also outside the territory of reference. These tools may be strictly linked to the undertaking of intelligence activities such as the ones carried out by the Skills Centres of the Walloon Region or by the Malopolska Labour Market Observatory (reported, respectively in Box 8 and in Box 9 of section 3.2.3). Good practices of information sharing of outcomes of labour market intelligence exercises to the public at large include the development of self-standing virtual tools that are able to share 'real-time' information on job opportunities by geographical area as in the Finnish *ForeAmmatti* web-based initiative (see Box 10) and in the RISA initiative from Czech Republic (Box 11).

In some cases, the problem is not in the lack of supply or of information sharing between skills supply and demand within a territory but in the lack of an agreement between the two parties (i.e. employers and candidate workers) on the terms and conditions of employability (as part of the 'apparent skills shortage'). In this case, LRAs may intervene by providing financial **incentives** to the business/industry, so as to raise the employability conditions to an attractive level which is able to retain the skilled workforce.

A more proactive option for LRAs is the design of **innovative approaches** which are potentially able to bring benefits to all the involved parties (e.g. by pushing interaction between industry sphere, university sphere, LRAs, and civil society as suggested by the Quadruple Helix approach). This option is in line with the intention of the EC to identify and spread effective best practices for retaining brains within a regional or local labour market. The '*Torno subito*' initiative of the Regione Lazio (CS_07) has apparently the potential to become one of these best practices as it concurrently encourages the mobility of graduates or university students and creates a mechanism for these students to use their gained skills in firms of the Lazio region once back from training. Furthermore, those firms of the region formally involved in the scheme are theoretically able to influence the type of upskilling of participating graduates so as to fill their skills gaps.

REC 03 – Improving the effectiveness and reputation of VET

<p>Objective: Reduce the skills mismatch in the short term; Fill the skills gap in the short-to-medium term.</p>
<p>Work strands of the Skills Agenda: Improving the quality and relevance of skills formation; Improving skills intelligence and information for better career choices.</p>
<p>Main addressed challenges: Ch1.1 Develop new skills for the unemployed; Ch2.1 Increase the skills of the employed; Ch3.1 Investigate actual skill needs (short-term) and facilitate the proper information sharing; Ch3.3 Systematically involve social partners.</p>
<p>In general, VET is acknowledged as a suitable approach to address skills gap and mismatch. Unemployed people can benefit from training which opens occupational prospects. Employed individuals may update their competences in order to achieve greater satisfaction and better employability conditions. In all types of regions (those with high vacancy rate, those with high unemployment and those with evidence of skills mismatch) VET represents an option to solve labour market imbalances in terms of skills. Key to this purpose is the effectiveness of VET, especially in terms of job opportunities' opening, and its reputation, in terms of attractiveness, especially for the youth. LRAs have a role to play in both aspects, in particular through the interaction with social partners (inclusive of the business sector) and education institutions.</p>
<p>Related EU policies/instrument(s): The main reference framework for VET policies is the 2010 Bruges Communiqué on enhanced European Cooperation in Vocational Education and Training for the period 2011-2020 which is linking the agenda for VET in Europe (with its strategic objectives) to Europe 2020 and ET 2020 strategies. The Skills Agenda is also specifically focussing on VET, and in particular on the need to make work-based learning a 'first choice', and to assure its recognition and quality, possibly through the development of a Quality Framework for Apprenticeships. Furthermore, the Skills Agenda fosters "<i>the development and visibility of higher VET opportunities through partnerships between learning providers, research and business, with a particular focus on needs for higher level skills at sectoral level</i>" and the improvement of "<i>data availability on labour market outcomes of VET</i>" (EC, 2016a). It is to these two aspects that LRAs and their capacity to engage with local stakeholders may add value. Among the instruments, the European Alliance for Apprenticeships aims at developing partnerships among stakeholders at local, regional and national levels through the facilitation of networking, co-operation and sharing of good practices.</p>

Option(s) available to LRAs

LRAs may improve the effectiveness of VET through their knowledge and understanding of the skills needs, especially in the short-term, and by directly interacting with the job providers to design and implement skills improvement systems such as apprenticeship schemes which are tailored to the needs of the territory or of some specific sectors/industries. One of the lessons learnt in this regard (CEDEFOP, 2015c) is the importance of having a long-term perspective since the involvement of SMEs is not a straightforward exercise. It needs to be triggered with both information and evidence on VET effectiveness, and,

possibly supported, for example, through incentives. The European Alliance for Apprenticeships may provide suggestions for the setup of these systems as well as for the “*smart use of funding and resources; it also stimulates important players, large companies as well as associations and social partners, to commit themselves to the theme*” (CEDEFOP, 2015c).

Immediate employability of trainees attending VET courses is the best way to remove the label of ‘second choice’ from professional education. LRAs may try to establish local or regional partnerships or alliances directly involving social partners and education providers in order to respond to explicit needs of the business sphere.

Finally, the production and dissemination of evidence on the outcomes of VET in terms of employability and individuals’ satisfaction may theoretically prove to be useful in sustaining quality and reputation arguments, especially among the youth, and in justifying the involvement of new stakeholders in the envisaged partnerships or alliances. The FEMCOOP project (CS_09) is an example of the effectiveness derived from the raising of awareness on the opportunities and career prospects for women related to technical occupations. In the example, *ad hoc* learning activities, coaching support, and partnering with schools and companies have been used to reach the scope.

REC 04 – Linking education to doing business

Objective: Reduce the skills mismatch in the short-to-medium term.
Work strands of the Skills Agenda: Improving the quality and relevance of skills formation.
Addressed challenge: Ch2.1 Increase the skills of the employed.
Regional authorities are required to emphasise in their Smart Specialisation Strategies the uniqueness of their territories and maximise the effectiveness of the use of the European Structural Investment Funds (ESIF). To this end, regional authorities need to foster the development of their top-performing/excellence sectors, with a consequent need to have available highly-specialised and modern workforce. This may be achieved through in-company training and apprenticeships. Initiatives of this kind are relevant to all the types of regions identified, i.e. those with high vacancies (Group1, Group 3, and Group 5) and those with evidence of skill mismatch (Group 2, Group 4, and Group 6). The targets of this education which takes place within the premises of businesses and industry include highly skilled workforce (i.e. with secondary or tertiary education) with limited professional experience; and senior employees having consolidated professional knowledge but exposed to the fast pace of changing skills requirements (e.g. due to the digitalization process).
Related EU policies/instrument(s): Among the relevant instruments, again there is the European Alliance for Apprenticeships (see REC 03), under which “ <i>social partners in different economic sectors have also made joint pledges [...] to provide more and better apprenticeships</i> ”, with a total of 250,000 in-company training and job opportunities being

mobilised for young people (EC, 2016a). The European Business Network for Corporate Social Responsibility (CSR Europe) brings together 50 multinational companies and 45 national partner organisations for a total of some 10,000 companies covering a very diverse range of sectors and regions. CSR Europe initiated the Pact for Europe to contribute to “boost the number and quality of business-education partnerships”, to “reduce the skills gap”, and to “contribute to the EU and national policy developments on skills for employability” (European Pact4Youth [website](#)). In particular, the Pact is expected “to support the creation of 10,000 quality business-education partnerships, with the shared target to establish together at least 100,000 new good quality apprenticeships, traineeships or entry-level jobs” (European Pact4Youth [website](#)). The Grand Coalition for Digital Jobs is a sectoral-based instrument “to tackle the lack of digital skills in Europe and the thousands of unfilled ICT-related vacancies across all industry sectors” (Grand Coalition [website](#)). According to the recently launched Skills Agenda, the Coalition has contributed to offer through companies and organisations “millions of additional training opportunities” (EC, 2016a). Finally, the European Institute of Innovation and Technology (EIT) is meant to facilitate the creation of partnerships among universities, research labs and companies. The Skills Agenda mentions EIT as “an example of how cooperation with businesses and research institutes can foster curriculum development, mobility programmes and access to research and industrial infrastructure for practical training in a real-life environment” (EC, 2016a).

Option(s) available to LRAs

Regional authorities having to foster economic growth and competitiveness in line with their Smart Specialisation Strategies may use ESIF to sponsor the business sector to directly undertake in-house educational activities targeted to their internal or even external employees. To this end, LRAs may define funding instruments such as grants, vouchers or fiscal incentives for businesses scouting the skills needs of their employees according to their expected tasks and proposing professional education courses to be internally run to reduce the mismatch. Such funding instruments may also be addressed to those VET providers designing professional education courses in close liaison with one or more businesses belonging to the most competitive and innovative sectors, as per Smart Specialisation Strategies.

REC 05 – Aligning digital preparedness and recognition with ICT take-up

Objective: Reduce the skill mismatch in the short-to-medium term.

Work strands of the Skills Agenda: Improving the quality and relevance of skills formation; Making skills and qualifications more visible and comparable.

Addressed challenges: **Ch2.1 Increase the skills of the employed; Ch2.2 Provide and/or formally recognise the qualifications of the employed.**

The digitalization trends affect the wide majority of the economic sectors, causing an increase of about 4% annually of the demand for digital technology professionals. Even

though the large share of the digital skills demand relates to highly-specialised ICT workers (e.g. professionals of coding or computer science), the digitalization of society requires employees of all economic sectors to be endowed with a certain set of digital skills. These may range from basic digital literacy for the carrying out of ordinary tasks, to intermediary digital competences needed to improve labour productivity. Intermediary digital skills allow workers to guarantee process efficiency and positively affect business competitiveness especially in the case of SMEs and self-employed workers.

Related EU policies/instruments: The main reference framework for the digitalisation of Europe is the Digital Agenda for Europe (DAE). The DAE (COM(2010)245) emphasises the need to enhance digital literacy and skills and brings forward the importance given as early as 2006 by the European Parliament and the European Council to digital competence (EC, 2014), in particular by referring to the development and recognition of a reference framework for digital competence. Apart from the [European Computer Driving Licence \(ECDL\)](#), a globally-recognised standard and certification initiated since 1996, the update of the European Digital Competence Framework for Citizens (DigComp) was completed in June 2016. Furthermore, an eCompetence framework (eCF) version 3.0 for ICT professionals was finalised. Such a framework is the first sector-specific implementation of the EQF and “*provides clear definitions and sound orientation to support decision-making in relation to the selection and recruitment of candidates, as well as the training and assessment of ICT professionals. It enables the identification of skills and competences that may be required to successfully perform duties and fulfill responsibilities related to ICT in both the private and public sectors*” (eCF 3.0 [brochure](#)). Among the latest developments, the Skills Agenda envisages the launch of a ‘Digital Skills and Jobs Coalition’ by the end of 2016, aimed at the development of a ‘large digital talent pool’. It also anticipates that Member States will be invited to prepare “*national digital skills strategies by mid-2017 on the basis of targets set by end-2016*” (EC, 2016a).

Option(s) available to LRAs

Most of the digital competences are part of the basic skills of the youngest generations (i.e. digital natives). Nevertheless, there is still a relevant need to endow new generations as well as currently employed individuals with a set of digital intermediary skills aimed at efficiently performing daily tasks and functions, both in the private and in the professional sphere. In the latter, certification is required to properly signal competences. LRAs have the opportunity to adopt as a reference within their initiatives the well-established ECDL (and its updated profiles) and the newly developed eCF 3.0. As LRAs are important stakeholders (either as financing entities or direct implementers) in the roll-out of broadband infrastructure, there is ample scope for them to combine broadband provision with ICT take-up initiatives funded through the ESIF, especially in those rural and remote areas characterised by low access rates¹⁵. Supporting the implementation of digital education programmes tailored to specific categories of business recipients may lead to an increase in

¹⁵ A comprehensive overview of the urban and rural digital divide at the regional level is provided in the COR study ‘*Linking the Digital Agenda to rural and sparsely populated areas to boost their growth potential*’ (COR, 2016b).

competitiveness. The Northern Ireland case (CS_10) is an exemplary demonstration of the positive and immediate impact of ICT skills development and qualification on productivity in a sector, agriculture, which is traditionally less inclined to modernisation.

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